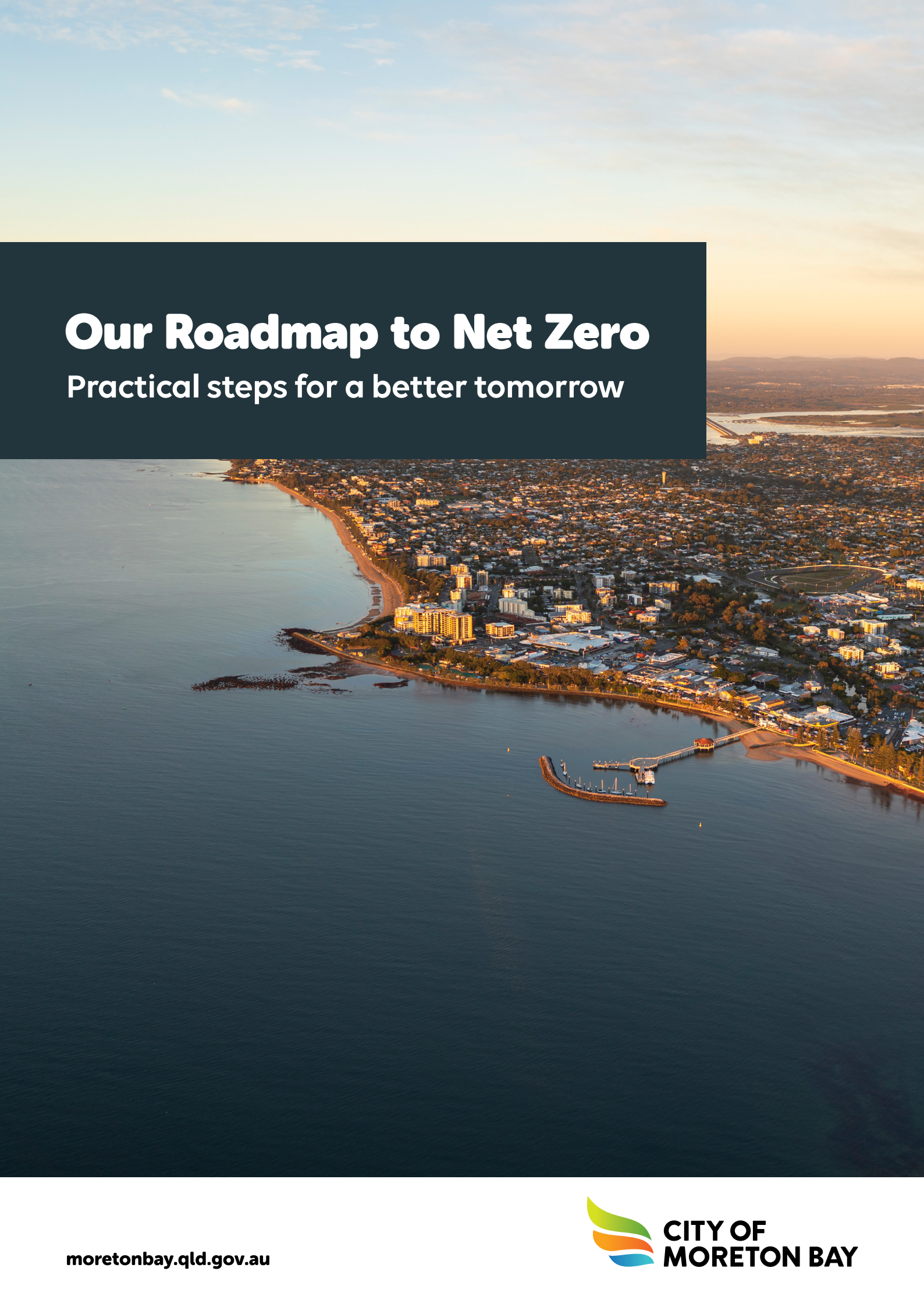


An aerial photograph of Moreton Bay, Australia, taken during the 'golden hour' of sunset. The sky is a mix of soft orange, yellow, and pale blue. The water in the foreground is dark and calm, reflecting the low light. A long, curved pier with several small buildings and boats extends into the water. The shoreline is densely packed with residential and commercial buildings, their lights beginning to glow. In the background, a large stadium with a green field is visible. The overall scene is peaceful and scenic.

Our Roadmap to Net Zero

Practical steps for a better tomorrow

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Disclaimer

The council and its officers accept no responsibility for any loss whatsoever arising howsoever from any person's act or omission in connection with any information, expressed or implied, contained within this document. Nothing in this document should be taken as legal advice.

Acknowledgment of Country

We acknowledge the Kabi Kabi, Jinibara and Turrbal Peoples as the Traditional Custodians of the lands and waterways of the Moreton Bay region, and pay our respects to their Elders, past, present and emerging. We recognise that the Moreton Bay region has always been a place of cultural, spiritual, social and economic significance to First Nations people.

We are committed to working in partnership with Traditional Custodians and other First Nations communities to shape a shared future that celebrates First Nations history and culture as an irreplaceable foundation of our region's collective identity.

Introduction

International scientific consensus is clear that climate change is occurring. It is driven by anthropogenic causes with human activities having a profound impact on the concentration of greenhouse gas emissions in our atmosphere since the start of the industrial revolution. Globally, there is recognition of the need to avoid, as far as possible, dangerous consequences from climate change. The Intergovernmental Panel on Climate Change (IPCC) recognises the role of adapting to those changes that can no longer be avoided, but also strongly emphasises the urgent need to reduce greenhouse gas (GHG) emissions¹.

The City of Moreton Bay has prepared a baseline inventory of Council's organisational emissions. This informed the establishment of a science-based target^{2,3} and an ongoing program of annual inventories to track progress toward that target.

The target for City of Moreton Bay operations is net zero GHG emissions by 2039⁴. This target was formalised through Council adoption in June 2023 of the Environment and Sustainability Strategy 2042 (ESS) and Outcome 4: We understand and proactively respond to climate change and natural hazard risks as one part of a broader response to climate change⁵.

The purpose of this plan is to outline a response to reducing emissions within our operations in line with our net zero target. Other matters, including Council's response to climate adaptation and possible ways of supporting the community to reduce emissions will be covered in other strategic documents.

Development of this plan is a crucial step in reaching our net zero target. However, success will depend on both the pace of adoption of emissions reducing technologies and procedures, and on deliberate longer range planning to enable a low-carbon transition across our operations. This plan therefore breaks the complex organisational challenge of emissions reduction into near term (1–4 years) and longer term (5–14 years) phases with interim emission reduction targets. It also sets out a process and guidance to coordinate and prioritise actions and projects to support emissions reduction.

1 AR6 Synthesis Report: Summary for Policymakers Headline Statements (ipcc.ch)

2 Ambitious corporate climate action–Science Based Targets

3 'Net zero' targets emphasise reducing emissions from sources within an entities control or influence. This differs from 'carbon neutrality', which can be achieved by funding projects to absorb emissions elsewhere.

4 Environment and sustainability strategy–City of Moreton Bay

5 Environment and sustainability strategy–City of Moreton Bay

Our City



More than 500,000
resident
population



3rd largest
local government in
Australia by population



Top 10 fastest growing
local government in
Australia by population



100
suburbs with an average
population density of
243 per km²



2,045km²
land area



294km
coastline and
estuaries



21 to 29°C
average year-round
temperature with 300
days of sunshine



82%
households have
internet connection



39 years
median resident age



3.9%
residents that identify
as Aboriginal or Torres
Strait Islander



21%
residents born
overseas



44%
households with
children



Welcoming over
4.6 million +
visitors every year

\$20 billion +

economy (2023)



\$40 billion +

projected economy (2042)

510,104

population (2023)



Nearing 750,000+

estimated population (2042)

Our Drivers

Climate Context

The impacts of climate change have become increasingly visible, including in our City. Changes to weather patterns and global atmospheric and oceanic circulation threaten both human and natural systems. There will be direct impacts through increased extreme weather events, such as heat waves and cyclones, in addition to coastal inundation due to sea level rise and changed rainfall patterns.

