



ENVIRONMENTAL SUSTAINABILITY POLICY COMMITTEE

AGENDA

9 JULY 2024

Notice is hereby given, in accordance with the provisions of the Local Government Act 1993 that an **ENVIRONMENTAL SUSTAINABILITY POLICY COMMITTEE MEETING of ORANGE CITY COUNCIL** will be held in the **COUNCIL CHAMBER, CIVIC CENTRE, BYNG STREET, ORANGE** on **Tuesday, 9 July 2024**.

David Waddell
CHIEF EXECUTIVE OFFICER

For apologies please contact Executive Support on 6393 8391.

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1 INTRODUCTION

1.1 DECLARATION OF PECUNIARY INTERESTS, SIGNIFICANT NON-PECUNIARY INTERESTS AND LESS THAN SIGNIFICANT NON-PECUNIARY INTERESTS

The provisions of Chapter 14 of the Local Government Act, 1993 (the Act) regulate the way in which Councillors and designated staff of Council conduct themselves to ensure that there is no conflict between their private interests and their public role.

The Act prescribes that where a member of Council (or a Committee of Council) has a direct or indirect financial (pecuniary) interest in a matter to be considered at a meeting of the Council (or Committee), that interest must be disclosed as soon as practicable after the start of the meeting and the reasons given for declaring such interest.

As members are aware, the provisions of the Local Government Act restrict any member who has declared a pecuniary interest in any matter from participating in the discussion or voting on that matter, and requires that member to vacate the Chamber.

Council's Code of Conduct provides that if members have a non-pecuniary conflict of interest, the nature of the conflict must be disclosed. The Code of Conduct also provides for a number of ways in which a member may manage non pecuniary conflicts of interest.

RECOMMENDATION

It is recommended that Committee Members now disclose any conflicts of interest in matters under consideration by the Environmental Sustainability Policy Committee at this meeting.

2 COMMITTEE MINUTES

2.1 MINUTES OF THE ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE 7 JUNE 2024

RECORD NUMBER: 2024/1006

AUTHOR: Eli Todman, Sustainability Officer

EXECUTIVE SUMMARY

The minutes of the Environmental Sustainability Community Committee held on 7 June 2024 are provided to the Environmental Sustainability Policy Committee for adoption.

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan strategy “9.2. Develop and promote initiatives to reduce water, energy and waste in consultation with the community”.

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Item 3.3, the ‘Final Report’, is provided by Community Committee members as overview of performance on how Community Committees could be improved. The item identifies opportunities for Council to consider during the induction and operation phases of future committees that form under the next Council.

RECOMMENDATION

- 1 That Council acknowledge the reports presented to the Environmental Sustainability Community Committee at its meeting held on 7 June 2024.**
- 2 That Council determine recommendations 3.3 from the minutes of the Environmental Sustainability Community Committee meeting of 7 June 2024.**
3.3.1. Request Council review the operation of the current community committees in the context of the Final Report, with the aim of identifying any enhancements to the community process under the next Council.
- 3 That the remainder of the minutes of the Environmental Sustainability Community Committee from its meeting held on 7 June 2024 be adopted.**

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation’s impact on Council’s service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

ATTACHMENTS

- 1 ESCC 7 June 2024 Minutes
- 2 ESCC 7 June 2024 Agenda, D24/63029 [↓](#)

ORANGE CITY COUNCIL

MINUTES OF THE

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE

HELD IN COUNCILLORS WORKROOM, CIVIC CENTRE, BYNG STREET, ORANGE

ON 7 JUNE 2024

COMMENCING AT 8:03 AM

1 INTRODUCTION

ATTENDANCE

Cr D Mallard (Chairperson), Cr M McDonell, Mr Peter West (*Audiovisual Link*), Mr Robert Alford, Mr Nick King, Mr Stephen Nugent, Mr Granton Smith, Ms Bev Williams, Mr Reg Kidd (*Audiovisual Link*), Mr Malcolm Stacey, Ms Shahreen Alford, Ms Jennifer Lacey, Mr Cyril Smith, Director Development Services, Water Treatment Manager (*Audiovisual Link*), Manager Waste Services and Technical Support

1.1 Apologies and Leave of Absence

RECOMMENDATION

Mr S Nugent/Ms B Williams

That the apologies be accepted from Mr Andrew Kennedy for the Environmental Sustainability Community Committee meeting on 7 June 2024.

1.2 Acknowledgement of Country

The Chairperson conducted an Acknowledgement of Country.

1.3 Declaration of pecuniary interests, significant non-pecuniary interests and less than significant non-pecuniary interests

Nil.

2 PREVIOUS MINUTES

RECOMMENDATION

Mr P West/Mr S Nugent

That the Minutes of the Meeting of the Environmental Sustainability Community Committee held on 5 April 2024 (copies of which were circulated to all members) be and are hereby confirmed as a true and accurate record of the proceedings of the Environmental Sustainability Community Committee meeting held on 5 April 2024.

Ms A Lockwood entered the meeting with the time being 8.08am

Mr G Smith entered the meeting with the time being 8.13am

Mr R Kidd entered the meeting via audiovisual link with the time being 8.27am

3 GENERAL REPORTS

3.1 CHAIR REPORT

TRIM REFERENCE: 2024/798

The Chair provided a verbal report on matters of relevance to the ESCC. The final meeting date for the Committee will be 19 July 2024, to allow Council procedures to take place with upcoming Local Government Elections.

Highlighted recommendations to 7 May Environmental Sustainability Policy Committee meeting were updated upon further review by staff. The updated recommendation included *that a follow-up report be prepared by staff to ESCC and Council on the adequacy of Council's current approach to biodiversity conservation reflecting the concerns raised by ESCC along with the other items listed in the committee's recommendation (including the implications of the 2020 biodiversity mapping and its associated report's recommendations for our LEP and DCP controls).*

Ms S Alford asked what the data gaps were with the 2020 biodiversity mapping.

Question taken on notice by Director Development Services.

RECOMMENDATION

Mr C Smith/Mr N King

That the Environmental Sustainability Community Committee acknowledge the verbal report provided by the Chair.

3.2 PRIORITY PROJECT TEAMS - UPDATE

TRIM REFERENCE: 2024/799

Climate Action Policy

- Climate Change Management Plan review to take place with Council's Sustainability Officer.
- LGNSW Community Emissions webinar to be circulated to members once available.
- Recommendation to go to Council that the operational Emissions Reduction Plan (ERP) be adopted. The ERP was included in the ESCC papers from 3 November 2023. ESCC members encouraged to attend Council meeting on 9 July and support adoption of the ERP.

Sustainable Urban Design

- Opportunity to provide feedback on Redmond Place Strategic Policy and Vision Statement – link sent to Priority Project Team members.
- Greenstar Community under development for Redmond Place, with ambitions for a 6-star rating.
- Urban Forest Strategy currently with Council's design team. Will be placed on 28 days public exhibition once available.

Mr R Alford highlighted the power issues impacting subdivisions to the south of Orange.

Mr R Kidd asked if Council had considered rent to buy options in the Redmond Place development. Suggested Council could pursue a rent to buy policy at the state level.

The Director Development Services explained this model was explored and there are restrictions which limit progressing further. Reiterated affordable housing would make up a minimum of 20% of housing supply in the development.

Water Management

- As per item 3.4.

Biodiversity

- Initial stages of developing a city-wide biodiversity strategic plan or conservation strategy, with an integrated approach and focus on data efficiencies. Currently working on a table of contents for the strategy.
- Intend to consult the Biodiversity Conservation Trust and Local Land Services for advice on developing the strategy.
- The strategy is expected to consider biodiversity threats such as weeds and feral animals.
- Acknowledged the assistance and support from Council's Strategic Planner, Chris Brown.
- Local Land Services have several events planned for biodiversity month in September. Group will meet to confirm involvement.

Mr S Nugent suggested the one-page project overview should be updated and look to include achievements and unfinished business once finalised.

RECOMMENDATION

Mr S Nugent/Ms A Lockwood

That the Environmental Sustainability Community Committee acknowledge the verbal reports provided by the Priority Project Teams.

3.3 ESCC FINAL REPORT 2022-24

TRIM REFERENCE: 2024/623

Mr M Stacey spoke to the report. Highlighted importance of induction process for Community Committees in general and for ESCC.

Mr S Nugent reiterated subgroups were to meet prior to the next meeting to populate attachment 3.

RECOMMENDATION**Mr M Stacey/Ms B Williams**

That the Environmental Sustainability Community Committee:

1. Acknowledge the contents of the Final Report.
2. Action Attachment 3 as a priority for inclusion in the next committee meeting.
3. Request Council review the operation of the current community committees in the context of the Final Report, with the aim of identifying any enhancements to the community process under the next Council.

Ms B Williams left the meeting with the time being 8.58am

3.4 ORANGE RAW WATER SUPPLY SYSTEM ANNUAL REVIEW 2022-2023

TRIM REFERENCE: 2024/677

Ms Shah Alford requested more information on the flow of Summer Hill Creek.

Manager Water Treatment highlighted monitoring already occurring for Summer Hill Creek, information will be circulated to the Committee.

Mr C Smith commended the Manager Water Treatment for the report. Commented on potential issues with the treated effluent arrangement in place with Cadia.

Mr N King recommended the Water Priority Project Team investigate treated effluent supply to Cadia.

RECOMMENDATION**Ms S Alford/Mr C Smith**

That the report by the Manager Water Treatment on Orange Raw Water Supply System Annual Review 2022-2023 be acknowledged.

THE MEETING CLOSED AT 9:16AM.



ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE

AGENDA

7 JUNE 2024

Notice is hereby given, in accordance with the provisions of the Local Government Act 1993 that a **ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE MEETING of ORANGE CITY COUNCIL** will be held in the **COUNCILLORS WORKROOM, CIVIC CENTRE, BYNG STREET, ORANGE** on **Friday, 7 June 2024** commencing at **8:00 AM**.

David Waddell
CHIEF EXECUTIVE OFFICER

For apologies please contact Eli Todman on 6393 8208.

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE

7 JUNE 2024

AGENDA

EVACUATION PROCEDURE

In the event of an emergency, the building may be evacuated. You will be required to vacate the building. The Committee Clerk will now identify the emergency muster point.

Under no circumstances is anyone permitted to re-enter the building until the all clear has been given and the area deemed safe by authorised personnel.

In the event of an evacuation, a member of Council staff will assist any member of the public with a disability to vacate the building.

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ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE**7 JUNE 2024**

1 INTRODUCTION**MEMBERS**

Cr D Mallard (Chairperson), Cr M McDonell, Dr Vikas Mittal, Mr Peter West, Mr Robert Alford, Mr Nick King, Mr Anthony Doyle, Mr Andrew Kennedy, Mr Stephen Nugent, Mr Granton Smith, Mr Ronald Finch, Ms Bev Williams, Mr George Bate, Mr Reg Kidd, Mr Malcolm Stacey, Ms Shahreen Alford, Ms Jennifer Wickham, Ms Amanda Lockwood, Ms Jennifer Lacey, Mr Cyril Smith, Director Development Services, Manager Building and Environment, Water Treatment Manager, Manager City Presentation, Manager Waste Services and Technical Support, Water and Sewerage Strategic Manager

1.1 APOLOGIES AND LEAVE OF ABSENCE**1.2 ACKNOWLEDGEMENT OF COUNTRY**

I would like to acknowledge the Traditional Custodians of the land on which we meet today, the people of the Wiradjuri Nation. I pay my respects to Elders past and present, and extend those respects to Aboriginal Peoples of Orange and surrounds, and Aboriginal people here with us today.

