



CANBERRA REGION
JOINT ORGANISATION

HOW TO GET TO NET ZERO

Knowledge, guidance and
advice for NSW Councils.



This guide was produced by the Canberra
Region Joint Organisation (CRJO).
Proudly supported by the NSW Government
through the Joint Organisation Net Zero
Acceleration (JONZA) Program.

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Executive Summary

This guide has been developed to support NSW Councils in understanding, planning for and progressing toward Net Zero operational emissions. Produced by the Canberra Region Joint Organisation (CRJO) as part of the NSW Government's Joint Organisation Net-Zero Accelerator (JONZA) program, the aim is to enable staff in all NSW Councils, to commence their journey towards Net Zero emissions.

Every Council is different. Variations in size, geography, services, infrastructure, and financial capacity mean that there is no single pathway to Net Zero. This guide provides a flexible framework that Councils can adapt or tailor to their own circumstances, priorities, and resourcing levels.

The first step every Council must take is to undertake an emissions inventory, determining what greenhouse gases are already being produced, from what part of operations and in what quantities. This acts as a baseline for emissions reduction efforts. A professional request for external assistance is provided, along with detailed explanations, a number of links to other useful resources and case studies, outlining other Council's approaches.

The second part of the document outlines a wide variety of actions and projects that can be employed to actively reduce emissions. These have been separated into the operational sectors of a Council, with each item supported by links to advice, and resources.

Finally, a toolkit is provided at the end of the guide, including a range of useful checklists, explanatory documents, case studies and a glossary of terms, especially helpful for someone new to the Net Zero space.

Although every Council and every area of NSW is different, there are enough common threads for us to be able to help each other in achieving Net Zero. While the journey can be long and complicated, there are lots of low cost and effective little steps that can make a big difference in the long run.

That's the purpose of this document, to help you find the quick wins, and give you the resources to take on the more challenging ones.

How to Use This Document

This guide is divided into three parts. It's best to read the first part in full, follow the instructions, then select a range of projects to implement from the second part. Part three provides some useful tools to help you achieve your goals.

Part 1

Background and Overview

A background and overview of Net Zero, explaining exactly what it means, and outlining our obligations to achieve it.

Part 2

Actions & Projects

A variety of actions and projects that can be implemented by various parts of the Council, to lower their greenhouse gas emissions.

Part 3

Tools & Resources

A toolkit of checklists and documents to help Council's achieve their goals, along with a helpful glossary of terms.

Table of Contents

Part 1

Background & Overview

Introduction	04
What is Net Zero?	05
Why should local government care about Net Zero?	07
What can we do?	09

Part 2

Actions & Projects

Leadership & Governance	19
Electricity & Gas	28
Waste water	33
Waste	35
Fleet	38
Sequestration	40

Part 3

Toolkit

Glossary	42
Tools	46
Case studies	58

Background & Overview

“Making peace with nature is the defining task of the 21st Century.

- António Guterres, UN Secretary General



Introduction

Of the 8.6 billion people on Earth today, only 2 billion of us were alive in 1965, when global temperatures started rising.

There is no debate over what's causing this.

It's the increase in levels of greenhouse gases, mostly carbon dioxide, preventing heat from leaving the atmosphere, leading to a warmer planet.

Some say that it's natural for the earth to go through these cycles and there's nothing we can do about it.

The overwhelming scientific consensus, however, is that these changes in climate are human-induced, and caused by increasing greenhouse gases in the upper atmosphere, which traps heat.



That's why we need to reduce the greenhouse gases emitted from our daily operations, and offset the remaining emissions accordingly.

This balance is what Net Zero means, and this guide will help identify what you, as local Council staff can do to get your organisations to Net Zero as fast as possible.

Some of the projects are easy to implement, and some are more challenging, but every single one of them is worthwhile, and makes a difference in the long run.

So please read through, share with your colleagues, then pick a few projects, and get started.

It's a great opportunity, and a great responsibility, and hopefully the knowledge in this document will help get your Council to Net Zero.

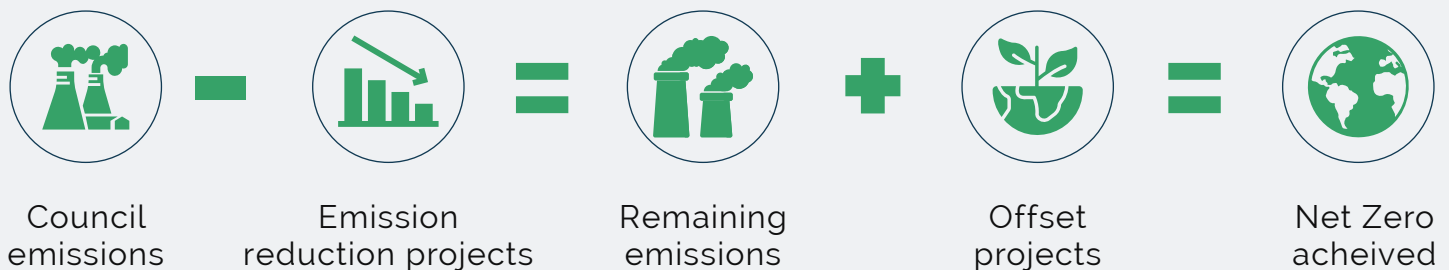
All the best, and good luck!

What exactly is Net Zero?

The following definitions are derived from the Australian Climate Council and Climate Active definitions.

Net Zero is an overall balance between the greenhouse gas emissions produced, and the greenhouse gas emissions removed from the atmosphere.

The balance of Net Zero



Net Zero is an overall balance

A Council can be said to have achieved Net Zero when it reaches a balance between the greenhouse emissions it creates, and removes from the atmosphere.

To do this Councils have to calculate the amount of emissions generated by their activity (such as fuel, electricity and travel) before reducing emissions by changing the way they operate, or investing in new technology.

Once they've lowered emissions as much as possible, the remaining emissions can be 'cancelled out' by purchasing carbon offsets.

Carbon offset units are generated from activities that remove, reduce or prevent greenhouse gas emissions from being released into the atmosphere, such as planting new forests, or using drawdown technologies like direct air capture.



We all have a role in this adjustment. One of the most basic roles is asking questions.

- Mark Carney,
Canadian Prime Minister

What's the difference between Carbon Neutral and Net Zero?

Net Zero refers to all greenhouse gases being emitted into the atmosphere, such as methane (CH₄), nitrous oxide (N₂O) and other hydrofluorocarbons, while carbon neutrality refers only to carbon dioxide (CO₂).

Resources:

[Climate Council – What is Climate Change and What can we do about it?](#)

[Climate Council – What does Net Zero emissions mean?](#)



Why should local government care about Net Zero?



We're legally mandated to do so

Australia was committed to a Net Zero future by a Coalition Government in 2021, and that commitment was reinforced by a Labour Government in 2022. These commitments have been legislated at State and Federal Government levels accordingly.

- **Federal Climate Change Act 2022**

Commits to reducing Australia's net greenhouse gas emissions to 43% below 2005 levels by 2030, and reducing Australia's net greenhouse gas emissions to zero (100%) by 2050.

As a Party to the United Nations Framework Convention on Climate Change (UNFCCC) the Kyoto Protocol, and the Paris Agreement, Australia has made commitments to reduce its greenhouse gas emissions, track progress towards those commitments and report each year on Australia's greenhouse gas emissions.

Additionally, at the COP28 climate summit in the United Arab Emirates in December 2023 the Australian Government pledged to triple its renewable energy capacity by 2030.

- **NSW Climate Change (Net Zero Future) Act 2023**

Legislates the State Net Zero targets as 50% by 2030, 70% by 2035 and 100% by 2050 (adopted 30 November 2023). Emissions from all sectors of the economy are covered by the NSW Net Zero emissions by 2050 target, in line with the National Greenhouse Accounts.

It is paramount that local government entities monitor and report on their emissions as part of a State wide monitoring and reporting framework.

[NSW Guidelines](#)

● NSW EPA Climate Change Policy and Action Plan 2023–26

Outlines a comprehensive regulatory approach and set of actions to address the causes and consequences of climate change in NSW. They support and build on the NSW Government's climate change policies and initiatives, helping industry to decarbonise and build greater preparedness and resilience to climate change risks.

Council operated landfills and water and sewer operations are directly affected by this Policy through their licencing provisions with the Environmental Protection Agency (EPA).

Implementation comes down to local Councils

Councils may not have the regulatory or financial powers of State or National governments, but they can take meaningful steps towards reducing emissions and delivering positive climate actions.

One of the most important roles of Councils is to advocate to higher levels of government for action. Councils can show leadership by implementing governance and operational actions that support more efficient, resilient and sustainable operations and communities.

NSW Council operations represent 4% of the State's emissions. Leading emissions reduction and developing internal Net Zero capacity is therefore critical to operations and positive results that will flow on to the community.

Although these Federal and State Government strategic directives influence the Delivery and Operational Plans, it's the community that sets the direction of work Councils' undertake through the Community Strategic Plan, and our communities support climate action too.



We represent the interests of our community

Australians all over the country have indicated overwhelming support for climate action, which should be reflected in the Community Strategic Plan.

96%

of Australians say they're taking specific actions to reduce their carbon footprint.*

77%

of Australians want the Government's climate plan to aim to limit risks from extreme weather events like bushfires.**

75%

This view is shared across the political spectrum, including 3 in 4 major party voters.**



The best way to solve issues communities face is by listening to them, developing solutions led by local people.

- Jim Chalmers,
Australian Treasurer

**Lonergan Research. Survey of over 2,000 Australians aged 18+ from capital city and non-capital city areas. (2022, October). Impact Unpacked: Lonergan Research for Australian Ethical.*

*** August 2025. National YouGov Poll*



It will lower our operating costs

Sometimes in the short run, always in the long run, the projects and suggestions in this guide will lower your costs.

And while Councils are fiscally responsible for providing services in an energy and cost-effective manner, planning for climate uncertainty will also increase Councils' resilience across the board.

As the 2026 Oil Crisis in the Middle East has clearly demonstrated, greater resilience is extremely important in a volatile world.

