



Net Zero Pathway Plan



CANBERRA REGION
JOINT ORGANISATION

Proudly funded by
the NSW Government
Climate Change Fund



Canberra Region Joint Organisation

The Canberra Region Joint Organisation (CRJO) consists of 11 member Councils alongside the Australian Capital Territory (ACT) Government and the Canberra Airport.

The Canberra Region is situated in south-eastern New South Wales and envelops the ACT. The region extends from the picturesque south-west slopes, through the dynamic Sydney-Canberra Corridor, across the scenic Eurobodalla, down to the vibrant Sapphire Coast, and up into the majestic Snowy Mountains.

The total population of the CRJO region, including the ACT exceeds 800,000 with a total area of 63,000km² and a gross regional product (GRP) of \$16.23 billion.

The CRJO allows our members, State agencies and other stakeholders to work together at a regional level to identify shared priorities, delivering important regional projects and better community outcomes.

The CRJO's core objectives include:

- ➔ Establishing strategic regional priorities and developing plans for delivering these priorities.
- ➔ Providing leadership and advocating for making real change in our communities.
- ➔ Identifying opportunities for intergovernmental cooperation and become one voice on matters relating to the region.

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QUEANBEYAN-PALERANG REGIONAL COUNCIL'S NET ZERO PATHWAY RECOMMENDATIONS

EXECUTIVE SUMMARY

This report outlines Council's recommended Net Zero Pathway, based on a baseline created in consultation with Council staff.

The main sources of emissions from Council's operations are:

- ➔ Direct **Landfill** emissions (decomposition of organic matter)
- ➔ Direct **Waste Water treatment** emissions (decomposition of organic matter)
- ➔ **Electricity** use (fossil fuels burnt to generate grid electricity)
- ➔ Direct **Fleet fuel** use (burning of fossil fuels in combustion engines)
- ➔ Direct emissions from **gas heaters and hot water**

The most critical steps to reduce emissions from Council's operations are:

- ➔ Publicly make a **commitment** to working towards Net Zero emissions
- ➔ Undertake an **emissions inventory** and adopt a greenhouse gas emission monitoring and reporting procedure
- ➔ Based on your data, **set science-based Net Zero targets and develop an Operational Emissions Reduction Plan** which outlines how to get there
- ➔ Set up a **Revolving Energy Fund/Net Zero Fund** to ensure funding is available for emission reduction and energy efficiency projects
- ➔ Choose to **buy electricity from renewable sources or generate on site using solar PV**
- ➔ Adopt a **Fleet Transition Plan** for all vehicles, including plant and equipment such as lawnmowers



**CLICK HERE TO GO TO THE
NET ZERO PATHWAY ACTION LISTS**



INTRODUCTION

The significant increase in natural disasters affecting our regions have brought to the forefront the urgency of climate action.

Both the State and Federal Governments are now fully committed to addressing Australia's greenhouse gas emissions, with local government being at the forefront of delivering climate action and climate change adaptation.

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.

The most important role of Councils is to advocate to higher levels of government for action. Councils should show leadership by leading the way in implementing both governance and operational actions that support more efficient, resilient and sustainable operations and communities.

Research shows that regional Councils have higher greenhouse gas emissions than metropolitan Councils, and a much smaller rate base¹. Due to the lack of staff and financial resources, regional Councils may struggle to resource emission reduction actions. These resource constraints highlight the importance of programs such as the Joint Organisation Net Zero Accelerator (JONZA) program, facilitated by the Sustainable Councils team at the NSW Office of Energy and Climate Change, which provides support to regional NSW Councils by developing tools and facilitating change.

¹ Department of Planning, Industry & Environment and 100% Renewables. [TRANSITION TO NET ZERO: LOCAL GOVERNMENT ROLE IN GREENHOUSE GAS EMISSIONS REDUCTIONS TO 2030 AND 2050](#). April 2021

With this type of support, and that of the Canberra Region Joint Organisation's (CRJO) Net Zero program, 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.

