Corporate Emissions Reduction Plan 2025-2029

A roadmap to real zero emissions for Banyule City Council

Banyule
City Council

Message from Council

Banyule Council is proud to reaffirm our commitment to reduce greenhouse gas emissions and build a healthier, more sustainable future for our community.

The climate emergency presents an ongoing threat to our health, our economy and our natural environment.

Council has an important role to play in demonstrating leadership and taking responsibility for how Council's work impacts the environment. This includes taking responsibility for past emissions and striving to reduce atmospheric greenhouse gases in any way possible,

We have come a long way since declaring a climate emergency in 2019 and setting a target to be a zero emissions organisation by 2028. To date, we have fostered a culture of climate action in the organisation and reduced Council's greenhouse gas emissions by 61%.

We achieved this reduction by:

- committing to purchase 100% green power
- electrifying most of our community facilities
- transitioning many of our fleet vehicles to electric, powered by renewable energy.

However, we still have much work to do, including electrifying our leisure centres, which consume high amounts of gas, and replacing our large fleet vehicles and heavy machinery with zero-emissions alternatives. Despite these industry-wide challenges, we remain dedicated to eliminating all emissions within our control by 2028 and achieving real zero.

We remain committed to this vital work.

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Acknowledgements

Acknowledgement of Traditional Custodians

Banyule City Council is proud to acknowledge the Wurundjeri Woi-wurrung people as traditional custodians of the land and we pay respect to all Aboriginal and Torres Strait Elders, past, present and emerging, who have resided in the area and have been an integral part of the region's history.

Banyule Diversity Statement

Our community is made up of diverse cultures, beliefs, abilities, bodies, sexualities, ages and genders. We are committed to access, equity, participation and rights for everyone: principles which empower, foster harmony and increase the wellbeing of an inclusive community.

Executive summary

Banyule City Council recognises that urgent action is required to address the climate emergency we are facing. Like all government organisations we must play an important role in meeting this challenge, providing leadership to our community and taking responsibility for the emissions generated by our activities and services. This plan reaffirms our commitment to eliminating the emissions that are within our control by 2028 and sets a longer-term target to work with our goods and services suppliers to achieve a zero-emissions, or real zero, supply chain by 2035. Real zero means eliminating all emissions sources rather than seeking to offset some emissions. These targets are bold but important if we are to play our part in responding to the climate emergency.

In 2019 we endorsed our original Corporate Emissions Reduction Plan (CERP), which established a 10-year target to net zero and several priority areas of focus. Five years on we have eliminated 61% of our baseline greenhouse gas emissions and are on track to achieving our targets. This revised CERP aims to address the remaining 39% of our baseline emissions and replaces the original goal of 'net zero' with 'real zero', recognising our firm commitment to achieving emissions reduction without purchasing offsets. We will get to real zero by focusing on eight priority areas:

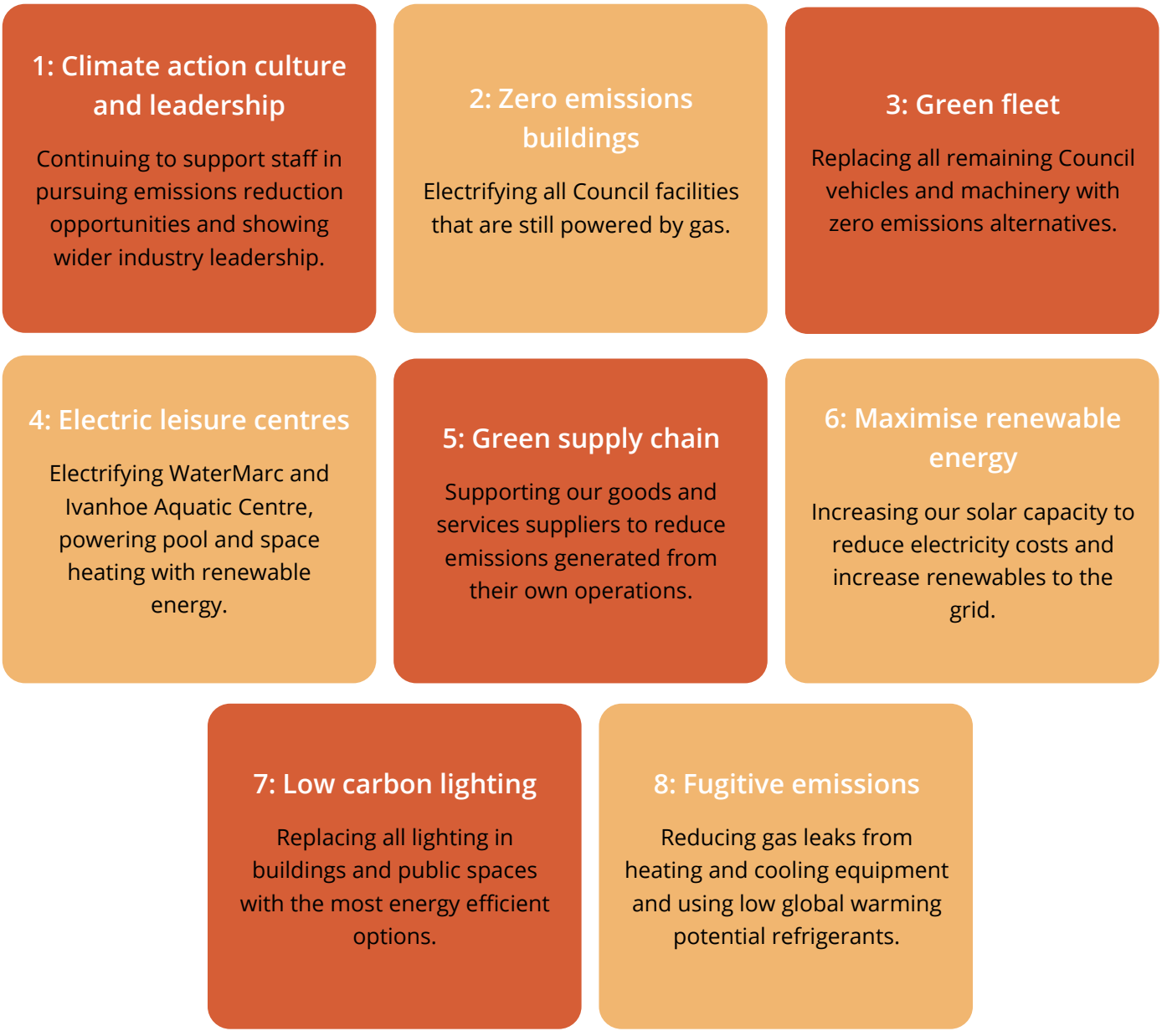


Figure 1 | Priority areas of the CERP

The climate emergency

We are in a climate emergency. While the Earth's climate is always changing due to the Greenhouse Effect, observed scientific evidence demonstrates with little doubt that human activity, particularly the burning of fossil fuels since the late 1800s, is speeding up natural climate change. The Intergovernmental Panel on Climate Change (IPCC) estimates with high confidence that global surface temperatures have warmed by 1.1°C over the past century and are continuing to increase.[1] This rapid change in our climate has led to more extreme weather events like heatwaves, bushfires, droughts and floods.

In Banyule we have already experienced some of the impacts of climate change, including more severe and frequent flash flooding and intense heatwaves. Although we will continue to see some of these impacts in the future, we can still limit the amount of warming. According to the IPCC a quick and sustained reduction in greenhouse gas emissions would lead to a slowdown in global warming within around two decades.[1]

'Climate change is something that is constantly on my mind as a young person growing up today. I want to have a safe future for the world.' – Banyule resident

If we act fast to curb global emissions:

We can limit future warming to between 1.5 °C and 2 °C and limit the severity of future weather events.

If we delay:

We may face average global temperatures up to 4.4 °C higher and experience more severe heatwaves, droughts, storms and bushfires.

'I have children and I worry for their future.' – Banyule resident

Global response to the climate emergency

In 2015, the international Paris Climate Change Agreement introduced emission reduction targets to limit global temperature rise to below 2°C by 2050 and to pursue efforts to limit it to 1.5°C above pre-industrial levels. These targets have been adopted by 194 nations, including Australia in 2016. The Federal Government has set a target for net greenhouse gas emissions across the country to be zero by 2050, which is embodied in the *Climate Change Act 2022*. Similarly, the Victorian Government has set a target to achieve net zero emissions by 2045. 'Net zero' means that emissions will be significantly reduced, and any remaining emissions will be offset by projects that remove greenhouse gases from the atmosphere.

This plan represents Council's commitment to helping Australia meet its Paris Agreement target and safeguarding our climate for current and future generations.

[1] IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001

Council's response to the climate emergency

The climate emergency requires urgent action by all levels of government across the world to keep global temperature rise below 2°C in line with the Paris Agreement. Council has a role to play in demonstrating leadership in emissions reduction, advocating for change and supporting the Banyule community to take action. Important commitments we have made to date include:

We declared a climate emergency

Banyule City Council declared a climate emergency in October 2019, joining thousands of other governments across the world in taking a strong stance on addressing climate change. It recognised that we are in a state of emergency that requires urgent action by all levels of government.

2,366 jurisdictions within 40 countries had declared a climate emergency as of July 2025. The total population covered by jurisdictions that have declared a climate emergency exceeds one billion people.

We developed our first Corporate Emissions Reduction Plan

Banyule City Council developed its first Corporate Emissions Reduction Plan (CERP) in 2019, establishing its ambitious target to achieve zero emissions by 2028.

The CERP set Council's original roadmap toward real zero, including purchasing 100% green power, electrifying all Council facilities, reducing supply chain emissions and transitioning all Council passenger vehicles, heavy vehicles and machinery to zero emissions alternatives.

We developed a Community Climate Action Plan

In 2020 Banyule City Council developed a Community Climate Action Plan (CAP) and set a target for the city to achieve carbon neutrality by 2040. The plan recognised the important role Council can play in reducing emissions across the city through advocacy, education, facilitating opportunities and supporting residents and businesses to upgrade their properties.

The CERP and CAP collectively represent Council's climate change mitigation response, supporting global efforts to curb emissions.

Our community prioritised climate action in the Banyule Community Vision 2041

In 2020, the community came together to create the Banyule Community Vision 2041 which captured the community's aspirations and priorities for our city over the next 20 years. Among the six priority areas identified by the community was 'Our Sustainable Environment', which sets a strong goal for Banyule to be '*a progressive and innovative leader in protecting, enhancing and increasing the health and diversity of our natural environment, where we all commit to playing an active role in achieving environmental sustainability and reducing waste and carbon emissions.*'

Our real zero target

In 2019, Council adopted the original Corporate Emissions Reduction Plan and set a target for Banyule City Council to achieve real zero emissions across all its operations by 2028 (Target28). This revised CERP reaffirms Council's commitment to Target28 for our Scope 1 emissions, without purchasing offsets, and sets a longer-term target to eliminate our Scope 3 emissions. Council has eliminated all Scope 2 emissions from its operations since 2021 through its participation in the Victorian Energy Collaboration (VECO). This initiative supplies 100% renewable electricity, sourced entirely from wind power, to all Council facilities.