1.3 DECLARATION OF PECUNIARY INTERESTS, SIGNIFICANT NON-PECUNIARY INTERESTS AND LESS THAN SIGNIFICANT NON-PECUNIARY INTERESTS

The provisions of Chapter 14 of the Local Government Act, 1993 (the Act) regulate the way in which Councillors and designated staff of Council conduct themselves to ensure that there is no conflict between their private interests and their public role.

The Act prescribes that where a member of Council (or a Committee of Council) has a direct or indirect financial (pecuniary) interest in a matter to be considered at a meeting of the Council (or Committee), that interest must be disclosed as soon as practicable after the start of the meeting and the reasons given for declaring such interest.

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Council's Code of Conduct provides that if members have a non-pecuniary conflict of interest, the nature of the conflict must be disclosed. The Code of Conduct also provides for a number of ways in which a member may manage non pecuniary conflicts of interest.

RECOMMENDATION

It is recommended that Committee Members now disclose any conflicts of interest in matters under consideration by the Environmental Sustainability Community Committee at this meeting.

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE

7 JUNE 2024

2 PREVIOUS MINUTES

RECOMMENDATION

That the Minutes of the Meeting of the Environmental Sustainability Community Committee held on 5 April 2024 (copies of which were circulated to all members) be and are hereby confirmed as a true and accurate records of the proceedings of the Environmental Sustainability Community Committee meeting held on 5 April 2024.

ATTACHMENTS

- 1 Minutes of the Meeting of the Environmental Sustainability Community Committee held on 5 April 2024

ORANGE CITY COUNCIL

MINUTES OF THE

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE

HELD IN COUNCILLORS WORKROOM, CIVIC CENTRE, BYNG STREET, ORANGE

ON 5 APRIL 2024

COMMENCING AT 8:02 AM

1 INTRODUCTION

ATTENDANCE

Cr D Mallard (Chairperson), Mr Peter West, Mr Andrew Kennedy, Mr Stephen Nugent, Ms Bev Williams, Mr Reg Kidd (*Audiovisual Link*), Mr Malcolm Stacey, Ms Shahreen Alford, Ms Amanda Lockwood (*Audiovisual Link*), Ms Jennifer Lacey, Director Development Services, Water Treatment Manager, Sustainability Project Officer, Sustainability Officer

1.1 Apologies and Leave of Absence

RESOLVED

Mr P West/Mr A Kennedy

That the apologies be accepted from Mr Granton Smith, Mr Nick King, Mr Robert Alford & Mr Ronald Finch for the Environmental Sustainability Community Committee meeting on 5 April 2024.

1.2 Acknowledgement of Country

The Chairperson conducted an Acknowledgement of Country.

1.3 Declaration of pecuniary interests, significant non-pecuniary interests and less than significant non-pecuniary interests

Nil.

2 PREVIOUS MINUTES

RESOLVED

Mr S Nugent/Mr P West

That the Minutes of the Meeting of the Environmental Sustainability Community Committee held on 16 February 2024 (copies of which were circulated to all members) be and are hereby confirmed as a true and accurate record of the proceedings of the Environmental Sustainability Community Committee meeting held on 16 February 2024.

MINUTES OF ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE 5 APRIL 2024

3 GENERAL REPORTS

3.1 CHAIR REPORT

TRIM REFERENCE: 2024/419

RECOMMENDATION

Mr A Kennedy/Mr P West

That the Environmental Sustainability Community Committee acknowledge the verbal report provided by the Chair.

Mr R Kidd entered the meeting with the time being 8.25am

3.2 PRIORITY PROJECT GROUPS - UPDATE

TRIM REFERENCE: 2024/435

The four Priority Project Groups provided a verbal update on key objectives:

Biodiversity

- Item 3.3 (Biodiversity Mapping) on agenda is primary focus.
- Determine involvement in Biodiversity Month, September 2024.
- Further encourage use of the iNaturalist platform to educate and engage the community on biodiversity in the region.

Water Management

- Briefing on the Orange Raw Water Supply OEMP report 2022-23 will be an item for ESCC at a future meeting.

Sustainable Urban Design

- Provide input into the Urban Forest Strategy.
- Draft Affordable Housing Policy to go to Council with a focus on Councils diverse housing development in the Redmond Place Precinct.

Climate Action Policy

- Community group Electrify2800 continue to meet.
- Organise a subgroup meeting to discuss action items for remaining term.

RECOMMENDATION

Mr P West/Mr A Kennedy

That the Environmental Sustainability Community Committee acknowledge the verbal reports provided by the Priority Project groups.

MINUTES OF ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE 5 APRIL 2024**3.3 BIODIVERSITY DATA & PRIORITIES REVIEW**

TRIM REFERENCE: 2024/437

RECOMMENDATION**Mr P West/Mr S Nugent**

Recognising that current biodiversity (flora/fauna) mapping data available to Council is an important, if incomplete, component of Council's integrated planning processes, and recognising that biodiversity considerations impact Council's work across the organisation, the Committee recommends that Council:

1. Formally adopt the biodiversity mapping study undertaken by The Environmental Factor in 2020 and incorporate the Biodiversity Values Map into the Orange LEP, as an amendment.
2. Make provision for Council's biodiversity mapping to be reviewed and updated on a regular basis, such as every five years, to account for variation in fauna/flora communities.
3. Recognise that gaps remain in biodiversity data/knowledge across the Orange LGA, and more detailed studies are required to identify biodiversity values/assets.
4. Make budget and resource provision for the identification of key components of a biodiversity strategic plan, as a matter of urgency.
5. Establish a Biodiversity Working Group to take responsibility for and progress the projects in parts 2, 3 and 4 of this recommendation.

3.4 GREAT SOUTHERN BIOBLITZ 2024

TRIM REFERENCE: 2024/415

RECOMMENDATION**Ms S Alford/Mr P West**

1. That the Environmental Sustainability Community Committee acknowledge the report on the Great Southern Bioblitz 2024.
2. That the Biodiversity Priority Project Group meet to confirm how Council can support this year's event.

MATTER ARISING**Mr A Kennedy**

Mr A Kennedy requested the inclusion of a legacy report for this term as a discussion item for the ESCC meeting on 7 June 2024.

THE MEETING CLOSED AT 9:15AM.

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE**7 JUNE 2024**

3 GENERAL REPORTS**3.1 CHAIR REPORT**

RECORD NUMBER: 2024/798

AUTHOR: Eli Todman, Sustainability Officer

EXECUTIVE SUMMARY

The Chair will provide a verbal report with feedback on Council's adoption of Committee recommendations and share any other information relevant to the ESCC.

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan strategy "9.2. Develop and promote initiatives to reduce water, energy and waste in consultation with the community".

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Nil

RECOMMENDATION

That the Environmental Sustainability Community Committee acknowledge the verbal report provided by the Chair.

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation's impact on Council's service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE**7 JUNE 2024**

3.2 PRIORITY PROJECT TEAMS - UPDATE

RECORD NUMBER: 2024/799

AUTHOR: Eli Todman, Sustainability Officer

EXECUTIVE SUMMARY

This is an opportunity for the Priority Project Teams to provide a verbal update on current focus areas.

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan strategy “9.2. Develop and promote initiatives to reduce water, energy and waste in consultation with the community”.

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Nil

RECOMMENDATION

That the Environmental Sustainability Community Committee acknowledge the verbal reports provided by the Priority Project Teams.

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation’s impact on Council’s service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

ATTACHMENTS

1 ESCC Project Planning Overview - June 2024, D24/54904

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE

7 JUNE 2024

Attachment 1 ESCC Project Planning Overview - June 2024

Version 4 28.05.24

ESCC 2022 - 2024 PRIORITY PROJECT PLANNING – ONE PAGE OVERVIEW

PRIORITY PROJECTS	Climate Action Policy	Sustainable Urban Design	Water Management	Biodiversity
Priority Project Team Members	Cr Mallard (Convenor), Cr McDonnell, Robert Alford, Stephen Nugent, Bev Williams, Granton Smith, Jen Lacey	Cr McDonnell (Convenor), Bev Williams, Jen Lacey, Shah Alford, Cyril Smith, Malcolm Stacey	Cyril Smith (Convenor), Reg Kidd, Ron Finch	Peter West (Convenor), Nick King, Stephen Nugent, Jen Lacey, Reg Kidd, Andrew Kennedy, Shah Alford, Malcolm Stacey
OCC Community Strategic Plan	<i>9.2. Develop and promote initiatives to reduce water, energy and waste in consultation with the community</i>	<i>8.1. Plan for growth and development that balances liveability with valuing the local environment</i>	<i>8.3. Enact policies and practices to protect the sustainability and security of water destined for potable supply for the water catchment area</i>	<i>8.1. Plan for growth and development that balances liveability with valuing the local environment</i>
Other OCC Community Committee Projects	Urban Forest Strategy	Urban Forest Strategy	Blackmans Swamp Creek Stormwater Harvesting Stage 2	Urban Forest Strategy
OCC Operational Activities	Sustainability, Rooftop Solar Installations	2022-2025 DCP Review, Affordable Housing Policy	Water Management, Orange Raw Water Supply System Annual Review	Biodiversity Mapping - LEP & DCP
Community Education & Engagement	Climate Action Community Leadership, Electrify2800		Purified Recycled Water Treatment plant tour (Sydney)	Great Southern BioBlitz 2024, Biodiversity month (September)
Energy	Renewable energy initiatives	Community battery in Redmond Place development	Solar power, energy efficiency upgrades	
Project Focus – Must Do	Climate Change Management Plan review	Input into update of key interim policies and strategies	Support water sensitive urban design in Redmond Place development	Gap analysis of biodiversity mapping and support LEP amendments
Project Focus – Nice To Do				
Project Focus - Bench				

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE**7 JUNE 2024**

3.3 ESCC FINAL REPORT 2022-24

RECORD NUMBER: 2024/623

AUTHOR: Eli Todman, Sustainability Officer

EXECUTIVE SUMMARY***Authors: Andrew Kennedy, Malcolm Stacey, Jennifer Lacey & Bev Williams***

This report records the achievements, unfinished business and continuous improvement suggestions of the current Environmental Sustainability Community Committee for the term of 2022 to 2024.

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan strategy “9.2. Develop and promote initiatives to reduce water, energy and waste in consultation with the community”.

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Nil

RECOMMENDATION**That the Environmental Sustainability Community Committee:**

- 1. Acknowledge the contents of the Final Report.**
- 2. Action Attachment 3 as a priority for inclusion in the next committee meeting.**
- 3. Request Council review the operation of the current community committees in the context of the Final Report, with the aim of identifying any enhancements to the community process under the next Council.**

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation’s impact on Council’s service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

SUPPORTING INFORMATION

The current ESCC was formed in early 2022, following the Council election in December 2021. A strategic planning workshop, facilitated by external professional, was held on 27 June 2022. This workshop identified four priority project areas: Climate Action Policy, Sustainable Urban Design, Water Management and Biodiversity. Project teams were subsequently formed based on these focus areas and operated with varying degrees of success throughout the Council term. These teams included community members, staff, and elected Councillors.

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE**7 JUNE 2024****3.3 ESCC Final Report 2022-24**

Following a review of the ESCC 2017-2021 Legacy Report, committee processes were revised to enable more efficient and effective outcomes. Notably, a committee coordinating group was established, convenors were appointed to each project team, and a Chair's report was made a standing item for all committee meetings.

Most importantly, the Committee Purpose Statement was updated and endorsed by Council (see Attachment 1). The revised purpose statement is now a more contemporary and inclusive assertion of the priority issues of interest to the ESCC.