The projected future changes expected to be experienced in our city (as compared to a 1986–2005 baseline) include:

- a continuing decline in cool season rainfall
- a continuing increase in rainfall storm intensity
- a continuing increase in average daily maximum and minimum temperatures
- a longer fire season with more dangerous fire weather
- increasing risk of drought
- at least 36 more hot nights each year by mid-century

The IPCC is an international body responsible for assessing the science related to climate change. The IPCC's latest report, the Sixth Assessment Report, found that:

"Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming..."

"Deep, rapid and sustained mitigation and accelerated implementation of adaptation actions in this decade would reduce projected losses and damages for humans and ecosystems, and deliver many co-benefits, especially for air quality and health."



What has the community told us?

Our communities have told us that climate change is a major concern for them. Seventy-three percent (73%) of respondents to our 2022 Moreton Says Pulse 2 survey⁶ agreed or strongly agreed that reducing Council's carbon footprint is a good use of public money and only 11% disagreed or strongly disagreed. Similarly, 76% agreed or strongly agreed that helping community members reduce their carbon footprint was a good use of public money and only 10% disagreed or strongly disagreed.

In the same survey, we asked about the top five ideas for actions Council could take to contribute towards a healthy environment and sustainable Moreton Bay. Actions that relate to or influence planning for a warming climate include:

- Reduce carbon emissions through initiatives such as energy efficient council buildings and facilities and upgrading streetlighting to LED—chosen by 40% of respondents
- Provide a third collection service for food organics and garden organics—chosen by 36% of respondents
- Provide solar and battery options for community buildings—chosen by 18% of respondents
- Encourage retrofits of buildings to be more energy and water efficient—chosen by 18% of respondents
- Provide free EV parking and charging—chosen by 17% of respondents.

Organisational emissions and our net zero target

The City of Moreton Bay organisational emissions are generated from activities or sources that are owned or controlled by Council. We can influence, manage, and reduce these emissions at their source.

A 'science derived' organisational net zero target was modelled from our baseline emissions and City specific circumstances (including growth and socio-economic factors) to align with the Paris Agreement target of limiting global temperature rise to 1.5°C above pre-industrial levels.

As outlined in the Environment and Sustainability Strategy 2042, Council has set the following emissions reduction target:

Net zero greenhouse gas emissions by 2039 for Council's operations

'Net zero' approaches focus primarily on reducing an entities' emissions, whereas claims of 'carbon neutrality' can be made by funding projects to absorb emissions elsewhere. The net zero approach works to decarbonise operations as far as possible, and generally only accepts residual emissions of no more than 5–10% of the organisation's baseline level.

Council's first annual greenhouse gas inventory was completed in 2020–21, Council's emissions inventory is based on standard methodology consistent with current best practice, according to the Australian National Greenhouse and Energy Reporting (NGER) Scheme and the World Resource Institute (WRI) Greenhouse Gas Protocol Corporate Standard⁷. This aligns City of Moreton Bay with best practices in greenhouse gas emissions reporting. The annual inventory tracks Scope 1, 2 and 3 emissions as outlined below:

Scope 1 emissions: direct emissions from owned or controlled sources and are emissions created when Council burns a fuel in an owned asset, such as a fleet vehicle or waste disposal to landfill.

Scope 2 emissions: indirect emissions from the generation of purchased energy and includes electricity purchased for Council-owned and operated assets.

Scope 3 emissions: all indirect emissions (not included in scope 2) that occur in the value chain of the reporting entity (Council), for example, contractor fuels.

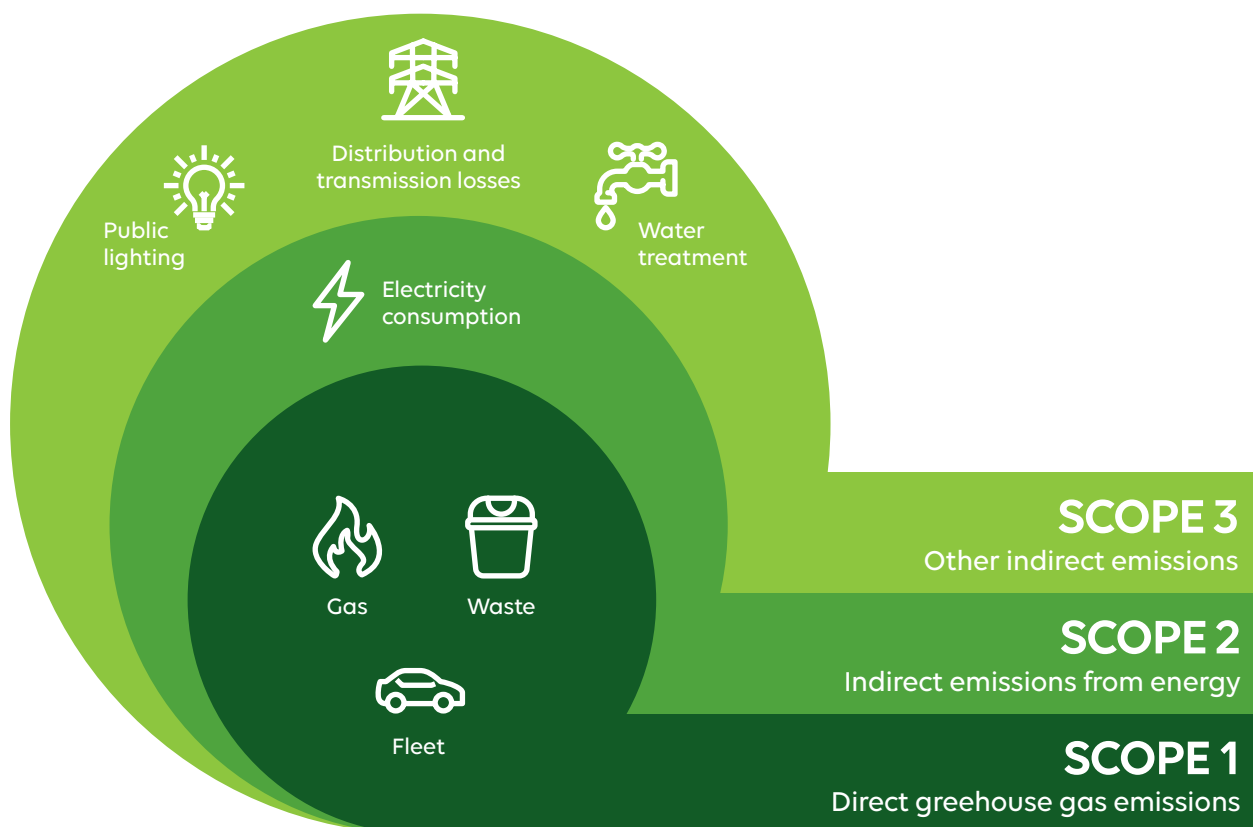


Figure 1: Example of scopes of GHG emissions

⁷ Note that the Greenhouse Gas Protocol Corporate Standard will be supplemented by new guidance, including a Land Sector and Removals Guidance document (currently in preparation). This guidance document should provide standardised processes to incorporate vegetation management into organisations' carbon accounts (Land Sector and Removals Guidance | GHG Protocol).

