dsquared

Towards zero emissions

A Carbon Management Plan for the Adelaide Hills

Adelaide Hills
COUNCIL

Document Control

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03	24/03/25	Final draft	DD	JP
04	30/04/25	Final	DD	JP

This plan has been prepared by dsquared Consulting on behalf of Adelaide Hills Council.

About dsquared

Our Vision is to think beyond the square.

Our Mission is to create spaces, places, and communities that are positive for both the environment and for people. We will do this by providing our clients with sustainable and bespoke solutions that are innovative, challenge perceived ideas, and push the boundaries of achievement and excellence.

We confirm that all work has been undertaken in accordance with our ISO 9001 accredited quality management system.

Acknowledgement of country

The dsquared team wish to acknowledge the Traditional Custodians of all country throughout Australia, and their cultural, spiritual, physical, and emotional connection with their land, waters, and community. We pay our respects to all Elders past, present, and emerging.

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Introduction

Adelaide Hills Council (Council) is committed to taking action to reduce the impacts of climate change, declaring a climate and biodiversity emergency in 2019. This Carbon Management Plan (the Plan) provides Council with an approach to reducing greenhouse gas (GHG) emissions across both corporate and community emissions. The Plan builds upon Council's Corporate Carbon Management Plan developed in 2019 and provides an updated pathway for Council's ongoing emissions reduction efforts.

Adelaide Hills Council has been demonstrating leadership in sustainability and managing emissions for many years including developing an emissions inventory, implementing emissions reduction initiatives, and supporting the community to reduce environmental impacts as part of education and grant programs. This Plan has been developed to continue this journey and support Council in continuing to demonstrate leadership in the local government sector.

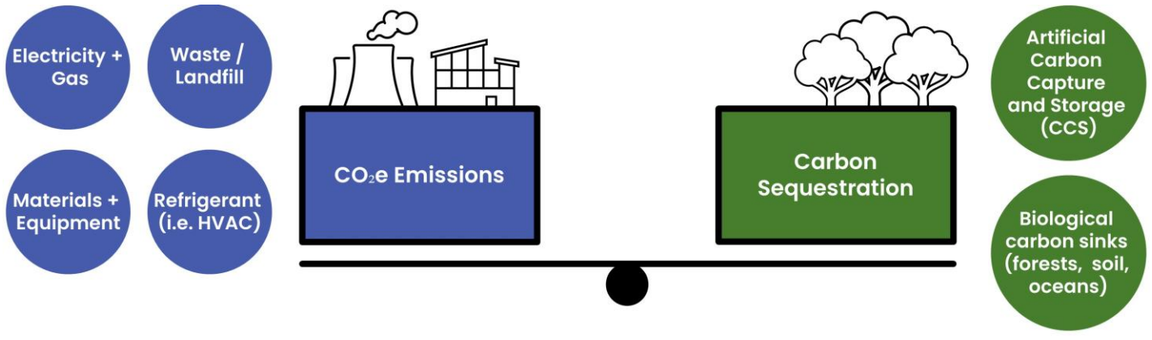
The scope of this Plan is Adelaide Hills Council's emissions which are in direct control of the Council, emissions from its supply chain which it can minimise and influence, as well as community emissions where Council can support and facilitate community action. Where Council can implement initiatives and programs that support the community to reduce emissions, these opportunities have been identified to ensure Council is considering a holistic approach to transitioning to net zero emissions.

This Plan has been developed to set a pathway to reduce emissions in line with the following United Nations net zero definition which acknowledges that reducing emissions is required across society. The aim of the Plan is to reduce emissions as far as possible which will also reduce the amount of additional carbon sequestration required to balance GHG emissions.

"net zero means cutting greenhouse gas emissions to as close to zero as possible, with any remaining emissions re-absorbed from the atmosphere"

GHG emissions (t CO2-e) emitted to the atmosphere by an organisation, activity, building, or individual.

Equivalent amount of GHG emissions reduced, avoided, or captured elsewhere.



Why take action

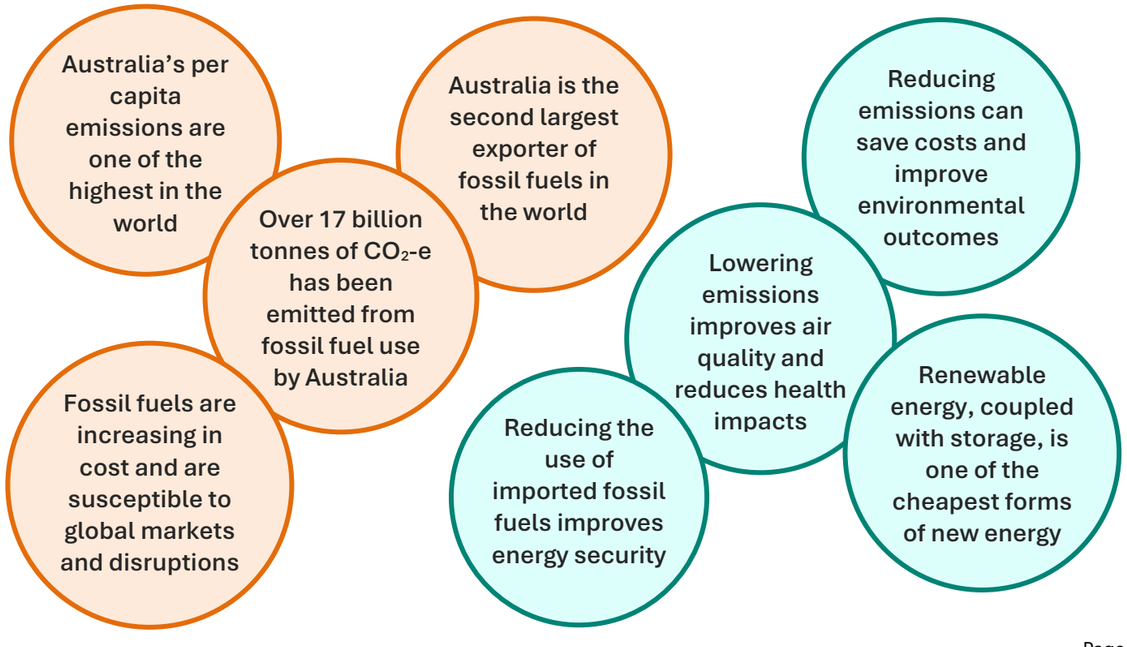
GHG emissions have increased exponentially worldwide since the Industrial Revolution and are a major concern due to their ability to trap more heat in earth's atmosphere, resulting in changes to the climate which can have a negative impact on life. Some of the impacts include the following:

Greenhouse gas (GHG) emissions have increased exponentially and have been scientifically proven to trap more heat in the atmosphere, impacting the climate and resulting in increasing average temperatures, more variable and extreme weather, and rising sea levels.

Extracting and burning fossils fuels negatively impacts natural environments, air quality, water quality, and flora and fauna. For example, there are over 6,500 coal mines worldwide covering approx. 100,000 square kilometres with 8.9 billion tonnes of coal mined each year.

Air quality impacts of burning fossils fuels have been shown to impact health including increasing the likelihood of asthma in children, respiratory complications, and increased likelihood of cancer and diabetes, which increases pressure on healthcare systems.

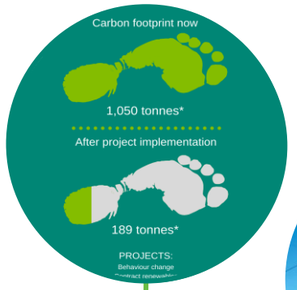
Fossil fuels are non-renewable, finite, becoming increasingly harder to mine and extract, and are susceptible to global supply interruptions and prices. The price of coal in Australia has doubled since 2020 largely due international markets and the war in Ukraine.



Council achievements

Council previously developed a corporate emissions inventory in 2019 which totalled 1,050 tCO_2-e and included electricity use in buildings and facilities, streetlighting electricity, fleet fuel use, and water. Since the 2019 inventory was developed, Council has implemented the following projects to reduce consumption, costs and emissions as part of Council operations and services:

Corporate Carbon Management Plan



900 streetlights changed to LEDs, and ongoing LED replacement for remaining 400

Fleet optimisation and 15 hybrid fleet vehicles

EV Charging installed at Heathfield Deport & Stirling Office + Garrod and Woodside

New HVAC systems at Woodside, Gumeracha, Coventry Libraries

Preparation of Sustainable Building Guidelines

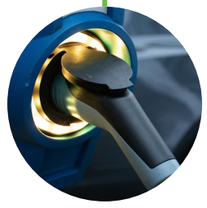
Kerbside waste collection trial to increase FOGO and landfill diversion

LED lighting upgrades across Council facilities

Solar PV installations at Stirling, Woodside, Norton Summit, Gumeracha Depot and Birdwood CWMS

Fleet Management Plan +

Data Management & Reporting Plan



EV Feasibility Report

Stirling, Woodside Offices & Heathfield Deport

14 electric vehicles delivered (Tesla's, Hyundai Kona, and Kia Niro's)

Sustainability Audits at 37 facilities

Irrigation system upgrades to reduce water consumption and emissions

Sustainable procurement review and alignment with ISO 20400

Standards used

This Plan has been developed in line with the GHG Protocol Corporate Standard, Climate Active Carbon Neutral Organisation Standard, and Science Based Targets Manuals and reference documents. The GHG Protocol and Climate Active are the main standards used in this Plan and are summarised below.

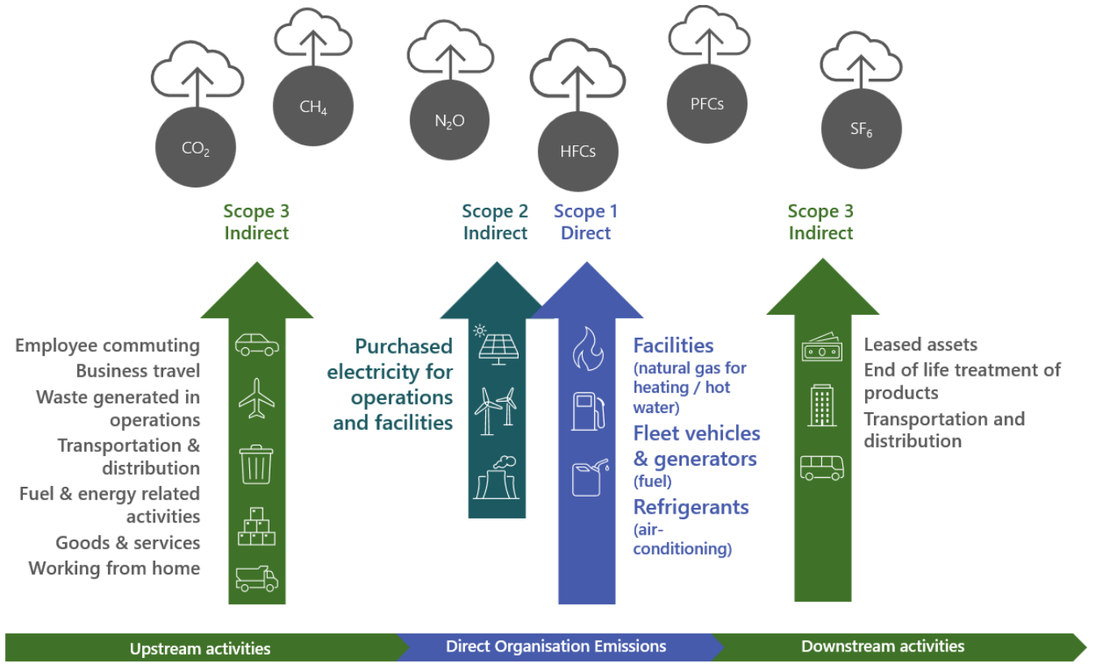
The **GHG Protocol** is an internationally accepted set of standards and resources for GHG emissions accounting and reporting and is used by both public and private entities. The GHG Protocol is referenced by many GHG emissions tools and certifications including Climate Active and the Science Based Targets initiative (SBTi).