Average wholesale price of power in 2025.

\$59/MWh from renewables

\$115/MWh from coal and gas.

Wholesale prices reflect what the electricity retailers pay, which accounts for up to 40% of our power bills.

Climate Council

Support available for Councils with less resources

Research shows that regional Councils have higher greenhouse gas emissions than metropolitan Councils, and a much smaller rate base.

Most actions to reduce operational emissions can be easily embedded into Council's regular operations. They may even come at no additional cost to Council operations, with efficiencies achieved through projects such as buying and/or generating renewable energy, energy efficiency upgrades, and considering the total cost of ownership of electric vehicles. A long-term financial approach should be taken to reap the full benefit of efficiency investments.

Australians across the political divide support stronger climate action, however they can't do it on their own.

Systemic change can only come when Governments take action, and legislate change, which is exactly what's happened here in Australia, and all over the world.

We've done it before, and we can do it again.

HOW WE FIXED THE HOLE IN THE OZONE LAYER

In the mid-70s, scientists warned us man-made chemicals were harming the ozone layer that protects all life on earth from ultraviolet radiation, and in 1985 a hole over Antarctica was confirmed.

Fortunately the world listened, and the 'Montreal Protocol on Substances that Deplete the Ozone Layer' was adopted in 1987. It was the first and only UN environmental agreement to be ratified by every country in the world, and resulted in 99% of ozone-depleting substances being phased out over the following years.

The Antarctic ozone hole is expected to close by the 2060s, while other regions will return to pre-1980s levels even earlier.

Global cooperation works, but it needs Governments to signal and target the change, and the rest of us to actually do it.

More than 140 countries and over a third of the world's largest organisations have set Net Zero targets. Now it's time to get on with it.

Understanding emissions

The core work of every Council is the same, however slight variations result in unique emission profiles for each and every Council.

Additional operations such as landfill management, and water and sewer services, for example, generally increase the number of vehicles and amount of electricity used, as well as direct emissions from the decomposition of organic matter.



A Council's main sources of emissions

- **Landfill emissions**

Fugitive emissions from decomposition of organic matter in landfill sites (CH⁴)

- **Waste Water treatment emissions**

Fugitive emissions from anaerobic waste water treatment (CH⁴ and N²O)

- **Electricity use**

Burning fossil fuels to create electricity (CO²)

- **Fleet fuel use**

Burning of fossil fuels in petrol and diesel engines (CO² and N²O)

- **Emissions from natural gas**

Natural gas used for space and water heating (pools) (CH⁴)

Key:



Carbon Dioxide



Methane



Nitrous Oxides

That's where emissions come from, however when accounting for emissions from different areas of operations, sources are split into three levels of influence, known as Scope 1, 2 & 3.

Scope 1

Produced as a direct result of Council's activities

These include direct carbon dioxide and nitrous oxide emissions from the burning of fuel in vehicles, carbon dioxide from the burning of gas in hot water systems, and methane from the decomposition of organic matter in landfills and waste water treatment facilities.

Scope 2

Emissions from electricity production and transmission

Electricity used by the Council contributes to the overall emissions the Council is responsible for. Obviously how this electricity is generated, will have an effect on the amount of emissions produced.

Scope 3

Indirect emissions from business activities you have no direct control over

This covers emissions created by contractors, travel, goods and services used by the Council.

The benefits of circular economies

Circular economies reduce the amount of virgin raw materials used, mitigating the overall impact of your Council's operations.

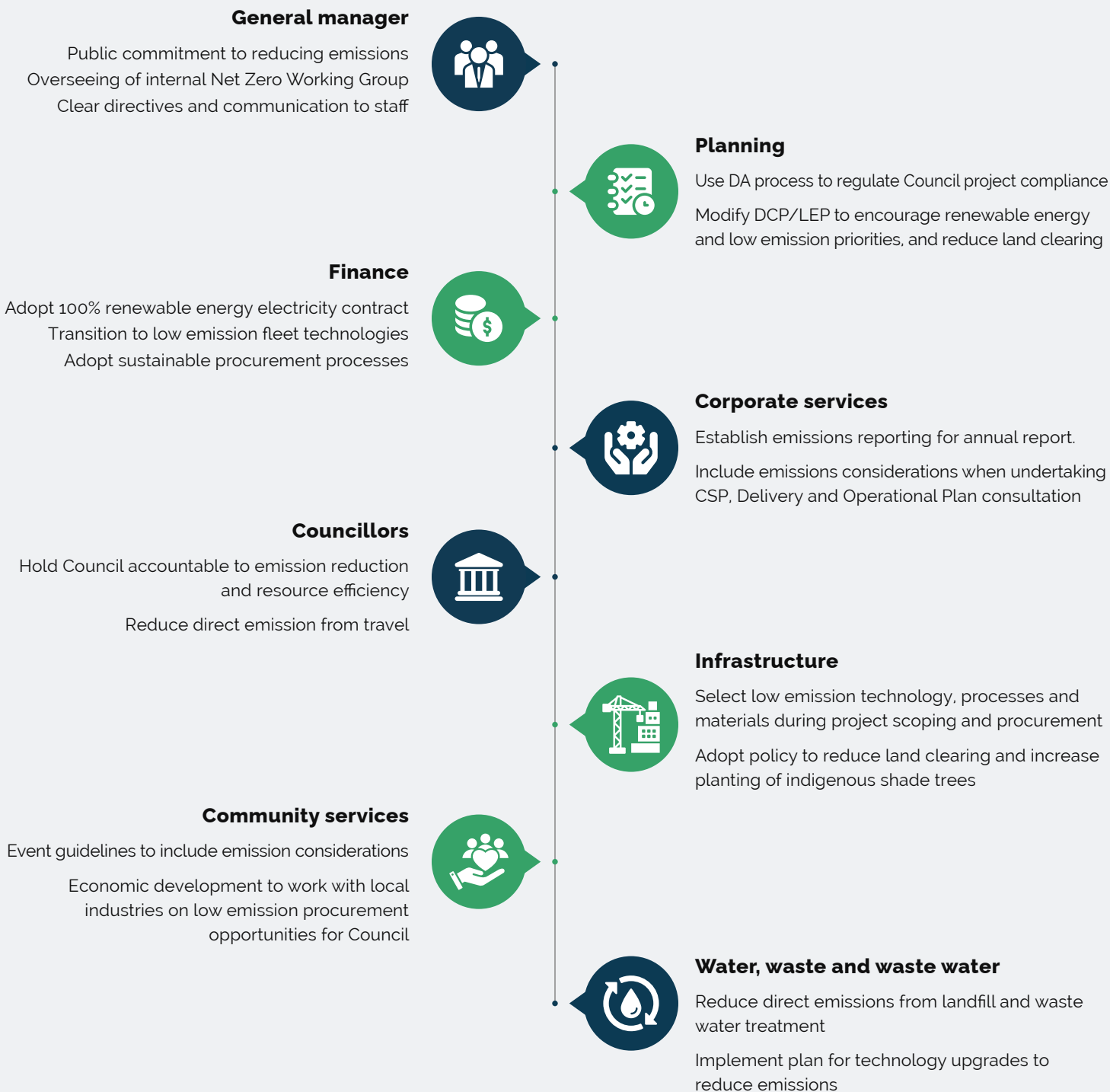


We cannot solve our problems with the same thinking we used when we created them."

Albert Einstein, Theoretical Physicist

Getting to Net Zero is a team effort, as demonstrated by a range of possible projects for the functions indicated.

Reducing emissions to Net Zero



Build your Net Zero pathway

Now you have a better understanding of emissions, you can make a plan to get to Net Zero by following the steps below.



Undertake an emissions inventory

This involves identifying all the emission sources, monitoring their levels with whatever data is available, then using that as a baseline for future emission reductions.

01 | Annual Emissions Monitoring and Reporting Procedure

A procedure outlining how data has been collected, and emissions calculated, should be established at the very beginning as it is important remain consistent in monitoring your progress.

02 | Mandatory Emissions Reporting

While reporting on your Council's operational emissions is good practice it's currently not mandatory (2026). It is, however, highly likely that the NSW State Government will introduce mandatory emissions reporting for local Councils within the next couple of years. Work has already begun on standardising emission calculating methodologies, along with the reporting format required. If you've got a procedure in place, however, you're one step ahead already. If you do produce an annual emissions report, sharing it publicly is recommended to demonstrate to your communities exactly what is being done to achieve Council's Net Zero targets.



Triage the projects to work on

The baseline emissions that you have just established will reveal the gap between where you are now, and where you need to be, with the size of that gap determining the speed and ambition required.

Now you can use the projects outlined later in this document as a guide, modelling which projects will help achieve your emission goals. Once projects have been identified, the sequence can be set according to existing capital works plans and budget forecasts.

The resulting list of projects with timings and budget allocations will form a key part of the Council's emissions reduction pathway plan.



Knowing what must be done does away with fear.

Rosa Parks, Civil Rights Activist



Embed projects in Council plans

Council's emission reduction ambition needs to be embedded in all layers of governance, including the Community Strategic Plan and the Delivery Plan and Operational Plan.

By adding the projects necessary to meet targets into the governance process, you will be able to plan for the associated costs, hence the Annual Budget should include the details, and be reported on through the Annual Report, and at Council meetings.

There are a range of resources available to help you with all three of these steps, and you'll find them in the Leadership & Governance section of this document.

Wherever you are in your Net Zero journey, these are the three most critical projects to allow you to reduce emissions from Council's operations.



What needs to be done

Undertake an emissions inventory

To determine what Council operations emit greenhouse gases, and how much. Then adopt an emissions monitoring and reporting procedure, and evaluate data on an annual basis to track and report progress.



How we're going to get there

Develop an Operational Emissions Reduction Plan

Outlining the projects that need to be implemented to get Council's emissions to Net Zero.