Greenhouse gas emissions are often described in terms of their 'carbon dioxide equivalent' global warming potential. Carbon dioxide equivalent is a standard metric used to measure and compare the potency of different greenhouse gases, such as methane and nitrous oxide.

Baseline organisational emissions were calculated for the 2020–21 financial year as 133,357 tCO₂e (tonnes of carbon dioxide equivalent). In 2021–22, total emissions were 137,199 tCO₂e.

Subsequent inventories revealed higher emissions totals reaching 176,553 tCO₂e in

2022–23 and 203,488 tCO₂e in 2023–24 as data collection has improved. It is expected to see increases in emissions during the early years of reporting as data collection and reporting becomes more comprehensive.

In 2023–24, our main sources of organisational emissions were from decomposition of waste at our landfills (38% of our total), construction materials and purchasing (34%), electricity which includes consumption in administration buildings, community facilities and sport and leisure facilities (10%), electricity consumption from street lighting (7%) and fuel consumption by contractors (5%) and from fleet vehicles (4%).

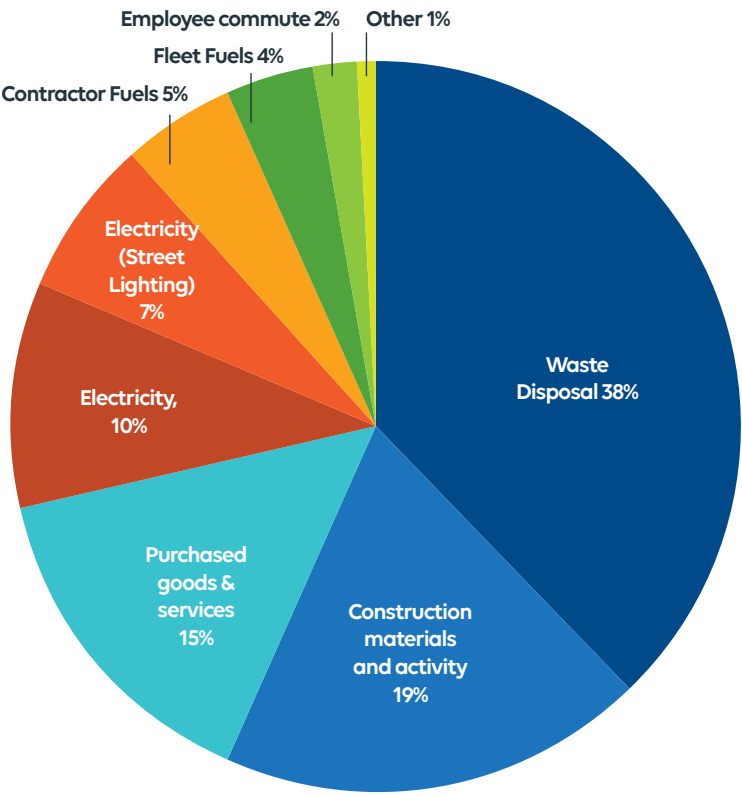


Figure 2: 2023–24 FY Corporate Emissions Breakdown by Sector



Our Planning Context

International policy

The International policy context is defined by the United Nations Framework Convention on Climate Change (UNFCCC), particularly the 2015 Paris Agreement and aligns with UN Sustainable Development Goals 11 and 13.



National government policy and legislation

The Australian Government's Net Zero Plan includes current emissions reduction policies and outlines the sectoral emissions reduction plans that will cover all relevant parts of the Australian economy. Policy and roles of the Australian government include:

- Sectoral engagement and technical analysis to establish emissions reduction pathways
- Submission of emissions reduction commitments under the Paris Agreement (known as Nationally Determined Contributions)
- National Electric Vehicle Strategy
- Critical Mineral Strategy 2023–2030
- Regulating and reporting greenhouse gas emissions under the National Greenhouse and Energy Reporting (NGER) scheme
- Providing incentives to industry to adopt new practices and technologies through the Emissions Reduction Fund
- Administering the Australian Carbon Credit Unit (ACCU) Scheme which supports projects that either avoid the release of GHGs or sequester carbon from the atmosphere Implementing the net zero target for the Australian Public Service⁸ and the associated roadmap for Government operations⁹.

Australian climate-related financial disclosure obligations were legislated in August 2024 and will progressively apply to increasing numbers of reporting entities. Starting in 2025, reporting requirements will apply to larger organisations (e.g. more than 500 employees). By 2027 requirements will apply also to relatively smaller entities (e.g. more than 100 employees). This staged rollout of disclosure will cascade through the economy, with increasing numbers of businesses reporting their own emissions and/or supplying other organisations that have a reporting obligation. In this context, businesses that have established a carbon accounting process will be well positioned.

⁸ APS Net Zero Emissions by 2030 | Department of Finance

⁹ Roadmap: APS Net Zero—Our path to Net Zero (finance.gov.au)

We are currently on track to fulfill the emissions accounting components of the new climate-related disclosures¹⁰ should it become a legislative requirement for local government. This plan, together with our baseline GHG inventory and subsequent data improvements for the 2022 and 2023 inventories, addresses the necessary steps by quantifying scopes 1, 2 and 3 emissions, emissions targets and performance measures. The city can demonstrate its leadership role by engaging with and supporting action by key supply chain emitters.

Queensland government policy and legislation

Aiming to drive investment in a clean economy, in April 2024 the Queensland Government passed the *Clean Economy Jobs Act 2024*. This legislated a new emissions reduction target of 75% below 2005 levels by 2035 and net zero by 2050. Building on earlier work, such as the 2022 Energy and Jobs Plan, the Clean Economy Pathway emphasises the benefits of decarbonisation across the whole State economy¹¹.

Some other relevant initiatives of the Queensland Government include:

- Zero Emissions Vehicle Strategy and Action Plan
- Low Emissions Investment Partnerships to support high emitting facilities to invest in emission reduction
- Biodiversity Conservation Strategy, which includes a Land Restoration Fund
- Sectoral development plans (for Resources, Agriculture, and Industry) to position Queensland's enterprises for a de-carbonised global economy.

City of Moreton Bay

The Environment and Sustainability Strategy 2042 (ESS) is the guiding document for environment and sustainability matters at City of Moreton Bay. The ESS is a foundation document supporting the "Our Healthy Environments" pillar of the Corporate Plan 2022–2027 and brings together the many programs that we are implementing across our city and Council's operations. Preparation of this plan is an action set out within Outcome 4 of the ESS, which directly addresses climate action and identifies strategic priorities and actions to address emissions from Council's operations.

¹⁰ In addition to reporting GHG emissions, Australian climate-related financial disclosure obligations address climate risk and climate governance more broadly. Reporting organisations will need to establish clear climate governance roles and responsibilities.

¹¹ Queensland's 2035 Clean Economy Pathway: 75% by 2035 (epw.qld.gov.au)

Our Current Responses

City of Moreton Bay has taken significant steps in identifying and understanding our emissions, setting a target and beginning planning for the actions required to achieve it. Along the way we have joined with broader local government networks to build and strengthen partnerships for collective action.