Climate Active Carbon Neutral Organisation Standards and Technical Guidance Manuals have been used throughout the development of this Plan and associated emission calculations, including setting an emissions boundary and baseline year, to ensure that in the event Council pursues Carbon Neutral certification, the emissions inventory and initiatives will meet the minimum requirements.

Scope 1, 2 & 3 emissions

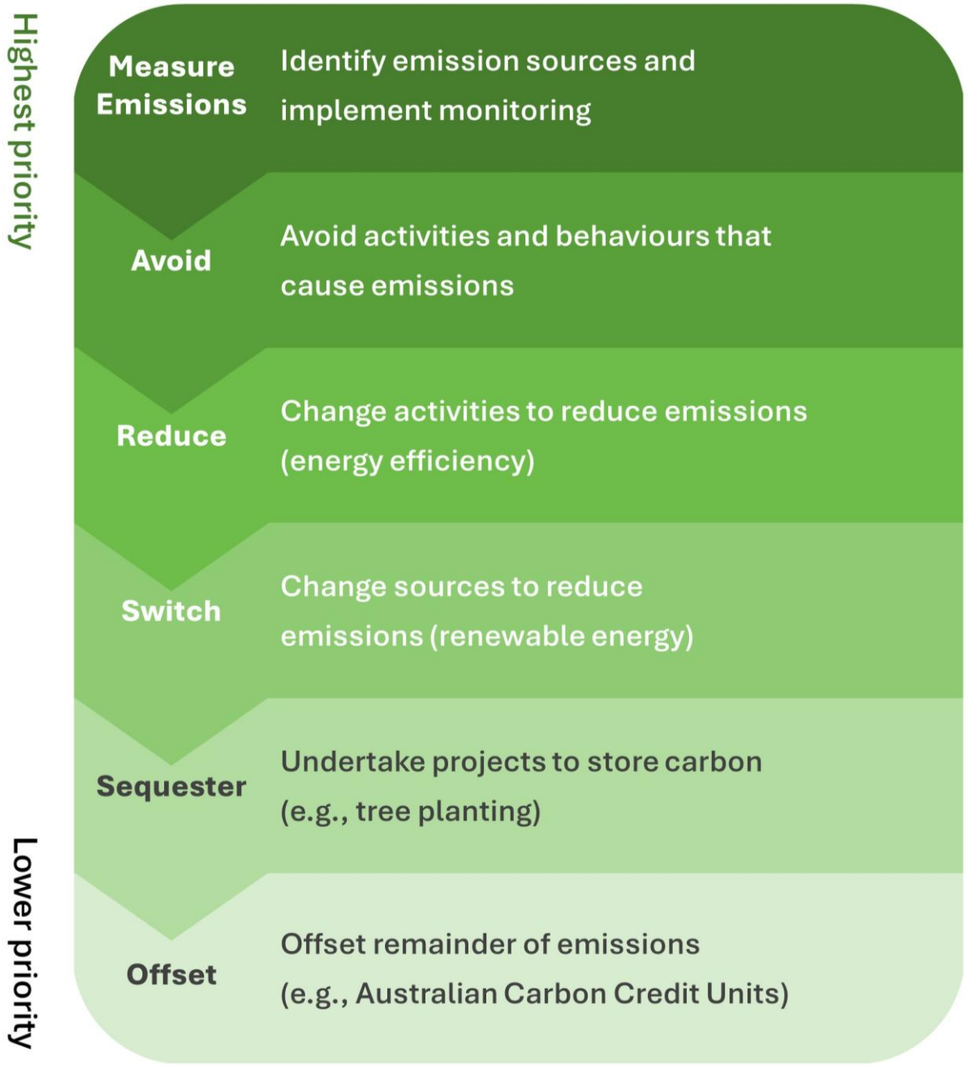
The emissions inventory includes Scope 1, 2 & 3 emissions for emissions sources associated with Council's operations and community emissions. Emissions scopes are categorised as follows:

- **Scope 1:** Direct emissions from sources that are owned or controlled by the reporting organisation.
- **Scope 2:** Indirect emissions associated with the purchase of energy (e.g., electricity).
- **Scope 3:** Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organisation, but that the organisation indirectly impacts in its value chain.



Carbon management hierarchy

The below carbon management hierarchy has been used to develop this Plan with a focus on initiatives that will avoid and reduce emissions as the highest priority, while also reducing costs for Council.