The ESCC 2022-2024 Final Report builds on these achievements and identifies opportunities that future committees could adopt to enhance committee processes and project activity.

This Final Report was drafted by an informal subcommittee of the ESCC and aims to:

1. Carry forward previous ESCC advice on how to maximise all council committee activity through a quality committee member induction process (Attachment 2; Induction).
2. Provide the next ESCC with recommendations on how to further improve the effectiveness of the committee's operations (Attachment 2; Committee Process & Project Teams).
3. Inform the next ESCC of the achievements and unfinished business of the current committee as a starting point for their considerations (Attachment 3).

ATTACHMENTS

- 1 Environmental Sustainability Community Committee Charter 2022, D22/76526
- 2 ESCC 2022-24 Recommended Actions, D24/54865
- 3 ESCC 2022-24 Outcomes of the Priority Project Teams, D24/54868



ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE

2022/217

F158

PURPOSE

The Purpose of the Environmental Sustainability Community Committee is:

- The facilitation and exchange of knowledge and ideas between community members, Council staff and Councillors
- To assist Council to lead the community on environmental sustainability
- Provide a voice for the importance and priority of climate action
- To advocate for best practice in urban planning, water management, natural resource management, biodiversity, waste management and renewable energy.
- To strive to help Orange retain its natural beauty as a liveable sustainable City

The Committee does not have a role in the operational function of Council. This is the responsibility of the Chief Executive Officer and staff. Equally, where Council has adopted a Strategic Policy or Strategic Planning document, the Committee must observe the Council position as set out in that policy, plan or document.

REPORTS TO

Environmental Sustainability Policy Committee

TERM

The Environmental Sustainability Community Committee shall dissolve at the General Election of Orange City Council. Council may dissolve the Committee at any time by resolution of Council.

MEMBERSHIP

Two or more Councillors (one of whom shall be Chairperson, as elected by Council)
 Up to 20 community representatives
 Chief Executive Officer (or nominee)
 Non-voting Committee Clerk
 Council staff as required (non-voting)

QUORUM

7 community members and at least one Councillor.

MEETING FREQUENCY

Bi-monthly, with specific meeting dates and times to be determined by the Committee.

VOTING

Each member of the Committee is entitled to one vote only. In the equality of votes, the matter is to be referred to Council for determination.

COMMITTEE CHARTER

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE CHARTER

REPORTS AND RECORDING

Matters to be considered by the Committee must be included in the agenda for the meeting, and must be provided in writing to the Committee Clerk at least 10 days before the meeting. Formal minutes of meetings of the Committee will be produced in accordance with Council's Code of Meeting Practice. The Committee may make recommendations to Council, via the Environmental Sustainability Policy Committee. Council may adopt, amend or decline any recommendation.

VACANCIES

Vacancies may arise during the term of the Committee. If a vacancy does occur, the Committee may invite an individual to join the Committee, or seek expressions of interest to fill the vacancy.

COMMITTEE CLERK

The Chief Executive Officer will provide a Committee Clerk who will be the representative of the Chief Executive Officer, and will exercise the functions of the Chief Executive Officer so far as they are relevant to the Committee and its Chairperson.

RELEVANT POLICIES/DOCUMENTS

Orange City Council Code of Conduct
Orange City Council Code of Meeting Practice
Orange Community Strategic Plan
Delivery/Operational Plan
Asset Management Plan Strategy and Plans

Copies of these and other documents are available on Council's website at www.orange.nsw.gov.au or from the Committee Clerk.

RECOMMENDED ACTIONS

The table below provides recommendations for actions that could enhance committee processes, as identified by an informal ESCC subcommittee. Recommended actions from the previous term of ESCC that were not enacted are again included for consideration.

Area	Recommended Action
Induction	<p>Implement a two-stage induction process for community members. As outlined below, part one is to be a community committee forum for anyone nominating for a community committee, and part two will be a more specific induction in the early stages of each committee:</p> <ol style="list-style-type: none"> 1. Conduct a community committee forum that covers general information relevant to all committees, e.g. purpose of committees, role in Council operations, charter, membership eligibility, commitment, processes, conflicts of interest, roles of different members, e.g. community members, Councillors, committee Clerk and staff. 2. Conduct specific inductions in the early stages of each committee, covering: <ol style="list-style-type: none"> a. Same materials as community committee forum (although more briefly) – for members who don’t get to community committee forum and as a refresher for those who do. b. Introduction to committee members, including other community members and their backgrounds and interests, plus staff and their functional responsibilities. c. Membership and attendance criteria, e.g. sending apologies, resigning if no longer interested, and consequences of missing three meetings without apologies. d. Expectations that community members have about their participation on the committee.
Committee Processes	<ul style="list-style-type: none"> • Hold a strategic planning session at the start of committee term to identify clear objectives and any priority projects to action.

Area	Recommended Action
	<ul style="list-style-type: none"> • Maintain Chairs report as a standing item for committee meetings to explain outcomes from ESCC recommendations to the Environmental Sustainability Policy Committee and any other relevant business. • Form and maintain ‘coordination group’ to consist of a community member acting as a convenor from each priority project team, Chair and Clerk. The purpose of this group is to set the agenda, time allocated for each item and determine any other matters arising that may impact the committee. • Develop a committee ‘database’ with the name, preferred contact, interests, relevant background and qualification of each committee member – to facilitate communication and make the best use of member expertise.
Project Teams	<ul style="list-style-type: none"> • Establish Project Teams as per identified committee priorities. • Identify a community member to act as the convenor for each team, along with an alternative convenor to support processes. • Ensure Project Teams meet between committee meetings to progress action items. • Establish a standardised report process for Project Teams to complete prior to each ESCC meeting. • Maintain Project Team updates as a standing item for committee meetings. • Appoint staff member to mentor each Project Team and provide technical assistance, and facilitate team meetings. It is the convenors role to keep the team on task. • Continuously review Project Team activity and identify as early as possible if the project is still relevant to ESCC priorities.
Relationship with other Community Committees	<ul style="list-style-type: none"> • Identify areas of cross-collaboration between community committees to

Area	Recommended Action
	<p>ensure resources are utilised to their full potential.</p> <ul style="list-style-type: none"> Identify projects which may impact other community committees and communicate this to the clerk for action as deemed necessary.
External Communication	<ul style="list-style-type: none"> Establish regular communication with other relevant community committees to ensure alignment and synergy in efforts and initiatives Utilise Councils Communication & Engagement Team to inform the general community about the activities and achievements of committees. This will enhance transparency and public awareness of community committee’s work. Explore feasibility of a dedicated committee communications page on Council’s website that provides easy access to meeting agendas, minutes, reports and other relevant documents. Establish a process to ensure the community is informed through targeted communication efforts rather than relying solely on the availability of business papers.
Councillor Role	<ul style="list-style-type: none"> Listen to community members and facilitate communication between community members and staff. Speak to the recommendations of the committee during Environmental Sustainability Policy Committee meetings.

OUTCOMES OF THE PRIORITY PROJECT TEAMS

The table below requires each Priority Project Team to populate the relevant sections. Once complete it will summarise the achievements to Council over the past three years to which the Priority Project Teams and ESCC have contributed. It also identifies areas of unfinished business as a potential starting point for the next iteration of ESCC.

Priority Project Team	Achievements	Unfinished Business
Climate Action Policy		
Biodiversity		

Sustainable Urban Design		
Water Management		

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE**7 JUNE 2024**

3.4 ORANGE RAW WATER SUPPLY SYSTEM ANNUAL REVIEW 2022-2023

RECORD NUMBER: 2024/677

AUTHOR: Jon Francis, Manager Water Treatment

EXECUTIVE SUMMARY

Description of the Orange Raw Water Supply System is provided with an overview on how a range of environmental requirements and commitments are managed through implementation of an Operation Environmental Management Plan and the annual reporting process.

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan strategy “9.2. Develop and promote initiatives to reduce water, energy and waste in consultation with the community”.

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Nil

RECOMMENDATION

That the report by the Manager Water Treatment on Orange Raw Water Supply System Annual Review 2022-2023 be acknowledged.

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation’s impact on Council’s service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

SUPPORTING INFORMATION

The Orange Raw Water Supply System is the term used to describe the sources of untreated ‘raw’ water for the community of Orange, including:

- Spring Creek Dam and Suma Park Dam;
- Blackmans Swamp Creek stormwater harvesting scheme (BSCSHS);
- Ploughmans Creek stormwater harvesting scheme (PCSHS);
- Water supply bores; and the
- Macquarie to Orange pipeline (MOP).

An Operation Environmental Management Plan (OEMP) has been developed to ensure that the environmental requirements and commitments made during the approvals process for these raw water supplies are implemented, monitored and reviewed. The OEMP was approved by the (then) NSW Department of Planning and Environment in September 2016, with updates to the OEMP made in accordance with approval conditions. The OEMP is

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE**7 JUNE 2024****3.4 Orange Raw Water Supply System Annual Review 2022-2023**

publicly available on the Orange City Council website at <https://www.orange.nsw.gov.au/water/oranges-water-supply/>

An Annual Review is prepared as a summary of the environmental performance of the Orange Raw Water Supply System for the previous financial year (referred to as the water year). The Annual Review references data collected by specialist consultants and Orange City Council staff and provides an overview of; key activities, monitoring results (including volumetric extractions), assessment of performance against predictions, compliance status and improvement measures. The Annual Review also contains relatively large appendices, including:

- Annual Hydrology Report (contains a stream-gauging sub-report from WaterNSW);
- Annual Aquatic Environment Monitoring Program (AEMP) Report (contains sub-reports from DPM Envirosiences and NSW Fisheries); and
- Groundwater Monitoring Program Annual Report.

The Annual Review is sent to the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW), and the State Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) (including the sub-agencies of Water, Fisheries, Environment & Heritage and Department of Planning Housing and Infrastructure). It is also made publicly available on the Orange City Council website at <https://www.orange.nsw.gov.au/water/macquarie-pipeline/>.

The 2022-23 Annual Review was completed in February 2024 with key points that include:

Hydrology:

- neither the Macquarie River nor the stormwater harvesting schemes were called upon;
- the water year was initially modelled as neutral in the Decision Support Tool;
- very high flows were experienced in Summer Hill Creek (Suma inflow was 75,389ML which is above modelled average of 15,500ML) and the Macquarie River (95th percentile); and
- the Third Crossing stream-gauge remained >1.75 ML/day so no need for additional releases above the 1ML/day and Summer and Autumn Flushes.

Aquatic Ecology:

- NSW Fisheries conducted fish and microcrustacean surveys at 9 sites on the Macquarie River and 5 sites on Summer Hill Creek with 12 species of fish recorded across 13 sites (7 native and 5 introduced/pest);
- data suggests that native fish communities in the broader Macquarie River (both upstream and downstream of the offtake) are under pressure; and
- aquatic ecologist (DPM Envirosiences) conducted autumn sampling in Summer Hill Creek and the Macquarie River.

Aquatic Water Quality:

- some elevated physical parameters due to high flows e.g. electrical conductivity in the Macquarie River and Summer Hill Creek.

ENVIRONMENTAL SUSTAINABILITY COMMUNITY COMMITTEE**7 JUNE 2024****3.4 Orange Raw Water Supply System Annual Review 2022-2023**

Groundwater:

- Showground and Margaret Street bores supplied 78ML to the Sewage Treatment Plant with improvements identified to set alarms for groundwater levels; and
- minimal extraction from Clifton Grove bores.

Improvement Measures:

- no aquatic ecology spring sampling on Macquarie River (improvement measure from 2021-22) due to high flows;
- aquatic monitoring moving forward to include dedicated searches for signs of platypus occupation (prints and burrows); and
- NSW Fisheries are engaged to assist with the assessment of the Macquarie River intake structure design and operation.