Our Target:

To achieve real zero for our Scope 1 emissions by 2028 (Target28) and our Scope 3 emissions by 2035 (Target35) without purchasing offsets.

Our Goal:

To be a zero emissions organisation demonstrating climate leadership.

The CERP outlines a pathway to achieving Target28 over the next four years and Target35 in the longer term. It identifies:

- Our priority emissions reduction focus areas
- Specific actions that we will undertake to advance emissions reduction across the organisation
- Our approach to investing in emissions reduction technologies and upgrades.

To achieve Target28 Council must eliminate:

Scope 1 emissions: emissions directly emitted from Council operations, such as the burning of fuel to power vehicles and burning of gas for heating and cooking. We have already eliminated Scope 2, which are emissions from the supply of electricity.

To achieve Target35 Council must strive to eliminate:

Scope 3 emissions: Emissions embedded within the goods and services Council purchases to run its operations, where the emission in not owned or controlled by Council.

Council tracks and reports on its emissions on an annual basis through the State of the Environment report. The table below outlines current emissions across the three scopes and the target they correspond to, as well as the status of emissions reduction projects that are underway.

Scope Type	Emissions (tCO_2^{-e})	Target	Status
Scope 1	Approx. 4,000	0 by 2028	In-progress
Scope 2	0	0 by 2028	Achieved
Scope 3	To be quantified. Work underway.	0 by 2035	Commenced

Figure 2 | Table outlining Council's emissions, target and progress as of August 2025 across three scopes

Our progress toward Target28

The year 2023/24 marked the final year of implementation of the original CERP and brings us to the halfway point on Council's journey toward achieving our target28. Our milestones since 2019 include:

We installed solar panels on most of our public buildings to generate renewable energy and reduce our consumption from the grid.

We eliminated our Scope 2 electricity emissions by committing to the purchase of 100% green power.

We electrified over 90% of Council facilities by replacing gas infrastructure with electric alternatives.

We converted most of our passenger fleet vehicles to electric.

These and other actions contributed to a 61% reduction in Council's overall greenhouse gas emissions (Figure 3). This is a reduction from 15,616 tonnes of carbon dioxide equivalent (tCO_2^{-e}) from our baseline year (2018-2019) to 6,080 tCO_2^{-e} as of 2024.

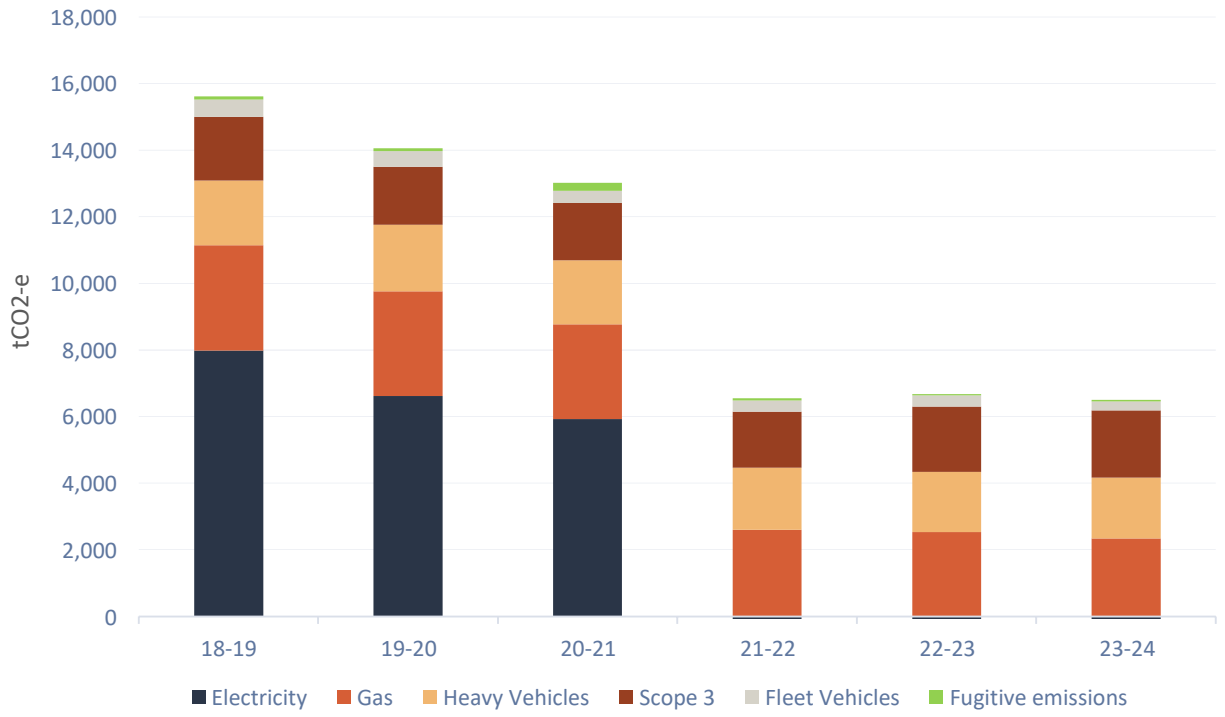


Figure 3 | Council's total Scope 1, 2 and 3 emissions between 2018-19 and 2023-24 financial years in tonnes of carbon dioxide equivalent (tCO_2^{-e}), highlighting a 61% reduction in overall emissions.

Victorian Energy Collaboration

Banyule Council is one of the 51 Victorian councils that have signed up to the Victorian Energy Collaboration (VECO), which is the largest ever emissions reduction project by local government in Australia. Three years on from signing up to VECO, Council has continued to experience the emissions reduction benefits of sourcing all its electricity from the Dundonnell wind farm near Mortlake and Murra Warra II wind farm near Horsham. These farms are exporting 100% green power to a rising number of Victorian councils, with a further five councils signing up since the initiative established in 2021/22.

The renewable energy is being provided by Red Energy, and the 240 GWh of clean power is equivalent to powering 48,000 homes with renewables or removing the emissions from 90,000 cars every year. For Banyule the initiative has continued to eliminate close to 60% of Council greenhouse gas emissions at no additional cost.

The road ahead: Target28

The journey toward Target28 will include ongoing electrification, energy efficiency works and tackling the more challenging emissions sources such as those from our heavy vehicles and aquatic centres. Projected emissions in line with Target28 are outlined in Figure 4. This graph shows a projected incremental reduction in our Scope 1 and 2 emissions through to 2028 as we continue to phase out gas and transition to a 100% green fleet.

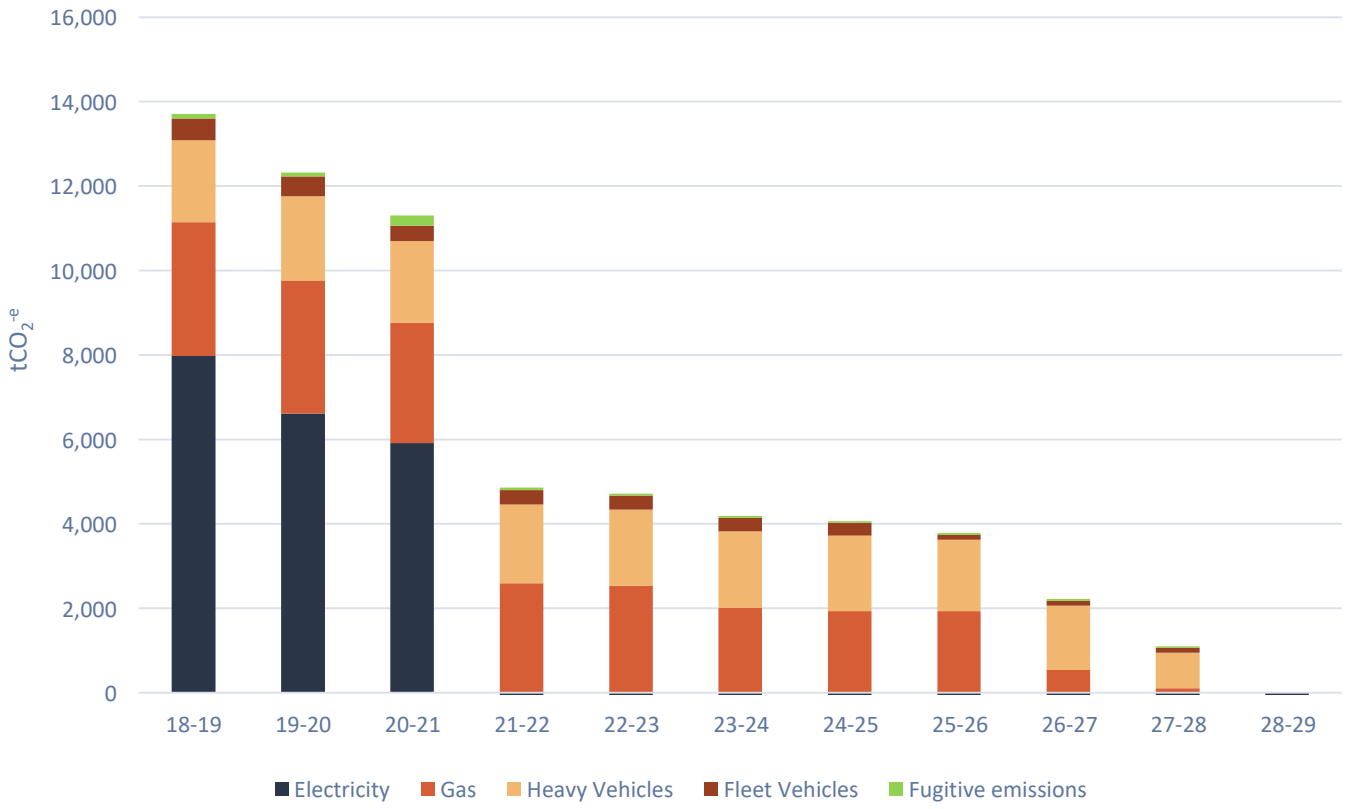


Figure 4 | Council's actual Scope 1 and 2 emissions (2019 to 2024) and projected emissions (2025-2029) in tonnes of carbon dioxide equivalent (tCO_2-e). ***Note: Scope 2 emissions were eliminated in 2021 and elimination of heavy fleet emissions is dependent on availability of fit for purpose technology in the market at a reasonable price point.***

The road ahead: Target35

The journey toward Target35 will involve working with our goods and services suppliers to achieve emissions reduction across our entire supply chain, supporting suppliers to strive for zero emissions. We will also strengthen consideration of real zero in our procurement processes to support suppliers seeking to reduce their environmental footprint in line with our target. Projected emissions in line with Target35 are outlined in Figure 5. This graph shows a projected incremental reduction in our Scope 3 emissions through to 2035 as we support an industry transition to real zero.

