



City of Unley Corporate Greenhouse Gas Inventory FY21-22

Comparison to Baseline Report

5 June 2023



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Kaurna Acknowledgement

We acknowledge the City of Unley is part of the traditional lands of the Kaurna people and we respect their spiritual relationship with their country. We acknowledge the Kaurna people as the traditional custodians of the Adelaide region and that their cultural and heritage beliefs are still as important to the living Kaurna people today.

1 Executive summary

1.1 Background

The City of Unley has a commitment to achieving carbon neutrality for operations by December 2030 (Climate & Energy Plan, February 2023). This report describes the greenhouse gas emission inventory for the City of Unley for the 2021-22 financial year and contrasts this with the 'baseline year' inventory developed for 2019-20.

Inventories categorise emissions sources into three scopes:

- **Scope 1** or "direct emissions" are those released directly by Council Operations such as the combustion of petrol, diesel and gas.
- **Scope 2** refers to the emissions embodied in the electricity consumed by Council Operations.
- **Scope 3** refers to other "indirect" greenhouse gas emissions that are generated in the wider economy as a consequence of Council's operations.

The Scope 1 and 2 emissions from Council Operations are based on the quantities of fuels and electricity used. Generally, these are well documented and accurately measured. Scope 3 on the other hand is often based on applying standard "factors" to expenditures.

The Climate and Energy Plan's Technical Report acknowledged that a high degree of uncertainty existed in the scope 3 estimates. The Climate and Energy Plan included an action to improve and expand the carbon management system to track scope 3 emissions and that significant jump in scope 3 emissions is a reflection of this action.

1.2 Inventory summary

Table 1 shows the total inventory for the City of Unley for FY2021-2022 compared to the base year in the Climate and Energy Plan (FY2019-2020).

Scope	Sub Category	Base Year 2019-2020 (t/CO ₂ e)	2021-2022 (t/CO ₂ e)	% Change
Scope 1	Gas	183	213	+16%
	Petrol	73	63	-14%
	Diesel	270	267	-1%
Scope 2	Electricity	1,193	697	-42%
Scope 1 + 2 Total		1,719	1,240	-28%
Scope 3	Travel	4	1	-75%
	Electricity embodied in Water	85	38	-55%
	Diesel used in waste collection	128	139	+9%
	Council Waste	180	178	-1%
	Construction Materials & Services (formerly roads, paths & stormwater)	1,500	3,703	+147%
Scope 3 Total		1,897	4,059	+114%
Total Emissions, Scope 1, 2 & 3		3,616	5,299	+47%

Table 1: City of Unley Greenhouse Emissions Inventory FY2021-2022 vs FY2019-2020

An overall reduction in reported emissions from FY2019-20 of 28% for Scope 1 & 2 reflects reduced consumption of electricity and petrol and the increase in the

proportion of renewable electricity in the South Australian grid. Gas use has however increased 16% over the same period.

The estimate of Scope 3 emissions for Construction Materials and Services for FY2021-2022 has increased by over 2,000 tCO₂-e. The FY2021-22 estimate uses actual expenditure and an emissions factor from the Australian Government's Climate Active program whereas the FY2019-20 estimate was based on an averaged amount of refurbished infrastructure.¹

In addition to improved carbon accounting, the Climate and Energy Plan:

- Identified staged actions over a nine-year period that Council will undertake to reduce its carbon footprint. The actions are aligned to asset management plans and whole-of-life assessments,
- Supports staff to embed a low carbon mindset and behaviours, and
- Anticipates technology and market developments for low carbon alternatives.

1.3 Navigating this report

Section 2 describes the geographic, organisational and Greenhouse Gas Emission boundaries applicable to the emissions inventory.

Section 3 describes the emissions reduction initiatives implemented by Council.

Section 4 presents the Inventory in more detail and provides explanations for the significant changes between the two inventory years.

Section 5 summarises the key activities to be delivered in year 2 (2022/2023) of the Plan.

¹ [City of Unley, Climate and Energy Strategy, Technical Report, 3 March 2021](#)

2 Boundary

The City of Unley is located immediately south of the City of Adelaide with a total land area of 14 square kilometres. The City has a population of 39,416² with an annual growth rate of 0.4%. Unley is predominately residential with some commercial and light industrial areas.