Activities relevant to the Orange Raw Water Supply System have also included focus on the approval process for the proposed East Orange Harvesting Wetland.

3 GENERAL REPORTS

3.1 EMISSIONS REDUCTION PLAN

RECORD NUMBER: 2024/996

AUTHOR: Eli Todman, Sustainability Officer

EXECUTIVE SUMMARY

The purpose of this report is to seek Council's adoption of the Emissions Reduction Plan (ERP) and the proposed emissions reduction targets. The ERP provides a pathway to reducing the operational greenhouse gas emissions for Orange City Council in order to meet the NSW Government's target of net-zero by 2050. The ERP was reported to the ESCC meeting held on 3 November 2023, with additional time given for feedback from ESCC members. Feedback has been considered and included in the updated draft ERP and this document is reported for Council's consideration.

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan strategy "8.2. Ensure best practice use of renewable energy options for Council and community projects".

FINANCIAL IMPLICATIONS

There is no current estimated value. The Emissions Reduction Plan identifies projects to support budget bids and grant applications.

POLICY AND GOVERNANCE IMPLICATIONS

Nil.

RECOMMENDATION

- 1 That the Council adopt the Emissions Reduction Plan.**
- 2 That the Council endorse the Emissions Reduction Targets identified within the Emissions Reduction Plan.**
- 3 That Council publish its emission reduction targets.**

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation's impact on Council's service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

SUPPORTING INFORMATION

In April 2021, Council adopted its Climate Change Strategic Policy (ST148) along with an operational Climate Change Management Plan. A key pillar of the plan is an overarching Emissions Reduction Plan (ERP) for Council activities which provides the pathway towards net zero and contributes to the NSW Government's emission reduction targets.

Council, via the Central NSW Joint Organisation (CNSWJO), received \$25,000 from the NSW Department of Climate Change, Energy, the Environment and Water (previously the Office of Energy and Climate Change) to assist with the development of the ERP.

3.1 Emissions Reduction Plan

Through previous work with the CNSWJO in the development of similar plans for Bathurst Regional Council and Cabonne Council, a company called “100% Renewables” was engaged to prepare the plan in consultation with key Council stakeholders.

The draft ERP (attachment 1) establishes baseline emissions for FY2020, covering all scope 1 and scope 2 emissions arising from Council activities. Scope 1 emissions are directly generated at Council facilities, such as the burning of natural gas, the production of waste, or driving Council vehicles. Scope 2 emissions are caused indirectly by consuming electricity. These emissions are generated outside of Council, but Council is indirectly responsible for them.

Council’s greenhouse gas emissions in FY2020 were 49,558 t CO₂-e. Over 61% of emissions are due to landfill operations, and 27% are from electricity used to operate Council facilities and streetlighting. Emissions for the last four financial years, including the baseline year, are shown in Table 1.

Council entered the 100% Renewable Power Purchase Agreement with Iberdrola on 1 January 2023 for large energy consuming sites, which resulted in significant emission reductions for both electricity and streetlighting. The significant emission reductions can be seen in Table 1 below.

Landfill emissions were calculated using National Greenhouse Account (NGA) factors based on aggregated waste deposited for the municipality. It is important to realise the NGA factors represent standard emission rates for landfill waste that has minimal recycling and diversion. For many years, Council has been a leader in recycling and diverting organic waste and other materials for its waste streams. Unfortunately, the NGA assumptions do not capture the actual emission reductions achieved by Orange’s diversion efforts. To accurately demonstrate its success, Orange needs to conduct actual emission studies of our landfill operations.

To this end, Council is currently in the process of installing gas biofilters on each of the capped landfill cells at the Euchareena Road Resource Recovery Centre. This will enable accurate emissions data to be captured. It is expected data from this system will be available for review from October 2025, at which point landfill emissions will be updated accordingly. Mitigation methods can then be modelled and implemented as required.

Table 1: Orange City Council Greenhouse Gas Emissions (Scope 1 & 2)

Emissions Source	FY20 t CO ₂ -e	FY21 t CO ₂ -e	FY22 t CO ₂ -e	FY23 t CO ₂ -e
Landfill waste (net emissions)	31,849	30,354	31,310	33,189
Electricity (Council assets)	11,425	10,938	8,930	2,653
Fleet fuel - Diesel	1,146	1,019	818	1,284
Wastewater	3,545	4,454	5,217	4,772
Streetlighting	1,982	1,434	1,301	557
Natural gas	808	862	719	508
Green waste	303	300	431	263
Fleet fuel - Petrol	85	81	68	107

3.1 Emissions Reduction Plan

LPG	5	5	0	0
Total emissions	49,558 t CO₂-e	49,447 t CO₂-e	48,795 t CO₂-e	43,332 t CO₂-e

The ERP proposes emissions reduction targets, which are underpinned by recommended actions to enable the targets to be met within the indicated timeframes. Specifically, the proposed targets are:

Net Zero by 2050

- In the first instance, it is recommended that Council commit to aligning with the NSW State Government target of net zero emissions by 2050 or earlier, where cost-effective and feasible abatement measures allow.

Maintain zero-emission electricity until 2030

- Maintain procurement of 100% of Council's electricity from renewable sources until 2030 through the implementation of renewable energy projects and power purchase agreements.

Emissions Reduction in Waste Management and Landfill

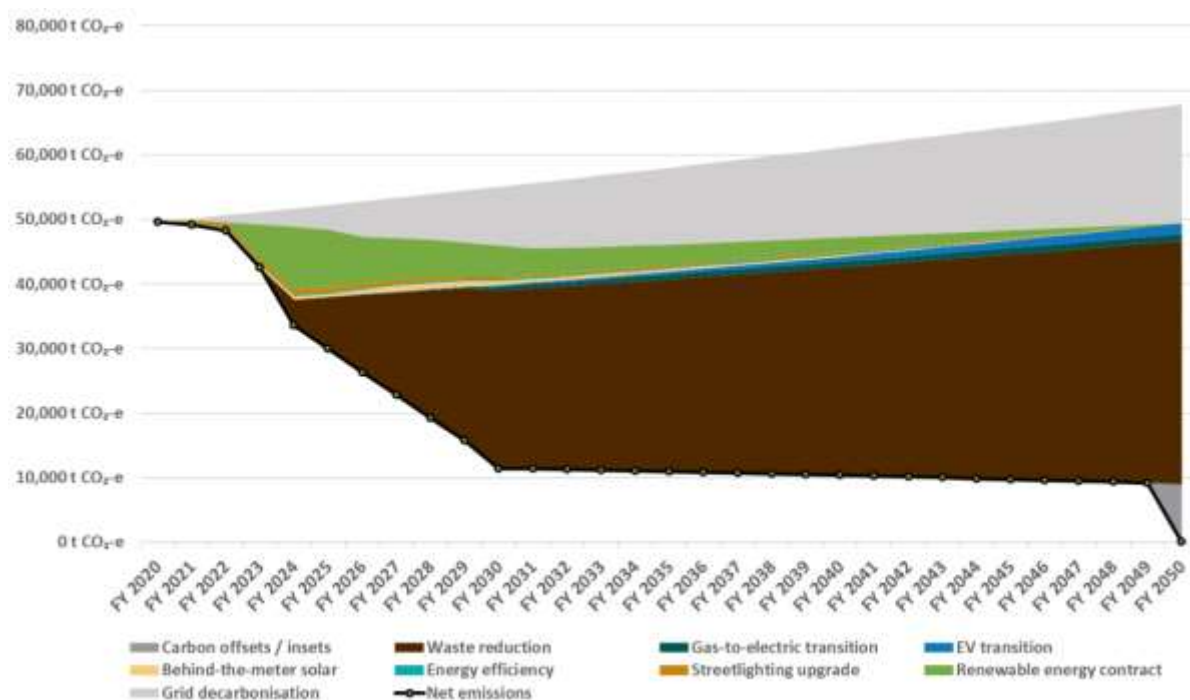
- In-principle commitment to emissions cuts aligned with the NSW Waste and Sustainable Materials Strategy 2041. This is dependent on regional collaboration and government support to achieve the WSMS emissions reduction targets, recognising the significant challenges facing regional councils in reducing emissions from landfills.

Fossil Fuel Transition

- Commit to transitioning away from fossil fuels and towards clean energy sources as part of the 2050 Net Zero target. This includes adopting renewable energy technologies and minimising reliance on fossil fuels across Council operations, facilities, and infrastructure.

Recommended actions and assumptions in the plan have been modelled and are reflected in Figure 1 to show an emissions road map for Council.

Figure 1: Orange City Council's Emissions Reduction Pathway



3.1 Emissions Reduction Plan

It should be noted that this space is very dynamic and targets at a State or Federal level may change very quickly; for example, the NSW Government's 70% interim emissions reduction target was originally 35% by 2030. Factors that may make the case for changing targets can be legislative, technology-driven (e.g. rapid acceleration in clean hydrogen, falling battery storage and EV costs), funding (e.g. to rapidly transition the waste sector to low emissions and circular economy outcomes), and political (e.g. IPCC changing guidance and international consensus to act, imposition of trade tariffs for high-carbon countries).

Other reasons to review targets may include future decisions to include scope 3 emissions, in upstream energy distribution and in goods and services purchased by Council, and the potential need to evaluate new abatement approaches such as carbon sequestration to achieve Council's targets.

It is therefore recommended that Council review its emissions reduction targets periodically, for example, in line with each Delivery Program Cycle.

Adopting the ERP and the associated targets will further support the success of the Climate Change Management Plan, which has already enabled reductions in Council's emissions profile and operational costs. Table 2 demonstrates some of the major achievements since the adoption of the Climate Change Management Plan in 2021.

Table 2: Climate Change Management Plan major achievements

Project	Estimated Cost Savings (annual)	Energy Reduction (annual)	Emissions Reduction (annual)
100% renewable electricity supply	\$1,524,000	-	10,938 t CO ₂ -e
740kW of solar on council assets	\$177,000	983 MWh	953 t CO ₂ -e
LED streetlighting upgrades	\$410,000	1,309 MWh	1,434 t CO ₂ -e
Wade Park energy upgrades	\$10,000	42 MWh	51 t CO ₂ -e
Total	\$2,121,000	2,334 MWh	12,376 t CO₂-e

The ERP was acknowledged by the Environmental Sustainability Community Committee on 3 November 2023, with positive feedback.

In accordance with s160 Local Government Act 1993, the ERP is not required to go on public exhibition as it is an operational document.

Whilst being an operational document, the implementation of the emissions targets identified within this plan is mandated by both NSW Government Policy and legislation; and is also required by the Actions within Council's Climate Change Management Plan and the Key Performance Indicators in Council's Community Strategic Plan.

ATTACHMENTS

- 1 DRAFT Orange City Council Emissions Reduction Plan, D24/63084 [↓](#)



Orange City Council

EMISSIONS REDUCTION PLAN

Draft Report

Date: 23 October 2023



www.100percentrenewables.com.au



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1 Executive Summary

100% Renewables was engaged by the NSW Office of Energy and Climate Change (OECC) via Central NSW Joint Organisation, to work with Orange City Council (Council) to deliver an Emissions Reduction Plan (ERP). The ERP brings together all the key elements of Council's scope 1 and scope 2 emissions into a single framework that can guide action across Council's key functions on emissions reduction.

Specifically, the ERP collates progress on Council's Climate Change Management Plan (CCMP) and input from Council on opportunities for emissions reduction from other stationary energy, transport and waste activities, and to model the deep cuts needed to Council's emissions over time.