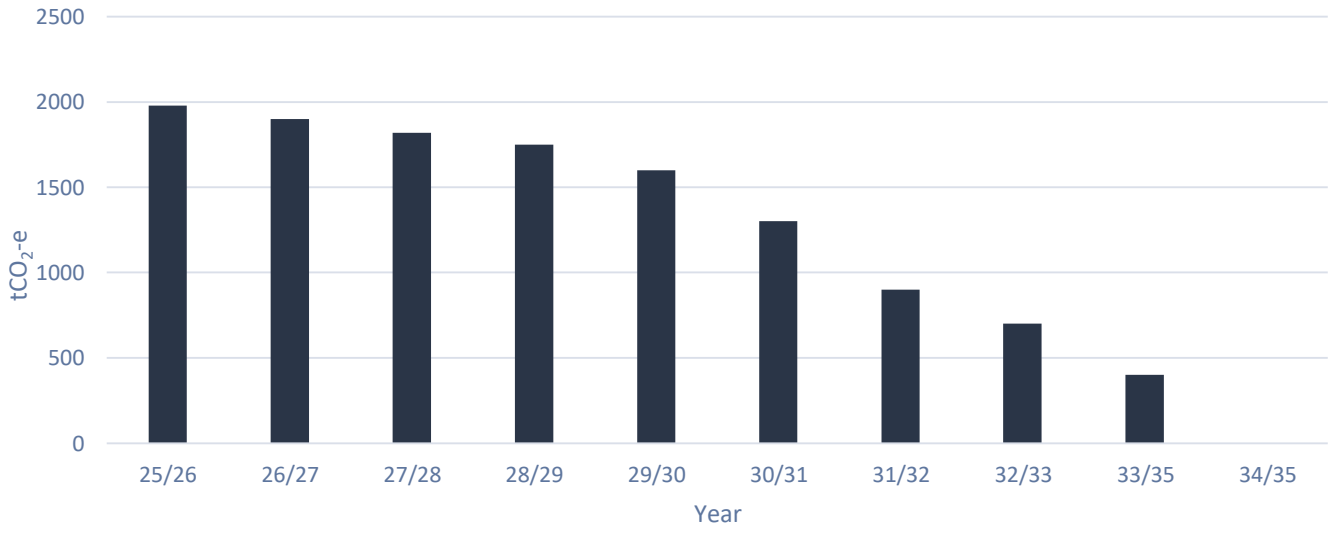


Figure 5 | Council's projected Scope 3 emissions in tonnes of carbon dioxide equivalent (tCO_2-e).

Figure 6 | Aerial image of Banyule shot from a drone

Key challenges

Key challenges to reaching our targets will be:

Green fleet (Scope 1)

Decarbonising Council's fleet remains one of the largest challenges in reaching Target28. While progress has been made in electrifying the passenger fleet, medium and heavy vehicles remain cost-prohibitive in the Australian market. Achieving fleet decarbonisation on schedule will depend on external factors beyond Council's control, which must align to support commercial-scale rollout.

Electric leisure centres (Scope 1)

Council is advancing the electrification of WaterMarc, its largest aquatic facility, but additional funding is required to redevelop and electrify the Ivanhoe Aquatic Centre, Banyule's second-largest leisure centre and gas consumer.

Fugitive emissions (Scope 1)

Heating, cooling, and refrigeration systems inherently leak greenhouse gases. Although Council's fugitive emissions are relatively low, they are challenging to eliminate entirely. Transitioning to low-emission refrigerants for new equipment will reduce these emissions, but significant industry advances are needed to capture them fully.

Green supply chain (Scope 3)

Whilst Council must account for its Scope 3 supply chain emissions, these emissions are not within our control and rest with the supplier. We will need to use a range of approaches to support our supply chain to transition to real zero.

Figure 7 | Key challenges to reaching our targets

In the face of these challenges, we will need to be bold and prepared accept a moderate level of risk to get to our destination.

Carbon removal and sequestration

Carbon removal and sequestration, or drawdown refers to the process of removing carbon dioxide from the atmosphere, typically through natural means such as large-scale revegetation or engineered carbon capture solutions.

While drawdown can play a role in broader climate action, this plan does not include drawdown actions at this stage due to Banyule's geographic constraints as a built-up metropolitan council with limited access to land for large-scale revegetation projects. As such, the CERP is firmly focused on reducing emissions at the source through changes to our operations, infrastructure and decision-making, where Council has the greatest influence and accountability. However, Council will continue to explore opportunities to support drawdown through advocacy to State and Federal governments and through partnerships with regional climate alliances and other relevant networks.

Our approach to the plan

This plan is underpinned by Council's commitment to phasing out fossil fuel use across our operations. Council recognises that fossil fuels are the primary driver of climate change, and we are taking deliberate steps to reduce and ultimately eliminate our reliance on them, in favour of clean, renewable energy and electrified alternatives. The plan has been shaped by research and extensive consultation with the community, Council staff and Councillors.

Key messages we heard from our community include:

- Over 80% of residents are either very concerned or extremely concerned about climate change. The biggest concerns include the increase in frequency and intensity of extreme weather, loss of biodiversity, heatwaves and impact on agriculture and access to food.
- When it comes to investing in new technology 62% of residents felt it was important for Council to be a risk taker, early adopter and industry leader. 38% of residents felt it was important that new technology was well tested before Council considers investing in it.
- Alongside actions outlined in the previous CERP, residents wanted Council to prioritise further renewable energy adoption and energy efficiency upgrades. This included improving insulation in Council buildings and promoting cleaner, more efficient heating options to reduce energy consumption and associated emissions.

The Banyule Environment and Climate Action Advisory Committee (BECAAC) has played a vital role in shaping the CERP, providing ongoing insight, feedback and community perspectives. Council acknowledges the importance of BECAAC's ongoing guidance and advice in delivering the actions outlined in the plan to ensure our approach remains responsive to community values, priorities and expectations.

Prioritising action

Based on this feedback we will prioritise actions according to the following criteria:

Underpinning these criteria will be a continuous improvement mindset and approach to ensure we remain flexible to change and maximise the benefits of our investment. In line with Criterion 6 we will strive to eliminate all Scope 1 emissions within our control and work with our supply chain to support reductions in Scope 3 emissions that are beyond our control.

Accounting for our emissions through Climate Active

Council's emissions reduction strategy has been guided by Climate Active (formerly the National Carbon Offset Standard), a voluntary Australian standard based on the internationally recognised Greenhouse Gas Protocol. We use this standard to measure and track our emissions reduction over time and report back to the community on our progress. While Climate Active is voluntary at present, it is likely that mandatory climate reporting will be introduced for local government in the coming years as has been done for large companies in Australia from 1 January 2025.

Under the Climate Active methodology, net-zero certification requires the use of carbon offsets to balance any remaining emissions that are unavoidable or difficult to eliminate. This conflicts with Council's policy position to achieve real zero without the use of offsets. As such, we will continue to monitor and report on our emissions performance in line with the Climate Active standard, though consider other accounting approaches in the future that align with our no-offsets position and ensure that any future mandatory reporting can be met.

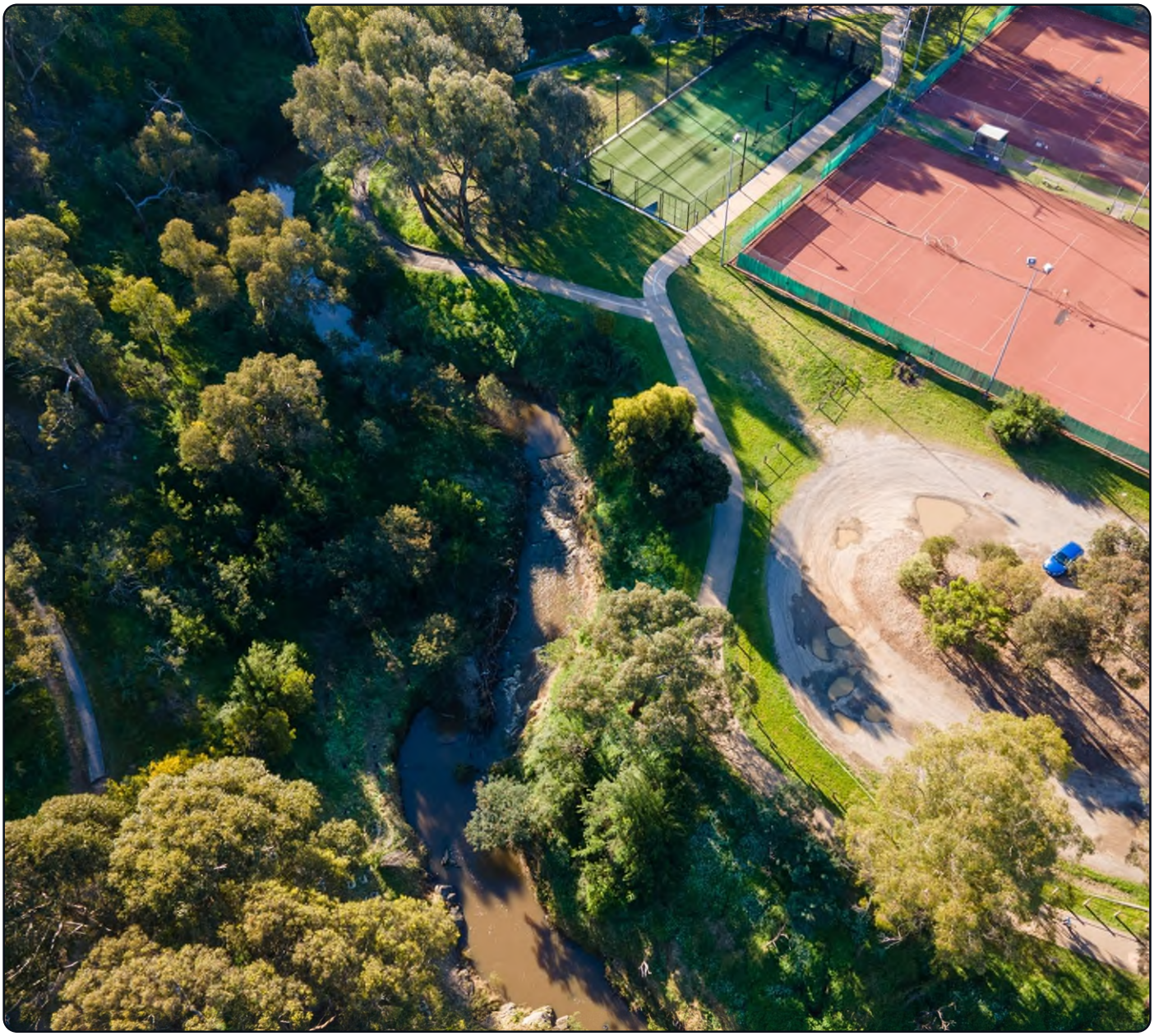


Figure 8 | Aerial view of a community facility in Banyule

Action Plan 2025-2029

Over the next four years, we will tackle the more complex and challenging emissions reduction projects to reduce and eliminate our remaining greenhouse gas emissions. This will include electrification of leisure centres and our larger fleet trucks and heavy machinery. We will continue to seek and act on opportunities to reduce our consumption and reliance on the grid through energy efficiency and renewable energy.