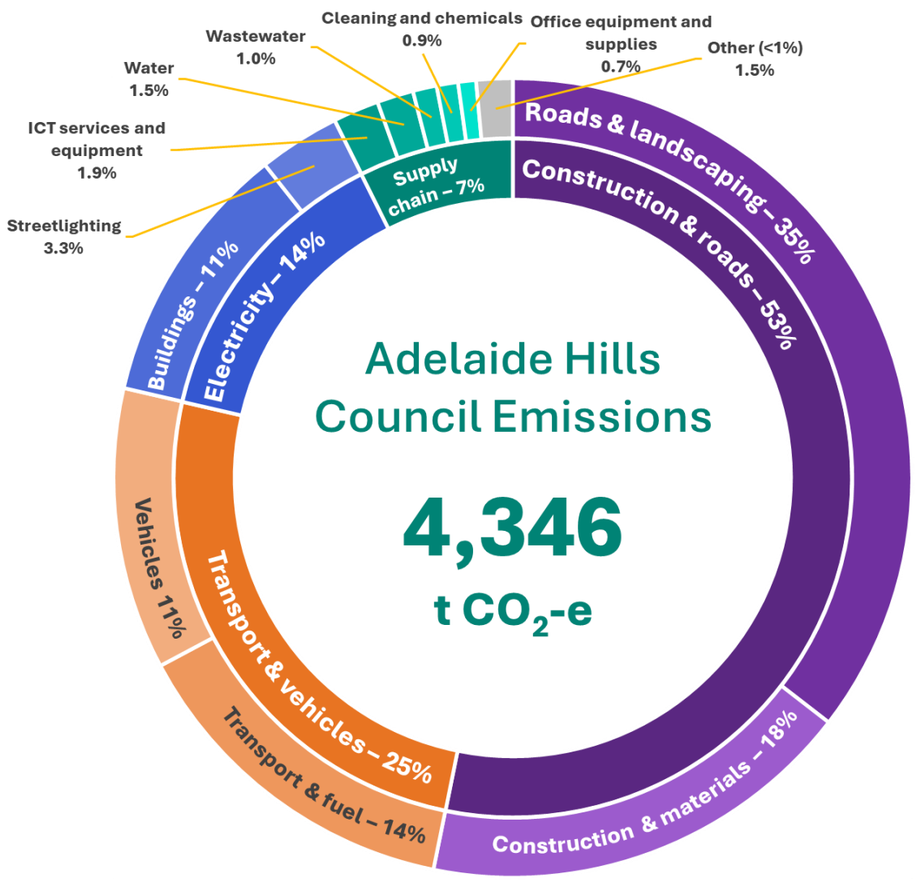


Council emissions inventory

An updated emissions inventory has been developed based on 2022/23 (FY23) data. The FY23 emissions inventory has been expanded to include additional emissions sources to align with the GHG Protocol and Climate Active Carbon Neutral standards, as well as the Best Practice Guide developed as part of the Local Government Association of SA Net Zero Accelerate Program.

The emissions inventory includes Scope 1, 2, and 3 emissions categories in Council's direct corporate control or where Council can influence emissions and totals 4,346 tCO2-e (refer below).

2022/23 emissions inventory



Scope 1

Direct GHG emissions emitted by Council (fossil fuels burnt / gasses released)

354 tCO_2-e

Scope 2

Indirect GHG emissions from electricity consumption

343 tCO_2-e

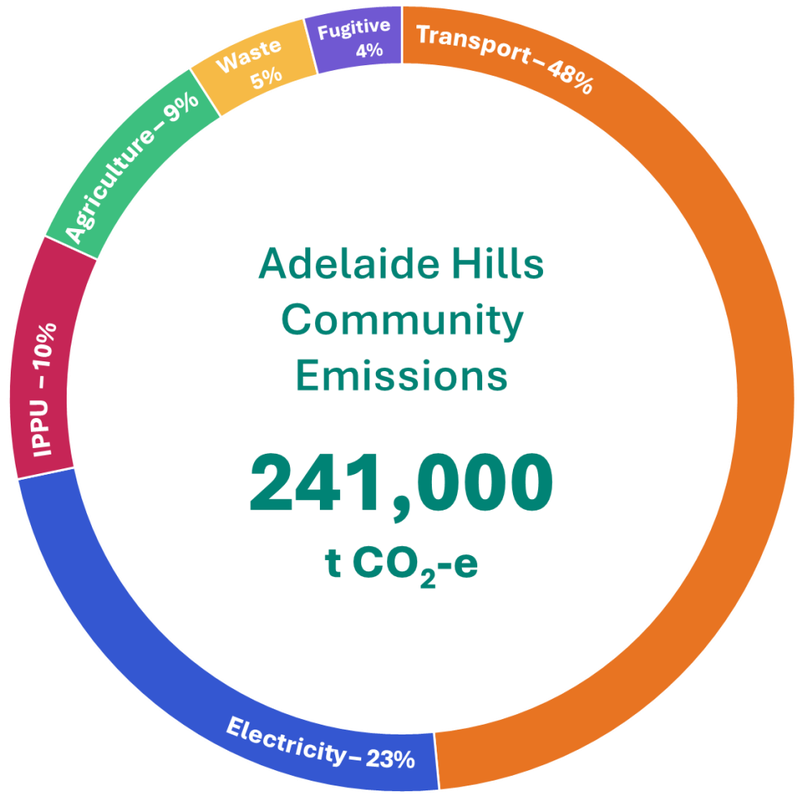
Scope 3

Indirect GHG emissions from Council's supply / value chain

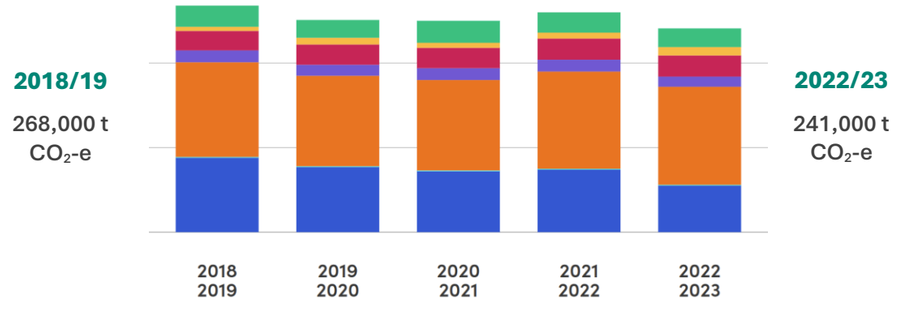
3,648 tCO_2-e

Community emissions inventory

The following community emissions inventory has been used to guide the identification of emissions reduction opportunities that Council can facilitate and support. The emissions inventory is based on the Snapshot Climate tool for FY23 to align with Council's corporate emissions. Based on the Snapshot tool Council's corporate emissions equate to approximately 1-2% of the total Adelaide Hills community emissions.