This ERP helps Council to understand the key abatement levers needed to align with the NSW Government's target to reduce the State's emissions by 70% by 2035 and to reach net zero emissions by 2050, and to set its own interim targets for emissions reduction.

Council can consider incorporating this Emissions Reduction Plan and related plans (e.g. CCMP) within its Integrated Planning and Reporting (IP&R) Framework, and updating these periodically to align with Delivery Program cycles and Operational Plans.

1.1 Orange City Council recommended energy and emissions targets

In 2021, Orange City Council released its Climate Change Management Plan (CCMP), outlining its emissions reduction priorities in alignment with the targets set by the New South Wales government. The CCMP identifies three key areas for operational emissions reduction actions, based on their emissions profile in NSW: Stationary Energy, Transport, and Waste. Education and communication efforts are equally emphasised across all priority areas. This strategic approach underscores Council's commitment to addressing climate change and promoting sustainable practices throughout the community.

The purpose of this ERP was to analyse current and potential future business-as-usual emissions, consult with key Council stakeholders, and perform analysis to highlight potential reduction pathways for Council's emissions. This takes into account Council's current electricity supply agreement for the large and small contract sites, which commits Council to source 100% of its total electricity from renewables, and the goals of the NSW Waste and Sustainable Materials Strategy (WSMS) 2041, which targets ambitious emissions reduction from diversion, waste reduction and organics management across the State. Resulting from this engagement and analysis, the following emissions reduction targets are recommended for Council's consideration:

- **Net Zero by 2050:** In the first instance it is recommended that Council commit to align with the NSW State Government target of net zero emissions by 2050, or earlier where cost effective and feasible abatement measures allow.
- **Maintain zero-emission electricity by 2030:** Maintain procurement of 100% of Council's electricity from renewable sources until 2030 through the implementation of renewable energy projects and power purchase agreements.



- Emissions Reduction in Waste Management and Landfill:** In-principle commitment to emissions cuts aligned with the NSW Waste and Sustainable Materials Strategy 2041. This is dependent on regional collaboration and government support to achieve the WSMS emissions reduction targets, recognising the significant challenges facing regional councils to reduce emissions from landfill.
- Fossil Fuel Transition:** Commit to transitioning away from fossil fuels and towards clean energy sources as part of the 2050 Net Zero target. This includes adopting renewable energy technologies and minimising reliance on fossil fuels across Council operations, facilities, and infrastructure.

In addition to these recommended targets and objectives, numerous factors may call for targets to be changed from time to time. These include legislation, technology, internal and external sources of funding, expansion of Council’s scope to include value chain emissions, as well as action by Council’s peers.

Given this, a priority for Council should be to review its targets, in line with periodic ERP reviews.

1.2 Orange City Council carbon footprint

Orange City Council’s greenhouse gas emissions in FY2020, the baseline year for this ERP, were **49,558 t CO₂-e** (scope 1 and scope 2). 62% of emissions are due to landfill operations, and 27% are from electricity used to operate Council’s facilities and streetlighting. A summary of emissions in the baseline year is graphed (Figure 1) and tabulated (Table 1) below.

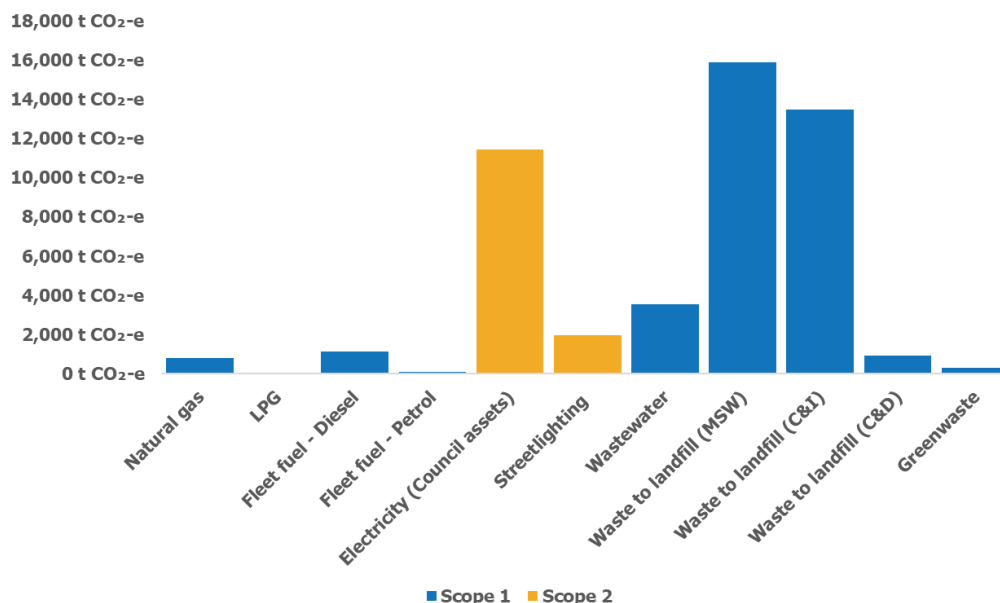


FIGURE 1: ORANGE CITY COUNCIL – FY2020 CARBON FOOTPRINT (SCOPE 1 & 2)



TABLE 1: ORANGE CITY COUNCIL – FY2020 CARBON FOOTPRINT (SCOPE 1 & 2)

	Emission source	Activity data	Unit	Scope 1	Scope 2	Total	%
	Natural gas	15,674	GJ	808 t CO ₂ -e		808 t CO ₂ -e	1.63%
	LPG	3	kL	5 t CO ₂ -e		5 t CO ₂ -e	0.01%
	Fleet fuel - Diesel	422	kL	1,146 t CO ₂ -e		1,146 t CO ₂ -e	2.31%
	Fleet fuel - Petrol	37	kL	85 t CO ₂ -e		85 t CO ₂ -e	0.17%
	Electricity (Council assets)	14,461,997	kWh		11,425 t CO ₂ -e	11,425 t CO ₂ -e	23.05%
	Streetlighting	2,508,432	kWh		1,982 t CO ₂ -e	1,982 t CO ₂ -e	4.00%
	Wastewater	3,545	t CO ₂ -e	3,545 t CO ₂ -e		3,545 t CO ₂ -e	7.15%
	Waste to landfill (MSW - Municipal)	9,930	tonnes	15,888 t CO ₂ -e		15,888 t CO ₂ -e	32.06%
	Waste to landfill (C&I - Commercial)	10,355	tonnes	13,462 t CO ₂ -e		13,462 t CO ₂ -e	27.16%
	Waste to landfill (C&D - Construction)	4,556	tonnes	911 t CO ₂ -e		911 t CO ₂ -e	1.84%
	Greenwaste	6,568	tonnes	302 t CO ₂ -e		302 t CO ₂ -e	0.61%
	Total (t CO₂-e):			36,152 t CO₂-e	13,407 t CO₂-e	49,558 t CO₂-e	100%

1.3 Potential roadmap to net zero emissions for Orange City Council

Based on meetings with stakeholders and analysis of data and reports provided by Council, a potential emissions reduction pathway was developed. Orange City Council could adopt this pathway to reduce its carbon footprint in coming years.

This pathway is based on a combination of business-as-usual assumptions relating to population growth and the associated impact on emissions, particularly from waste. Also included are known initiatives such as current renewable energy power purchasing and streetlighting upgrades, plus possible emissions reduction pathways for sources including electricity, transport, gas, and landfill emissions.

The timing and scale of any of the measures included in the pathway may well change over time, and this pathway therefore highlights one possible scenario, aligned with the recommended targets and objectives above. This is represented graphically in Figure 2.



Emissions Reduction Plan: Orange City Council

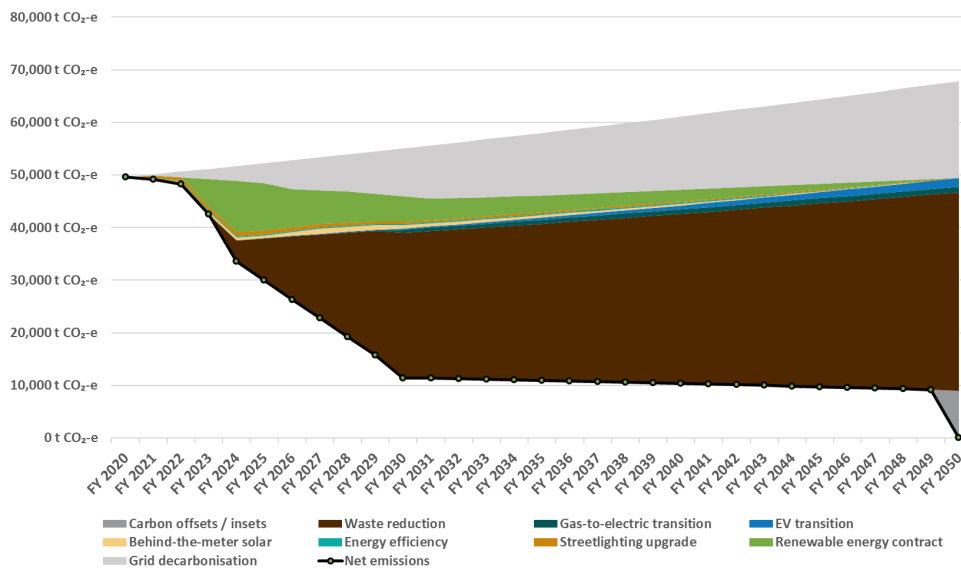


FIGURE 2: ORANGE CITY COUNCIL: POTENTIAL EMISSIONS REDUCTION PATHWAY

1.3.1 Orange City Council’s Emissions Reduction Plan

The ability for Council to achieve an emissions reduction outcome such as that outlined in Figure 2 will be a function of local action, regional collaboration and support from State Government to achieve the goals. Table 2 sets out the recommended approach and key initiatives that can be developed or continued to help drive low emissions outcomes in each area of Council’s emissions.

TABLE 2: ORANGE CITY COUNCIL – EMISSIONS REDUCTION PLAN PER SOURCE

Opportunity	Timing	Recommended action plans
Renewable energy contract	Phase 1: FY2023 to FY2050	<ul style="list-style-type: none"> Council’s current renewable energy contract commenced on 1 January 2023, covering 100% of the total electricity load. Sustain a minimum 100% renewable energy purchase for Council’s electricity use.
Electricity – on site solar PV and batteries	FY2024 to FY2027	<ul style="list-style-type: none"> Implement Council’s plan to install additional solar PV systems at the Orange Showground and Water Treatment Plant, building on the more than 740kW of installed solar PV systems. Continue small-scale solar rollout, adding new units or increasing the size of existing systems on facilities with daytime loads that can be effectively supported by PV, and progress with solar installations on the Theatre roof to better meet the demand at the Civic Centre. Assess the feasibility of installing more midscale solar systems on Council sites, such as the Suma Park Pump Station and Wastewater Treatment Plant, sized to meet operational needs and reduce running costs.