How we're going to fund it

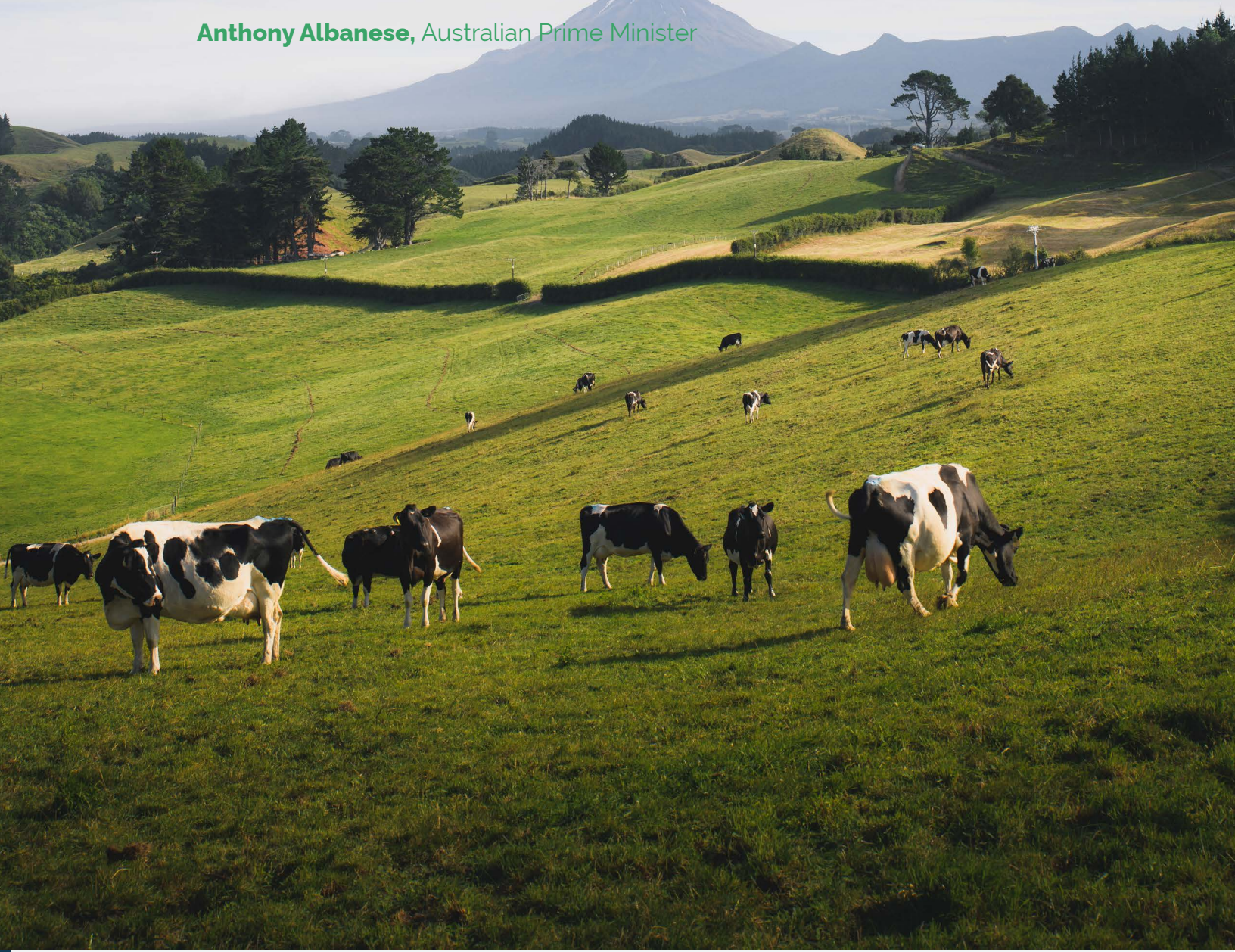
Set up a Revolving Energy Fund (Net Zero Fund)

To ensure funding is available for emission reduction and energy efficiency projects.

Actions & Projects

“ We are committed to working across governments, with regional communities and industries, and our international partners, to secure the opportunities of Australia's Net Zero future.

Anthony Albanese, Australian Prime Minister



Net Zero pathway actions & projects

The rest of this document provides recommendations to choose from in your pursuit of Net Zero, along with information to help you determine the best course of action.



Consult

You may choose to share the entire document with your fellow Council staff, or if you wish, just the part that concerns their area of influence. Once all the decision makers and participants have reviewed, it's time to decide what projects to work on.



Curate

Each project comes with guidance on the level of financial commitment required, and the relevant impact of the action, while the timeframe reflects how long a project might take to complete. This should help you curate a list of projects that align with available resources, and the results of your emissions inventory, demonstrating what areas you need to focus on.

Timeframes

Short:

1-2 years

Medium:

2-3 years

Long:

3 + years



Create

The projects and recommendations also come with reputable, government-appropriate resources to support implementation, along with tools to help you plan, and actually achieve your goals. Most of the resources have been designed specifically for Councils, and can be used to create internal Action Plans.

Finally, once you've done all of that, you can begin your Council's journey to Net Zero!

Leadership & Governance

A good place to start your Council's Net Zero journey, is to obtain a clear statement on Councils commitment to Net Zero from the Executive Leadership Team that can be communicated internally, and to the community.

Once your projects and targets have been determined, approved, and targets have been set (using your Emissions Inventory to help you prioritise) these projects need to be itemised in your Councils operational plans.

All areas of Council, particularly those responsible for operations, need to be held accountable for emissions and aim to reduce or achieve targets, as well as monitoring and reporting their progress. Using your Emissions Inventory as your base year is a good idea - you can measure reductions against this, or target percentage reductions for future years.

Leadership & Governance Facts

LATEST NSW EPA FIGURES, 2021-22

- NSW net greenhouse gas emissions were 111 million tonnes tCO₂-e, which was 27% lower than the emissions in 2004-05.
- The highest contributor is the electricity generation sector, which has decreased by 26% relative to 2005 levels due to uptake of renewable energy.
- The emissions of the second highest contributor, the transport sector, only decreased marginally (2%) compared to 2004-05 levels.
- Since 1993, the land use, land use change and forestry sectors have acted as 'carbon sinks' absorbing more carbon than they emit and contributing significantly to the reduction in net emissions in NSW.

NSW EPA

Cost of climate catastrophes

\$2.1 Billion¹

1995 – 2000

\$4.5 Billion¹

2020 - 2024

\$40.3 billion²

2049 – 50

01. Insured losses from declared catastrophes, Insurance Council of Australia, 2024.

02. Forecast across each state and territory for flood, bushfire, storm surge and tropical cyclones for a moderate emissions scenario (+1.5°C), Australia's National Climate Risk Assessment, 2025

Leadership & Governance

	Reviewing	Preparing	Underway	Complete
Leadership				
- Public Commitment - Net Zero Advocacy				
Finance & Procurement				
- Revolving Energy Fund - Divest from Fossil Fuels - Sustainable Procurement				
Governance & Internal Processes				
- Net Zero Working Group - Emissions Inventory - Emissions Monitoring - Net Zero Targets - IP&R Process - Strategic Documents - Climate Change Strategy - Operational Emissions Reduction Plan - Energy Management Plan - Electric Vehicle Transition Plan - Landfill Emissions Reduction Plan - Waste & Waste Water Treatment Emissions Reduction Plan - Offset Policy - Resource Efficiency Policy - Asset Management Strategy / Capital Works Plan - Modify Project Management Procedures - Join Membership Groups				
Human Resources				
- Compulsory Staff Training - Embed KPIs - Revise Onboarding Process - Internal Videos				

Leadership

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Make a public commitment to reducing operational emissions to Net Zero by 2050.	Staff and the community will understand the Council's commitment to reducing emissions from operational activities.	Low	High	Short	Global Covenant of Mayors for Climate & Energy
Engage in Net Zero advocacy by encouraging other Councils to take on emission reductions, lobbying State and National governments to adopt, fund, invest and regulate for Net Zero actions by local government.	You will demonstrate strong leadership by encouraging others to accompany you on your Net Zero journey. Clearly outline the support you need to meet with legislated targets from the State Government.	Low	High	Short	Local Government NSW Australian Local Government Association Canberra Region JO

Finance & Procurement

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Establish a Revolving Energy Fund/Net Zero Fund to finance Net Zero emission reductions.	Have funds set aside for emission reduction projects. Any savings generated from these projects are channelled back into the fund until the project has been paid off, creating funds for more projects.	Low	High	Medium	Revolving Energy Fund Guide (Sustainable Councils)
Develop a plan for Council to divest from institutions that operate or invest in fossil fuel companies and projects.	Council's emissions footprint includes the impacts of its financial investments. By ensuring that Council's money is not invested in emission-intense activities such as fossil fuel exploration and power generation, the Scope 3 emissions from Council will be reduced.	Low	High	Medium	What you need to know about fossil fuel divestment (Climate Council) Divestment from Financial Organisations Supporting Fossil Fuel Industries: A snapshot of progress in the local government sector (Eastern Alliance for Greenhouse Action, May 2017)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Adopt sustainable procurement principles by amending the existing procurement policy and procedure.	Services and products bought by Council have environmental impacts. By creating clear procurement guidelines that identify lower impact options Council can reduce its Scope 3 emissions significantly.	Low	High	Short	Program: Local Government Procurement Sustainable Choice Sustainable Procurement guide for local government in NSW (LGNSW)