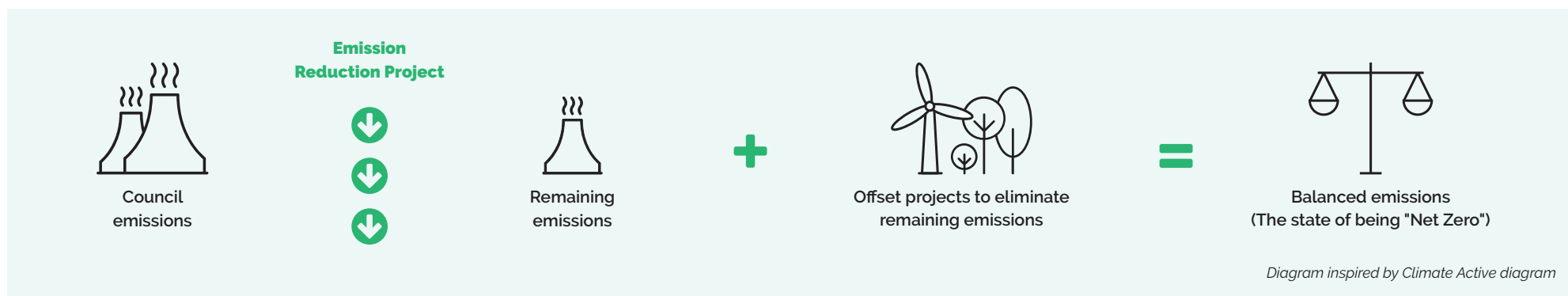
Furthermore, with the NSW greenhouse gas emission reduction targets now being legislated through the *Climate Change (Net Zero Futures) Act 2023*, as well as recent recommendations from the *Review of the National Greenhouse and Energy Reporting (NGER)* outlining details of how the NGER scheme should be extended to State and Local Government, the conversation around undertaking an emissions inventory for each Council, and implementing annual emissions monitoring and reporting procedures, have become critical.

This plan has been designed to outline how your Council can embed a thorough, strategic response to emissions reduction. A Net Zero Maturity matrix will be used to demonstrate any work done to date whilst also highlighting the key opportunities that still need to be actioned in order to reach Net Zero.

To support each Council on their Net Zero journey, tables at the end of this report provide a breakdown of which actions are most achievable to help you reach Net Zero, and are designed to slot into your governance process and project planning.

This report, and the work by the CRJO Net Zero Project, is financially supported by the Sustainable Councils program through the NSW Climate Change Fund.

WHAT IS NET ZERO?



Net Zero refers to achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

To become Net Zero, Councils calculate the greenhouse gas emissions generated by their activity, such as fuel or electricity use and travel.

They reduce these emissions where possible by investing in new technology or changing the way they operate.

Getting to Net Zero means we can still produce some emissions, as long as they are offset by processes that reduce greenhouse gases already in the atmosphere.

The remaining emissions can be thus be 'cancelled out' by purchasing *carbon offsets*.

Carbon offset units are generated from activities that prevent, reduce or remove greenhouse gas emissions from being released into the atmosphere.

For example, these could be things like planting new forests, or drawdown technologies like direct air capture.

— DEFINITION DERIVED FROM THE AUSTRALIAN CLIMATE COUNCIL AND CLIMATE ACTIVE DEFINITIONS

Carbon Neutral vs Net Zero

Net zero is similar in principle to carbon neutrality, but is expanded in scale. To achieve net zero means to go beyond the removal of just carbon emissions. Net zero refers to all greenhouse gases being emitted into the atmosphere, such as methane (CH₄), nitrous oxide (N₂O) and other hydrofluorocarbons.

Resources:

Climate Council – [What is Climate Change and What can we do about it?](#)
Climate Council – [What does Net Zero emissions mean?](#)



HOW TO READ THIS PLAN

This plan is composed of three key sections:

1. The Net Zero and emission reduction context for local governments in NSW
2. A summary of your Council's Net Zero Maturity (2023)
3. A list of recommended actions designed to assist in project planning and implementation
4. Appendix A provides a Checklist tool for embedding Net Zero ambition into Council operations

THE KEY OBJECTIVES OF THIS PLAN

The following are the key objectives of this plan:

- ➡ Help you understand the Council's emission sources
- ➡ Provide recommendations on the projects necessary to reduce the emissions

WHAT WE HEARD

The Net Zero Pathway Plan was developed through consultation with the CRJO Net Zero Working Group and informed by the CRJO Net Zero Baseline Survey.

The 11 CRJO Councils range greatly in what emission reduction work has been done to date, as well as the community and Council's commitment to reducing operational emissions.

To establish the Council's starting point on their Net Zero journey, the working group members and their colleagues were asked to complete the CRJO Net Zero Baseline Survey, which provided a snapshot of the different areas of operations that contribute to the Council's greenhouse gas emissions.

During the consultation with the working group members, they were asked what the main barriers were to adopting emission reduction actions. Four key themes emerged:

- 1. Councils are under-resourced:** Regional Councils struggle to deliver on core Council activities due to the lack of staff and money.
- 2. Lack of clarity from Council leadership on Net Zero:** Staff are not clear on organisation's commitment to Net Zero and therefore aren't sure if they should be striving to reduce emissions.
- 3. There is a perceived lack of community support:** Council staff are at the front line and often hear the personal opinion of community members rather than the overall community sentiment. Councillors therefore have the important role of providing clear directive which is representative of the community.
- 4. A lack of knowledge:** Climate Change has been debated for so long that it has slipped off the list of considerations that Council staff have to deal with. A lack of understanding results in perceived barriers to action and reluctance to embrace additional responsibilities.