Community emissions have been reducing due to increasing renewable energy generation in the South Australian electricity grid as shown below.



Key priorities

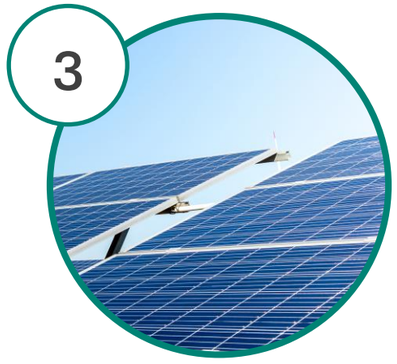
Based on the FY23 emissions inventory for both corporate Council operations and the community, the following emissions reduction priorities for this Plan have been identified:

Road & construction emissions

Reducing the embodied emissions of new construction and road projects by incorporating low emissions materials, increased recycled content and improving construction practices and efficiencies. Targeting the highest emissions sources including roads, new buildings and major refurbishments.

Fleet fuel & transport

Transitioning to higher fuel efficiency vehicles such as hybrid electric in the short term, and fully electric vehicles in the medium term, while supporting increased accessibility and availability of electric vehicle charging. Support the community on using sustainable and active forms of transport.



Smart energy

Continue to improve the energy efficiency of Council facilities including supporting community groups and sporting clubs, optimise the installation of rooftop solar and battery storage, and facilitate innovative approaches to renewables and energy management. Support the community on accessing trusted, competitive and effective services to reduce emissions and costs.

Waste, resources & supply chain

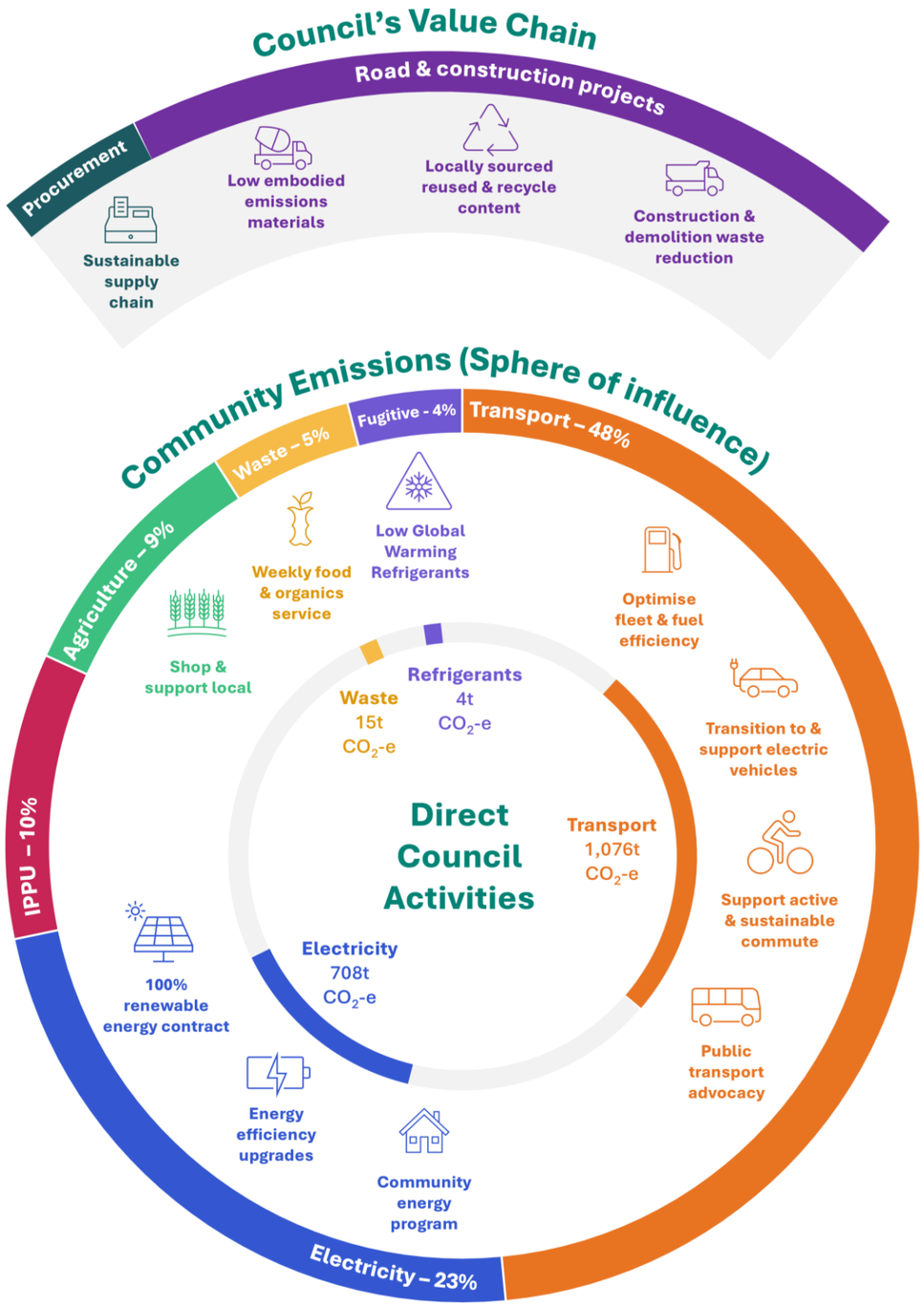
Implement sustainable procurement processes to transition to lower emissions and environmentally sustainable suppliers, targeting the largest suppliers and supply chain emissions sources. Support the local economy and businesses to buy local.

Collaborate & advocate

Advocate on behalf of community in support of emissions reduction actions and collaborate with other councils to reduce duplication and share resources. Share learnings and collaborate across government to drive outcomes.