Net Zero PATHWAY ACTIONS & PROJECTS

Human Resources

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Establish an internal Net Zero Working group to oversee resource use and emissions.	Emission reductions need to take place across the whole organisation. Leadership and a collaborative approach will help set and meet targets.	Low	High	Medium	Developing a Focus on Sustainability at your Council – a guideline and resources designed to support Council officers who are just getting their colleagues and their Councils to think about sustainability.
Undertake an emissions inventory.	Establish a register of all emission sources and associated data. This inventory will form the basis for setting target and of your annual monitoring and reporting process.	Medium	High	Medium	Steps to developing a Net Zero emissions strategy (NSW Government - Climate and Energy Action) Address Common Sources of Emissions (NSW Government - Climate and Energy Action) Case study Video: Clarence Valley moving towards Net Zero (NSW Government) & Clarence Valley Council (LGNSW)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Adopt an annual emissions monitoring and reporting procedure.	A process which will allow Council to accurately report on its emissions with clear allocations of responsibilities, resourcing guidelines and reporting templates (for data collection and Executive reporting)	Low	High	Medium	A Guide to Developing a Local Government Corporate Emissions Inventory (WALGA) Organisational Carbon Accounting for Local Governments – Learner Guide (Sustainability Victoria) City Journey – a resource outlining the steps of identifying and implementing emission reductions (GCoM) National Greenhouse and Energy Reporting Scheme
Adopt Net Zero targets	The baseline emissions data gathered when undertaking the inventory can be used to model emission reduction scenarios at different speeds and financial implications. Targets can then be set and used to plan for actions.	Low	High	Low	Video: What are Science-Based targets?
Net Zero processes and projects included in the IP&R process (draft Community Strategic Plan, Delivery Plan and Operational Plan).	Embedding Net Zero actions into Council operations is best done through the IP&R process and is critical if Net Zero is to be adopted as an operational priority.	Low	High	Low	Climate Change IP&R Package (Hunter Joint Organisation) – a comprehensive toolkit to assist in embedding climate change in the IP&R cycle
Review of all Council strategic documents, processes and programs and modify to align with emission reduction targets.	Embedding Net Zero actions into Council operations is best done through the IP&R process and is critical if Net Zero is to be adopted as an operational priority.	Low	High	Low	Climate Change IP&R Package (Hunter Joint Organisation) – a comprehensive toolkit to assist in embedding climate change in the IP&R cycle
Develop a Climate Change Strategy	A document which outlines Council's vision and commitment to Net Zero across Council operations and the wider community.	Medium	High	Medium	Video: What comes first, target or strategy? – A series which outlines the development of mitigation strategies and setting targets

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Operational Emissions Reduction Plan	Outlines the targets and associated actions. Chapters will align with emission sources, governance & leadership.	Medium	High	Medium	Planning for Climate Change (LGNSW) – a workshop package to help member Councils develop a climate change action plan. Video: Best practice climate action strategies for local governments (NSW Government) Case study video: Bega's pathway and engagement towards Net Zero (NSW Government)
Develop an Energy Management Plan	A more detailed document focusing on the emission reduction opportunities from electricity and gas use. This would also include details of producing and procuring electricity from renewable resources.	Medium	High	Medium	Case study video: Accelerating Dubbo Regional Councils towards a renewable energy future (NSW Government) Case study video: Getting buy-in for Hawkesbury's Net Zero Emissions Strategy and Water Efficiency Strategy (NSW Government)
Develop an Electric Vehicle Transition Plan	A more detailed document focusing on the emission reduction opportunities from Council fleet – equipment and vehicles.	Medium	High	Medium	Electric Vehicle Council Local Government Resource pack NSW Government's Electric Vehicle Strategy Video: What can we do? The role of local government in electrification (NSW Government) Video case study: Converting Council's fleet to EV (Canterbury Bankstown)



Recommendation	Outcome	Cost	Impact	Time-frame	Support
Develop a Landfill Emission Reduction Plan / Clause	A more detailed document focusing on the emission reduction opportunities from Council managed landfills.	Medium	High	Medium	
Develop a Water and Waste Water Treatment Emission Reduction Plan/ Clause	A more detailed document focusing on the emission reduction opportunities from Council managed waste water treatment plants.	Medium	High	Medium	
Develop an Offset Policy	A strategic document with details of when offsets should be bought and what the criteria should be for selecting carbon offsets.	Medium	High	Short	How does offsetting work (Climate Active) The Oxford Offsetting Principles
Develop a Resource Efficiency Policy	Commits the organisation to improve efficiencies across operations to reduce emissions and costs. State Government Policy can easily be modified for Council.	Low	High	Low	Government Resource Efficiency Policy (NSW Government) Case study: Resource Efficiency Strategy 2016 to 2023 (NSW Health)
Develop an Asset Management Strategy/ Capital Works Plan.	Ensuring that climate change adaptation is accounted for in all asset plans will help reduce insurance premiums and reputational risk. Futureproofing assets means less maintenance expenditure going forward. Also ensure that maintenance guidelines include minimum acceptable replacement standards in line with the Resource Efficiency Policy.	Medium	High	Low	Every Building Counts - A practical plan for emissions reduction in the built environment (for local governments) (Green Building Council Australia and Property Council of Australia) Clean Energy Council - provides guidance of certified installers of solar and batteries. Energy Efficiency Council Professional certifications - insulation certification Energy Efficiency Council Professional Certifications - insulation certification Circular design guidelines for the built environment Whole-of-life principles for transitioning buildings, precincts and infrastructure to a circular economy February 2023 (NSW Office of Energy and Climate Change) Video: Evidence-based climate action planning in the built environment (NSW Government) Video: Using sustainability ratings to progress your emissions reductions journey (NSW Government) Energy and Water metering and monitoring guide for aquatic centres (NSW Government) Energy efficient water heating technology guide for aquatic centres (NSW Government)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Modify Project Management procedures	Ensure that project scoping pathways include triggers to remind staff of the organisation's commitment to resource efficiency, sustainable procurement and reducing emissions.	Low	High	Medium	Low emission building materials (NSW Climate and Energy Action) Sustainability Advantage
Join membership groups that help Councils on their Net Zero and Sustainability journeys.	Be supported in your Net Zero journey by joining a network of like-minded organisations and being able to access resources and expertise to facilitate your Net Zero activities.	Medium	High	Medium	– a NSW Government program that provides customised service to your Council Case study video: 100% Renewable Operations - Lismore City Council (Sustainability Advantage) Climate Action Professional Officer Group (LGNSW) – a collaboration between Council staff, LGNSW and the Department of Planning and Environment on climate change adaptation and Net Zero emissions. Global Covenant of Mayors for Climate & Energy (GCoM) – the largest global alliance for local government climate leadership.

NET ZERO PATHWAY ACTIONS & PROJECTS

Human Resources

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Compulsory staff training on climate change and the importance of emission reductions and adaptation.	Staff understand the importance of emissions reduction and incorporate positive climate action into their daily work duties.	Medium	High	Medium	Video: Why Net Zero? (NSW Government) Videos: Project Drawdown Climate Solutions 101 Climate Change in My Region (AdaptNSW) – a resource which allows staff to gain an understanding of the impacts of climate change in your specific region Transition to Net Zero: Local Government role in GHG reduction to 2030 and 2050 (NSW Government) – a publication which outlines the role of local government in emission reduction Videos: What is the meaning of... – a series demystifying climate language

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Embed measurable resource efficiency and emission reduction key performance indicators (KPIs) into Executive and Manager roles.	By including resource efficiency references/targets in staff KPIs they will be reminded of the commitment to actively reducing the resources used by their role.	Low	High	Short	
Setting through onboarding process	At the point of staff starting include in the onboarding a corporate expectation that all staff will contribute to the resource efficiency targets of the Council.	Low	Medium	Short	Developing a Focus on Sustainability at Your Council (Institute for Sustainable Futures, UTS)
Develop videos of internal staff showcasing their commitment to Net Zero	Share the videos across the organisation and at onboarding will normalise the behaviour and set expectations.	Low	High	Short	
Internal communication campaigns to educate staff about new procedures and expectations	By using internal communications channels (back of toilet door signage, intranet, etc) to educate staff they will be across changes made to strategic documents.	Low	High	Short	



Electricity & Gas

If your power doesn't come from a renewable energy source already, then switching to renewables is one of the fastest, cheapest and easiest ways to reduce your emissions.

This can be done by generating renewable energy at Council assets, and using a Power Purchasing Agreements (PPAs), where renewable energy project developers partner with a retailer, to supply end users with electricity produced by a renewable source, be it wind, solar or hydro. Burning natural gas, and LPG (Liquid Petroleum Gas), also produces emissions, and an easy fix is to replace gas appliances with their electric equivalents.

Electricity & Gas Facts

LATEST NSW EPA FIGURES, 2021-22

- NSW net greenhouse gas emissions were 111 million tonnes tCO₂-e, which was 27% lower than the emissions in 2004-05.
- The highest contributor is the electricity generation sector, which has decreased by 26% relative to 2005 levels due to uptake of renewable energy.
- Gas is mostly made up of methane, the second most significant greenhouse gas after carbon dioxide, and is a key driver of climate change.
- Methane is up to 80 times more potent than carbon dioxide for its global warming potential in the short term. This means that over 20 years, one tonne of methane warms the atmosphere 84 times as much as one tonne of carbon dioxide.

NSW EPA

Climate Council

Electricity & Gas

Recommendation	Reviewing	Preparing	Underway	Complete
• Switch power to a renewable source • Upgrade to Smart meters • Asset energy efficiency audits • Undertake tariff reviews • Implement electricity monitoring process • Introduce minimum performance standards for goods and services • Upgrade all Street Lights to LEDs • Implement onsite solar projects • Adopt battery technology • Undertake Energy Efficiency Projects • Replace gas with electric appliances				



Recommendation	Outcome	Cost	Impact	Time-frame	Support
Review electricity contract and opt for sourcing electricity from renewable sources.	For Council's electricity to be sourced from non-fossil fuel sources and the emissions from Scope 1 to be eliminated.	Low	High	Medium	Local Government Guide for PPAs - The objectives of this guide are to support the growing number of Councils contracting renewable energy via PPA. Business Renewables Centre - Australia (BRC-A) BRC-A Diagnostic Tool Case Study: Collaborating to secure renewable energy for local Councils (CNSWJO)
Upgrade all electricity meters to smart meters	Electricity retailers are obliged to replace analogue meters with smart meters if asked to do so by the customer. Having smart meters allows for accurate, real-time monitoring and budgeting of electricity use.	Low	High	Medium	Electricity metering and monitoring guide (NSW Climate and Energy Action)
Undertake energy efficiency audits on assets, such as pools	By regularly reviewing the performance of assets, opportunities can be identified to undertake efficiency upgrades. The audits are a critical part of grant applications for asset upgrades and identifying cost savings.	Medium	High	Medium	Video: The importance of energy efficiency - series outlining how and why to improve energy efficiency incl a virtual energy audit
Undertake tariff reviews	Another cost saving process is to annually undertake tariff reviews, to ensure that the tariffs that you are on are the lowest possible ones. Savings from reviews can be allocated to asset maintenance and upgrade funds.	Medium	High	Short	TBA: Tariff Review Tool (Sustainable Councils)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Implement electricity monitoring process aligned with the emission reduction monitoring procedure (see Leadership & Governance)	By collecting all electricity and gas use data, efficiencies can be sought, saving on utility costs. Ensure that asset owners are also responsible for the paying of the electricity costs to ensure accountability	Low	High	Medium	
Introduce minimum performance standards for goods and services	When reviewing your Asset Management and Procurement Guidelines ensure that the most efficient solutions are stipulated to reduce electricity/gas use and cost.	Low	High	Medium	Clean Energy Council – industry best practise information on services and products
Upgrade all Street Lights to LEDs	This will reduce the expenditure on street lighting as well as reduce emissions from the electricity they use.	Low	High	Medium	Southern Lights Initiative Essential Energy's register of LED Upgrades