The City of Unley (ABN 63 714 797 082) operates autonomously within the framework of the *Local Government Act 1999* and is responsible for providing strategic direction for the local area, planning and development control, setting policy, providing, and maintaining infrastructure and services, and regulating activities, whilst complying with and enforcing legislation.

The City of Unley boundary incorporates all Council owned and operated buildings, including the Civic Centre and Depot, libraries and community centres, swimming centre, public toilet facilities and numerous parks, carparks and reserves. The boundary does not include Council owned facilities that are leased for community or commercial use.

2.1 Data Sources

City of Unley staff provided data from several sources for this report including:

- Billing data entered into Trellis for electricity and water use,
- Audit committee reports,
- Financial data,

- Bespoke reporting prepared by staff.

2.2 Greenhouse Gas Emissions Boundary

The City of Unley greenhouse gas emissions boundary reflects emissions that occur as a result of Council activities within the organisation boundary (operational control) as well as emissions the organisation can strongly influence (for example, products and services purchased).

Table 2 shows which carbon emission sources are included in the emissions inventory for Scopes 1 and 2.

City of Unley, Carbon Emissions Boundary		
Scope 1 (Direct Emissions)	Gas Petrol Diesel	Acetylene Gas** Refrigerants**
Scope 2 (Indirect emissions from electricity generation)	Electricity use in buildings, parks & public lighting	

** Not yet calculated – data management plan in place

Table 2: City of Unley, Carbon Emissions Boundary (Scope 1 and 2)

Table 3 overleaf shows which carbon emission sources are included in the emissions inventory for Scopes 3.

² [Population in local government areas | Centre for Population](#)

Scope 3	Included Emissions	Excluded emissions
(Indirect emissions from value chain)	<ul style="list-style-type: none"> • Construction Materials & Services • Travel • Electricity Embodied in Water • Diesel use in waste collection • Council waste 	<ul style="list-style-type: none"> • Electricity and LPG use at downstream leased Facilities • Employee Commute • Working from Home • Accommodation • Cleaning • Cleaning equipment & chemicals • Food & catering • Horticulture & Agriculture • Products • ICT services & equipment • Machinery & vehicles • Office equipment & supplies • Paper • Postage, courier & freight • Professional services • Staff clothing & uniforms • Telecommunications

Table 3: City of Unley, Carbon Emissions Boundary (Scope 3)

3 Emission Reduction Activities

Guiding Strategy

The City of Unley has a long-term commitment to reducing carbon emissions and addressing the causes of climate change. The Climate and Energy Plan (2023) sets out actions to 2030 to measure and reduce the City of Unley's operational emissions, with any remaining unavoidable emissions balanced through a purchase of accredited carbon offsets.

The City of Unley has been actively reducing their direct emissions for a number of years by improving efficiencies and utilising smart technology and renewable energy.

Achievements to date include:

- A total of 105kW of solar and a 9.8 kW battery have been installed since 2016.
- A public electric vehicle charging station at Heywood Park funded through a Federal grant was installed in 2019.
- Replacement of existing Council-owned streetlights to LED lighting in residential streets.
- Six 'e-bikes', funded through State Government grants, are used by Council staff to replace car travel.

Emissions reduction actions during FY2021-2022

Council endorsed the Climate and Energy Plan & Carbon Neutral 2030 Target (updated 2023). The aim of the first two years of the plan was to focus on systems improvements and supporting staff to embed a low carbon mindset and behaviours.

City of Unley achieved the following in 2020–2022 (Climate & Energy Plan – Year 1):

- Climate Change Policy adopted (June 2022).
- Climate Partner Fund established: \$26,173 in subsidies provided to leased community groups of Council Owned buildings to increase energy efficiency.
- Unley Insights – 5 x Climate Change Community Focus Groups (May 2022) held to gather community understanding and suggestions.
- E-Scooter trial commenced Feb 2022.
- Carbon Neutral presentations held at 7 staff team meetings to help increase understanding and implementation of carbon neutral activities relevant to individual business groups.
- Sustainable Procurement Review completed with recommendations to support Council staff to purchase products and services with lower carbon emissions.
- Use of online meetings where appropriate to avoid unnecessary travel.