As we begin to embed processes and frameworks to accelerate our net zero pathway, we have been undertaking actions and initiatives that have both a direct and indirect ability to influence our emissions including:

- continuing to effectively manage our landfill gas collection systems
- a staged rollout of a FOGO (food organics, garden organics) kerbside collection (initially for GO only)
- supporting the ASPIRE program, which encourages industry-led circular economy practices and diversion of materials from landfill
- engaging with Energex on the installation of community and larger scale batteries to promote effective utilisation of solar power generation across the city
- incorporating recycled materials in construction projects
- improving guidance around procurement to highlight the opportunities and impacts from our contractors and suppliers
- hosting events that focus on sustainability more broadly for communities and businesses ie EcoFest, Sustainability Demo Day, Supplier Information Day, Innovation Day
- achieving certification as a Sustainable Tourism Destination through the EarthCheck program
- investigating and modelling the green economy and industry contribution to our current and future economy
- tendering for a third party to install, operate and maintain electric vehicle charging stations in the city
- joining the South-East Queensland Climate Resilient Alliance (SEQCRA) as a foundation member.
- joining the Cities Power Partnership
- including purchasing hybrid vehicles and electric vehicles and plant into our fleet







Our Role and Partnerships

Achieving Council's adopted target of net zero organisational emissions by 2039 will require a sustained shift in the way Council conducts business and delivers services. Decarbonisation will involve the whole organisation and will be our new business as usual.

Council has a critical role to play in ensuring that mitigation responses are tailored to the specific risks, issues, and characteristics of our City and to show leadership in the delivery of services and programs to support its future growth.

Climate change mitigation is a shared responsibility and Council's role is to work collaboratively with all stakeholders to share knowledge, ideas and opportunities, and seek to influence change through advocacy and partnerships (particularly with other levels of government), to encourage climate responsive activities that prioritise low emissions.

Beyond the internal collaboration required to deliver organisational emissions reductions, wider partnerships for climate change mitigation have a vital role in accelerating the net zero transition beyond local government borders. Partnerships like the South-East Queensland Climate Resilient Alliance (SEQCRA) and Cities Power Partnership, enable City of Moreton Bay to collaborate on climate projects and programs, share knowledge and learnings with peers and share in advocacy opportunities for funding and policy responses from other levels of government.

Our supply chain also makes a significant contribution to our emissions. In this regard, we have an opportunity to respond to the progressive approaches, processes and actions emerging from our suppliers and the broader supply chain as they work to reduce their emissions in the context of an increasing emphasis on ESG (environmental, social and governance) considerations and climate-related financial disclosure requirements.

Council is also responsible for identifying and responding to a wide range of risks from a warming climate. These include physical risk assessments and plans (e.g. for coastline management and flooding) and broader adaptation and resilience measures. These bodies of work are separate and outside of the scope of this plan. Similarly, any role that Council may have in relation to assisting the community to reduce emissions is also separate and outside of the scope of this plan.

Our Approach to Net Zero

Progress toward our net zero target will be informed by the following elements:

- Guiding principles and emissions reduction approach
- Emissions pathway
- Objectives, targets and key directions for priority emissions sectors
- Emissions pathway decision-making and prioritisation framework
- Funding mechanisms and approach
- Governance framework

Guiding principles and emissions reduction approach

The following principles are integral to this plan and will guide its implementation and review:

1. The plan will draw on the best available information, and will respond to broader emissions reduction programs and policies, and advances in technology, to ensure agility and a City of Moreton Bay focused approach
2. Clear internal governance processes and a hierarchy of responses will guide emissions reduction activities and decision-making
3. Minimise reliance on offsets to meet our targets

City of Moreton Bay emissions reduction actions will be:

- Ambitious – Our goals and actions demonstrate leadership and work towards achieving our ambitious target of net zero by 2039
- Comprehensive and integrated – We progressively undertake actions across all emissions sources, based on a prioritised pathway
- Actionable – We undertake fiscally responsible, cost-effective, and practical actions that can be successfully implemented
- Transparent and verifiable – We follow a rigorous decision-making process, and set actions that can be measured, reported and verified.

A hierarchy of emissions reduction responses, consistent with guiding principle 2, is presented in Figure 3.

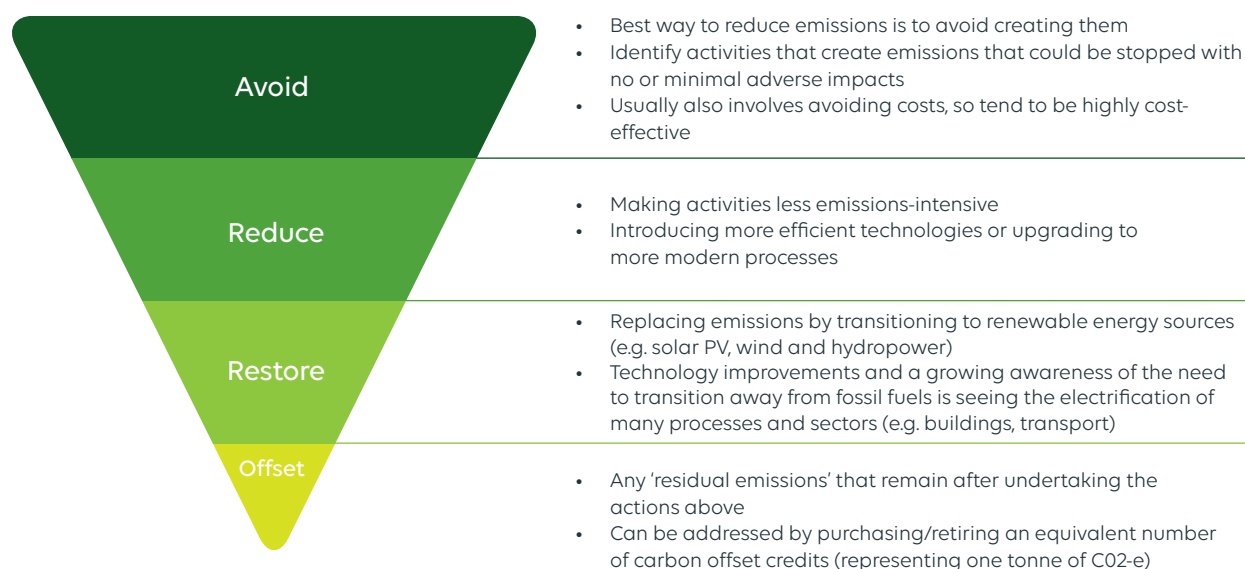


Figure 3: Carbon Mitigation Hierarchy¹²

Emissions Reduction Pathway

Development of the pathway

Our emissions reduction pathway describes an overall sequence, or priority order, of action required across Council operations, to reach net zero by 2039, as well as corresponding interim targets in 2029 and 2034.

The process of developing the pathway has been informed by technical specialists' input and peer review, best practice examples, Council's annual emissions inventories, in-house modelling, and the operational practitioners who have roles in reducing emissions across Council. The emission reduction pathway, as outlined in each successive version of this plan, will be a snapshot of the information available at the time of its preparation.

Developing the pathway involved comparison of a range of alternatives for future action. This process took account of the emissions outcomes resulting from the combination of all current and future actions across the City of Moreton Bay's operations.