WHY TAKE ACTION?

Councils are accountable to their communities and as such are fiscally responsible for providing services in an energy- and cost-effective manner, providing the Community with value for their rates.

In addition, planning for climate uncertainty will increase Councils' resilience and emergency readiness.

Although the community sets the direction of the work that the Council undertakes through the Community Strategic Plan, there are other Federal and State Government strategic directives that influence the Delivery and Operational Plans. With the adoption of the Climate Change (Net Zero Futures) Act 2023, State-wide targets have been set for emission reductions which Councils need to achieve, as well as assist the community to achieve.

Councils can demonstrate leadership through taking meaningful steps towards reducing emissions and delivering positive climate action.





In responding to the challenges presented by climate change, a number of directives influence Council's responsibility to reduce its greenhouse gas emissions. These are:

Region

The South East and Tablelands Regional Plan – Direction 17 “Mitigate and adapt to climate change” (p.38-39)

“Communities need skills and knowledge to deal with the effects of climate change. The NSW Climate Change Policy Framework and the draft Climate Change Fund Strategic Plan set policy directions and prioritise investment to reduce carbon emissions and adopt and mitigate the impacts of climate change. The South East and Tablelands is the first region in NSW to implement a regional response within government to climate change, and this process has been adopted across NSW. The opportunity to work with the ACT Government (which undertook a parallel regional adaptation planning process and set similar policy targets) will allow the region to leverage the transition to a low emissions economy and prepare for climate change. Preparedness will be enhanced by embedding emission reductions and climate change into business-as-usual planning, program delivery and governance. This will include initiatives to improve awareness of climate change impacts, strengthen natural ecosystems, safeguard public assets, support business and communities, unlock funds for communities to undertake adaptation strategies, and develop a services market to support adaptation strategies. The infrastructure built today must consider the climate projections for the near future and, in some cases, the far future. Building community capacity to deliver and own renewable energy, promoting the use of advanced technology vehicles, identifying low emission pathways for energy-intensive industries and improving access to start-up funding to accelerate innovation will help to reduce emissions and minimise energy consumption.

Actions

- 17.1** Enhance government service delivery and implement local initiatives to address climate change impacts on local communities.
- 17.2** Collaborate with the ACT Government to reduce emissions and adopt adaptation strategies.
- 17.3** Support Councils to assess and respond to impacts and opportunities associated with a changing climate.
- 17.4** Help communities and businesses to understand and respond to climate related risks and opportunities by providing climate information, building capacity and unlocking financial mechanisms to help fund emission reductions and climate adaptation.”

Councils are tasked with implementing the directives set by their communities through their Community Strategic Plans, as well as complying with Federal and State Government legislation.

NSW State Government

NSW Climate Change (Net Zero Futures) 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 will be paramount that local government entities monitor and report on their emissions as part of a State wide monitoring and reporting framework.

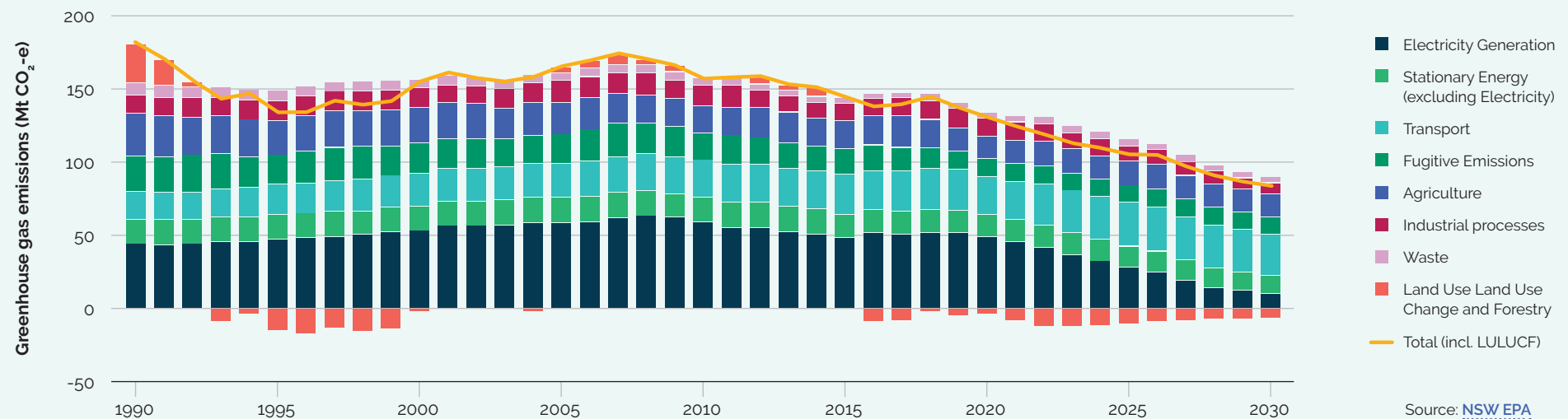
Climate Change Policy and Action Plan 2023–26: outlines a comprehensive regulatory approach and set of actions to address the causes and consequences of climate change in NSW. They support and build on the NSW Government's climate change policies and initiatives, helping industry to decarbonise and build 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).