Priority areas

A total of 32 actions have been identified to steer us toward Target28 and Target35 across the following priority areas:

1) **Climate action culture and leadership**
2) **Zero emissions buildings**
3) **Green fleet**
4) **Electric leisure centres**
5) **Green supply chain**
6) **Maximise renewable energy**
7) **Low carbon lighting**
8) **Fugitive emissions**

Each priority area is explored below along with a summary table outlining key objectives, actions, timeframes and associated resources. These resources include staff (existing or new) and funding broken down as follows:

$ = $0 to $100,000

$$ = $100,000 to $1M

$$$ = > $1M

Monitoring and evaluation

We will establish monitoring and evaluation processes to track progress against these objectives and actions. At present, reporting is provided to the community through existing channels such as the State of the Environment Report and the Annual Report (Banyule Story). In future, this will be incorporated into a comprehensive Monitoring, Evaluation, Reporting and Improvement (MERI) framework, integrated with the Community Climate Action Plan to provide a clearer and more consistent approach to measuring climate outcomes and identifying areas for improvement across both corporate and community emissions.

1. Climate action culture and leadership

To achieve Target28 and Target35 we will need to continue developing a culture of climate action within the organisation and demonstrating industry leadership. Pursuing more sustainable practices will require a shift in how we work and adopting a mindset of continuous improvement, with all staff and teams playing a role. In line with Council's core values we will continue to foster a culture of responsibility and initiative, empowering staff to look for opportunities to do their work in a more sustainable way. We will also participate in and advocate through industry networks and representative bodies for support in meeting our goals.

Where we are now

Key actions we have undertaken over the last five years on our journey to building a culture of climate action and leadership include:

We formed a Climate Action Steering Committee

The Climate Action Steering Committee is made up of executive leaders and aims to support climate action and assist in overcoming challenges to achieving our climate goals.

We introduced climate action into staff inductions

We introduced a training module to assist new staff in understanding our climate action goals and how they can support positive action through their work.

We set climate action as an organisational priority

Council and the community identified environmental action as a priority in the Banyule Plan 2025-2029, including Target28.

We advocated for our climate priorities

We advocated to governments and through industry bodies and networks for support in electrifying public buildings, replacing our fleet with zero emissions alternatives and addressing supply chain emissions.

Priorities over the next four years

Fostering a climate action culture

With the adoption of the CERP in Dec 2019, we implemented a cultural change program across the organisation. Climate action is now promoted as a whole of organisation responsibility and staff are supported and empowered to pursue improvements within their own roles and business units. There is yet more that can be done. This plan identifies further opportunities to embed climate action into our daily operations and engage staff in emissions reduction initiatives.

We will develop climate and sustainability key performance indicators (KPIs) that can be embedded within staff work plans and business unit plans to guide effective action. This will be supported by training, workshops and information to build the capacity of individuals and teams to set meaningful actions. We will also renew and launch a new internal Green Team, encouraging staff from across the organisation to participate, share ideas and champion innovative actions to improve our sustainability performance.

There will be an increased focus on climate considerations in our decision making. Council will integrate environmental impact and opportunity assessments into Council planning, reporting and decision-making processes, similar to how we consider social, financial and legal responsibilities. This will encourage staff at all levels to consider the climate implications of Council strategies, plans, projects and services and identify opportunities for improvement. We will also equip our leaders with tools and information to support their teams and inspire action. Leaders across Council have a fundamental role to play in influencing culture and driving behavioural change.

Figure 9 | Reusable tote bags for staff use

Green travel

Council's Green Travel Plan seeks to reduce transport-related greenhouse gas emissions by encouraging staff to consider more sustainable travel choices for commuting and business travel. The plan aims to reduce reliance on private vehicles by making it easier and more attractive for staff to walk, cycle, use public transport, and carpool where practical. We will review and redevelop the Green Travel Plan, identifying further measures and initiatives to reduce transport-related emissions and support other benefits of green travel, such as staff health and wellbeing and reduced reliance on fleet cars and carparking.

Advocacy and collaboration

Banyule is a long-standing member of the Northern Alliance for Greenhouse Action (NAGA), a collaboration of eight councils progressing climate action across Melbourne's northern region. Banyule is also a member of Climate Emergency Australia (CEA), a collaboration of local governments across Australia committed to addressing the climate emergency on a national scale. We will continue to participate and advocate through NAGA and CEA to achieve emissions reduction and participate in collaborative research and pilot programs on shared climate challenges.

While continuing to undertake action to reduce emissions and combat climate change, it is equally important that Council focusses on advocacy to other levels of government to achieve its targets. Effective climate action requires adequate regulation, a strong, competitive market and technology that is available and financially feasible, all of which State and Federal governments have a large influence over. We will advocate directly to government and through our representative bodies such as the Australian Local Government Association (ALGA) and Municipal Association of Victoria (MAV) for support to achieve our own goals and overcome industry-wide challenges to achieving real zero. Our key advocacy priorities will centre around green fleet, electrification of aquatic centres and addressing supply chain emissions.

Climate action culture and leadership actions

Action #	Description	Timeframe	Responsibility	Resources
1.1 Climate Action KPIs	Develop climate action KPIs to integrate into staff work plans and business unit plans.	December 2026	City Futures	Existing
1.2 Staff engagement program	Develop a staff engagement program to support and build staff capacity, including tools, resources, training and workshops.	June 2027	City Futures	Existing
1.3 Green Team	Launch a new Green Team to champion internal sustainability initiatives.	December 2027	City Futures	Existing, **$**
1.4 Green Travel	Review and update the Green Travel Plan and identify suitable measures of success.	June 2027	Transport Planning & Projects	Existing
1.5 Advocacy plan	Develop and implement a four-year advocacy plan for climate action, addressing both climate mitigation and adaptation priorities.	June 2026 and ongoing	City Futures and Advocacy, Communication, Engagement & Performance	Existing
1.6 Cross-organisation collaboration	Proactively seek opportunities to partner with local government and other industry stakeholders on climate action initiatives.	Ongoing	City Futures	Existing

Figure 10 | Council officer plugging in an electric vehicle for charge

2. Zero emissions buildings

Where we are now

Key actions we have undertaken over the last five years on our journey to zero emissions buildings include:

We purchased 100% green power

The VECO power purchase agreement made it possible for us to eliminate most emissions sources from our buildings by simply replacing gas infrastructure with electric alternatives.

We introduced the Sustainable Building Guidelines (SBG)

The SBG embed best practice environmentally sustainable design into our building programs and set a minimum standard that must be met when Council plans and delivers any building construction or maintenance project.

We electrified 21 buildings

Council has progressively electrified its buildings by replacing gas infrastructure with electric alternatives. This includes most childcare centres, community halls, sports pavilions and NETS stadium.

We upgraded to more energy efficient equipment

Refrigerators, freezers, and other equipment have been upgraded to high-efficiency models as they failed or reached their end of life.

Priorities over the next four years

Over the next four years we will prioritise the electrification of key facilities, the ongoing application and review of the Sustainable Building Guidelines and the rollout of a new Built Environment Efficiency Project (BEEP). This program of work will reduce emissions, improve building performance and lower operational costs by replacing gas infrastructure, embedding best practice sustainable design in capital works, and delivering targeted energy and water efficiency upgrades informed by detailed building audits. These initiatives support Council's broader commitment to phasing out the use of gas and other fossil fuels in our buildings and transitioning to clean, all-electric, and renewable-powered efficient infrastructure.

Building electrification

Having 100% of our electricity now supplied by two wind farms in western Victoria means there are no emissions from energy generation, providing a clear path to Target28 by simply replacing gas systems with efficient electric alternatives. Planning is underway to electrify the remaining Council buildings over the coming years, aligning where possible with capital works, maintenance, or asset renewal projects. This approach allows electrification to be integrated into existing project scopes, reducing additional costs and streamlining delivery. Due to rising gas prices there are also ongoing financial benefits from switching to electricity.

What do electrification works include?

- Replacing natural gas equipment with efficient, electric alternatives
- Upgrading electrical switchboards and supply infrastructure as needed
- Abolishing gas connections once electrification is complete

The planned program of electrification works through to 2028 is outlined below.