¹² Emissions reduction plan business considerations–BDO

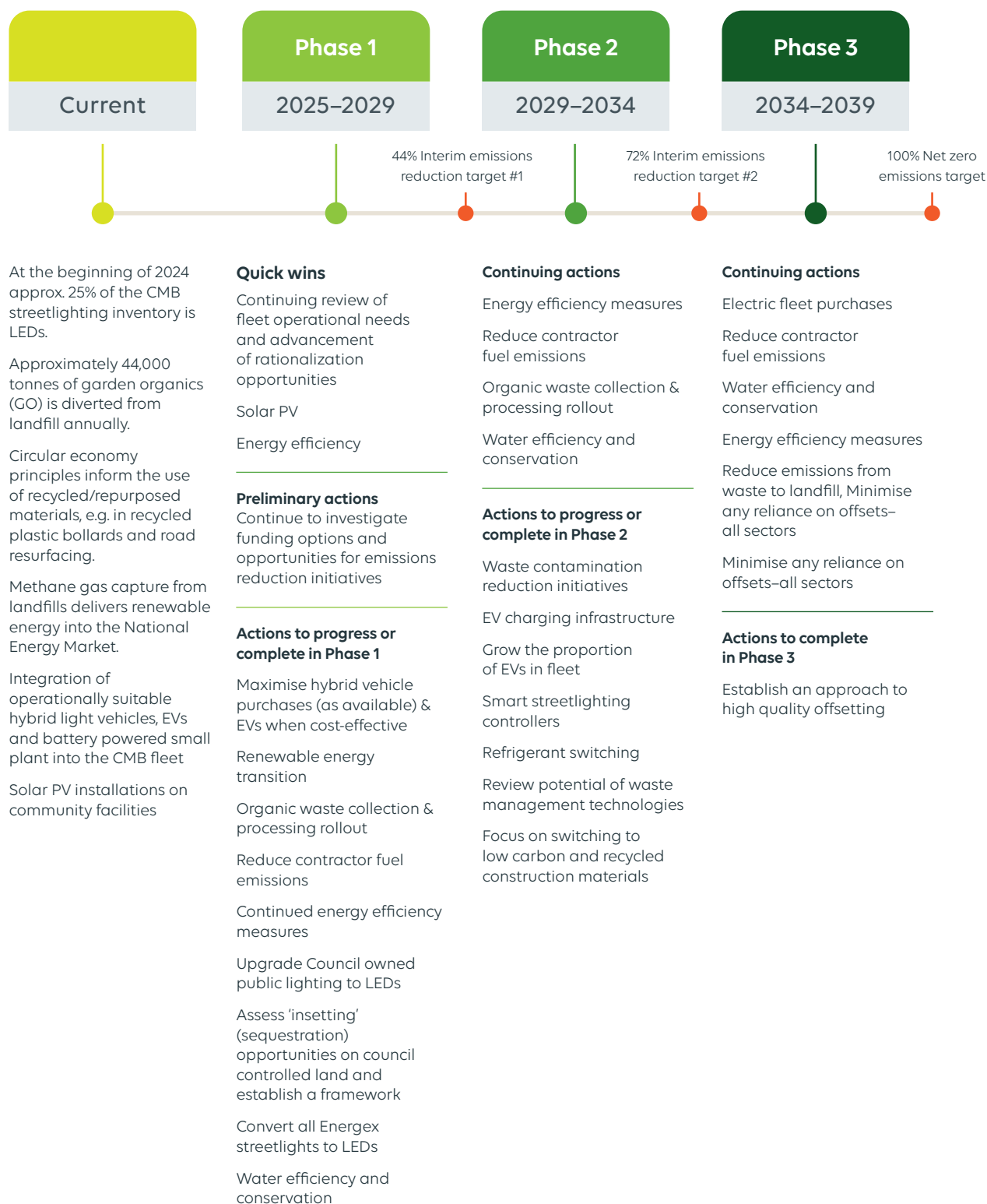


Figure 4: Emissions reduction pathway overview

Interim target 1–44% emissions reduction by 2029

Modelling shows considerable progress toward our first interim target can be achieved without major additional expenditure across the organisation. This is due to:

The ability to procure much of our electricity from renewable sources

The Energex commitment to upgrading all streetlights to LEDs by 2030

Fleet rationalisation initiatives

The implementation of the first phase of FOGO, the diversion of garden organic waste from our landfills

Given the significant proportion of greenhouse gases generated by our landfill facilities, further emission reductions from this source (including from diversion of food organics), are necessary to meet the 2029 interim target. Additionally, progress in reducing emissions from contractor fuels will assist in bringing Interim target 1 within reach.

Interim target 2–72% emissions reduction by 2034

Modelling shows the prospect of meeting the 2034 and 2039 targets can be improved through early moves by Council and other stakeholders to:

continue the commitment to actions under Interim target 1

implement an emissions reduction pathway for transport fuels/our fleet

continue improving organic waste processing outcomes within the City

Meeting these later targets will also require action throughout the life of the plan to ensure:

continuation of the fleet transition

ongoing energy efficiency upgrades and demand-side management

continuing progress in waste diversion and processing

steady progress with contractor fuel emissions

effective responses to the emissions intensity of construction materials

In addition to the overall potential for emissions reductions, operational and financial considerations are important influences on the inclusion and timing of pathway directions (see the Pathway Options Prioritisation Framework section below). For example, the early prioritisation of rooftop solar PV has both emissions and financial benefits. As our current electricity procurement is not renewable energy, demand management measures that reduce the organisation's reliance on grid electricity (e.g. energy efficiency, upgrading Council-owned lighting) will provide both immediate emissions benefits and significant operational cost savings.



Priority Emissions Sectors

Priority sectors are the areas of council operations that potentially offer the most timely and largest reductions in emissions. For each priority emission sector, key directions, targets and actions have been developed. Actions are tabulated in the Action Plan at the end of this document.

Key directions: Focus areas for Council, including where specific actions may be unclear at present, or where dependent on external factors.

Interim targets: This plan is divided into segments (Phases 1-3). Some sectors have corresponding interim targets for the end of each phase—2029, 2034 and 2039, to monitor our progress toward net zero by 2039

Waste

Key directions: Actively reduce waste generation from our operations and volume disposed to Council's landfills, as we transition to a low/zero waste organisation.

Council will continue to prioritise circular economy initiatives, helping the community to reduce waste and encouraging and facilitating reuse, repurposing, and recycling.

Council remains committed to investigating options around food organic waste collection, transfer, and processing.

Phase 1 interim target

- 70% of municipal waste diverted from landfill
- 85% construction and demolition waste diverted from landfill

Phase 2 interim target

- 80% municipal waste diverted from landfill

Phase 3 interim target

- 90% municipal waste diverted from landfill

Success in achieving our waste targets will be influenced by several factors external to City of Moreton Bay including nature and timing of funding to support regional waste management solutions, regulatory and policy context, private sector take-up and engagement in circular economy activities contributing to waste diversion and community willingness to reduce waste and reuse, repurpose and recycle wherever possible.



Electricity

Key direction: Planning a transition to renewable electricity is prioritised and installation of solar photovoltaics on Council buildings and facilities is accelerated.

Phase 1 interim targets

- 2.5MW of solar PV installed on Council assets
- 75% Council's electricity sourced from renewable energy by 2029

Phase 2 interim targets

- Council's operations powered by 100% renewable energy by 2034
- Additional 2.5MW of solar PV installed on Council assets
- 50% of Council-owned streetlights upgraded to LEDs

Phase 3 interim target

- All remaining Council-owned streetlights upgraded to LEDs



Buildings and Infrastructure

Key direction: Council's buildings and infrastructure will be energy efficient and low/zero emissions.

Phase 1 interim targets

- 10% energy efficiency improvements across existing Council owned buildings and facilities
- 15% water efficiency improvements across existing Council owned buildings and facilities
- 5% reduction in emissions from construction materials

Phase 2 interim targets

- Significant new Council buildings meet 5-star green star rating and are planned, designed, and constructed in accordance with Council sustainability guidelines
- 15% additional energy and water efficiency improvements across Council's existing buildings and facilities
- 10% additional reduction in emissions from construction materials



Transport

Key directions: Transition Council's vehicle and equipment fleet to low or zero emissions technology

Utilise alternate fuel sources, fleet and plant management initiatives (ie. rationalisation, vehicle substitution) and trip planning to reduce emissions.

Phase 1 interim targets

- 50% of small vehicle fleet is hybrid/EV by 2029
- Adopt new low emission fuel technology for the large fleet, where operationally suitable

Phase 2 interim targets

- 90% of vehicle fleet is hybrid/EV by 2034
- Large fleet to transition to low or zero emission fuel/vehicle as technology becomes available



Governance

Key direction: Integrate net zero emissions considerations across our organisation as business as usual.