Opportunity	Timing	Recommended action plans
		<ul style="list-style-type: none"> Incorporate renewables (and storage) in design for new / upgraded works, for example in sewage pump stations (SPS). Conduct a Council-wide battery storage feasibility study and implementation rollout plan.
Streetlighting – LED upgrades	<u>Phase 1:</u> FY2023 to FY2032	<ul style="list-style-type: none"> Council rolled out implementation of LED streetlighting upgrades in February 2020. No further action is required at this time.
	<u>Phase 2:</u> FY2033 to FY2050	<ul style="list-style-type: none"> In the future, implement another bulk upgrade with more efficient LEDs and potentially smart controls.
Electricity – energy efficiency	<u>Phase 1:</u> FY2021 to FY2030	<ul style="list-style-type: none"> Continue the energy efficiency retrofitting and lighting replacement projects that Council has been implementing at Council sites, such as the LED lighting upgrades at the airport and Council buildings. Improve energy efficiency at large sites such as the wastewater treatment plant (e.g., secondary treatment diffuser design). Ensure that energy efficiency and sustainability are built in to building design guidelines and practices and develop a review process that evaluates the integration and performance of new technology in building design.
	<u>Phase 2:</u> FY2031 to FY2050	<ul style="list-style-type: none"> Continue implementing other energy efficiency initiatives such as air conditioning upgrades particularly in offices and community facilities, VSD controllers across water and sewage pumping systems, WTP and STP upgrades (e.g. STP digester system), smart metering, and implement building audits to improve efficiency adoption.
Natural gas & LPG	FY2024 to FY2030	<ul style="list-style-type: none"> Adopt a policy of not implementing gas in new facilities, refurbishments, or equipment replacement projects. Complete the feasibility assessment for replacing gas boilers at the Olympic Pool with electric heat pumps (and implement where the business case is favourable and/or grant funding can be applied to the project). Progressively upgrade gas equipment such as boilers, storage water heaters, and cooking equipment with equivalent electric devices, building on the electric heat pump installed in Council’s admin building replacing a 500kW gas heating system. By 2030, a complete electrification of these systems will be achieved.
Transport fuel –EV Transition Plan	<u>Phase 1a:</u> FY2024 to FY2030	<ul style="list-style-type: none"> Implement a staged approach to transition Council fleet towards zero emissions. Develop a fleet transition plan via CNSWJO, including consideration of leaseback vehicle EV incentives.



Opportunity	Timing	Recommended action plans
Transport fuel –EV Transition Plan	<u>Phase 1b:</u> FY2026 to FY2030	<ul style="list-style-type: none"> Focus on replacing existing internal combustion units with fit-for-purpose EVs, including passenger vehicles and small plant, building on the 3 x EV and 5 x Hybrid vehicles that are currently in use. Establish EV charging infrastructure across council facilities such as the Council Depot and seek grant funding to support the deployment of EV fleet and Council charging stations. Invest in staff upskilling in EV maintenance to support transition.
	<u>Phase 2a:</u> FY2031 to FY2040 <u>Phase 2b:</u> FY2031 to FY2050	<ul style="list-style-type: none"> Expand fleet electrification to include heavy-duty vehicles and specialised equipment. Continuously trial and integrate advanced EV and hydrogen models and innovations. Collaborate with other councils, regional bodies, and industry partners for large-scale EV and hydrogen adoption. Revisit and periodically update the fleet strategy in future to adapt to changing circumstances and emerging technologies and to reflect more commercially available and fit-for-purpose vehicles in Council’s plan.
Landfill waste	FY2024 to FY2030	<ul style="list-style-type: none"> Focus on community education and exploring new approaches in waste reduction. Implement waste reduction campaigns and community outreach initiatives to encourage responsible waste management practices and behaviour change.
	<u>Phase 1:</u> FY2024 to FY2030	<ul style="list-style-type: none"> Explore reducing red bin collection to fortnightly to boost green bin usage and improve FOGO recovery rates. Initiate a staged phytocapping program for active and future landfill cells, upon achieving the required finished height for effective capping, as part of Council’s staged landfill cell development plan. Implement passive gas monitoring on capped landfill cells, such as a biofiltration system, for effective emissions management. Renew the Waste Collection Contract in 2026 and aim to implement feasible improvements, including electrification and or hydrogen fuel of waste collection vehicles and optimised pickup rosters. Align licensed waste facilities with upcoming new EPA requirements through necessary adjustments.



	<p><u>Phase 2:</u> FY2031 to FY2050</p>	<ul style="list-style-type: none"> • Advocate for robust product stewardship legislation, ensuring industries are responsible for their waste lifecycle, and promote collaborations between government and industry for effective waste management initiatives. • Advocate for equitable recycling regulations, making recycling bin usage mandatory for industries in alignment with household practices. • Enhance methane collection in landfills where feasible, ensuring optimal gas recovery and utilisation. • Seek to secure funding for alternative recycling streams like plastics (e.g., RedCycle) and glass (e.g., asphalt utilisation), while also allocating resources for efficient leachate transport and treatment in the STP. • Foster a culture of waste minimisation and recycling within the community.
<p>Carbon offsets / insets</p>	<p>FY2050</p>	<ul style="list-style-type: none"> • Council has no plans to purchase carbon offsets to reduce emissions. Investigate local insetting capacity through urban greening projects and tree canopy cover initiatives, including the development of an Urban Forest Strategy and implementing tree replacement measures for trees removed.



1.4 Funding an emissions reduction plan

1.4.1 Budget for Council action

Subject to feasibility studies, continue funding emission reduction initiatives from the operational budget.

1.4.2 Grant funding

Many initiatives that Council has progressed have been with grant assistance, and this will continue to be a key means of funding abatement projects. Recommended starting points for the identification of grants that can support emissions reduction initiatives include:

- Commonwealth Government grants portal at <https://www.energy.gov.au/business/grants-and-funding> links through to grants at Commonwealth and State levels, including to Australian Government financing via <https://business.gov.au/grants-and-programs>.
- NSW State Government funds via <https://www.nsw.gov.au/grants-and-funding> and <https://www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes>, and
- Funding linked to the NSW Sustainable Waste and Materials Strategy via <https://www.dpie.nsw.gov.au/our-work/environment-energy-and-science/waste-and-sustainable-materials-strategy>

1.4.3 Revolving Energy Fund (REF)

Council may consider re-establishing the REF¹, utilised approximately 12 years ago for solar PV investments, to support emission reduction and renewable energy initiatives. However, the potential revival of the REF should address previous limitations, ensuring it encompasses a broader scope of investments beyond solar PV installations on general Council facilities.

1.5 Next steps

The following are the recommended next steps as part of the implementation of this ERP:

- Review and consider adoption of the ERP to drive progress towards lower emissions for Orange City Council's operations.
- Review and adopt the targets suggested as part of this ERP.
- Develop waste and fleet strategies that explicitly take emissions reduction and funding initiatives into account and engage with NSW Government, regional Councils, and JO partners.
- Incorporate the ERP and related plans into Council's Integrated Planning and Reporting framework, and ensure that 4-year Delivery Programs and annual Operational plans assess opportunities to implement the ERP across functional areas.
- Consider the re-development of a Revolving Energy Fund to support the plan.
- Regularly review Commonwealth and State Government funding opportunities to identify those that are applicable to Orange City Council. Ensure that grant-eligible projects are 'shovel-ready' to the extent possible, so that chances of success are improved.

¹ A REF is a sustainable funding mechanism, whereby savings from sustainability projects are tracked and used to replenish the fund for the next round of investments. In this way, funds used for energy efficiency, renewable energy, and potentially other sustainability projects can be spent multiple times to drive emissions reduction, energy and cost savings. REFs allow a monetary investment to be spent a number of times (through reinvesting energy cost savings) without reducing its value.



2 Context for action to reduce emissions

2.1 Global context

According to the IPCC’s report, *Climate Change 2021: the Physical Science Basis*, we have emitted over 85% of all emissions we can emit if we are to have a chance of remaining within 1.5°C of warming in the long term. Key agreements and reports that underpin international consensus to act include:

1. Sustainable Development Goals (SDGs)²
2. Paris Agreement³
3. IPCC’s AR6 Synthesis Report: Climate Change 2023 (AR6)⁴



FIGURE 3: GLOBAL CONTEXT FOR ACTION ON CLIMATE

The pathway to follow if a safe future climate is a goal is to **start today, make deep emissions cuts, and persist on this path for years to reach net zero emissions**. To achieve this would mean:

1. GHG emissions from stationary fuel combustion such as natural and LP gas are minimised, and
2. GHG emissions from transport fuel combustion are minimised, and
3. GHG emissions from electricity consumption are minimised, and
4. GHG emissions from waste to landfill and wastewater systems are minimised, and
5. Remaining emissions are offset or removed through new emissions removal measures

² Sourced from <https://www.un.org/sustainabledevelopment/development-agenda/>

³ Sourced from <https://www.un.org/sustainabledevelopment/climatechange/>

⁴ Sourced from <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>



2.2 National and local context

In Australia, the commitment to addressing climate change is becoming more uniform and aligned towards international goals across all levels of government. This includes:

- The Federal Government has legislated emissions reduction of 43% by 2030 (from 2005 levels) and is committed to net zero by 2050,
- NSW Government has a target of 70% emissions reduction by 2035 and net zero by 2050, as yet unlegislated,
- A large number of regional local governments representing more than two thirds of NSW population are committed to deep emissions cuts.