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Implement onsite solar projects	By installing solar on Council facilities, you can reduce the amount of electricity bought from the grid. This in turn reduces the emissions from Council electricity use as well as Council costs on electricity.	Medium	Medium	Medium	Net Zero Solar Tool - An online assessment tool to model the energy and financial performance of on-site solar and battery storage projects. The tool can assist energy users test a range of project sizes, cost and technical considerations for different solar scenarios. Solar Toolkit SunSPoT - Toolkit for Residents, Council and Business to assess optimal size solar and/or batteries for their roof and estimated costs associated as well as annual savings. Sustainable Councils has paid a 1 year subscription for all participating Councils to have access to their own solar dashboard through the APVI site. ANU Solar PV and Wind Heat Map tool Clean Energy Council Beam Solar tool - online Solar Tool to undertake a solar assessment at your site of choice. This will enable you to identify solar projects testing a range of project sizes, cost and technical considerations for different solar scenarios. Case Study: Kempsey Shire Council goes Solar

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Adopt battery technology	Partnering onsite solar and battery technology will further reduce Council's dependence on grid electricity and reduces emissions.	Medium	Medium	Long	Video: How can battery storage benefit my business? (NSW Energy Saver) Battery Storage Guide (NSW Climate and Energy Action)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Undertake Energy Efficiency Projects	Once identified, undertake the business cases for projects including implementation schedules.	Low	Medium	Medium	Sustainable Councils Pool Toolkit, Business Case templates and Guide – Designed to develop an awareness of appropriate and generally applicable energy efficiency opportunities specific to the pool's context. Lighting Specifications Tool – Sustainable Council's and LGNSW resource to simplify lighting upgrades. Energy Efficient Lighting Guide (NSW Climate and Energy Action) Heating, ventilation and air conditioning (HVAC) guide (NSW Climate and Energy Action) Voltage optimisation guide (NSW Climate and Energy Action)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Replace gas powered appliances and equipment with electric alternatives	Removes the direct emissions from the burning of gas.	Medium	Medium	Short	Video: Why is gas bad for climate change and energy prices? (Climate Council)
Perform Regular energy audits	The Sustainable Councils' tool is an interactive way to assess 10 commonly found energy efficiency opportunities in STPs and WTPs.	Low	Medium	Short	Net Zero Sewage Treatment and Water Treatment Plant Energy Efficiency Tool (Sustainable Councils)

Waste Water

Traditional anaerobic processing of waste water, produces methane and nitrous oxide emissions from retention ponds, however, increased innovation and alternative technologies can be explored to reduce these emissions.

Waste Water Facts

LATEST NSW EPA FIGURES, 2021-22

- NSW net greenhouse gas emissions were 111 million tonnes tCO₂-e, which was 27% lower than the emissions in 2004-05.
- Anaerobic processing of waste water produces methane, which is up to 80 times more potent than carbon dioxide for its global warming potential in the short term. This means that over 20 years, one tonne of methane warms the atmosphere 84 times as much as one tonne of carbon dioxide.
- Wastewater treatment is a significant contributor to climate change, responsible for roughly 1-5% of global greenhouse gas (GHG) emissions, equivalent to the global aviation industry.

NSW EPA

Climate Council

UN Environment Programme

Recommendation	Reviewing	Preparing	Underway	Complete
Best practice emissions monitoring for waste water treatment				
Introduce emission reduction clauses				
Scope best practice waste water treatment for future plant upgrades				

Recommendation	Outcome	Cost	Impact	Timeframe	Support
Implement best practice emissions monitoring protocol for your waste water treatment facilities	As part of the emissions inventory identify the data available from the mandatory EPA licensing reporting.	Medium	Medium	Medium	Climate Change Policy and Action Plan 2023–26 (NSW EPA) Fact sheet: Climate Change Policy and Action Plan - opportunities for Councils (NSW EPA) NSW Regional and Local Greenhouse Gas Emissions (NSW Government) p.62 Emission estimation method – domestic and commercial wastewater p.66 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Vol 5 – Waste. Chapter 6 (Intergovernmental Panel on Climate Change) Methane and Volatile Organic Compound Emissions in New South Wales Section 2.8 (CSIRO)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Supplement waste water management strategies with emission reduction clauses, with the assistance of the NSW EPA	A strategic document which outlines how Council will comply with NSW EPA license requirements. "The action plan proposes that all licensed facilities, including those managed by Councils, develop climate change mitigation and adaptation plans. We will work with all of our licensees to support the development and implementation of these plans." - NSW EPA	Medium	High	Medium	Climate Change Policy and Action Plan 2023–26 (NSW EPA)

Recommendation	Outcome	Cost	Impact	Timeframe	Support
Scope best practice waste water treatment for future plant upgrades	Undertaken the process of identifying the steps necessary to bring the facility up to best practise standard.	Medium	High	Long	NSW Public Works Waste Water team Energy management and climate change (Sydney Water)

Waste

Emissions from landfill sites are one of the largest sources of greenhouse gases in NSW, and addressing these emissions is one of the most important things a Council can do in their pursuit of Net Zero.

Reducing emissions from landfill can be achieved at the input phase, or through management protocols. It's recommended that you work closely with the NSW EPA on developing best practise management of landfill, along with minimising the amount of organic matter sent there in the first place.

Waste Facts

LATEST NSW EPA FIGURES, 2021-22

- NSW net greenhouse gas emissions were 111 million tonnes tCO₂-e, which was 27% lower than the emissions in 2004-05.
- Waste emissions decreased by 22% relative to 2005, owing to improved capture of landfill gas (methane) and less waste ending up in landfills.
- Methane is up to 80 times more potent than carbon dioxide for its global warming potential in the short term. This means that over 20 years, one tonne of methane warms the atmosphere 84 times as much as one tonne of carbon dioxide.
- Waste, particularly organic matter in landfills, is a major driver of climate change, responsible for roughly 3% of Australia's emissions and up to 10% of global greenhouse gases when including food waste.

NSW EPA

Climate Council

Department of Climate Change, Energy, the Environment and Water

Recommendation	Reviewing	Preparing	Underway	Complete
Implement monitoring of landfill emissions Create emission reduction clauses for landfill Adopt methane reducing technology solutions Introduce Food Organics & Garden Organics programs Monitor and reduce emissions from legacy landfill sites Scope best practice landfill management for future site upgrades				

Recommendation	Outcome	Cost	Impact	Timeframe	Support
Implement robust monitoring of landfill emissions protocol	Have embedded in landfill management regular emission monitoring processes and annual reporting	Medium	Medium	Medium	Climate Change Policy and Action Plan 2023–26 (NSW EPA) Fact sheet: Climate Change Policy and Action Plan - opportunities for Councils (NSW EPA) NSW Regional and Local Greenhouse Gas Emissions (NSW Government) p.58 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Vol 5 - Waste (Intergovernmental Panel on Climate Change) Methane and Volatile Organic Compound Emissions in New South Wales Section 2.7 (CSIRO) p.58 Emission estimation method p.61

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Supplement landfill management strategies with emission reduction clauses, with the assistance of the NSW EPA	A strategic document which outlines how Council will comply with NSW EPA license requirements. "The action plan proposes that all licensed facilities, including those managed by Councils, develop climate change mitigation and adaptation plans. We will work with all of our licensees to support the development and implementation of these plans." - NSW EPA	Medium	Medium	Medium	Climate Change Policy and Action Plan 2023–26 (NSW EPA)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Adopt methane reducing technology solutions	Technology implemented such as flaring and capping technology	High	High	Long	Landfill gas method (Australian Clean Energy Regulator)

Recommendation	Outcome	Cost	Impact	Timeframe	Support
Introduce FOGO, material recovery and recycling programs to reduce the amount of waste going to landfill	Reusable and organic materials diverted from landfill to reduce emission.	Medium	High	Medium	Video: Net Zero Organics - the plan for 2030 (NSW Government) Reducing carbon emissions through better waste and material management (NSW EPA)

Recommendation	Outcome	Cost	Impact	Timeframe	Support
Explore ways to monitor and reduce emissions from legacy landfill sites	Unless managed, legacy landfill sites will continue emitting greenhouse gas emissions. Creating a project to reduce emissions from your legacy sites will be necessary to reduce your emissions to Net Zero.	Medium	Medium	Medium	Waste Assets Management Corporation (NSW Government) Regulatory Baselines in NSW for Landfill gas legacy waste projects (Australian Clean Energy Regulator)

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Scope best practice landfill management for future site upgrades	Undertaken the process of identifying the steps necessary to bring the facility up to best practise standard.	Medium	High	Long	NSW Public Works Waste team



Fleet

Approximately a fifth of Australia's greenhouse gas emissions can be attributed to transport, therefore it's highly recommended that you transition to Low Emission Vehicles (LEV) and equipment.

Councils own or lease a large number of fleet vehicles, from lease-back passenger vehicles to road graders, lawn mowers and hedge trimmers, and all of them are generally powered by fossil fuels, creating greenhouse gases. Major emission reductions in Council Fleet can be achieved through the staged replacement of electric vehicles. A Fleet Transition Plan gives a good overview of your fleet and targets where improvements can be made in a gradual, strategic and pragmatic manner.