Phase 1 interim targets

- Budget prioritisation process is developed and implemented
- New internal business model to support net zero initiatives in place
- Relevant policies and procedures are updated
- Guidelines and other supporting documents are developed and implemented



Supply Chain

Key direction: Encourage and support our supply chains to reduce emissions through adoption of more sustainable practices and utilisation of lower emissions energy, fuel sources and technology.

Phase 1 interim targets

- 15% reduction in contractor fuel emissions
- Proactive engagement with the top 10% of our highest emitting suppliers to identify mutually beneficial ways to reduce emissions
- All significant contracts include emissions reduction reporting, targets, benchmarks, or standards

Phase 2 interim targets

- 30% reduction in contractor fuel emissions
- All contracts and supplier arrangements include emissions reduction reporting, targets, benchmarks or standards

Pathway Options Prioritisation Framework

Decision-making criteria and considerations

To bring about the required reductions in our emissions, while remaining achievable for Council in a fiscally constrained operating environment, the following criteria are applied when making decisions around potential mitigation options. These criteria are appropriate considerations when planning and developing mitigation actions and programming budget allocations for plan implementation.

Climate mitigation projects are prioritised and programmed according to the following (in addition to relevant guiding principles and the emissions reduction hierarchy):

- Their alignment with established operational needs (such as equipment replacement schedules and programmed asset renewals)
- Their impact on emissions in the context of annual reduction, interim and/or sectoral targets
- The timing and availability of funding (either internal or external)
- The timing and quantum of any cost impact to Council
- The timing and quantum of any benefits to Council and CMB communities
- The market maturity and availability of suitable low-emissions technologies and equipment

As outlined in the ESS, reducing greenhouse gas emissions is the focus for implementation of this plan, but achieving net zero may also require offsets for the emissions that we can't practically eliminate. Whilst focusing primarily on reducing emissions will minimise any offset requirement, the likely cost to purchase offsets is a relevant consideration for decision making.

At present offsets can be purchased through the voluntary carbon market or through Australian Carbon Credit Units (ACCUs) administered by the Clean Energy Regulator. Modelling published in 2023 by the Climate Change Authority for the Australian Government explored a range of scenarios and predicted a market price for ACCUs in 2035 between \$51 and \$90¹³.

¹³ ACCU Market Analysis–Final Report for Publication.pdf (climatechangeauthority.gov.au)
Note: 1 ACCU = 1 tonne CO₂e

Quantitative tools

In addition to the considerations above, quantitative tools and analysis will inform planning for emissions reduction projects. The Greenhouse Gas Protocol Policy and Action Standard (Policy and Action Standard | GHG Protocol) outlines 3 common approaches for the quantitative evaluation and prioritisation of climate mitigation projects. These are:

- Cost benefit analysis (CBA): comparison between different options based on their costs and expected benefits, where these can be quantified in purely monetary terms
- Cost effectiveness analysis (CEA): determines the cost of avoided GHG—typically expressed as \$/tCO₂e. This form of evaluation may be helpful where dollar benefits are uncertain. Where suitable data is available for multiple mitigation projects, CEA for each project can be compiled into a Marginal Abatement Cost Curve (MACC).
- Multi-criteria analysis (MCA): compares options against multiple criteria (environmental, economic etc.) and does not require all benefits to be expressed in monetary terms.

Marginal Abatement Cost Curve

This abatement approach visually suggests a logical order for mitigation actions. By starting with projects that have the lowest costs, an organisation can effectively make investments that offset the impact of later projects that may have higher costs.

The MACC approach supports the idea that sequencing projects correctly can minimise cost impacts and keep the required rate of organisational change steady. Progressing the highest value projects as soon as possible is key to realising these benefits.

The type of project will determine which of the previous approach/s is most appropriate, where emissions reduction considerations and responses are a relevant or required project outcome. This plan recognises the importance of prioritising projects, as opportunities arise, according to both their anticipated financial performance and their emissions reduction benefits.

Funding

There are a range of funding options that will be utilised to support emission reduction initiatives and our net zero pathway. For example:

- Project prioritisation within existing capital budgets, which considers emissions abatement potential as well as return on investment
- An organisation-wide net zero by 2039 annual budget allocation which specifically targets emission reduction projects such as energy efficiency initiatives, solar PV projects, and feasibility and other required investigations to support rollout of annual programs aligned with our capital works and asset renewal schedules.
- Applications for external grants and utilisation of incentives

Governance Framework

Adoption of this plan represents an ongoing commitment to project evaluation, planning and funding to sustain the organisation's required overall rate of emissions reduction.

To ensure appropriate governance, oversight and coordination, the following governance and resourcing actions and initiatives will be undertaken:

- establishing a senior officer level group that will oversee and direct implementation of this plan and our net zero pathway
- integrate the Sustainability Planning team (within the Environment and Sustainability Policy and Planning Department) as "net zero business partners" to provide support and assistance to Departments across City of Moreton Bay to facilitate the analysis, project development, evaluation, executive decision making/recommendation and implementation of low/zero emission projects
- ongoing annual greenhouse gas inventory
- a budgeting and project planning process and pipeline
- regular review and updates to the Action table, sectoral targets, and overall organisational pathway.



Our Action Plan

Implementation

This plan organises emission reduction activities into near term (1–4 year) and longer term (5–14 year) phases for delivery, consistent with our emissions reduction pathway.

For the first four years following adoption of this plan, the Action table lists a range of activities, including some that are now business as usual, some already committed or planned actions, as well as new initiatives. The likely timing and impact of later projects is currently less certain and will depend on changing technology and evolving opportunities for emissions reduction, as such, these subsequent actions are not programmed in detail yet. The emissions reduction pathway after 2029 is therefore currently indicative only.

Each iteration of the plan will include actions at various stages of readiness for implementation. There will be some projects already in progress, as well as those moving through investigation, planning, budgeting and programming stages. There will also be emissions reduction actions that are not yet detailed and still expressed as more general directions. Becoming a net zero organisation will involve timely progress of actions across all operational areas through to the implementation stages.

Action Tables

Actions–Key actions to be undertaken to help achieve interim targets.

Responsible Department–While multiple Departments are often involved in the actions outlined, this nominates which Branch has responsibility to take the lead.

Council Roles–Council's role will be to deliver actions, where they address our operational emissions. In some instances, Council will provide support to others, for example our suppliers across our supply chain, and facilitate, partner, educate or advocate to assist others in reducing their emissions.

Cost Estimate–Low, medium or high-cost estimate, which are indicative only, and ultimately dependent on Council's capital works and operational annual budgetary considerations.

Timing–nominates when the task will commence or be completed by, depending on the action.