Federal Government

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.

Net NSW greenhouse emissions as inventoried (2005–2019) and projected (2020–2030)



UNDERSTANDING COUNCIL EMISSION SOURCES

Most Councils have the same core areas of operations however some have additional operations such as landfill management and water and sewer services.

The number of vehicles and amount of electricity used will be related to the extent of these operations thus though the core work being done by Councils is the same, the emissions profile from each Council is unique.

In order to manage Council emissions, an inventory of operational emissions must be undertaken and a monitoring and reporting procedure be implemented.

Once the inventory has been completed, and set as the baseline, then the Council can set targets.

Main sources of emissions

SOURCE	EMISSION
Electricity use	Burning fossil fuels to create electricity (CO ₂)
Waste Water treatment	Fugitive emissions from anaerobic waste water treatment (CH ₄ and N ₂ O)
Landfill management	Fugitive emissions from decomposition in landfill sites (CH ₄)
Transport	Petrol and diesel engines (CO ₂ and N ₂ O)
Natural Gas	Natural gas used for space and water heating (e.g. pools) (CH ₄)

Key: CO₂ = Carbon Dioxide; CH₄ = Methane; N₂O = Nitrous Oxides

When accounting for emission from different areas of operations, sources are split into three levels of influence:

Scope 1 emissions are those that are produced as a direct result of Council's activities.

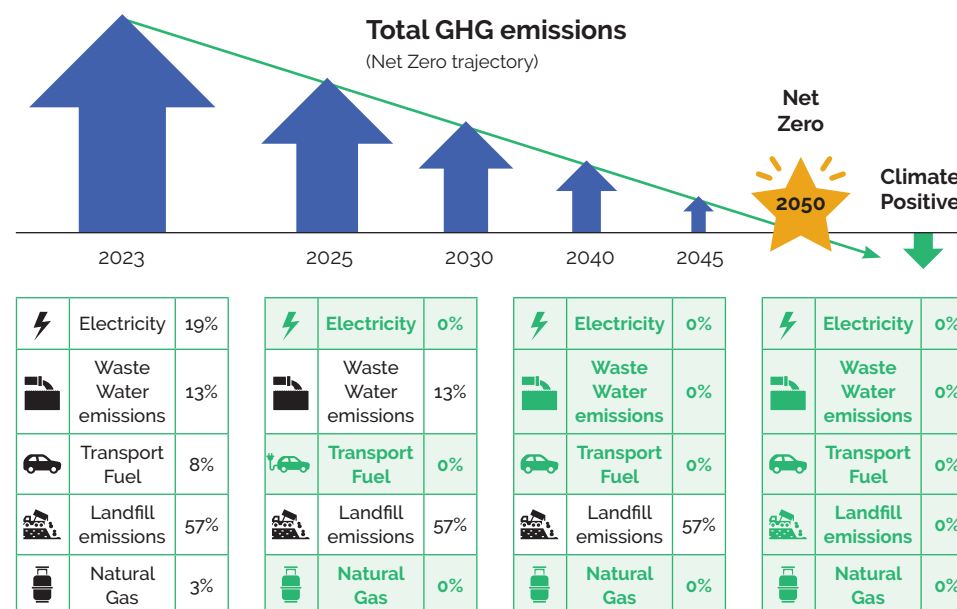
These include direct carbon dioxide and nitrous oxide emissions from the burning of fuel in vehicles, carbon dioxide from the burning of gas in hot water systems and methane from the decomposition of organic matter in landfills and water treatment facilities.

Scope 2 emissions are the indirect emissions from electricity production and transmission.

The electricity use of Council therefore contributes to the overall emissions that the Council is responsible for.