Fleet Facts

LATEST NSW EPA FIGURES, 2021-22

- NSW net greenhouse gas emissions were 111 million tonnes tCO₂-e, which was 27% lower than the emissions in 2004-05.
- The emissions of the second highest contributor, the transport sector, only decreased marginally (2%) compared to 2004-05 levels.
- Cars are responsible for roughly half of Australia's transport emissions, while Australia has been ranked Australia second-worst internationally for transport energy efficiency.
- The sale of vehicles powered by petrol and diesel, globally, are considered to be in structural decline, having peaked at 86 million sales in 2017.
- In 2022, one in every seven passenger cars sold around the world was an electric vehicle, up from one in every 70 in 2017.

NSW EPA

Climate Council

Recommendation	Reviewing	Preparing	Underway	Complete
Adopt a Fleet Transition Plan				
Develop charging policy on public land				

Recommendation	Outcome	Cost	Impact	Timeframe	Support
Adopt a Fleet Transition Plan, outlining steps to transition away from combustion engines	A strategic document which outlines the steps to phasing out fossil fuel equipment and vehicles, including the incentivisation of staff using public transport or carpooling, and undertaking trials across Council operations.	Low	Medium	Medium	Local Government Resource pack (Electric Vehicle Council) Electric Vehicle Strategy (NSW Government) Why buy an Electric Vehicle? (Transport for NSW) TBA: Fleet Transition Plan (Sustainable Councils)

Recommendation	Outcome	Cost	Impact	Timeframe	Support
Develop a charging policy on public land	A Public EV Charging policy will facilitate the installation of EV chargers by third parties on public lands.	Low	Medium	Medium	Case Study: Queanbeyan-Palerang Regional Council Public Electric Vehicle Charging Plan 2030 Electric Vehicle Charging Toolkit (Central NSW Joint Organisation)

Sequestration

Once all other projects have been implemented, the remaining emissions can be offset by capture and storage, which is known as sequestration.

Carbon sequestration is the process of capturing carbon dioxide and storing it somewhere it won't reach the atmosphere, whether that's in the earth, in soil, in trees, or locked into solid rock. NSW now has a carbon sequestration system where you can buy carbon offsets, or a credit, to "offset" one tonne of your emissions. In essence you are balancing out your remaining emissions with planted trees or other sequestration methods to achieve your target of Net Zero. It's one of the strategies that is left to last because it requires funds and you should be prioritising other reduction methods to ensure you need as little carbon offsets or credits as possible.

Sequestration Facts

LATEST NSW EPA FIGURES, 2021-22

- NSW net greenhouse gas emissions were 111 million Tonnes tCO₂-e, which was 27% lower than the emissions in 2004-05.
- Since 1993, the land use, land use change and forestry sectors have acted as 'carbon sinks' absorbing more carbon than they emit and contributing significantly to the reduction in net emissions in NSW.
- The Intergovernmental Panel on Climate Change estimates 6 billion tonnes of CO₂ have to be removed per year by 2050 globally, and about 14 billion tonnes per year by 2100, for a 50 per cent chance of limiting global warming to below 1.5°C.
- The world currently removes around 2 gigatonnes of carbon dioxide (GtCO₂) per year from the atmosphere, with only 0.002 GtCO₂/year of this resulting from novel methods.

NSW EPA

Australian Academy of Science

Recommendation		Reviewing	Preparing	Underway	Complete
Develop an Offset policy and plan					

Recommendation	Outcome	Cost	Impact	Time-frame	Support
Develop an Offset policy and plan	A strategic document which details a range of offset opportunities including local offset solutions or when offsets must be bought, including what the criteria should be for selecting carbon offsets.	High	Medium	Short	How does Offsetting Work (Climate Active) The Oxford Offsetting Principles

Toolkit

“In my lifetime I have witnessed a terrible decline. You could and should witness a wonderful recovery.

- David Attenborough, Broadcaster, Environmentalist



Glossary

Net Zero

Net Zero is an overall balance between the greenhouse gas emissions produced, and the greenhouse gas emissions removed from the atmosphere.

Greenhouse gas emissions

This means carbon dioxide (CO²) mainly, but also includes a range of gases such as methane (CH⁴), nitrous oxide (N²O) and other hydrofluorocarbons.

Greenhouse gas emissions produced

Most of the emissions are produced when we burn fossil fuels to generate energy, and when waste material decomposes.

Hard-to-abate emissions

Emissions that are going to be difficult to reduce, such as those coming from industries that require high heat.

Scope 1 emissions

Produced as a direct result of Council's activities

Scope 2 emissions

Emissions from electricity production and transmission.

Scope 3 emissions

Indirect emissions from business activities you have no direct control over.

Renewable energy

Energy generated by wind, solar and wave power.

Fugitive emissions

Unintentional leaks of gases—primarily methane and carbon dioxide.

Carbon Neutral

An overall balance between the carbon dioxide (CO²) produced, and removed from the atmosphere.

Warming Planet | Climate Change | Global Warming

The heating of the planet due to greenhouse gases.

Fossil fuels

Coal, oil and natural gas, created 400 million years ago and when burden to release energy, also release carbon dioxide into the atmosphere, causing the planet to warm.

Solar PV

Solar photovoltaic (PV) systems convert sunlight directly into electricity using semiconductor cells

Power Purchasing Agreements (PPAs)

A long-term contract between an electricity generator, and a buyer (off-taker) that defines the terms for selling renewable energy.

Smart meter

Digital devices that securely send data to retailers, eliminating manual reads, and allow users to make use of solar and battery systems.

Low Emission Vehicles (LEV)

Vehicles that produce very few emissions, such as Battery Electric Vehicles (BEVs), Hydrogen Fuel Cell Vehicles (FCEVs), and Plug-in Hybrid Electric Vehicles (PHEVs)

EV

Electric vehicle, powered by an electric motor that draws electricity from a battery and is capable of being charged from an external source.

Sequestration

The long-term capture and storage of carbon dioxide to reduce greenhouse gases.

Carbon insets

Reducing emissions within your own supply chain, for example, helping a renewable energy project get off the ground, and then buying energy from it.

Carbon offsets

Units generated from activities that remove, reduce or prevent greenhouse gas emissions from being released into the atmosphere, such as planting new forests, or using drawdown technologies like carbon capture & storage (CCS)

Carbon Capture & Storage (CCS)

This is an extremely expensive, ineffective way of removing greenhouse gases that involves capturing, transporting and storing emissions from fossil fuel power stations, energy intensive industries, and gas fields by injecting the captured greenhouse gases back into the ground.

Emissions Inventory

A quantified account of greenhouse gas emissions generated by a Council's operations measured over a defined period and reported in carbon dioxide equivalent (CO₂-e). An emissions inventory typically includes sources such as electricity use, fuel consumption, waste water, and landfill emissions (Scope 1 & 2 emissions), and is used to establish baselines, track progress, and inform emissions reduction planning.

Emissions Monitoring and Reporting Procedure

A documented process that outlines how a Council measures, records, verifies, and reports greenhouse gas emissions and related energy data. The procedure defines responsibilities, data sources, calculation methodologies, reporting frequency, quality assurance processes, and compliance requirements to ensure consistent and transparent emissions reporting across Council operations.

Operational Emissions Reduction Plan

A strategic and operational document that identifies the actions, projects, timelines, responsibilities, and performance measures required to reduce greenhouse gas emissions from Council operations. The plan typically addresses areas such as buildings, energy use, fleet, waste, procurement, and infrastructure, and aligns with Council Net Zero targets.

Revolving Energy Fund (Net Zero Fund)

An internally managed funding mechanism established by a Council to finance energy efficiency, renewable energy, electrification, and emissions reduction projects. Savings generated from completed projects — such as reduced energy or fuel costs — are returned to the fund to support future sustainability initiatives, creating an ongoing cycle of reinvestment.

Fleet Transition Plan

A long-term plan that guides the transition of a Council's vehicle and plant fleet toward low-emissions or zero-emissions technologies. The plan typically includes fleet replacement schedules, electric vehicle adoption pathways, charging infrastructure requirements, operational considerations, financial analysis, and emissions reduction targets.

Climate Change Strategy

A high-level strategic framework that outlines a Council's approach to mitigating and adapting to climate change. The strategy generally sets long-term goals, priorities, and actions relating to emissions reduction, climate resilience, renewable energy, sustainable infrastructure, community engagement, and risk management, consistent with relevant state and national policy frameworks.

Energy Management Plan

A structured plan that outlines how a Council will manage and improve energy performance across its operations and assets. The plan identifies energy use patterns, efficiency opportunities, renewable energy initiatives, performance targets, implementation actions, monitoring arrangements, and governance responsibilities to reduce costs, energy consumption, and emissions.

Offset & Inset Policy

A policy that establishes the principles, criteria, and governance arrangements for the purchase and use of carbon offsets by a Council. The policy typically defines when offsets may be used, preferred offset standards or certifications, prioritisation of emissions reduction before offsetting, reporting requirements, and alignment with Council Net Zero commitments. The policy also outlines how inseting can be used to reduce Council's overall emissions.

Resource Efficiency Policy

A policy that sets out a Council's commitment to the efficient and sustainable use of resources, including energy, water, materials, fuel, and waste. The policy establishes guiding principles and responsibilities aimed at reducing consumption, minimising waste, improving operational efficiency, supporting circular economy outcomes, and lowering environmental impacts across Council activities.

Inseting

The reduction, removal, or sequestration of greenhouse gas emissions within an organisation's own value chain or sphere of influence.

State & Federal Legislation

- **Federal Climate Change Act 2022**

Commits to reducing Australia's net greenhouse gas emissions to 43% below 2005 levels by 2030, and reducing Australia's net greenhouse gas emissions to zero (100%) by 2050.

- **NSW Climate Change (Net Zero Future) Act 2023**

Legislates the State Net Zero targets as 50% by 2030, 70% by 2035 and 100% by 2050 (adopted 30 November 2023). Emissions from all sectors of the economy are covered by the NSW Net Zero emissions by 2050 target, in line with the National Greenhouse Accounts.