Waste

Action #	Action	Responsible Department	Council Roles Deliver, facilitate, partner, educate, advocate, regulate	Cost Indicator	Timing
PHASE 1					
1.1	Continue Garden Organics (GO) collection service with a dedicated lime green lidded waste bin to approximately 65% of CMB households on a conditional 'opt-out' basis	Waste Services	Deliver	Medium	Ongoing
1.2	Maintain and expand the landfill gas collection network	Waste Services	Deliver and Partner	Low-Medium	Ongoing
1.3	Continue to progress evaluation and collaboration with external stakeholders around food organics waste collection, transfer and processing opportunities	Waste Services	Advocate, Partner	Low-Medium	2026
1.4	Through ongoing education and support to the community, continue to prioritise waste reduction and diversion efforts to reduce overall volume of waste to landfill	Waste Services	Deliver, Partner, Advocate	Low	Ongoing
PHASE 2					
1.5	Program introduction of a Food Organics collection service when processing capacity becomes available	Waste Services	Deliver, Partner	High*	2030–2034
1.6	Continue to maintain and expand the landfill gas connection network	Waste Services	Deliver, Partner	Low	Ongoing
PHASE 3					
1.7	Continued initiatives to reduce emissions from waste to landfill	Waste Services	Deliver	Low	Ongoing

*To be determined—depends on allocation of State Government funding for regional organics processing

Electricity

Action #	Action	Responsible Department	Council Roles Deliver, facilitate, partner, educate, advocate, regulate	Cost Indicator	Timing
PHASE 1					
2.1	Identify the best available option/s to source Council's electricity from renewable energy	ESPP, Procurement	Deliver, facilitate, partner	Low	2025–2028
2.2	Identify and implement energy reduction opportunities and demand side electricity management measures	Buildings & Facilities	Deliver	Medium	2025
2.3	Emission reduction opportunities (e.g. lighting upgrades, building envelope sealing, HVAC controls) to be prioritised as part of planning for Council buildings and facilities	Asset Maintenance	Deliver	Medium	2025–2028
2.4	Develop a renewable energy capital works schedule and plan to drive investment in solar PVs and battery storage for new and existing Council buildings and facilities	ESPP	Deliver	Low	2026
2.5	Execute a Power Purchase Agreement to source 100% renewable energy for Council's operations	ESPP, Procurement	Deliver	High	2026–2028
2.6	Investigate potential to upgrade all Council-owned streetlights with smart controllers	Asset Management	Deliver	Low	2029
PHASE 2					
2.7	Reinvest operational savings from emissions reduction activities into new energy saving projects	All	Deliver	Low	Ongoing
2.8	Upgrade 50% of Council owned streetlights to LEDs	Asset Management	Deliver	High	By 2034
PHASE 3					
2.9	All remaining Council-owned streetlights converted to LEDs	Asset Management	Deliver	High	By 2036

Buildings and Infrastructure (includes construction materials)

Action #	Action	Responsible Department	Council Roles Deliver, facilitate, partner, educate, advocate, regulate	Cost Indicator	Timing
PHASE 1					
3.1	Develop a policy (or other document/s) that sets out the requirement for all buildings and major refurbishments to achieve a minimum green star rating (or other comparable standard)	ESPP to coordinate, B&F Planning	Deliver	Low	2025–2026
3.2	Identify energy efficiency and technology upgrade opportunities to reduce emissions, as part of building and infrastructure planning processes.	Asset Maintenance, B&F Planning	Deliver	Medium	Ongoing
3.3	Prioritise audits (structural, electrical) of Council buildings and facilities to determine which assets are solar ready or for those that aren't identify what needs to occur for them to be solar installation ready.	Asset Maintenance, B&F Planning	Deliver	Medium	2025-2026
3.4	Planning and design of new Council owned buildings and building upgrades to include identification and assessment of solar PV opportunities and battery storage where relevant.	Project Management, B&F Planning	Deliver	Low	Ongoing
3.5	Review and update standards and drawings to reflect sustainable, low emissions outcomes consistent with our net zero pathway.	ESPP to coordinate	Deliver	Low	2027
3.6	Develop a forward schedule of works for implementation of energy and water efficiency upgrades. Review of water and electricity usage data for existing assets will inform this action.	B&F Planning	Deliver	Low	2025
3.7	Prioritise sustainable and recycled materials in procurement processes that are fit for purpose	All	Deliver	Low	2026
3.8	Investigate opportunities to recycle/reuse construction waste from capital works projects.	Project Management	Deliver	Low	2026
3.9	Investigate and promote procurement opportunities in the market for low embodied emissions construction materials	ESPP, B&F Planning, Project Management	Deliver	Low	Ongoing
PHASE 2					
3.9	Planning and design for construction, operation and maintenance of infrastructure integrates sustainable and low emissions principles throughout each phase of the asset life cycle	Project Management, B&F Planning	Deliver	Low	Ongoing
PHASE 3					
3.10	Ongoing roll out of energy and water efficiency measures across all Council owned buildings and facilities.	Multiple	Deliver	Medium	Ongoing

Transport

Action #	Action	Responsible Department	Council Roles Deliver, facilitate, partner, educate, advocate, regulate	Cost Indicator	Timing
PHASE 1					
4.1	Investigate the potential use of renewable diesel and/or other low emissions fuels	Fleet	Deliver	Medium	2025
4.2	Procure hybrid vehicle models in the light fleet where operationally suitable	Fleet	Deliver	Medium	Ongoing
4.3	Electrify small plant where operationally suitable	Asset Maintenance	Deliver	Low	Ongoing
4.4	Continue to monitor the market for further hybrid and EV fleet opportunities that suit Council's needs	Fleet	Deliver	Low	2027
4.5	Develop an Electric Vehicle Transition sub-plan to advance planning for delivery of EV charging infrastructure at priority Council buildings and facilities and support uptake of EVs as the fleet transitions	Fleet, Asset Management	Deliver	Low	2025–2026
4.6	Begin rollout of EV charging infrastructure at priority Council buildings and facilities in accordance with Electric Vehicle Transition sub-plan	Building and Facilities	Deliver	Medium-High	2028–2029
PHASE 2					
4.7	Procure a mix of hybrids and EV's and significantly scale up purchase of fully electric vehicles in the light vehicle fleet	Fleet	Deliver	Medium-High	2030–2035
4.8	Promote and support the uptake of sustainable transport options for staff (options in the CMB Travel Demand Implementation Plan)	All	Deliver	Low	Ongoing
4.9	Transition large equipment and heavy machinery to low emissions or zero emissions technology where operationally suitable	Fleet, Asset Maintenance	Deliver	High	2033
PHASE 3					
4.10	Aim to procure majority of vehicle purchases as EVs or other low/zero emissions vehicles, where suitable	Fleet	Deliver	High	2035–2039

Governance

Action #	Action	Responsible Department	Council Roles Deliver, facilitate, partner, educate, advocate, regulate	Cost Indicator	Timing
PHASE 1					
5.1	Continue to improve data capture processes for measuring and reporting Council's emissions as part of the annual greenhouse gas inventory	ESPP	Deliver	Low	Ongoing
5.2	Continue to monitor and update Council's greenhouse gas inventory as relevant guidance becomes available (including the forthcoming Land Sector and Removals Guidance)	ESPP	Deliver	Low	Ongoing
5.3	Incorporate GHG emissions targets and performance metrics into the annual planning and reporting cycle to inform prioritisation and decision-making processes	ESPP, Strategy, Performance and Risk	Deliver	Low	2026
5.4	Identify specific performance metrics for each area of Council's operations	ESPP, All	Deliver	Low	Ongoing
5.5	Integrate our net zero emissions by 2039 target and outcomes of this plan into all relevant new Council strategies, policies and plans	All	Deliver	Low	Ongoing
5.6	Support and encourage an organisational culture of innovation towards emissions reduction initiatives	ESPP	Deliver, educate, advocate	Low	Ongoing
5.7	Facilitate access to relevant information/training to ensure that staff have knowledge and resources to deliver plan actions and collaborate with external stakeholders	ESPP, People and Capability	Deliver	Low	2025
5.8	Establish the internal governance arrangements, roles, responsibilities and processes that will drive and direct implementation of the plan, including project prioritisation, resourcing and annual recurrent funding	ESPP to initiate	Deliver	Low	2025
PHASE 3					
5.7	Establish a policy for high quality offset purchasing	Procurement	Deliver	Low	2035



Supply chain (includes contractor fuels)