4 Greenhouse Gas Emissions Inventory FY2021–2022

Table 4 shows the total inventory for the City of Unley for FY2021–2022 compared to the base year in the Climate and Energy Plan (FY2019–2020).

Scope	Sub Category	Base Year 2019–2020 (t/CO ₂ e)	2021–2022 (t/CO ₂ e)	% Change
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Table 4: City of Unley Greenhouse Emissions Inventory FY2021–2022

4.1 Explanation of Significant Changes

Category	Baseline 2019-20 tCO _{2-e}	2021-22 tCO _{2-e}	Comments
Gas	183	213	The 16% increase in emissions is due to increased consumption of natural gas at the Unley Swimming Centre. No changes were made to emissions factors between the two inventory years.
Petrol	73	63	The 14% decrease in emissions is due to reduced km travelled by petrol vehicles that resulted from less cars in the fleet, introduction of hybrid vehicles to fleet and a preference for online meetings post COVID. .
Electricity (Scope 2)	1,193	697	The 42% reduction is due to the falling emissions factor for electricity in SA from 0.54 to 0.37 kgCO _{2-e} per kWh between the two years – the result of steadily increasing proportions of solar and wind power in the local grid – and a 12% reduction in electricity purchased from the grid due to onsite solar generation and consumption. .
Emissions embodied in Water	85	38	The decrease in reported emissions is due to water consumption being significantly lower in 2021-22 than 2019-20.
Category	Baseline 2019-20 tCO _{2-e}	2021-22 tCO _{2-e}	Comments
Diesel Used in Waste Collection	128	139	Increased access to data has allowed for a refinement of the methodology and a 9% increase in reported emissions. Future years will reflect changed management (now with East Waste).
Construction Materials & Services	1,500	3,703	The increase is a result of new methodology: moving from estimating emissions from refurbishment to calculations based on actual expenditure. This category refers to the

			<p>emissions embodied in roads, paths and stormwater infrastructure. Due to limitations in the detail of data collected, the approach taken FY2019-2020 was to:</p> <ul style="list-style-type: none"> • use the 'Greenhouse Gas Assessment Workbook for Road Projects' developed by The Transport Authorities Greenhouse Group (TAGG) to estimate the emissions created by a project to replace all roads, kerbing and footpaths in the Unley area. • Assume refurbishment generates half of the emissions as new construction • Divide this estimate by the average 'life' of the assets to generate an annual estimate of embodied emissions. <p>The 2020 Transport Asset Management Plan states that Council is responsible for 172km of roads, 329km of paths, 307km of kerbing and 38 bridges. The Workbook generates an estimate of the emissions that would be generated if this was all a new construction project: 150,000 tCO_{2-e} and that refurbishment generates half of the emissions as new construction (i.e. 75,000 tCO_{2-e}) and then dividing by an average asset life of 50 years to generate the estimate of 1,500 tCO_{2-e} per annum.</p> <p>Under the Climate Active approach, expenditure. data was aggregated into \$4.7M of 'construction materials and services' and an emission factor applied. The end result is a much higher estimate. In future years, being able to capture and report on more granular data will allow more accurate emissions intensity factors to potentially reduce the quantum of emissions in this category.</p>
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Note: The scope 3 inventory does not include all of the categories required to comply with the Australian Government's Climate Active approach to Carbon Neutral Certification for Organisations .

5 Next Steps

The following activities are scheduled to be delivered in Year 2 (FY2022-2023) of the Climate & Energy Plan (2023):

- Commence purchase of light fleet Electric Vehicles.
- 2022 second and final round of Climate Partner Fund subsidies offered.
- Fleet tracking software installed to improve fleet efficiencies and support electric vehicle transition.
- Solar installation at Goodwood Library and Community Centre.
- Introduction of carbon footprint evaluation criteria to Procurement Acquisition Plan (trial with City Development projects) - partially completed.
- Environmentally Sustainable Design (ESD) guidelines for Council Buildings.
- Data Management Plan for City of Unley Carbon Emissions – partially completed.