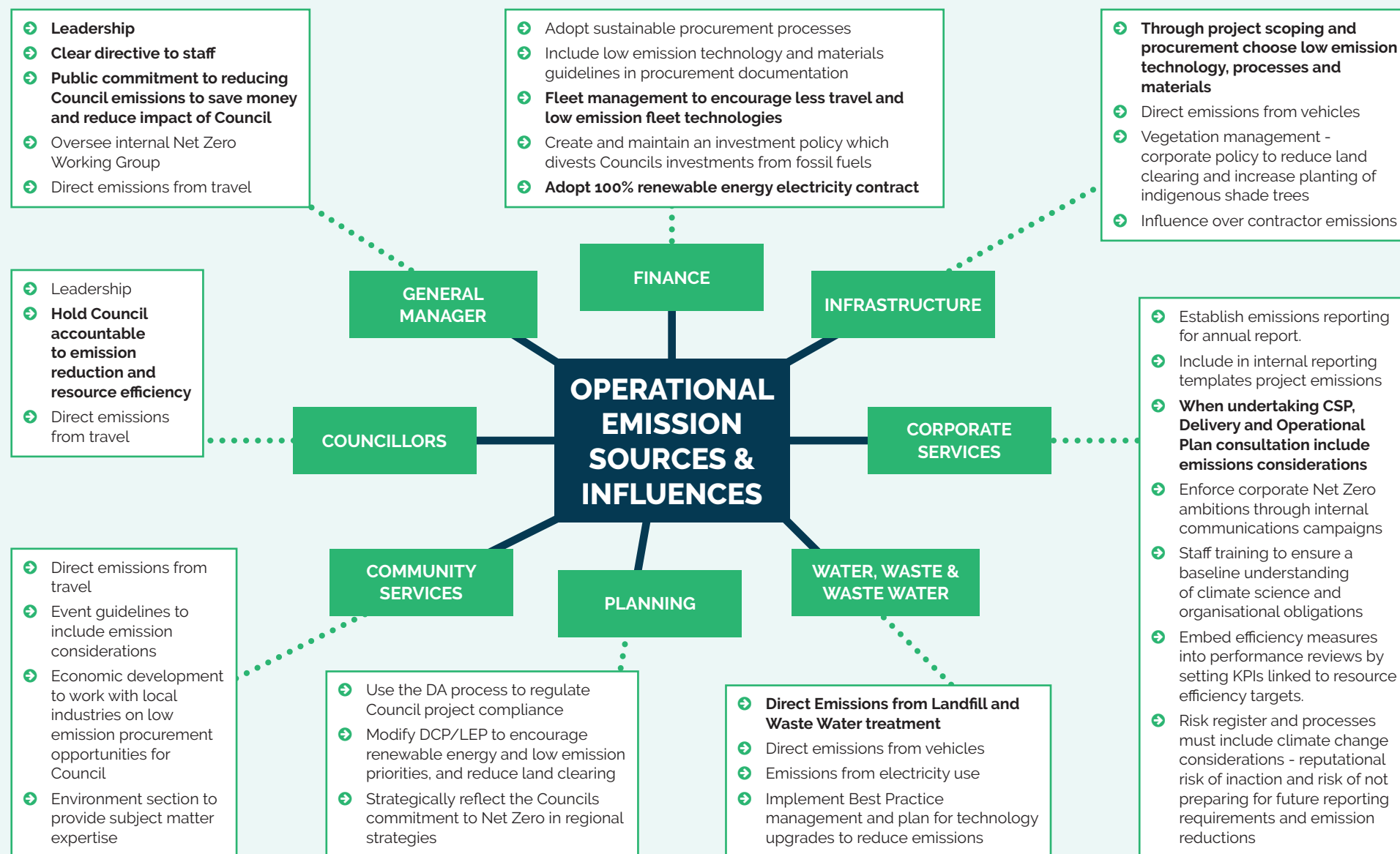
Scope 3 emissions are the indirect emissions from business activities which Council has no direct control over such as contractors, travel and purchased goods and services.

This is where the significance of a Circular Economy comes into play for Councils. By reducing the amount of virgin raw materials used, Councils can reduce the overall impact of operations.



Rough percentages are used to represent Council emissions for demonstration purposes only

Reducing emissions from Council operations therefore involves the whole organisation, from the Fleet team to the CFO, from the Councillors to the Governance team. The diagram below demonstrates the necessity of an Organisation-wide approach to emission reduction.



Emission reductions must be mandated throughout the organisation as there are multiple sources and processes that influence these processes (Main emission reduction actions in bold)



PLANNING YOUR PATHWAY TO NET ZERO

The very first step in any Council's emission reduction journey is to undertake an **Emissions Inventory**.

This is most readily done by an energy consultant with the help of internal staff. The work involves identifying all the emission sources and what data is available and can be used to monitor the levels of emissions.

Once the inventory of emission sources has been completed, a Monitoring and Reporting Procedure should be adopted which will assist your Council in annually reporting on your emissions reduction journey.

Emissions reporting is fast becoming an important way for Councils to demonstrate clearly their commitment and actions undertaken to achieving the legislated Net Zero targets. It is highly likely that the State Government will introduce mandatory emissions reporting for local Council within the next couple of years. Work has already begun on standardising the methodologies used to calculate emissions as well as the reporting format required.

The pace at which Councils reduce their emissions can be decided by using the inventory baseline emissions and modelling which types of projects can achieve the necessary emissions reductions. Once projects have been identified then the sequence can be set according to existing capital works plans and budget forecasts. The result will be the Council's emissions targets.