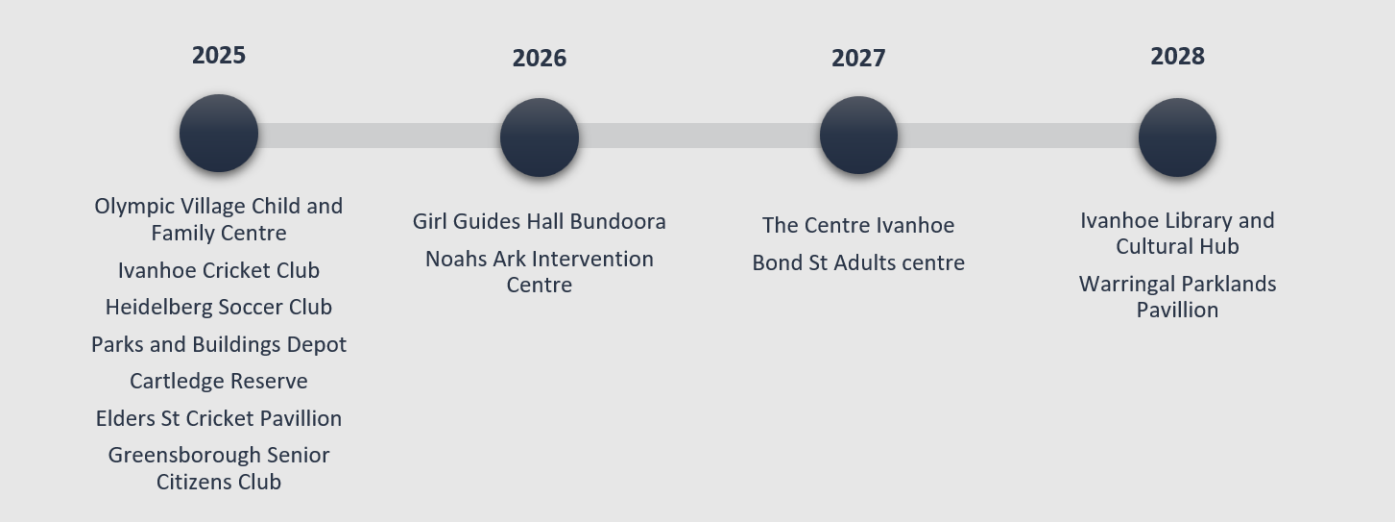
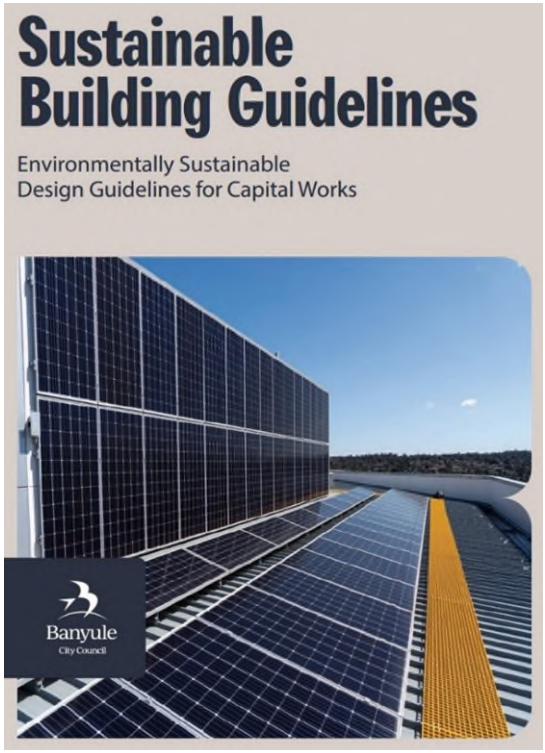


Figure 11 | Planned program of electrification works through to 2028

Sustainable Building Guidelines

The Sustainable Building Guidelines (SBG) will continue to be used for capital works projects including:

- Construction of new buildings
- Maintenance, upgrade, retrofit, renovation, and refurbishment of existing buildings



The SBG help ensure that every aspect of a building's lifecycle—from design and construction to operation and eventual deconstruction—is aligned with the goal of real zero emissions. Through a combination of energy efficiency, low-carbon materials, smart technologies, and renewable energy integration, these guidelines provide a comprehensive framework for creating and maintaining buildings that have minimal environmental impact.

The SBG will continue to be updated periodically in accordance with the best practices of the time and to ensure continuous alignment with Council policy and objectives. This will also assist with identifying continuous improvement and learning opportunities.

Key outcomes of the Sustainable Building Guidelines

Zero emissions	Cost savings	Future proof buildings
By addressing both operational and embodied carbon, the SBG ensure that emissions from energy use and materials are reduced in the pursuit of real zero.	Implementing energy-efficient measures and renewable energy results in long-term cost savings through reduced utility bills and maintenance costs.	The guidelines ensure that buildings are future-proofed against climate impacts and promote a healthy environment for occupants.

Built Environment Efficiency Project

We are launching the Built Environment Efficiency Project (BEEP) to improve the energy and water performance of Council-owned buildings and assets. Over several years, detailed audits will assess lighting, heating, ventilation and air conditioning (HVAC), insulation and appliances to cut emissions, save on running costs, and use resources more efficiently. These audits will help shape clear, site-specific action plans that prioritise both quick improvements and larger projects, supporting our long-term financial sustainability and emissions reduction goals.

Once opportunities are identified, site-specific action plans will be created, prioritising both quick, easy improvements and major projects. we will work with building occupants and tenants to support behaviour change and sustainable operations. Progress will be tracked through annual performance reporting, and green building certifications like Green Star and NABERS will be considered to benchmark improvements. BEEP will also aim to align efficiency upgrades with existing capital works projects to reduce disruption and costs and maximise benefits. The ultimate goal is to create healthier, more efficient buildings while lowering our environmental impact.

Action #	Description	Timeframe	Responsibility	Resources
2.1 Electrification	Undertake electrification of Ivanhoe Library & Cultural Hub and small sites in line with Target28.	June 2028	City Futures and Assets & City Services	Existing **$$$**
2.2 Sustainable Building Guidelines	Review and update the Sustainable Building Guidelines periodically.	2026 and ongoing	City Futures	Existing
2.3 BEEP program development	Develop the program framework, outlining project goals, priorities and delivery stages.	June 2026	City Futures	Existing
2.4 BEEP data collection	Undertake audits and collect baseline data on current energy and water use across Council buildings.	June 2027	City Futures	**$**
2.5 BEEP implementation	Implement the program, delivering targeted upgrades, engaging building users and monitoring results.	July 2027 - ongoing	City Futures and Assets & City Services	Existing **$$**

Figure 12 Ivanhoe Library and Cultural Hub

3. Green fleet

Where are we now

Key actions we have undertaken over the last five years on our transition toward a fleet with zero operating emissions include:

We have transitioned most of our passenger fleet

All vehicles scheduled for replacement to date have been transitioned to electric alternatives. As the remaining passenger vehicles reach the end of their service life, they will be replaced with zero emissions vehicles ahead of Target28.

We have investigated future EV infrastructure at Council sites

EVSE investigations across operational sites identified infrastructure needs and operational considerations, with plans to address these through the Capital Works Program and align future installations with fleet procurement in the lead-up to Target28.

We reviewed and updated our Fleet Policy

Council's Light Fleet policy was updated in FY 2024/25. The Fleet Governance Group and other internal stakeholders were involved with the review to ensure alignment with Council's climate action approach.

We replaced our fuel powered equipment with electric alternatives

The transition of plant and equipment to battery electric alternatives, where fit for purpose options were available has improved staff safety, reduced emissions, and delivered long-term operational savings and efficiency gains. This supports both Council's zero emissions target and health and safety commitments.

Priorities over the next four years

Council's fleet currently generates 43% of its total emissions. As Council reduces emissions from other sources such as gas and electricity, fleet emissions are becoming an increasingly significant proportion of overall emissions.

When Council first committed to transitioning to a zero emissions fleet in the original CERP, we recognised that a range of technologies might help us achieve this goal. In the years since, electric vehicles (EVs) have rapidly emerged as the most accessible and proven option in the Australian market. Moving forward, Council will focus on electrifying its fleet while remaining open to other zero emissions technologies as they become commercially viable.

Decarbonising our fleet is one of the biggest challenges we face on the way to achieving Target 28. It's not just about replacing vehicles; many of our sites will need significant electrical upgrades to power new chargers, especially for our heavy fleet. There's also limited availability of zero emissions heavy vehicles in Australia at the moment, which makes this transition more complex. These vehicles, which include waste collection trucks, long-haul semi-trailers and rigid trucks currently account for around 87% of Council's fleet emissions, while the passenger fleet makes up the remaining 13%. To help address these challenges, we will also support our staff through this transition, with training, resources and regular updates to help everyone adjust to new vehicles and systems. This transition is a key part of Council's broader strategy to eliminate fossil fuel use across all of its operations and move toward a clean, all-electric fleet powered by renewable energy.

Installation of EV chargers

To power our EVs we will need a network of EV chargers across our offices and depots. While we have already installed chargers at some sites to power our passenger vehicles, infrastructure to support our trucks and other heavy vehicles is still required. Work is already underway to investigate where chargers will be needed, what type of equipment will best suit each location, and the electrical capacity upgrades required to support them. Many of our sites have never needed this type of infrastructure before, and in some cases, the existing power supply won't be enough. Upgrades to power supplies, transformers, switchboards, cabling and other essential components may be needed. Once these investigations are complete, Council will develop a detailed plan for the installation and management of EV chargers and progressively roll them out over the coming years.

EV purchases and fleet transition

Council's fleet vehicles are replaced every four to seven years depending on the vehicle type. This relatively short turnover period, compared to assets like buildings or roads, provides an opportunity to upgrade technology in line with replacement cycles. We will replace Internal Combustion Engine (ICE) vehicles with electric alternatives as they reach their replacement age to ensure the transition is achieved in a financially responsible way. Based on our replacement schedule we will transition all fleet vehicles to electric by 2028 in line with our target.

As Council's services and business needs evolve, we will review the fleet to right-size it, reduce vehicle numbers where possible, and look for opportunities to replace larger vehicles with smaller, zero-emissions options without affecting how services are delivered. To support this, Council is currently investigating the rollout of a system to help track and optimise vehicle use, which will inform future purchasing and operational decisions. We will continue to monitor market developments and emerging technologies, while actively collaborating with other Councils and organisations to explore innovative projects.

Change management

As Council prepares to transition to electric vehicles, we're also working on a range of supporting projects to help make the change as smooth and successful as possible. Training is already available for staff to help them get familiar with driving electric vehicles from our light fleet, including how to safely charge them, plan trips and manage battery range. With our heavy fleet, we'll also be looking into programs that encourage safer, more efficient driving habits to help reduce emissions and keep drivers safe. Simple changes in the way we drive can make a big difference to energy use and emissions.

Council will develop a change management plan to support our staff through this transition. This will include clear communication, regular updates, staff training, and practical ways to help everyone adjust to new vehicles and systems. Planning for risks and challenges along the way will be part of this, ensuring the transition is well-managed, future-ready and aligned with Council's broader fleet, climate and operational strategies.

Green fleet actions

Action #	Description	Timeframe	Responsibility	Resources
3.1 EV chargers	Design and plan the rollout of EV charging infrastructure across Council sites.	December 2026	Operations and City Futures	Existing
3.2 EV chargers	Construct EV chargers across all sites.	December 2027	Operations	**$$$**
3.3 Fleet replacement	Replace all remaining fleet vehicles with EV alternatives.	December 2028	Operations	**$$$**
3.4 Change management	Develop and deliver a change management program to support staff through the transition to a zero emissions fleet.	December 2026 and ongoing	Operations and City Futures	Existing **$**
3.5 Fleet advocacy	Continue to advocate through NAGA and the Victorian Greenhouse Alliances for government support in enabling the fleet transition.	Ongoing	Operations and City Futures	Existing

4. Electric leisure centres

Where we are now

Key actions we have undertaken over the last five years on our journey to electrifying leisure centres include:

We investigated the feasibility of electrification at WaterMarc

We engaged consultants to assess the feasibility of electrifying WaterMarc, including identifying suitable methods and technology. This study confirmed that electrification was achievable and would deliver significant long-term emissions and operational cost savings.