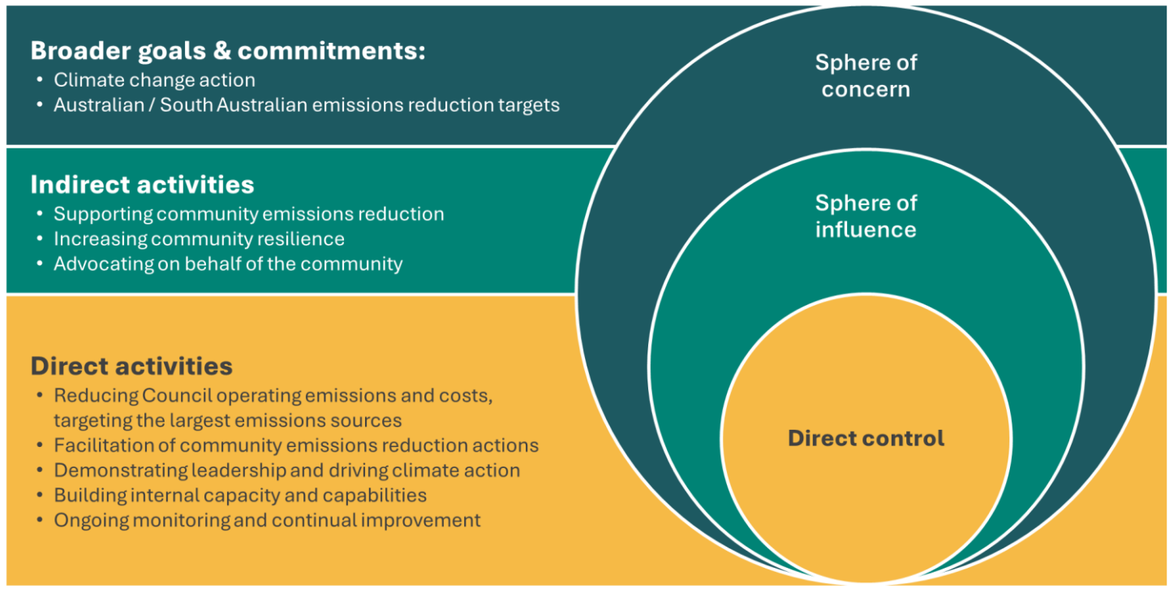
Emissions reduction opportunities

The below provides a summary of the key actions and recommendations identified in this Plan with both direct and indirect emissions reduction opportunities incorporated.



Approach

The following has been used to guide the recommendations with a focus on direct emissions reduction activities and where Council can use its influence to support the community on reducing emissions. The recommendations have also been aligned with broader goals and commitments on climate action.



Implementation

The following emissions reduction initiatives will reduce corporate and community emissions across numerous services, facilities and activities. The below emissions reduction initiatives are a recommendation and will be considered for implementation through the budget process. The initiatives are identified as corporate or community actions in line with the following, with some initiatives addressing both corporate and community emissions.

Legend

Direct Council / Corporate emissions reduction initiatives

Community emissions reduction initiatives

Initiative		Summary	Indicative resources	Indicative budget	Timing	Indicative target	Emissions reduction
Road & construction emissions							
1	**Infrastructure and capital works embodied emissions**	Continue to implement initiatives to reduce embodied emissions in infrastructure projects and improve data availability and monitoring. This includes low embodied emissions materials that also support increased longevity and reduce maintenance costs. Implement a policy that all major capital works projects over a set threshold must consider embodied emissions.	Allocate an additional 2-3% budget for large capital works and road projects to specify low emissions materials that support local suppliers and services. To be reviewed against whole of life costs e.g., increased longevity and reduced maintenance costs to be quantified.	Approx. $60,000-$90,000 capital budget increase for sealed road projects	From 2025	All major projects aim for: 10% reduction embodied emissions reduction from 2027 20% embodied emissions reduction from 2030	TBC based on project type and assessment
Transport							
2a	**Low emissions fleet transition**	Continue to transition to low emissions vehicles aiming for the procurement of all light and commercial vehicles to be fully electric by 2030. Review current EV transition costs and savings, EV prices, and future trends as part of fleet transition planning.	Budget will be dependent on vehicle type, availability and replacement timeframe, aiming for price parity with combustion vehicles over time.	TBC based on EV rollout review and EV availability and pricing	2030	100% operational emissions reduction for light and commercial vehicles from 2030.	40-80 t CO_2-e reduction per annum for fleet fuel emissions
2b	**EV transition support**	Advocating on behalf of the community for improved EV charging infrastructure.	Existing internal resources	N/A	Ongoing	TBC – Based on overall uptake of low emissions vehicles and EVs in the community.	TBC
Smart energy							
3a	**Renewable energy contract**	Negotiating a 100% renewable electricity power purchase agreement to continue 100% renewable energy for Council facilities and services.	Requires training and expert advice to assess contract options and ensure the agreement is suitable for Council's operations and is cost competitive.	Expert consultant advice and training required $30,000-$40,000	2026	Zero electricity emissions	Approx. 900 t CO_2-e per annum (reducing over time)