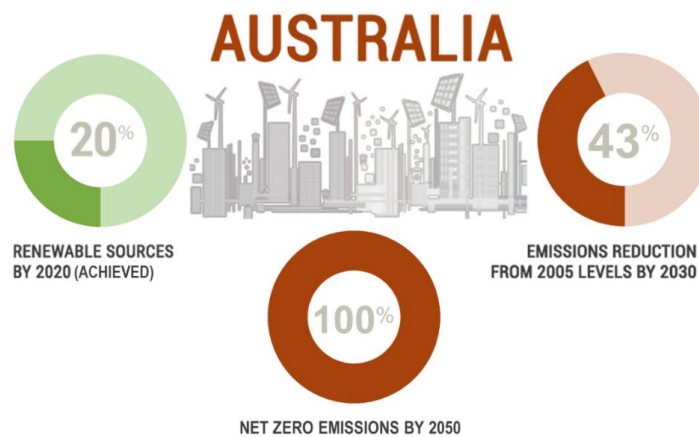


FIGURE 4: AUSTRALIA’S EMISSIONS REDUCTION GOALS AT NATIONAL LEVEL

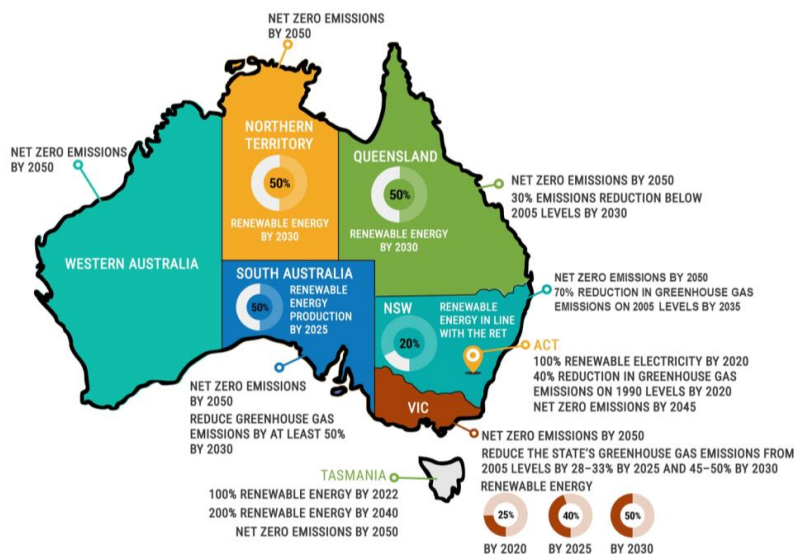


FIGURE 5: AUSTRALIA’S EMISSIONS REDUCTION GOALS AT STATE AND TERRITORY LEVELS



Emissions Reduction Plan: Orange City Council

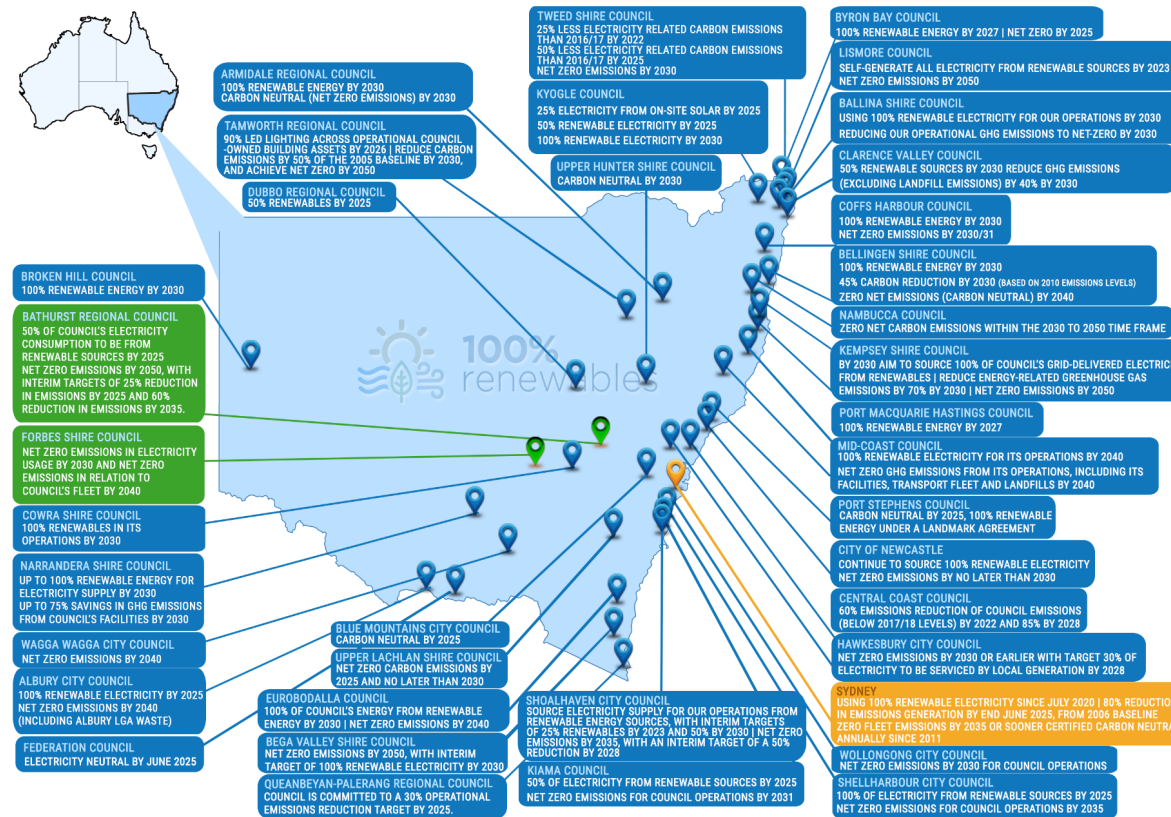


FIGURE 6: NSW REGIONAL LOCAL GOVERNMENTS EMISSIONS REDUCTION AMBITIONS, 2023



2.3 Central West Orana Renewable Energy Zone

The NSW Government, through EnergyCo has declared a Renewable Energy Zone (REZ) in the Central West region of NSW, referred to as the Central West Orana REZ. This REZ will encompass most of the LGA immediately north of CNSWJO councils, and will see the development of new grid energy resources in coming years.

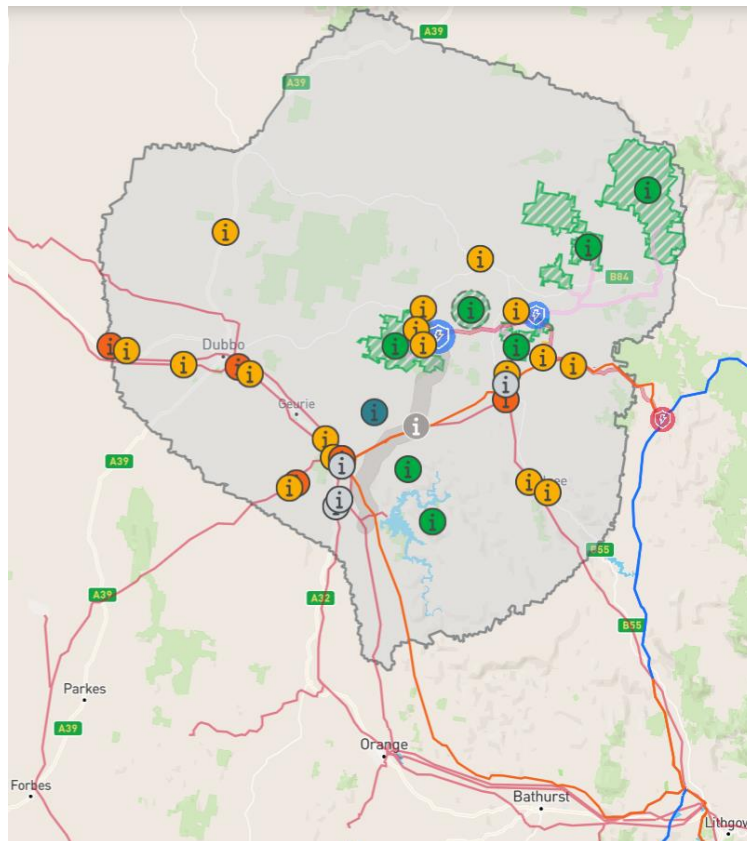


FIGURE 7: CENTRAL WEST ORANA REZ (SOURCE: [HTTPS://CAPORTAL.COM.AU/ENERGYCO/REZ](https://caportal.com.au/energyco/rez))

Per EnergyCo's advice⁵:

- The REZ will unlock 3 gigawatts of new network capacity by the mid-2020s, enough to power 1.4 million homes.
- New transmission infrastructure will enable generators (such as solar and wind farms) participating in the REZ to export electricity to the rest of the network.
- It is expected to bring up to \$5 billion in private investment to the Central-West Orana region by 2030.
- At its peak, this REZ is expected to support around 3,900 construction jobs in the region.

⁵ Sourced from <https://www.energyco.nsw.gov.au/cwo-rez>



2.4 Orange City Council strategies and sustainability actions

In April 2021, Orange City Council published its [Climate Change Management Plan \(CCMP\)](#) that outlines their commitment to reducing emissions and addressing the impacts of climate change over the next five years. Council aims to implement the plan in accordance with their [Climate Change Strategic Policy](#) and regularly report their progress to the community. By sharing their approach, Orange City Council aims to inspire and set an example for the broader community, as well as encourage other cities and towns to take action in adapting to a changing climate and reducing their environmental impacts.

The plan focuses on several priority areas, including understanding operational emissions, cultivating a low carbon culture, organising emissions-free council events, reducing emissions from buildings and facilities, choosing carbon-neutral goods and services, managing waste with emissions reduction in mind, reducing transportation-related emissions, and prioritising adaptation actions.

Through these strategies, Orange City Council aims to enhance their understanding of emissions, foster sustainable practices, and actively address climate change risks. By taking a leadership role and emphasising these priorities, Council seeks to demonstrate the potential of climate action and encourage widespread adoption of sustainable practices.

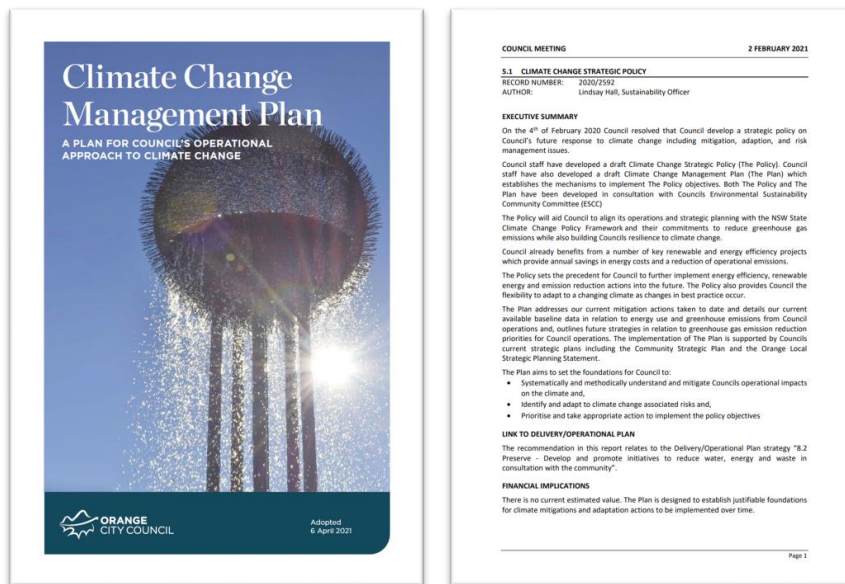


FIGURE 8: ORANGE CITY COUNCIL CCMP 2021 AND CLIMATE CHANGE STRATEGIC POLICY

Council has taken significant actions to reduce its emissions and ensure transparent reporting on its carbon footprint. Noteworthy actions and achievements to date include:

- LED upgrade for streetlighting across Orange City commenced in February 2020.
- Council has sourced 3 electric vehicles and 5 hybrid vehicles for its passenger fleet.
- Council installed a Building Management System (BMS) in the Civic Centre and Gallery/Library and made upgrades to the chiller and windows in the Civic Centre.



- Council implemented variable speed drives in water and sewer pumps at the STP. Water demand management initiatives have been put in place, water loss analysis has been conducted, and sewer inflow and infiltration management processes have been implemented.
- Council implemented operational procedures at the Aquatic Centre to reduce energy consumption.
- For its water network, Council is currently implementing the *Non-Revenue Water (NRW) Leakage Reduction Program* as part of the DPE Water - Water Efficiency Program. This initiative aims to reduce energy costs by curbing water losses in the network, building on previous water loss assessments, and employing strategies such as the replacement of aging water mains and the roll-out of smart water meters for all customers.
- For its sewer network, Council launched a *Rainfall-dependent Inflow and Infiltration (RDII) Reduction Program* to address challenges caused by heavy rainfall, which increases inflows and operational costs in sewage treatment. Efforts include flow quantification, sub-catchment analysis, and manhole inspection, reducing energy and treatment expenses, building upon past work such as sewer relining and manhole rehabilitation to enhance RDII performance during wet weather.
- Council is currently utilising biogas produced from anaerobic digestion of the Orange WWTP sludge to fuel boilers, maintaining the digester's temperature.
- A 500 kW electric heat pump has also been installed in Council's administration building to replace the old heating system, and this initiative is now being rolled out to other buildings.
- A FOGO collection system has been implemented, and processing occurs at a tunnel composting facility. There is bulk waste transfer from other locations to the landfill, and there is passive gas collection at the landfill.
- Council participated in a renewable energy contract with CNSWJO which commenced on 1st of January, 2023. The contract covers 100% of the electricity load for large and small sites.
- Council has successfully implemented solar PV projects with a cumulative capacity of 742 kW at the following sites:
 - Girralang Ganya (HACC) – 5 kW
 - Courallie Park Child Care Centre – 4 kW
 - Occasional Child Care Centre – 1 kW
 - Yarrawong Child Care Centre – 7 kW
 - Botanic Gardens – 1 kW
 - Icely Road Water Filtration Plant – 35 kW
 - Orange STP – 30 kW
 - Orange Depot (Workshop) – 72 kW
 - Orange Depot (Admin) – 26 kW
 - Orange Aquatic Centre – 198 kW
 - Animal Shelter – 16 kW
 - Airport – 99 kW
 - Civic Centre – 99 kW
 - 144 March Street – 20 kW
 - Wade Park – 36 kW
 - Orange City Library – 93 kW

These implemented emission reduction initiatives have been considered and taken into account in the development of this ERP.