These targets must then be embedded within the Community Strategic Plan, Delivery Plan and Operational Plan, resourced appropriately in the Annual Budget and reported on through the Annual Report and Council meetings.

To measure each Council's progress to date a Net Zero Maturity matrix has been developed. It is based on the key actions necessary to achieve Net Zero. The diagram on the following page illustrates your Council's Net Zero Maturity as of December 2023.

An Emissions Inventory involves identifying all the emission sources and what data is available to monitor the levels of emissions.

QUEANBEYAN-PALERANG REGIONAL COUNCIL'S **NET ZERO** MATURITY SNAPSHOT

DECEMBER 2023



NET ZERO MILESTONE	MET
Governance/Leadership	
Adopt a Net Zero Plan	Yes
Publically commit to Net Zero by 2050	Yes
Establish an internal Net Zero working group	Yes
Undertake an emissions inventory	No
Implement an annual emissions monitoring and reporting procedure	Yes
Set up a Revolving Energy Fund/Net Zero Fund to finance emission reductions	Yes
Adopt sustainable procurement principles	Yes
Divest from fossil fuels	No
Embed emission reduction targets into all Council strategic documents, processes and programs	No
Set internal expectations through training, performance reviews, internal communications, onboarding	No
Net Zero processes and projects included in the IP&R process (draft Community Strategic Plan, Delivery Plan and Operational Plan)	No
Electricity	
Sourcing electricity from renewable sources	Yes
Have all Street Lights upgraded to LEDs	Yes
Renewable energy and battery projects on Council assets	Yes
Upgrade gas equipment with electric alternatives	No
Adopt a Resource Efficiency Policy	No
Adopt an energy management plan	No
Implement an electricity monitoring process	No
Undertake Energy Efficiency upgrade Projects	No

NET ZERO MILESTONE	MET
Waste Water emissions	
Supplement waste water management strategies with emission reduction clauses	No
Implement a best practice emissions monitoring protocol for waste water treatment facilities	Yes
Scope best practice waste water treatment for future plant upgrades	No
Landfill emissions	
Supplement landfill management strategies with emission reduction clauses	N/A
Implement robust monitoring of landfill emissions protocol	N/A
Adopt methane reducing technology solutions (flaring, capping)	N/A
Adopt a legacy landfill monitoring program	No
Scope best practice landfill management for future site upgrades	No
Introduce FOGO, material recovery and recycling programs	Yes
Fleet emissions	
Adopt a Fleet Transition Plan with targets	No
Adopt a Public EV Charging policy	Yes
Offsets	
Develop an Offset policy	No

NET ZERO PATHWAY ACTION LISTS

Having identified where your Council is on its Net Zero journey, the following section elaborates on the actions required to continue this journey.

The recommendation lists are designed to be used to create internal Action Plans (which should be created through internal consultation and costed).

The **Cost** and **Impact** columns in the lists are designed to provide guidance on the level of financial commitment necessary (High, Medium or Low) and the relevant impact of the action (High, Medium, Low), i.e. priority.

The **Timeframe** column is an indication of the ease of project implementation, with *Long* timeframes indicating an extensive project (3+ years), compared to a *Medium* project (2-3 years) and *Short* timeframes (1-2 years).

These indicators are included to assist you in prioritising projects according to what resources are available to you, and when.

Each table also has a column outlining the support available to you to implement this project. These are all reputable, government-appropriate resources, many of which are designed for Councils.

**FOR A CHECKLIST OF THE CORE STEPS TO EMBEDDING
NET ZERO INTO COUNCIL OPERATIONS, [CLICK HERE](#)**



Leadership & Governance

The Council and Executive Team must make a clear commitment to reduce emissions and to futureproof operations, especially in light of the now legislated Net Zero NSW targets. A clear directive will provide clarity to staff and set expectations, and should be coordinated by the General Manager's Office with support from the CRJO Net Zero Working Group representative.

Once the emissions inventory has been completed and targets set, a number of systemic changes need to be made, which include operational strategic documents being amended to reflect the emissions reduction projects and targets. All areas of operations must be responsible for their emission sources by monitoring and reporting on these.

The following is a list of possible actions that can be undertaken to drive the embedding of emission reduction through leadership and governance.