Initiative		Summary	Indicative resources	Indicative budget	Timing	Indicative target	Emissions reduction
3b	**Smart energy / energy efficiency** 	Implement an annual energy efficiency program for Council facilities based on the sustainability audits, ESD Guidelines, and priorities identified in this Plan. Program to be based on initiatives that achieve a <7-year payback while supporting improved facilities and services, aiming for a 3-5 year payback.	Internal property and facilities management resources to manage program.	Annual budget: $50,000-$75,000	2025-2030	Energy consumption and costs reduced by 5-10% by 2030.	N/A – 100% renewable energy contract in place
3c	**Community energy** 	Implement a community energy program to support residents and businesses take advantage of new technologies and services that will reduce consumption, costs and emissions. Can also support Council facilities as part of a broader energy contract. Options include: 1. Engage ShineHub to implement a bulk buy solar PV, battery storage, and VPP program. 2. Implement an Adelaide Hills specific program and expand the scope to capture energy and transport.	1. The ShineHub bulk-buy and VPP program will require internal additional resources to deliver and budget for due diligence checks before proceeding	$97,000 for staff and due diligence requirements	From 2026	To be reviewed and confirmed based on adopted approach.	Emissions reduction potential: 1-2% of community emissions
			2. Developing an EOI and implementing a community energy program will require additional internal resources (1 FTE) and expert advice / consultancy services.	Approx. $240,000			
3d	**Sport & recreation facilities** 	Undertake energy and water audits at sports and recreation facilities to identify consumption, cost and emissions reduction opportunities. To be progressed as part of a staged audit and implementation program.	External expert advice for energy and water audits.	Audits: $20,000 Implementation: $100,000	2025	TBC based on audits	TBC based on audits – typically a 3-5% energy reduction opportunity
Waste, resources and supply chain							
4a	**Weekly organics waste services** 	Changing waste service to weekly food organics green organics and fortnightly general waste collection.	Internal resources and capital cost required to implement alternative services. Green Industries SA grant may be available to reduce costs.	Capital cost for implementation $341,000	From July 2025	5% reduction in community waste emissions	740 tCO_2-e reduction in waste emissions.
4b	**Supply chain** 	Undertake a review of the largest supply chain emissions (top 5) and collaborate with suppliers to identify and implement emissions and cost reduction initiatives. Update procurement processes for large supply contracts to include sustainability and emissions criteria, including opportunities for local suppliers.	Staff training and resources to undertake a supply chain review of top suppliers.	Expert consultant advice and training required $30,000-$40,000	From 2025	Target set by 2026 – To be confirmed based on engaging with suppliers and reviewing opportunities.	TBC

Initiative		Summary	Indicative resources	Indicative budget	Timing	Indicative target	Emissions reduction
Advocacy							
5	**Advocate**	Advocate on behalf of the community for improved standards and services that will reduce consumption, costs and emissions for residents and business. This includes advocating on improved energy efficiency standards, EV charging, and sustainable transport. This could include advocation for: - Improved public transport and funding for cycleways (e.g., cycling trails supporting tourism) - Additional EV charging infrastructure (e.g., RAA EV charging program expansion) and EV incentives. - Statewide community energy programs and funding support.	Existing internal resources.	N/A	From 2025	N/A – Recommend advocacy actions undertaken annually.	N/A
Grant programs							
6	**Grants**	Identify grants and incentives that can support the community on reducing costs and emissions in line with this plan. The Community Development Grants program could be updated to include a focus on emissions reduction opportunities which also support reducing costs. In the event a community energy program does not proceed, consider a new grant program to support residents and businesses on implementing emissions reduction initiatives.	Existing grant programs for community facilities. New grant dependent on community energy outcomes and could be rolled out concurrently with the AHC specific community energy program.	New grant program: $90,000	From 2025	N/A – Community grants not expected to have a direct emissions impact that can be accurately quantified.	N/A

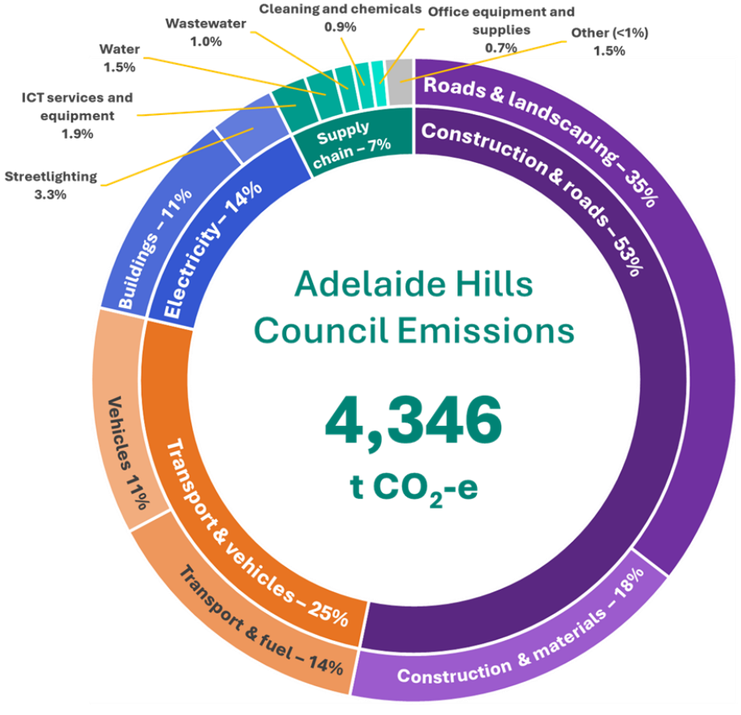
Corporate net zero pathway

The below net zero pathway has been developed to provide guidance on setting an emissions reduction target for Council's corporate emissions only. Due to the scope of this Plan including both corporate and community emissions, achieving net zero emissions will be dependent on both direct emissions reduction actions and the broader economy decarbonising which should be monitored over time.

Based on the projections, it is estimated that Council could achieve a 30% reduction in emission by 2034/35 compared to 2022/23. This will require Council to continue to investigate and implement emissions reduction programs in line with this Plan, as well as monitoring emerging technologies and solutions to fast track the pathway as the broader economy decarbonises.

The recommendations in this Plan will be assessed against Council's broader strategic priorities, budgets and operational planning.