We undertook a range projects to prepare for electrification

Before switching to all-electric systems, we carried out several improvements to make the centre more energy efficient. This included installing upgraded metering and control systems, enhancing air circulation equipment, optimising pump operations, and adding pool blankets.

We turned off the Cogeneration plant

The cogeneration plant at WaterMarc was originally installed to generate electricity for the building and heat for the pools. With Council now buying 100% renewable electricity through the VECO agreement, greater emissions savings can be achieved by replacing the gas boilers with electric alternatives.

We secured a $2.34 million Federal government grant for WaterMarc

We applied for the Community Energy Upgrade Fund (CEUF) in 2024 and were notified that we were successful in early 2025. Our innovative approach to jointly electrifying both the WaterMarc aquatic centre and the 1 Flintoff office complex is believed to be the first of its kind in Australia.

Priorities over the next four years

The use of natural gas across Council properties now represents 54% of our overall emissions and around 95% of this is required to heat swimming pools across Banyule's aquatic centres. Electrifying these aquatic centres remains one of Council's biggest and most expensive challenges to achieving Target28.

WaterMarc electrification

The WaterMarc aquatic centre in Greensborough is Council's largest and most resource-intensive facility, with pool and space heating accounting for approximately 74% of the organisation's total gas consumption. This is largely due to the energy required to maintain WaterMarc swimming pools at serviceable temperatures. As such, WaterMarc is a priority for electrification.

Council was recently awarded $2.34 million through the Federal Government $100 million Community Energy Upgrades Fund to electrify WaterMarc and associated office complex. Our project, titled 'Australia's first integrated aquatic and office precinct electrification' will see existing gas boilers and domestic hot water systems replaced with electric alternatives. The switch to electricity will eliminate most of the emissions generated by the facilities and save around $467,000 per year in utility costs.

Turning off the gas at WaterMarc

Council is preparing to deliver Australia's first integrated electrified aquatic and office precinct at WaterMarc and Council's 1 Flintoff Street office. This major project will replace existing gas systems with high-efficiency heat pumps to heat and cool both the buildings and pool water, supported by upgrades to air handling systems. With an anticipated 37% reduction in Council's overall emissions, this project represents the largest emissions reduction opportunity for Banyule. It will eliminate over 33,000 gigajoules of natural gas use each year, cutting emissions by approximately 1,257 tonnes of CO_2-e annually.

Council is also proposing to use a low Global Warming Potential (GWP) refrigerant to reduce the impact of fugitive emissions. This approach is in its infancy in electrification projects, so being an early adopter will provide an opportunity for Council to promote the viability of this approach and to showcase the emissions reduction benefits that low GWP refrigerants offer. Sharing the learnings of this unique project will also support broader decarbonization efforts across Australia, as well as across the community. The project is expected to begin in 2025 and be completed by 2027.

Figure 13 | Indoor pool at WaterMarc

Ivanhoe Aquatic Centre redevelopment and electrification

The Ivanhoe Aquatic Centre (IAC) is the second largest user of natural gas after WaterMarc. In 2015, the centre underwent partial redevelopment to upgrade the gym, fitness areas, changerooms, and reception. We are now working on the next stage of works which will modernise the aging indoor pool areas, improve capacity, and build a new plant room.

A key part of this redevelopment will be switching the centre from gas to electric heating using high-efficiency heat pumps. This will remove gas use from the site and help Council meet its target of achieving real zero by 2028. The project will also aim for a 5 Star Green Star rating by including sustainable design features such as responsible use of materials, water-saving measures, and waste reduction. This project is expected to cost around $37 million, and Council is currently advocating to State and Federal governments for a partnership and funding agreement to deliver the redevelopment. Multiple funding streams are being investigated and applications for grants have been submitted.

Electric leisure centres actions

Action #	Description	Timeframe	Responsibility	Resources
4.1 WaterMarc and 1 Flintoff Electrification	Deliver the WaterMarc and 1 Flintoff electrification project by 2027	July 2027	Delivery & Assets, Healthy & Active Communities and City Futures	$2.34 M grant **$$$**
4.2 Champion broader decarbonisation	Support broader decarbonization efforts across Australia by sharing learnings and promoting the unique WaterMarc and 1 Flintoff office complex electrification project.	Ongoing	City Futures	Existing
4.3 Ivanhoe Aquatic electrification	Transition the Ivanhoe Aquatic Centre to an all-electric facility in line with Target28.	December 2028	Delivery & Assets, Healthy & Active Communities and City Futures	**$$$**

Figure 14 | Ivanhoe Aquatic Centre

5. Green supply chain

Scope 3 emissions are indirect emissions that result from activities outside the Council's direct control but occur across its broader value chain. These emissions primarily stem from purchased goods and services, outsourced operations, and staff travel. For example, any emissions generated from the supply of catering for a Council event (such as cooking and transportation) are emissions that Council needs to factor into its emissions accounting.

Scope 3 emissions sources include electricity, gas, transportation, waste, staff travel, asphalt, printing, water and catering, and can occur either upstream or downstream of Council. Upstream emissions occur before a product or service reaches Council, such as electricity used in manufacturing or fuel used in delivery. Downstream emissions occur after Council's involvement has ended, such as the disposal or recycling of products, or use of a vehicle after it has been sold by Council.

Where we are now

Key actions we have undertaken over the last five years on our journey toward a green supply chain include:

We developed a Sustainable Procurement Framework

Sustainability criteria have been embedded into Council's procurement processes, with higher weightings awarded to suppliers delivering positive environmental outcomes in areas such as carbon emission reduction, energy efficiency and waste management.

We commenced staff awareness and capacity-building training

Procurement awareness trainings are held for staff to build capability and strengthen understanding of sustainable procurement principles. Educational events have been held for suppliers, providing information about Council's sustainable procurement requirements and expectations.

Council uses 2018/19 as the baseline year for measuring and comparing future emissions. The graph below illustrates the Council's Scope 3 emissions since the baseline year.

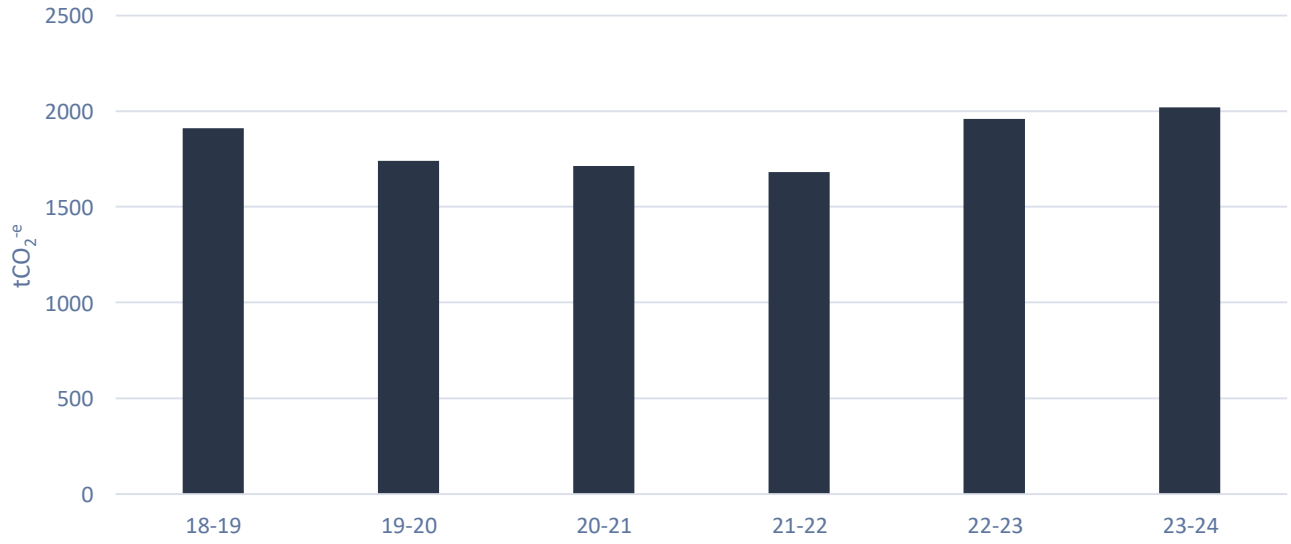


Figure 15| Annual Scope 3 emissions since the baseline year

The lower Scope 3 emissions in the years 19-20, 20-21, and 21-22 were likely a result of the COVID-19 pandemic, which limited the services the Council could provide and, in turn, reduced procurement volume. Emissions returned to pre-pandemic levels in 22-23 and saw a slight increase in 23-24. This is due to adjustments to Scope

3 emissions factors being introduced for fleet fuel and natural gas to account for improvements in data monitoring and reporting. As Council continues to implement emissions reduction projects targeting Scope 1 emissions, Scope 3 emissions will increasingly represent a larger proportion of total emissions. In 23-24, Scope 3 emissions accounted for just over 2,000 tCO_2^{-e}, approximately a third of Council's total emissions.

Priorities over the next four years

As we continue to refine our emissions reporting boundaries, the shift towards more detailed and comprehensive emissions accounting will result in an expanded range of Scope 3 emissions being captured, including downstream emissions. The introduction of more precise and stringent emissions factors will also improve reporting accuracy and data quality, which may lead to higher reported emissions, even if actual activity levels remain unchanged. Additionally, as Council broadens the range of services it delivers, increased procurement of goods and services will naturally contribute to a rise in Scope 3 emissions over time.

While the focus is largely on upstream emissions now, Council will progressively collect data on its downstream emissions as well. This will enable Council to identify and address opportunities to reduce downstream Scope 3 emissions. Alongside this, there is growing emphasis on quantifying and managing embodied emissions from Council's capital works projects. These represent all emissions associated with the extraction, production, transport, construction, maintenance, and end-of-life disposal of materials used in an asset. Actions to reduce embodied emissions, such as specifying lower carbon and recycled materials are already outlined in Council's Sustainable Building Guidelines. The case study below highlights a selection of recent projects where alternative materials have been successfully integrated, demonstrating both environmental and community benefits when compared to usual alternatives.

Zero emissions supply chain

Eliminating Scope 3 emissions and achieving a zero emissions supply chain would require Council to procure goods and services exclusively from suppliers that have achieved zero emissions in their operations. With few zero emissions suppliers currently in the market this is a longer-term goal that aligns with broader societal emissions reduction targets such as the Victorian Government's 2045 net zero target, the Federal Government's 2050 net zero target, and the Banyule 2040 community net zero target. To propel us forward and demonstrate industry leadership we have set the more ambitious target of eliminating our Scope 3 emissions by 2035. The success of Target35 will depend on the willingness, capacity and capability of our supply chain to make the transition to real zero.