LEADERSHIP					
Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Make a public commitment to reducing operational emissions to Net Zero by 2050	For staff and the community to understand the Council's commitment to reducing emissions from operational activities.	Low	High	Short	Global Covenant of Mayors for Climate & Energy
Advocacy - Encouraging other Councils to take on emission reductions and lobbying State and National governments to adopt, fund, invest and regulate for Net Zero actions by local government.	Showing leadership by encouraging others to accompany you on your Net Zero journey. Clearly outlining the support you need to meet with legislated targets from the State Government. Using the CRJO network to show regional commitment and requirements.	Low	High	Short	Local Government NSW Australian Local Government Association Canberra Region JO
FINANCE & PROCUREMENT					
Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Revolving Energy Fund - 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)

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FINANCE & PROCUREMENT (cont'd)					
Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Divest from fossil fuels - 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 snap-shot of progress in the local government sector (Eastern Alliance for Greenhouse Action. May 2017)
Sustainable Procurement – 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)

GOVERNANCE & INTERNAL PROCESSES					
Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Establish an internal Net Zero working group which has the task of overseeing resource use and emissions. The group would be led by the CFO or GM, with representation from all operational areas	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. Video case studies of NSW Local Councils
Undertake an emissions inventory	Establish a register of all of Councils 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)

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GOVERNANCE & INTERNAL PROCESSES (cont'd)					
Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for 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 (Federal Government standard)
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	As above	Low	High	Medium	
Where necessary, adopt new strategic documents which outline Council's approach to Net Zero:					
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: Developing a net zero emission strategy (NSW Government) Video: What comes first, target or strategy? - A series which outlines the development of mitigation strategies and setting targets

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GOVERNANCE & INTERNAL PROCESSES (cont'd)					
Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for 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)
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)
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)
Landfill emission reduction plan/ clause	A more detailed document focusing on the emission reduction opportunities from Council managed landfills.	Medium	High	Medium	
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	
Offset policy	A strategic document with details of when offsets should be bought and what the criteria should be for selecting carbon offsets.	High	Medium	Short	How does Offsetting Work (Climate Active) The Oxford Offsetting Principles

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GOVERNANCE & INTERNAL PROCESSES (cont'd)					
Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
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 purposes.	Low	High	Low	Government Resource Efficiency Policy (NSW Government) Case study: Resource Efficiency Strategy 2016 to 2023 (NSW Health)
Asset Management Strategy/Capital Works Plan	<p>Ensuring that climate change adaptation is accounted for in all asset plans will help reduce insurance premiums and reputational risk.</p> <p>Futureproofing assets means less maintenance expenditure going forward.</p> <p>Also ensure that maintenance guidelines include minimum acceptable replacement standards in line with the Resource Efficiency Policy.</p>	Medium	High	Medium	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 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)
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)

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GOVERNANCE & INTERNAL PROCESSES (cont'd)

Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Join membership groups which help Councils on their Net Zero and Sustainability journeys. e.g., NSW Government's Sustainability Advantage , Local Government NSW Climate Action Professional Officers Group (CAPOG), the Global Covenant of Mayors for Climate & Energy (GCoM) and Sustainable Choice by Local Government Procurement.	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.	Low	Medium	Short	Sustainability Advantage – 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.

HUMAN RESOURCES & INTERNAL COMMUNICATIONS

Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for 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
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	

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HUMAN RESOURCES & INTERNAL COMMUNICATIONS (cont'd)					
Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Setting corporate expectations 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

Unless your Council has chosen to buy renewable electricity, the electricity you use comes from the burning of fossil fuels. This produces carbon dioxide which contributes to climate change. Similarly, the burning of gas (natural and LPG) also produces emissions.

Changing the source of Council's electricity generation, and replacing gas appliance with electric equivalents, are some of the fastest, cheapest and easiest emission reduction projects.

By **Reducing** the amount of electricity and gas you use, **Producing** as much renewable electricity at Council assets as possible and **Procuring** fossil fuel-free alternatives, Council can achieve strong emission reductions and cost savings.

The main way in which large scale renewable energy has been sourced in recent years is via retail Power Purchasing Agreements (PPAs), where renewable energy project developers together with a retailer have developed contracts to supply end users with electricity generated by a renewable source (wind, solar, hydro).

Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for 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)

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Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
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 audits on assets (energy efficiency) e.g., 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.	Low	High	Short	TBA: Tariff Review Tool (Sustainable Councils)
Implement an electricity monitoring process which aligns 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
Work with Essential/Endeavour Energy to have all Street Lights upgraded to LEDs	This will reduce the expenditure on street lighting as well as reduce emissions from the electricity they use.	Medium	High	Medium	Southern Lights Initiative Essential Energy's register of LED Upgrades

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Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for 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	<p>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.</p> <p>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.</p> <p>ANU Solar PV and Wind Heat Map tool</p> <p>Clean Energy Council</p> <p>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.</p> <p>Case Study: Kempsey Shire Council goes Solar</p>
Adopt battery technology	Partnering onsite solar and battery technology will further reduce Council's dependence on grid electricity and reduces emissions.	Medium	Medium	Low	<p>Video: How can battery storage benefit my business? (NSW Energy Saver)</p> <p>Battery Storage Guide (NSW Climate and Energy Action)</p>
Develop an Offsite Renewable Energy project	Sourcing renewable electricity can be done by developing large scale renewable energy projects on public or private land. Locally produced renewable electricity contributes to the reduction of Council's emissions.	High	High	Long	<p>TBA: Offsite Renewable Energy: A Guide for Councils (Sustainable Councils)</p>