Corporate emissions reduction pathway



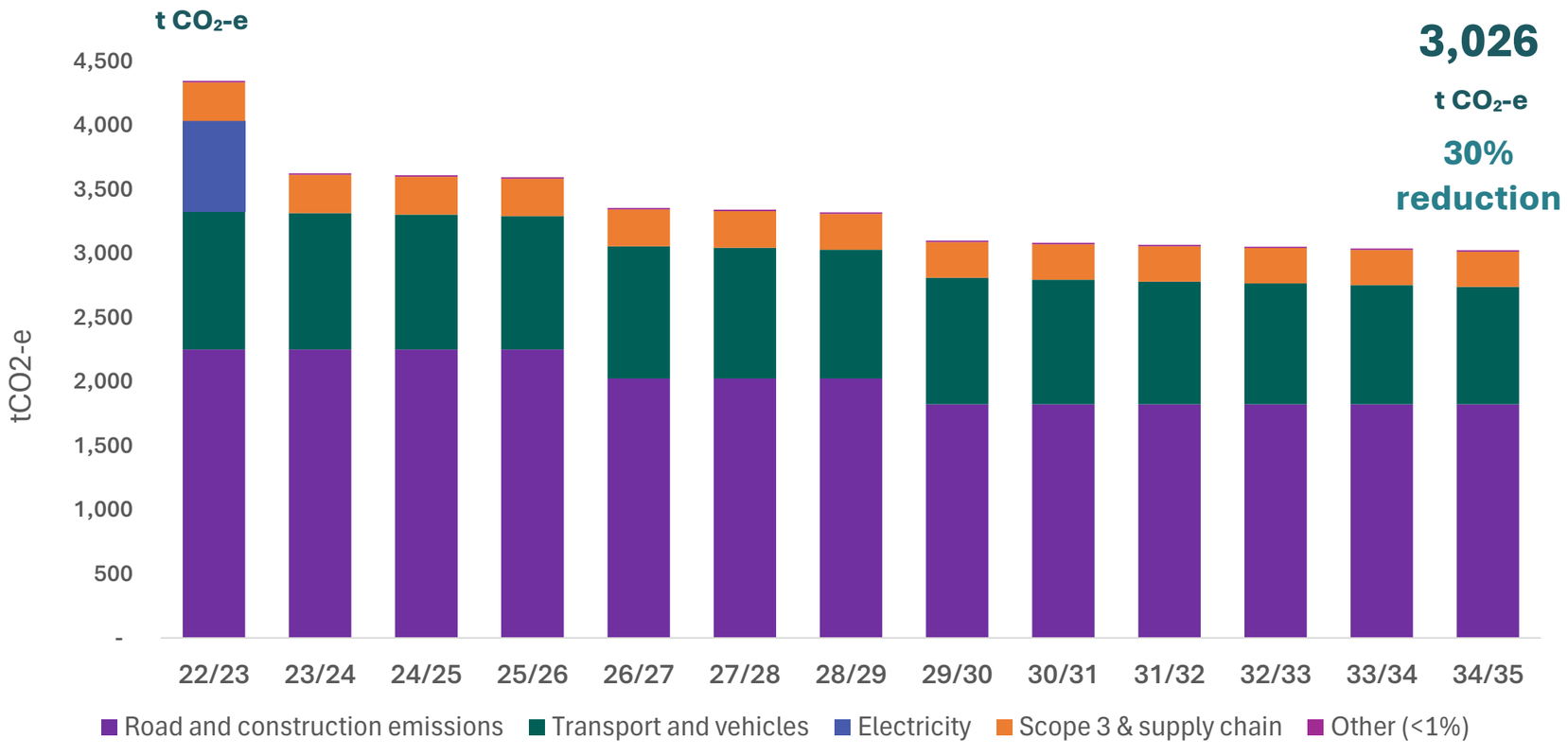
The following emissions reduction assumptions have been included in the below pathway:

Ongoing 100% renewable energy contract

10% reduction in construction emissions by 2027, 20% by 2030

20% reduction in fuel emissions due to EV transition

10% reduction in supply chain emissions



Next steps

Council is committed to continuing to demonstrate leadership in emissions management and implementing programs to support the community on reducing emissions in line with the priorities identified in this Plan. The below provides a summary of the key actions and next steps to continue to work towards reducing emissions. A more detailed summary of the recommendations in the Plan is provided in a separate Detailed Summary Report.

FY23 Baseline	The FY23 inventory developed for this Plan should be used as a new baseline to monitor emissions reduction initiatives and set targets. This aligns with best practice approaches for emissions inventories and will enable Council to track its emissions and reduction measures moving forward.
Emissions reduction initiatives	Implementing immediate emissions reduction initiatives targeting the top 5 emissions sources is recommended. The largest opportunities include construction and road embodied emissions, transport, energy, and supply chain emissions with opportunities to reduce consumption, costs and emissions.
30% emissions reduction target	A 30% corporate emissions reduction target by 2035 is achievable to work towards net zero emissions while Council's supply chain and the economy decarbonises. The emissions inventory and target should be reviewed and updated every 3-5 years to track progression and revise the target if required, with the aim of reaching net zero emissions prior to 2050.
Community emissions	There are a number of ways Council can support the community on reducing emissions including advocacy, education, and collaborating across local, state and federal government to implement emissions reduction programs. A key opportunity for Council to support the community is considering a community energy program which will require dedicated resources and planning based on the needs of Adelaide Hills region.
Planning	This Plan has identified that achieving net zero emissions is dependent on Council's supply chain and the broader economy in decarbonising. However, there are actions Council can take to reduce emissions within its control. It is recommended Council review the opportunities identified in this Plan and incorporate into Council operations and planning.
Publicly commit	It is recommended Council publicly commit to emissions reduction initiatives and targets to work towards, demonstrate leadership, and enable Council to celebrate achievements. Learnings from the Council initiatives should also be shared to support community emissions reduction action.
Net zero pathway	The net zero emissions transition is a journey which is continually evolving as new approaches, technologies and data becomes available. A flexible approach based on a continual improvement model should be adopted to improve over time and work towards net zero emissions.