- **NSW EPA Climate Change Policy and Action Plan 2023–26**

Outlines a comprehensive regulatory approach and set of actions to address the causes and consequences of climate change in NSW. They support and build on the NSW Government's climate change policies and initiatives, helping industry to decarbonise and build greater preparedness and resilience to climate change risks.

Organisations

NSW DOCEEW

NSW Department of Climate Change, Energy, the Environment and Water

CRJO

Canberra Joint Regional Organisation

Sustainable Choice

Local Government Procurement organisation

Global Covenant of Mayors for Climate & Energy (GCoM)

The largest global alliance for local government climate leadership.

Intergovernmental Panel on Climate Change (IPCC)

United Nations body for assessing the science related to climate change.

JONZA

Joint Organisation Net Zero Accelerator program run by the Sustainable Councils team at NSW DCCEEW

NSW EPA

NSW Environmental Protection Agency

Climate Action Professional Officer Group (LGNSW)

Collaboration between Council staff, LGNSW and the Department of Planning and Environment on climate change adaptation and Net Zero emissions.

Sustainability Advantage

NSW Government program that provides customised service to your Council

Tools

CHECKLIST

Embedding Net Zero ambition into Council operations

- | Commit to Council operations going Net Zero, publicly and internally
- | Set up a Net Zero Working Group, with representation from the main emitting areas of operations
- | Map out Council emission sources and data sets available
- | Implement an emissions inventory platform, to record and monitor emissions data
- | Develop a rigorous data monitoring procedure, for all sources of emissions and link this with reporting requirements
- | Develop Net Zero targets, once the baseline of emissions has been established
- | Do a gap analysis of strategic documents to be created or modified, to include emission reduction considerations
- | Undertake a training and communications campaign, to raise staff awareness of new/modified documents, and subsequent changes to internal processes
- | Allocate annual budget to drive the emission reduction projects, and seek grant funding for scoped projects
- | Create a plan of emission reduction projects, then scope and implement
- | Undertake quarterly emission reporting, to the internal Net Zero Working Group and Executive
- | Report annually to Council and community [View NSW Guidelines](#)
- | Review the process to optimise efficiency, every three years

CHECKLIST

Net Zero to-do list

This is a list of all the recommendations in the guide, so you can tick them off as you go, marking your journey to Net Zero.

Governance & Leadership

- | Adopt a Net Zero Plan
- | Publicly commit to Net Zero by 2050
- | Establish an internal Net Zero working group
- | Undertake an emissions inventory
- | Implement an annual emissions monitoring and reporting procedure
- | Set up a Revolving Energy Fund/Net Zero Fund to finance emission reductions
- | Adopt sustainable procurement principles
- | Divest from fossil fuels
- | Embed emission reduction targets into all Council strategic documents, processes and programs
- | Set internal expectations through training, performance reviews, internal communications, onboarding
- | Net Zero processes and projects included in the IP&R process (draft Community Strategic Plan, Delivery Plan and Operational Plan)

Electricity & Gas

- | Sourcing electricity from renewable sources
- | Have all Street Lights upgraded to LEDs
- | Renewable energy and battery projects on Council assets
- | Upgrade gas equipment with electric alternatives

- | Adopt a Resource Efficiency Policy
- | Adopt an energy management plan
- | Implement an electricity monitoring process
- | Undertake Energy Efficiency upgrade Projects

Waste water emissions

- | Supplement waste water management strategies with emission reduction clauses
- | Implement a best practice emissions monitoring protocol for waste water treatment facilities
- | Scope best practice waste water treatment for future plant upgrades

Waste emissions

- | Supplement landfill management strategies with emission reduction clauses
- | Implement robust monitoring of landfill emissions protocol
- | Adopt methane reducing technology solutions (flaring, capping)
- | Adopt a legacy landfill monitoring program
- | Scope best practice landfill management for future site upgrades
- | Introduce FOGO, material recovery and recycling programs

Fleet

- | Adopt a Fleet Transition Plan with targets
- | Adopt a Public EV Charging policy

Offsets

- | Develop an Offset policy

Staff Training Checklist

Develop training program to bring everyone up to speed with Net Zero, along with Councils obligations to its community and the latest legislation

Ensure all existing staff undergo training on Net Zero

Revise onboarding process to incorporate new Net Zero training program

Develop & distribute internal communications campaigns

Record and distribute videos of staff and what they're doing to work towards Net Zero



Council Operational Emissions Data Sourcing Table

Top 5 Emission Sources + Offsets	Emission source	Emission source - detail	Unit	Data sources (preferred)	Internal team that has access to this data	Person to contact to get data (Name and title)	Details of utility provider (Company & Account Manager name)
Gas	Natural gas		GJ	- Gas retailer - Gas consumption data from software platform			
	LPG		kL	- LP gas retailer - LP gas consumption data from software platform			
Fleet	Fleet fuel	Diesel, petrol, E10	kL	- Bulk fuel purchase report - Fleet card report			
Electricity	Electricity Usage (Council assets)	Renewable PPA data: GreenPower® purchased & LGCs purchased and retired	kWh	- Electricity retailer - Electricity consumption data from software platform			
	Electricity Production (Onsite solar PV data)	Self consumed small-scale solar (STCs), Exported small-scale solar (STCs), Self consumed solar (LGCs not created, OR created & retired), Exported solar (LGCs not created), Exported solar	kWh	- Electricity retailer - Electricity consumption data from software platform			

		(LGCs created & retired), Self consumed solar (LGCs created & sold/banked); Exported solar (LGCs created & sold/banked)					
	Streetlighting	Renewable PPA data (for Network-owned streetlighting): GreenPower® purchased, LGCs purchased and retired & Network-owned	kWh	• Electricity retailer • Electricity consumption data from software platform			
Wastewater	Wastewater emissions		t CO2-e	• Population served (or STW inflow) + treatment type • EPA report (EPA compliance report)			
Waste	Landfill emissions	Waste to landfill (MSW - Municipal, C&I - Commercial, C&D - Construction & Greenwaste	tonnes	• EPA report (EPA compliance report) of waste volumes by waste type • Use NGER Solid Waste Calculator of Council's landfill/s emissions accounting to get t CO2-e			
Offsets	Carbon abatement measures	Carbon offsets purchased and retired; Carbon offsets created and retired & Landfill gas emissions reduction	t CO2-e				

TEMPLATE

Greenhouse Gas Reporting Template.



[Full Reporting Template Here](#)

Emissions Reduction Plan RFQ

This is a template Request for Quote for a local Council to acquire the services of an energy consultant to develop an Emission Reduction Plan and Organisational Carbon Inventory. It is based on a number of documents and credit should be given to Hornsby Shire Council

Corporate Carbon Inventory and Emissions Reduction Plan Request for Quotation

Invitation

[Council name] is committed to reducing its greenhouse gas emissions and action on climate change. [Provide details of any strategic document that sets out the plan to reduce emissions and the targets therein].

Council is looking to developed a detailed understanding of its emissions rouces, and the emissions reduction targets neceaary to get Council to Net Zero by 2050. Council is interested in standardising its emissions reporting framework and is therefore seeking advice as to the current best practice emissions reporting protocols for corporate level emissions.

In order to prepare for this work Council is looking to engage a suitably experienced and qualified consultant to provide advice on reporting protocols and to subsequently undertake a corporate emissions inventory covering 2 financial years.

1. Project Objectives and Deliverables

[Include a paragraph about existing wok that has been done and resources that already exist e.g. any data that is already being collected and monitored – this will help the consultant quote based on the data already available]

1.1.1 Provide advice to Council on current best practice inventory measurement and reporting (NGERS, NCOs, GPC).

1.1.2 Prepare and present carbon inventories scope 1, 2 & 3 for [name of Council] (corporate emissions only) for both [specify the last two financial years] to agreed standard.

1.1.3 Based on the results of the carbon inventory develop a detailed pathway to Net Zero plan.

The plan should include:

- Science-based targets which align with State, Federal and International targets, based on Council's baseline year of 2005 [where possible – data availability dependant] (to align with the NSW State Government legislation Climate Change (Net Zero Future) Act 2023).
- A focus on [Scope 1, 2 and 3 – delete as appropriate]. The final report should outline the boundaries chosen for the scopes.
- Acknowledge Council's existing emission reduction work and programs.
- Tie in the emission reduction projects with circularity opportunities.
- An opportunities register which focuses on the main projects to reduce emissions to 50% by 2030 and subsequently 75% by 2035 and 100% by 2050.
- To inform the implementation priorities include a marginal abatement cost curve based on a sound cost benefit analysis.
- A section of the final report must discuss Council's opportunity to adopt best practice emissions reporting protocols for corporate level emissions. It must outline the emission source data used to calculate the emissions baseline in order to ensure consistent data collection and use in the future.

1.1.3 The Emission Reduction Pathway should be based on Council's existing Capital Works Plan and strategic asset replacement plans, and emission reduction opportunities proposed should dovetail into Council's existing project plans.

1.1.4 The development of the Emissions Reduction Pathway should be based on consultation undertaken with relevant internal stakeholders and this consultation must be factored into the scope of this quote.

1.1.5 A final inventory and Emission Reduction Pathway report should finally be presented to Council's Executive Leadership team and relevant internal stakeholders.

1.2. Background Material

Council has consumption data available for [electricity (including streetlights), gas, fuel, water and limited scope 3 emissions – delete as appropriate] sources for [baseline year].

1.3. Personnel

The project is to be undertaken by a suitably qualified and experienced consultant. Details of the expertise of personnel, including the supervisor and those undertaking the work and responsibilities for each team member, are to be provided in the consultant submission.

1.4. Selection Criteria

The selection of the consultant will be undertaken on the basis of the following criteria:

- 1.4.1. Appreciation of the project brief;
- 1.4.2. Proposed methodology;
- 1.4.3. Consultants' qualifications, skills and experience;
- 1.4.4. Details of project budget (note: the lowest quotation may not be selected); and
- 1.4.5. Detailed project timeline demonstrating ability and commitment to complete the project within the set timeframe.