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Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Co-Fund Joint CRJO Energy Projects	Creating shared opportunities, managed by the CRJO, to undertake critical energy management actions such as tariff reviews, electricity contract reviews, coordinate smart meter upgrades, etc will lower the cost of each Council spending money on staff undertaking the same jobs.	Medium	High	Short	
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)
Replace gas powered appliances and equipment with electric alternatives	Replacing gas powered equipment with electric alternatives which will remove the direct emissions from the burning of gas.	Medium	Medium	Short	Video: Why is gas bad for climate change and energy prices? (Climate Council)
Evaluate your waste water treatment energy performance	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)

Direct Waste Water Emissions

When processing waste water, traditional anaerobic processes generate methane and nitrous oxide emissions as fugitive emissions from retention ponds. Large amounts of emissions can be released from these waste water treatment plants and alternative technologies should be explored to reduce these emissions. It is recommended that Councils work with entities such as Sydney Water and NSW Public Works to identify what improvements can be made to the existing facilities, followed by developing the specifications for any future major upgrades.

Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Implement a 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)
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)
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)

Direct Landfill Emissions

Fugitive emissions from landfill sites are one of the largest sources of greenhouse gas emissions in NSW. Methane is the main gas emitted, a greenhouse gas which is 28 times more potent than carbon dioxide.

Therefore, reducing emissions from landfill sites is critical and can be done at the input phase or through management protocols.

It is recommended that Council works closely with the NSW EPA on developing Best Practise management of their landfills as well as minimising the amount of organic matter sent to landfills.

Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for 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
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	High	Medium	Climate Change Policy and Action Plan 2023–26 (NSW EPA)
Adopt methane reducing technology solutions	Technology implemented such as flaring and capping technology	High	High	Long	Landfill gas method (Australian Clean Energy Regulator)
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)
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)
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

Direct Fleet Emissions

Around a fifth of Australia's greenhouse gas emissions can be attributed to transport. Councils own or lease a large number of fleet vehicles, ranging in size and application from lease back passenger vehicles to road graders, lawn mowers and hedge trimmers. Since the burning of fossil fuels to power these vehicles creates direct emissions, it is recommended that Councils explore transitioning to Low Emission Vehicles (LEV) and equipment.

Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
Adopt a Fleet Transition Plan which outlines the steps that will be taken to transition away from combustion engines	A strategic document which outlines the steps to phasing our 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)
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)

Offsetting remaining Emissions

Offsetting should be the last part of a Council's Net Zero journey as it involves spending money on buying credits for the emissions that are still being emitted due to Council emissions, despite all other projects having been implemented. The money spent on offsetting could instead be spent on further emission reduction projects and thus perhaps generating long-term cost savings for Councils.

Carbon offsets tend to be purchased when organisations can't meet emissions reduction targets due to unforeseen circumstances. Offsetting involves the purchasing of carbon credits, where, typically, one credit permits the emission of one tonne of 'carbon dioxide equivalent' (a combined measure of the warming potential of various greenhouse gases).

In order to futureproof Council's Net Zero journey, it is recommended that you develop a Greenhouse Gas Emission Offset Policy in order to be prepared if the situation arises when credits must be purchased.

Recommendation	Outcome	Cost	Impact	Timeframe	Where to go for support
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.	High	Medium	Short	How does Offsetting Work (Climate Active) The Oxford Offsetting Principles

APPENDIX A

CHECKLIST

EMBEDDING NET ZERO AMBITION INTO COUNCIL OPERATIONS

COMPLETED 	ACTION
	1. Publicly and internally commit to Council operations going Net Zero
	2. Set up a Net Zero Working Group with representation from the main emitting areas of operations
	3. Map out Council emission sources and data sets available
	4. Implement an emissions inventory platform to record and monitor emissions data
	5. Develop a rigorous data monitoring procedure for all sources of emissions and link this with reporting requirements
	6. Once the baseline of emissions has been established, develop Net Zero targets
	7. Do a gap analysis of which strategic documents must be created or modified to include emission reduction considerations
	8. Undertake a training and communications campaign to staff to raise awareness of new/modified documents and subsequent changes to internal processes
	9. Allocate annual budget to drive the emission reduction projects identified and seek grant funding for scoped projects
	10. Create a plan of emission reduction projects, scope these and implement
	11. Quarterly undertake emission reporting to the internal Net Zero Working Group and reporting to Executive
	12. Annually report to Council and community
	13. Every three years undertake a review of the process to optimise efficiency



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