Action #	Action	Responsible Department	Council Roles Deliver, facilitate, partner, educate, advocate, regulate	Cost Indicator	Timing
PHASE 1					
6.1	Prioritise the scoping, development and implementation of tools and processes that integrate and prioritise low emissions, circular economy, and sustainable outcomes across capital works procurement processes from project inception to end of life e.g. project management sustainability framework including standards (e.g. GreenStar, ISC rating etc)	Project Management, B&F Planning, ESPP, Procurement	Deliver	Low	2026
6.2	Actively engage with suppliers to support and encourage emissions reduction initiatives and innovation across our supply chains, through workshops, education materials etc.	Economic Development	Advocate, Educate	Low	Ongoing
6.3	Through the procurement process, prioritise suppliers that are actively reducing their emissions through use of low emissions fuels and materials, alternative technology etc.	Procurement, Project Management	Advocate	Low	2027
6.4	Develop a system, and associated tools and templates, to facilitate the collection of consistent and accurate data from suppliers across the range of procurements undertaken by Council	All	Deliver	Low	2026
PHASE 2					
6.5	Through the procurement process, prioritise suppliers that can demonstrate use of low emissions/recycled materials that achieve required standards developed during Phase 1	All	Deliver	Low	2029
6.6	Continue to support suppliers to reduce their fuel emissions and prioritise renewable/sustainable options	All	Partner, Advocate	Low	Ongoing
PHASE 3					
6.7	Ongoing prioritisation of, and support for, suppliers to reduce emissions and choose sustainable, low/zero emissions technology, practices, and fuel etc.	All	Advocate	Low	Ongoing

Monitoring our Success

Monitoring and review

To ensure this plan remains relevant and effective, we will measure our emissions and monitor implementation over time to track our progress towards meeting our emissions reduction target.

An annual report will document progress against actions and our target. This will be informed by the results of the annual greenhouse gas inventory, which will measure and track the effectiveness of the specific actions in the pathway. Changes may be required to the action plan, for example, when new technical information becomes available or new operational arrangements become established.

Implementation of this plan and the emissions reductions achieved will be considered annually by the Executive Leadership Team and action taken where necessary to improve alignment to our emissions reduction pathway. The outcomes of the monitoring process will be used to identify key challenges and focus areas for the coming years. These will address actions that are not on track for completion within their timeframe, or actions that have not resulted in the achievement of intended mitigation outcomes in line with the pathway.

This plan will then be fully reviewed every two years to ensure the overall approach to mitigation remains flexible and achievable in the current operating context. To ensure the plan remains effective, and that the appropriate mitigation activities are being prioritised effectively, successive versions of this Plan will incorporate:

- revised analysis of emissions trends and future projections
- updated emission reduction projects and practices
- new actions and specific operational targets
- any required governance or other updates.

Monitoring and evaluation of our progress against actions and targets will also generate learning and idea creation opportunities that will help to improve the design and delivery of future climate change related policies, plans and activities. It is our aim that, through this ongoing monitoring and evaluation process, we will firmly embed climate change mitigation considerations into our business-as-usual processes.

Outcomes of the full review process will generate a revised version of the action plan.

Major updates and achievements, including key outcomes from the organisational annual greenhouse gas inventory, will be publicly communicated to our residents, businesses, and the wider community, and as part of existing reporting arrangements.

Glossary

ACCU–Australian Carbon Credit Units are a financial product that equate to a tangible reduction of carbon dioxide or carbon dioxide equivalent in the atmosphere. Each ACCU represents one tonne of CO₂- equivalent (CO₂-e) greenhouse gas emissions avoided or removed from the atmosphere as defined in the Australian Government's *Carbon Credits (Carbon Farming Initiative) Act 2011* and associated Regulations.

Actions–Key steps to be undertaken to help achieve interim carbon reduction targets.

Adaptation–Taking action to reduce the negative impacts of climate change and build resilience to climaterelated shocks and stresses across economic, social and environmental systems.

Carbon dioxide equivalent (CO₂e)–The basic unit for greenhouse gas accounting which allows standardised comparison of gases with differing global warming potentials. For example, 1 tonne of methane = 29.8 tonnes of carbon dioxide equivalent (CO₂e).

Carbon neutral–Reducing your carbon footprint to zero through the acquisition and retirement of carbon offsets.

Carbon offset–A tradable carbon 'certificate' used to negate (or offset) all or part of an entity's greenhouse gas emissions.

CBA–Cost Benefit Analysis (CBA) involves adding up the benefits of a course of action, and then comparing these with the costs associated with it.

CEA–Cost-Effectiveness Analysis (CEA) compares the relative costs of the outcomes of two or more courses of action and is considered an alternative to cost-benefit analysis.

Circular economy–A circular economy aims to sustainably reuse materials through reuse, repurposing, recycling and remanufacturing.

Cities Power Partnership–A free program from The Climate Council that provides local government with tools and connections to capitalise on the shift to a clean economy.

Cost Estimate–Low, medium or high-cost estimate, which are indicative only, and ultimately dependent on Council's capital works and operational annual budgetary considerations.

Decarbonisation–Switching from the use of fossil fuels such as coal, natural gas or oil to carbon-free and renewable energy sources.

FOGO–Food Organics Garden Organics

GO–Garden Organics

Greenhouse Gas–The greenhouse effect is a warming of Earth's surface and the air above it. It is caused by gases in the air, mainly carbon dioxide, methane, nitrous oxide and water vapour, that trap energy from the Sun. These heat-trapping gases are called greenhouse gases.

Grid-scale battery–Grid-scale storage refers to technologies connected to the power grid that can store energy and then supply it back to the grid when the demand is increased – for example, at night, when no solar power is available.



HVAC–Heating, Ventilation, and Air Conditioning (HVAC) is the use of various technologies to control the temperature, humidity and purity of the air in a building.

Insetting–A strategy used by organisations to reduce their emissions and carbon footprint within their supply chain.

Interim targets–This action plan is broken down into 5 year segments (Phases 1–3). Some sectors have corresponding interim targets for the end of each phase–2029, 2034 and 2039, to monitor our progress toward net zero by 2039

IPCC–The Intergovernmental Panel on Climate Change (IPCC) was created to give policymakers regular scientific assessments on climate change, its implications and potential future risks, and to put forward adaptation and mitigation options.

Key directions–Focus areas for Council where specific actions may be unclear at present, or where dependent on external factors

MACC–Marginal Abatement Cost Curve (MACC) is a tool to compare the cost effectiveness of emissions reduction solutions.

Mitigation–means reducing emissions of heat-trapping greenhouse gases into the atmosphere to prevent the planet from warming to more extreme temperatures

Neighbourhood battery–Excess solar power generated during the day is stored in larger local community battery for use when there is higher demand. These batteries are usually mounted on a power pole or in a park.

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

NGERs–The National Greenhouse and Energy Reporting (NGER) Scheme is a single national framework for reporting information about greenhouse gas emissions, energy production and energy consumption.

PPA–A Power Purchasing Agreement (PPA) is an agreement where a business or organisation will buy electricity from a generator (for example, a solar or wind farm) at an agreed price over a fixed term.

Renewable energy–Often referred to as clean energy, renewable energy comes from natural sources or processes that are constantly replenished. For example, wind and solar power.

Responsible Department–While multiple Departments are often involved in the actions outlined, this nominates which Branch has responsibility to take the lead for Scope 1, 2 and 3 emissions

Solar PV–Solar photovoltaic (PV) systems generate clean electricity from sunlight.

SEQCRA–South-East Queensland Climate Resilient Alliance (SEQCRA) will deliver collaborative activity at a scale beyond any individual Council to minimise climate risks to the SEQ region whilst supporting its member Councils to create climate resilient communities.

Timeframe–nominates which year the task will commence or be completed.

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