2. Administrative Information and Requirements

2.1. Report Requirements

Council will provide branding and style guidelines to the successful consultant which should be followed in preparing reports and outputs for the project.

A 1st draft report is to be submitted in electronic format (Word format or similar) for internal review by Council. Following review of the 1st draft, a final draft report is to be submitted two (2) weeks after receipt of comments on the 1st draft.

One (1) x hard copies of all outputs along with electronic copies in Word format and raw data in excel format or similar are required to be submitted. Diagrams, maps, plans and graphs should be in a format compatible with software used by the [Council name] and be suitable for transfer/reproduction into Council documents as needed.

The outputs of the internal consultation with key stakeholders must be captured and shared as supporting material with the final report.

The final report will be presented to the Executive Leadership team and relevant internal stakeholders by the successful consultant.

2.2. Copyright and intellectual property

The Consultant will respect copyright provisions and acknowledge Council ownership of all contract materials regardless of what form in which they are stored.

When the report becomes a document owned by Council, a printed version will be required.

The Consultant will acknowledge that any discoveries, inventions, patents, designs or other rights arising from the contract are the property of the Council.

The Consultant will ensure a full transfer of knowledge and accreditation of same to Council during the course of the contract.

2.3. Confidentiality

The consultant must maintain effective systems to protect confidential information.

The consultant may not use confidential information for any purpose other than the performance of that person's obligations for the project; may not disclose (and must ensure that its employees do not disclose) confidential information to any third party, and may not allow its employees access to confidential information without ensuring that those employees are aware of and comply with these systems for the protection of confidential information.

Council reserves the right to disclose any or all information provided by the consultant where disclosure is required or compelled by any order of a Court, law or notice, or is necessary for the conduct of any legal proceedings or the provision of advice by the Councils legal advisers, accountants or other consultants.

2.4. Conflict of Interest

Consultants should declare any potential or actual conflict of interest or specify that no actual or perceived conflict of interest exists or is likely to arise during the undertaking of the project.

2.5. Provision of termination of consultancy

In addition to a recommendation of the Project Manager to terminate the consultancy, there are other contractual conditions which may lead to Council terminating the contact. These are as follows:

- Non-performance - if the consultant fails to complete the assignment in accordance with the agreement, Council reserves the right to terminate the contract forthwith.
- Unethical or unprofessional conduct - evidence of such will lead to termination of the contract by Council.
- Criminal Activity - where the consultant is found guilty of dishonest conduct or becomes bankrupt during the consultancy.
- Unauthorised disclosure of information, non-compliance with secrecy and confidentiality provisions and unauthorised contact with the media - no public statement or press release shall be issued without the express permission of Council. The Consultant shall respect the secrecy and confidentiality of Council information.
- Conflict of Interest - Consultants should declare any potential or actual conflict of interest prior to agreement with Council. If a subsequent disclosure is made this will constitute grounds for termination. Should termination of the contract be carried out by Council the Consultant will forfeit the balance of monies unpaid at the time of termination.

2.6. Insurances

The consultant will be required to provide details of professional indemnity insurance of \$10 million and public liability cover of \$20 million.

2.7. Response to Brief

Responses to the brief are due by **[time and date]**.

Quotations should include the following:

- Proposed methodology and timeline;
- Lump sum fee for the project, broken down to include costs for each component of the project;
- Hourly rates for staff for any additional work/agreed variations;

- Experience and qualifications of all members of project team; and,
- Details of relevant studies, projects previously undertaken, including dates of completion and referees.

3. Submissions

Submissions will be received until [date and time] by either

Mail: [Council name and address]

Or email: [contact email]

For enquiries contact:

[contact details including name, title, email and phone number]



Case Study

Council: Yass Valley **PROJECT:** Emissions Inventory



Background

Yass Valley Council needed to complete an emissions inventory as part of their pathway to Net Zero. Through the Joint Organisations Net Zero Acceleration (JONZA) project, the Canberra Region Joint Organisations (CRJO) sustainability team had encouraged regional Councils to document Scope 1 & 2 emissions first. The task was to find emissions data for all

utilities, fleet, waste and wastewater going back seven years and enter the results into the NSW Government's 'Cassora' online portal. Cassora was developed for local governments as a climate reporting tool, preparing them for mandatory reporting. Unfortunately, no emissions data had been collected by Council up to that time.



Approach

Council had no commercial software systems in place nor any established processes for collecting annual emissions data, aside from wastewater emissions reporting submitted each year to the NSW Department of Planning and Environment under the Regulatory and Assurance Framework for Local Water Utilities.

As a result, significant investigative work was required across numerous supplier portals, some highly effective, others far less so. Even where data was available, suppliers often provided only 18 months of historical information, requiring ongoing

liaison to obtain earlier records. Where gaps remained, data had to be manually extracted from individual invoices stored within Council's finance system - a lengthy and onerous process that was essential to completing the broader emissions picture.

All information was ultimately consolidated into an extremely detailed spreadsheet. At the conclusion of a focused five-month period, this resource enabled analysis not only of Council's emissions profile but also of the operational costs associated with the various functions and services across the organisation.



Results

The spreadsheet was subsequently used to develop graphs and tables that clearly illustrated annual emissions and costs across Council's various operational areas. Because the data extended down to individual facilities, it enabled a level of analysis that had never previously been possible.

This detailed assessment identified the largest sources of emissions and the areas incurring the highest costs while also demonstrating the effectiveness of existing emissions reduction initiatives. For example, the LED streetlight upgrade implemented in 2021 was shown to have reduced

both emissions and operating costs by approximately 50%.

Solar installations were also shown to provide significant benefits, and the analysis highlighted sites where battery storage could further improve outcomes. More recently, the sharp rise in diesel prices enabled forecasting of the potential long-term financial impact on Council's leaseback vehicle fleet should elevated fuel costs persist. This proved to be an extremely valuable insight, and an unexpected benefit arising from the broader project.

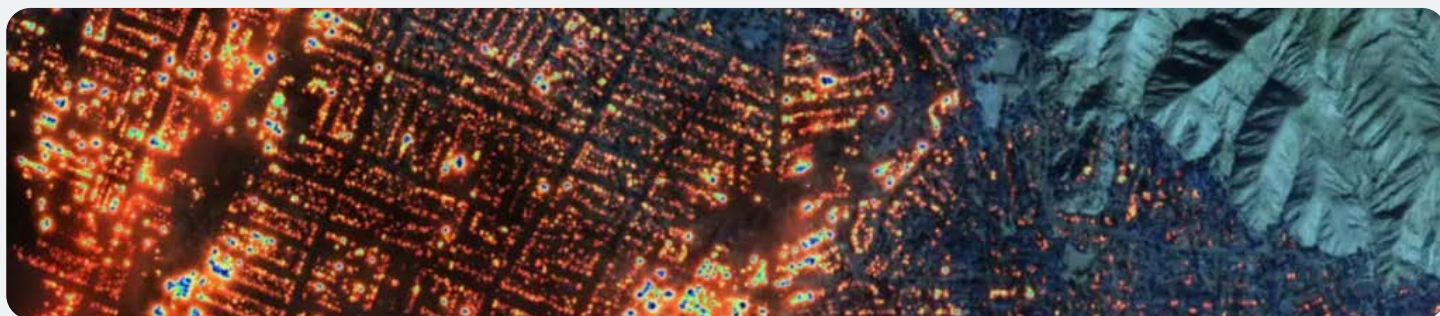


Advice

Because this is a data-intensive process, it is important to allocate the work to someone with good attention to detail, and excellent interpretation skills to transform the data collected into sensible, and useful information.

Capturing financial costs alongside emissions data also creates a highly

valuable organisational asset. It supports more informed decision-making, improves the ability to identify efficiencies and investment opportunities, and when maintained over time, provides Council with an up-to-date resource that can continually inform future planning and operational strategies.



Case Study

Council: Wingecarribee Shire Council **PROJECT:** Waste Water Treatment Plant Upgrade



Background

Wingecarribee Shire Council is well advanced in its journey to Net Zero, having reduced operational emissions by 60% in the last ten years alone. This was achieved in a number of ways including switching to renewable energy,

and moving from gas to electricity. Improvements completed in the last 12 months should reduce the emissions even further, however, with most of the reductions coming from an upgrade of the waste water treatment plant in Bowral.



Approach

The Council has responsibility for two waste water treatment plants that operate anaerobic treatment processes, where water sits in settling ponds expelling methane and nitrous oxide. They also have to meet EPA licencing requirements, and this was becoming increasingly difficult.

After reviewing a number of options the decision was made to move to an aerobic treatment process (that produces no methane) however changing the system was going to be an extremely expensive project.

Fortunately, both plants also fall within the Sydney drinking water catchment area, and the Shire in general was experiencing greater population growth than expected because of the COVID pandemic. This meant that Council could legitimately, and successfully, apply for a variety of Federal funding grants, that secured the finance to carry out the projects.

Funding Sources:

- Safe & Secure Water - \$6.6 Million



Results

Finance was secured for both projects, with the Bowral plant coming on line gradually in 2026, and the Moss Vale plant scheduled for the following year.

All information was collated by the consolidated planning team and has been used to produce a completed August/September five-month period. This usage is not only of 2026, but also of the operating costs associated with the various functions and services at the organisation.

nitrous oxide may have been reduced as well. The new system does use more electricity, as it involves constant aeration of the water, however variable

periods of use have been used to predict. At completion, this usage is not only of 2026, but also of the operating costs associated with the various functions and services at the organisation.



Advice

Due to the amount of money required to implement, it's highly unlikely a regional Council will be able to afford these kinds of projects on the basis of reducing emissions alone. Finding another related, and pressing issue is therefore the best way to move a

project like this forward. In general, they are hugely complex and under researched, however well worth it in the end, as testing will show, no doubt, in the coming months.





CANBERRA REGION
JOINT ORGANISATION

HOW TO GET TO NET ZERO

Knowledge, guidance and
advice for NSW Councils.



This guide was produced by the CRJO
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