To support a zero emissions supply chain, we will conduct a comprehensive analysis of our procurement and supplier data to identify industries and areas of the supply chain that are already transitioning to real zero. This will help prioritise shifts to zero-emission suppliers where feasible, while recognizing that some sectors may require more time to make the transition.

Integrating sustainable, recycled materials into infrastructure projects

At several sites across Banyule, including Were Street Reserve in Montmorency, Heidelberg Park, and a nature strip in Ivanhoe East, we installed Porous Lane, a permeable surface product made from up to 60% recycled Australian tyres. This offers up to a 79% reduction in carbon emissions compared to concrete, and up to 45% compared to asphalt. In addition to giving end-of-life tyres a new purpose, this material improves stormwater management by allowing water to infiltrate, reduces runoff and supports healthier urban landscapes.

We also trialled asphalt mixes incorporating recycled plastics, crushed glass, and crumbed rubber from used tyres in road resurfacing projects in Macleod, Bundoora, and Heidelberg West. These materials replace virgin resources, lower embodied emissions, and strengthen local recycling markets, while still meeting performance and durability standards for municipal roads.

The recent construction of Watsonia Town Square features recycled brick pavers in key public areas. This approach maintained the area's character while reducing the need for newly manufactured materials and preventing useful resources from ending up in landfill.

These examples highlight just a few of the sustainable material initiatives being delivered through Banyule's capital works program. By embedding lower-carbon and recycled material requirements into tenders and continuing to trial and adopt new products, Council is actively reducing the environmental impact of infrastructure delivery while promoting innovation, responsible resource use, and a thriving circular economy.

Figure 16 | Shared user path constructed with Porous Lane at Heidelberg Park

Sustainable events guide

Council runs a diversity of community events throughout the year, including festivals, workshops, consultations and information sessions. We are committed to making events more sustainable by developing a Sustainable Events Guide to support Council staff in planning and hosting environmentally responsible events in Banyule. This guide will provide practical recommendations around the principles of low emissions, sustainable transport, resource efficiency, environmental protection and waste minimisation.

By implementing small, meaningful changes, we can significantly reduce the environmental impact of our events. Additionally, staff will be encouraged to use a carbon calculator to measure emissions generated by their events, track reductions over time, and foster continuous improvement through knowledge sharing. Over time, this approach will contribute to a broader ambition of working towards zero-emissions events in Banyule.

Green supply chain actions

Action #	Description	Timeframe	Responsibility	Resources
5.1 Supply chain analysis	Conduct a supply chain analysis to identify industries setting emissions reduction targets and prioritise shifts to zero-emission suppliers where feasible.	December 2026	City Futures	Existing
5.2 Build supplier capability	Develop and implement a program to raise awareness within the supply chain of Council's long-term goals and build supplier capacity to address their emissions.	June 2027 and ongoing	Strategic Finance & Performance and City Futures	Existing **$**
5.3 Sustainable events guide	Develop and implement a Sustainable Events Guide to support Council staff in reducing the environmental impact of events.	June 2026 and ongoing	City Futures and Operations	Existing
5.4 Influence collective contracts	Influence procurement processes in collective and regional contracts that Council utilises to align with Council's commitment to 'real-zero'.	Ongoing	Strategic Finance & Performance and City Futures	Existing

Figure 17 | Banyule Eco Festival

6. Maximise renewable energy

Where we are now

Key actions we have undertaken over the last five years on our journey toward clean, renewable energy include:

We installed solar PV systems on Council facilities

Solar systems have been installed on 85 Council-owned sites, generating clean, renewable energy and reducing our reliance on the grid. Most systems are monitored to keep them performing at their best and to spot any opportunities for improvement.

We installed batteries at key community sites

Council's investment in battery storage across four facilities - NETS Stadium, Montmorency Community Centre, Simms Road Oval Pavillion and the Bellfield Community Hub - is helping to smooth energy demand and cut carbon emissions.

Council is also a member of the Victorian Energy Collaboration (VECO)—Australia's largest emissions reduction project by local government. Through VECO, Council has committed to 100% renewable electricity for our operations, significantly reducing our corporate emissions footprint. The representation below denotes the impact of Council's participation in VECO from July 2021 to December 2024.

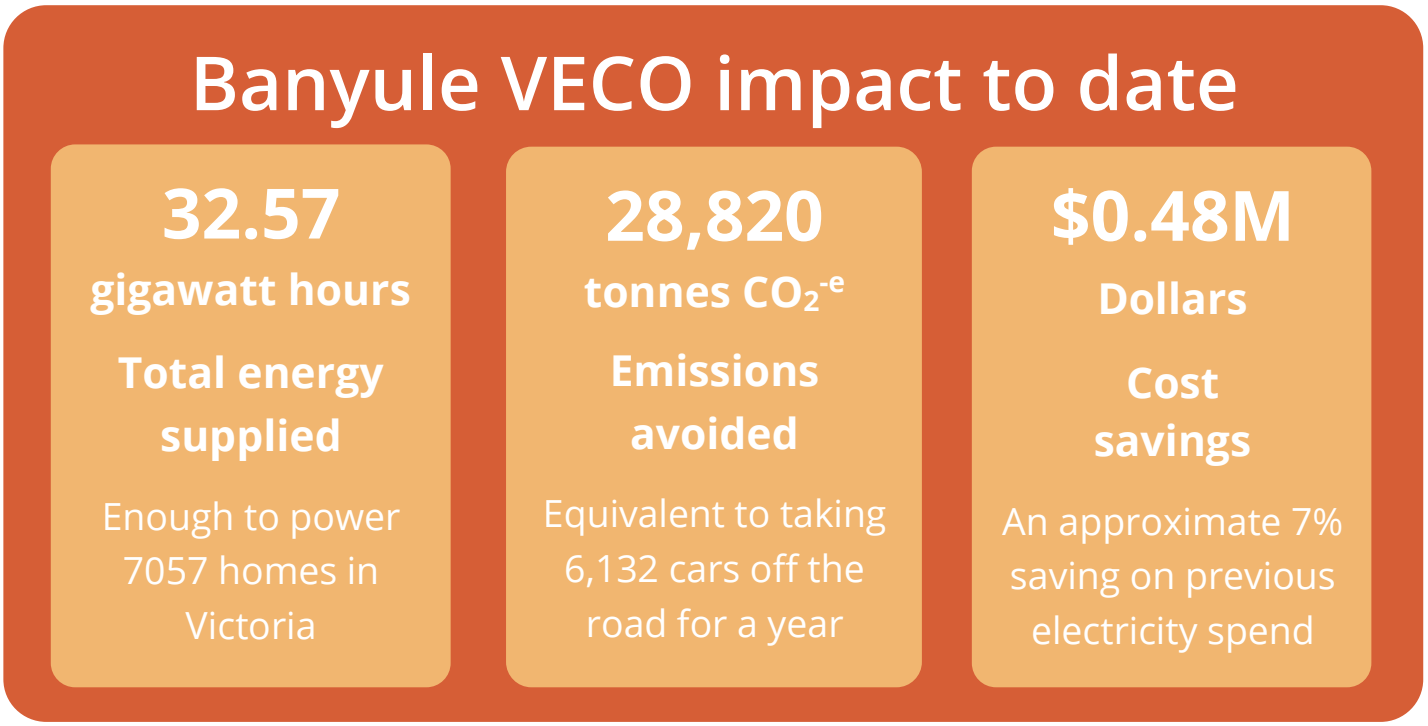


Figure 18 | Representation of the impact of Council's participation in VECO from July 2021 to December 2024

Priorities over the next four years

As Banyule continues to transition to electric technologies, particularly across its large, energy-intensive facilities like aquatic centres, we anticipate a significant rise in our overall electricity demand. This shift is a necessary part of decarbonising our operations, but it also places greater importance on how we source and manage our electricity. Ensuring our growing energy needs are continued to be met without reliance on fossil fuels is central to our approach. In this context, maximising our use of renewable energy, both on-site and through large-scale procurement will play a vital role in meeting that increased demand without compromising our emissions reduction goals. Banyule already sources 100% renewable electricity through the Victorian Energy Collaboration (VECO), and this will remain a key part of our strategy as we electrify more of our operations. Additionally, by investing further in solar, exploring battery storage, and engaging in emerging energy systems we can reduce

our reliance on the grid, improve energy resilience, and continue to lead by example in the local government sector.

Battery integration with solar PV systems

One key area of future focus is battery energy storage. While solar systems are highly effective at fulfilling daytime electricity use, batteries present an opportunity to store excess solar generation for use during peak periods when energy use remains high at many Council facilities. This not only reduces demand on the grid but can also improve energy security and resilience. We will undertake a feasibility study to assess battery storage integration across our existing solar sites. Facilities with significant energy consumption during evening hours will be prioritised to offer energy security for after-hours community services and financial benefits.

NETS battery case study

Council has successfully implemented a solar and battery energy system at the NETS stadium in Macleod to address its high electricity demand, particularly during evening hours when the facility is most active. In recognition of high use for community sport after 4pm each day, the site was selected as the first Council site to pilot battery energy storage. The battery installation was designed to maximise on-site use of solar energy, reduce peak grid demand and associated costs, improve energy resilience for evening operations, and explore the return on investment of battery systems at Council facilities.

Prior to installation, the stadium's average annual electricity cost was approximately $54,000. In 2020, a 122kW sized solar system was installed along with 7 Tesla Powerwall 2 batteries. This complemented a smaller 35kW solar system that had been operating on the site since 2016.

Post-installation, the average electricity cost has now dropped to less than $15,000 per year, resulting in annual savings of over $39,000. The battery system, which cost $193,000, is projected to achieve full payback in under five years. The project learnings will guide future battery feasibility studies, prioritising sites with similar energy use and ensuring battery investment is data-driven and outcome-focused.

Figure 19 | Aerial view of the NETS stadium in Macleod

Optimising and maintaining existing solar PV systems

Council's solar PV installations represent a major investment in renewable energy, and their continued high performance is essential to achieving long-term emissions and cost reduction goals. Over the coming years our focus will shift from solar installation to solar asset management, where we will track system generation, efficiency, and faults in real time. Ongoing performance tracking and asset inspections allow for early detection of faults or performance drops, supporting timely cleaning, repairs and upgrades that minimise energy losses.

Explore upcoming technology and future possibilities

As our energy needs evolve, staying agile and responsive to emerging technology and market opportunities will be key. Beyond optimising current systems, we will actively explore the next generation of energy technologies and market opportunities that could strengthen resilience, support better community outcomes, improve financial outcomes, and further reduce emissions. We will continue to seek opportunities to expand our solar footprint, particularly through integration with new facility developments, retrofits of suitable existing buildings, and creative applications such as solar carports, shade structures, or integrated lighting.

Maximise renewable energy actions

Action	Description	Timeframe	Responsibility	Resources
6.1 Battery integration	Undertake a feasibility study to assess the technical, financial, and operational viability of battery storage integration at existing solar PV sites across Council.	June 2027	City Futures	Existing **$**
6.2 Solar Asset Management Plan	Develop and implement a Solar Asset Management Plan.	June 2027 and ongoing	City Futures	Existing
6.3 Explore emerging technologies	Investigate the feasibility of emerging technologies and identify opportunities for pilot renewable energy projects.	Ongoing	City Futures	Existing

Figure 20 | Aerial view of the Bellfield Hub showing solar panels on the roof

7. Low carbon lighting

Where we are now

Key actions we have undertaken over the last five years on our journey toward clean, renewable energy include:

We began streetlight upgrades to energy efficient LEDs

Since previously being identified as a priority area, a comprehensive streetlight audit was undertaken and a business case developed. LED upgrades have since commenced, significantly reducing energy use.

We have installed smart controllers at 18 sports fields across Banyule

This technology allows us to remotely monitor and manage the lights, turning them off when not in use and detecting faults quickly. This helps save energy, reduce greenhouse gas emissions, improve safety for the community, and limit light spill into nearby homes and natural areas.

Priorities over the next four years

There are approximately 13,000 streetlights throughout Banyule, 12,000 of which are owned and maintained by the Distributed Network Service Providers (DNSPs) Jemena and Ausnet. To date, nearly 1,000 of these have been upgraded to LED. Over the next few years Council will continue to work in partnership with both DNSPs to accelerate the transition of these lights to LED, including pursuing co-funding and rebate opportunities where available.

We will explore opportunities in collaboration with DNSPs to expand smart lighting technology across DNSP-owned streetlights throughout Banyule. This may include installing smart controllers to enhance operational efficiency, reduce energy consumption and enable integration with environmental sensors. These systems could capture valuable data on air quality, noise levels and ambient temperature, providing critical insights to support climate adaptation, identification of pollution hotspots and enhanced urban liveability.

Smart lighting pilot project

In 2023/24, Council undertook a smart lighting pilot project that involved 100 lights in parks and open spaces. Older lighting technology was replaced with energy efficient LED lights and smart lighting controllers. The aim of this initiative was to improve energy efficiency, reduce carbon emissions, extend lamp life, lower energy and maintenance cost and enhance safety and comfort in public spaces. This has allowed Council to have real time visibility and control over the lights, monitor and adjust lighting levels, leading to a reduction in light pollution and minimizing disturbances to Banyule residents and local wildlife. A dashboard has also been established to monitor power consumption in real time, provide insights into usage and automated alerts for lighting faults, allowing for proactive and faster maintenance. A further 900 lights have now been identified for future upgrades with smart lighting technology.

Figure 21 | Case study of the smart lighting pilot project and image showing installation in progress

Council owns and operates nearly 1,000 public lights across carparks, reserves, playgrounds, and sports fields. Around half of these have already been upgraded to LED, including 100 fitted with smart lighting controllers. Council will continue to upgrade the remaining lights in a phased manner over the next four years, with smart lighting controllers installed where appropriate. This will be guided by asset lifecycle considerations and evolving commercial supply dynamics, particularly as inefficient technologies are expected to be phased out industry-wide in coming years.

As all Council-billed lighting is powered through the VECO 100% renewable energy agreement, the focus of lighting upgrades is now on improving energy efficiency, reducing operating costs, and enhancing service delivery, rather than directly reducing emissions.

Low carbon lighting actions

Action #	Description	Timeframe	Responsibility	Resources
7.1 DNSP streetlights LED Upgrade	Advocate for and support full LED transition of DNSP-owned streetlights	Ongoing	City Futures	Existing
7.2 Council lighting LED Upgrade	Complete the upgrade of remaining Council-owned public lighting to LED over the next four years	June 2028	Delivery & Assets and City Futures	Existing **$$**
7.3 Smart streetlights	Investigate the expansion of smart streetlights and sensor-enabled infrastructure across Banyule	December 2026 and ongoing	City Futures	Existing

Figure 22 | Flood lights in use at a sporting facility in Banyule

8. Fugitive emissions

Fugitive emissions are the irregular releases, seepage and leaks of gases and vapours from pressurised systems such as storage tanks, pipes, plant and equipment such as refrigeration, heating, ventilation and air conditioning systems. These emissions are most commonly associated with industrial processes like natural gas, oil, and coal production, and chemical manufacturing. Within Council operations, fugitive emissions primarily result from refrigerant leaks in plant and equipment at buildings, aquatic centres, and community facilities, as well as from lubricants used in fleet vehicles and machinery, and air conditioning systems in vehicles. Due to their irregular and dispersed nature, these emissions are difficult to accurately measure and predict. This is a new area of focus for Council and was not addressed in our previous emissions reduction plan.

Although fugitive emissions make up less than 1% of our total emissions profile, they present a disproportionate challenge in terms of elimination. The environmental impact of these emissions depends on the type of gas released and its associated Global Warming Potential (GWP). Assessment of these emissions, let alone reduction, is still in its infancy, and further work is required to better understand and quantify additional potential sources within Council operations. As we transition to an electrified fleet, reliance on certain engine oils and lubricants contributing to fugitive emissions will naturally decrease, supporting broader emissions reduction goals. The below graph shows our fugitive emissions from the 2018/19 baseline year. In the 2020-2021 financial year, a significant amount of refrigerant was used to service the chiller at Council's 1 Flintoff offices. As of 2023-24 our annual fugitive emissions were 41 tonnes CO_2^{-e}. Council is committed to reducing fugitive emissions wherever possible. However, due to the unpredictable and unintentional nature of these emissions, they are not expected to be fully eliminated and are likely to remain relatively stable for the immediate future.

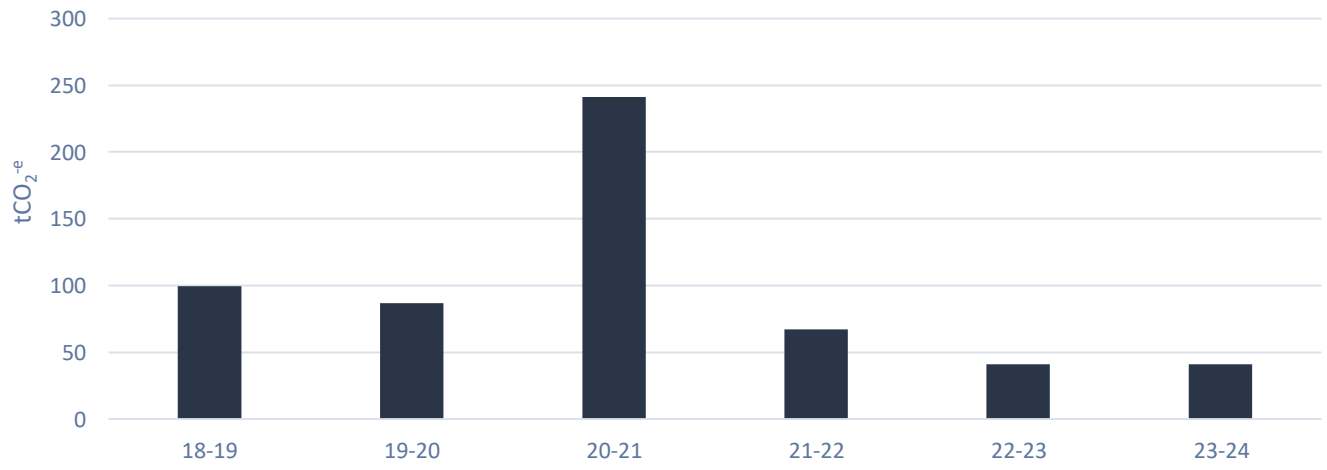


Figure 23 | Council's fugitive emissions in tonnes of carbon dioxide equivalent (tCO_2^{-e}) since baseline year

Fugitive emissions actions

Action #	Description	Timeframe	Responsibility	Resources
8.1 Improve fugitive emission detection	Investigate and implement opportunities to improve fugitive emission detection and management through monitoring technology and routine inspections.	December 2026 and ongoing	City Futures	Existing
8.2 Transition to lower GWP refrigerants	Procure and utilise equipment, plant and appliances that support low Global Warming Potential (GWP) refrigerants, as outlined in Council's Sustainable Building Guidelines.	Ongoing	Delivery & Assets and City Futures	Existing **$**
8.3 Transition to lower GWP lubricants	Investigate opportunities to transition to lower GWP lubricants for the fleet as industry options evolve.	Ongoing	City Futures and Operations	Existing

Glossary

Baseline	In emissions reporting, a baseline refers to the starting level of greenhouse gas emissions against which future emissions reductions can be measured.
Climate Emergency	A situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it.
Cogeneration	A system that generates both electricity and usable heat, for example for water and space heating.
Distributed Network Service Providers (DNSPs)	DNSPs are the companies that own and maintain the infrastructure that delivers electricity to homes and businesses. Ausnet and Jemena are the DNSPs in Banyule.
Downstream Emissions	Emissions that occur during the use and disposal of products and services after they leave the direct control of the organisation.
Electrification	The replacement of technologies or processes that use fossil fuels, like internal combustion engines and gas boilers, with electrically powered equivalents, such as electric vehicles or heat pumps.
Global Warming Potential	A measure of how much heat a greenhouse gas traps in the atmosphere over a specific period, compared to the same amount of carbon dioxide.
Green power	Electricity generated from 100% renewable energy sources that have a minimal environmental impact.
Greenhouse gases	Carbon dioxide, methane, nitrous oxide and other gases that contribute to climate change.
Low-carbon materials	Materials that have a reduced environmental impact by minimizing emissions during their production, transportation, and use, compared to traditional materials.
Net zero	A state where the greenhouse gas emissions produced by an organisation's operations are balanced by an equivalent amount of emissions removed from the atmosphere. Achieving net zero typically involves reducing emissions as much as possible and then using credible carbon offsets or removals to balance any remaining emissions.
Real zero	A state where an organisation eliminates its greenhouse gas emissions entirely, without relying on offsets. Real zero is achieved by fully transitioning operations, services, and assets to zero-emissions technologies and practices.
Supply chain	A network of companies and products that are involved in the production and delivery of a product or service.
Upstream Emissions	Emissions that occur during the production, transport, and delivery of products and services before they reach the organisation and come under its control.