2.5 Solar PV uptake in Orange City LGA

Orange City Local Government Area lies in the median range among LGAs in NSW in terms of adoption of solar hot water and photovoltaic systems. According to [data sourced](#) from the Australian Photovoltaic Institute (APVI), Orange City LGA has:

- 6,016 PV installations, a 28% penetration rate, at June 2023, with 43.4 MW of installed capacity. Refer to the APVI map with Orange City LGA details highlighted below.
- Of the total 6,016 installations, there are 4 installation of over 100 kW, 871 installations over 10 kW and less than 100 kW, and 5,141 installations of less than 10 kW.

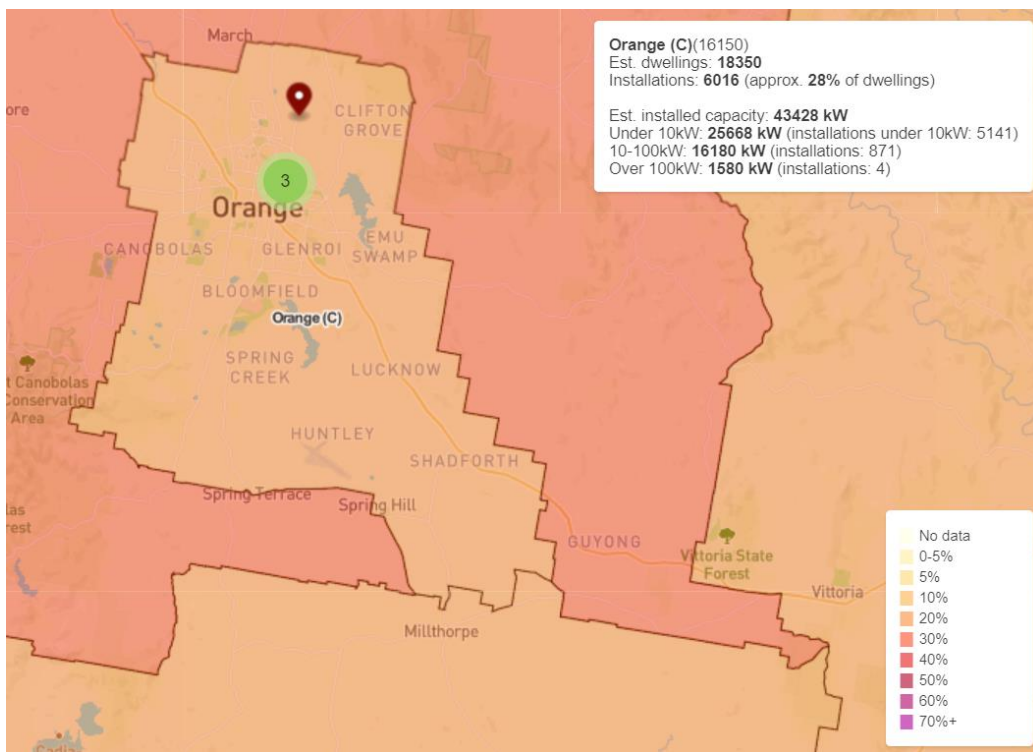


FIGURE 9: ORANGE CITY LGA SOLAR PV INSTALLATIONS, JUNE 2023



3 Orange City Council carbon footprint

3.1 Scope 1, scope 2 and scope 3 emissions

To help differentiate between different greenhouse gas emission sources, emissions are classified into the following scopes according to the GHG Protocol⁶ – Corporate Standard:

- **Scope 1 emissions** are emissions directly generated at your operations such as the production and management of waste, burning fuel for heating, driving company cars, or refrigerant gases in your air conditioning equipment.
- **Scope 2 emissions** are caused indirectly by consuming electricity. These emissions are generated outside your organisation (think coal-fired power station), but you are indirectly responsible for them.
- **Scope 3 emissions** are also indirect emissions and happen upstream and downstream of your business. Typical examples are staff commute, air travel, the purchase of goods and services, contractor emissions, or leased assets.

Since Council operates landfill systems, greenhouse gas emissions from this activity are considered to be Council’s scope 1 – i.e. direct emissions, as shown in the graphic below.



FIGURE 10: SCOPE 1, SCOPE 2 AND SCOPE 3 EMISSIONS

At this time, Orange City Council’s carbon footprint coverage is limited to scope 1 and scope 2 emissions relating to energy (for facilities and transport) and waste from Council’s operations (landfill and wastewater treatment), with refrigerants excluded as they typically contribute to less than 1% of the overall carbon footprint.

⁶ <https://ghgprotocol.org/>



3.2 FY2020 carbon footprint

The 2019/2020 financial year (FY2020) is taken as the baseline year for the ERP. Orange City Council’s FY2020 carbon footprint was **49,558 t CO₂-e**. The two charts (Figure 11 and Figure 12) and Table 3 below provide further insights into Council’s emissions in FY2020.

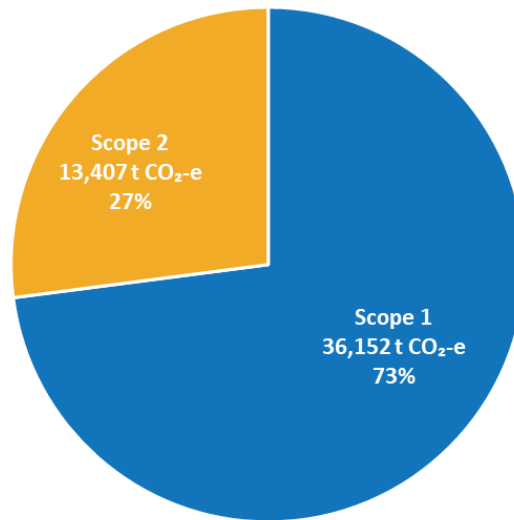


FIGURE 11: ORANGE CITY COUNCIL FY2020 CARBON FOOTPRINT BY SCOPE

TABLE 3: ORANGE CITY COUNCIL – FY2020 CARBON FOOTPRINT BY SOURCE AND ACTIVITY

	Emission source	Activity data	Unit	Scope 1	Scope 2	Total	%
🔥	Natural gas	15,674	GJ	808 t CO ₂ -e		808 t CO ₂ -e	1.63%
	LPG	3	kL	5 t CO ₂ -e		5 t CO ₂ -e	0.01%
🚗	Fleet fuel - Diesel	422	kL	1,146 t CO ₂ -e		1,146 t CO ₂ -e	2.31%
	Fleet fuel - Petrol	37	kL	85 t CO ₂ -e		85 t CO ₂ -e	0.17%
⚡	Electricity (Council assets)	14,461,997	kWh		11,425 t CO ₂ -e	11,425 t CO ₂ -e	23.05%
💡	Streetlighting	2,508,432	kWh		1,982 t CO ₂ -e	1,982 t CO ₂ -e	4.00%
🚰	Wastewater	3,545	t CO ₂ -e	3,545 t CO ₂ -e		3,545 t CO ₂ -e	7.15%
🗑️	Waste to landfill (MSW - Municipal)	9,930	tonnes	15,888 t CO ₂ -e		15,888 t CO ₂ -e	32.06%
	Waste to landfill (C&I - Commercial)	10,355	tonnes	13,462 t CO ₂ -e		13,462 t CO ₂ -e	27.16%
	Waste to landfill (C&D - Construction)	4,556	tonnes	911 t CO ₂ -e		911 t CO ₂ -e	1.84%
♻️	Greenwaste	6,568	tonnes	302 t CO ₂ -e		302 t CO ₂ -e	0.61%
🏢	Total (t CO₂-e):			36,152 t CO₂-e	13,407 t CO₂-e	49,558 t CO₂-e	100%



Emissions Reduction Plan: Orange City Council

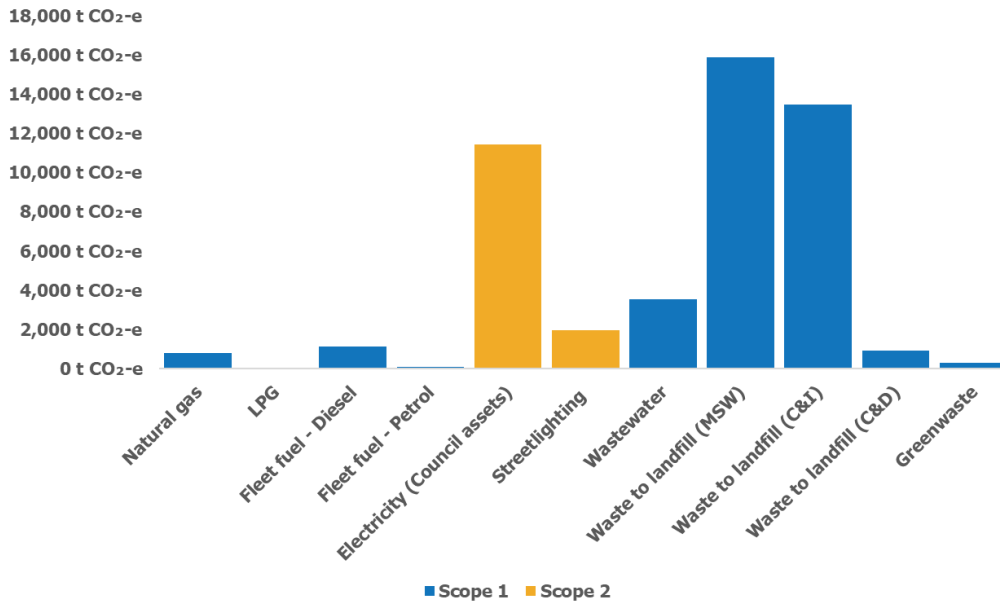


FIGURE 12: ORANGE CITY COUNCIL – FY2020 CARBON FOOTPRINT BY SOURCE AND ACTIVITY

3.3 Data management and emissions reporting tool

An inventory tool is developed for Council with this ERP that can be used to record activity data for each relevant emission source, as well as data on solar energy consumption and export, and on renewable energy power purchase agreements, including GreenPower® and LGCs purchased and retired.

The factors used in the tool have been largely sourced from the National Greenhouse Account (NGA) Factors by the Commonwealth Department of Climate Change, Energy, the Environment, and Water (DCCEEW). These were the most current factors available at the time that this inventory tool was developed. These factors are updated regularly and as such the factors included in this inventory tool should be reviewed and updated to ensure consistency with the most recent factors published by the Department. The tool’s emission factors should be updated from the ‘Emission factors’ tab to reflect changes in future years.

Electricity Accounting rules are applied to the calculation of emissions from electricity, including accounting for renewable energy power purchasing, onsite solar, and export of solar energy from small-scale and large-scale systems. These rules also change from time to time and Council should factor this in to their emissions reporting procedures.



3.4 Scope 1 and Scope 2 data analysis

3.4.1 Analysis of electricity use

Electricity usage accounted for ~27% of Council's carbon footprint in FY2020, including facilities and streetlighting. Consumption data was obtained from the consolidated baseline data spreadsheet provided by Council. Below is the summary of Orange City Council's electricity usage in FY2020.

TABLE 4: ORANGE CITY COUNCIL – FY2020 ELECTRICITY USAGE

Description	FY2020 electricity usage
Council assets	14,461,997 kWh
Streetlighting	2,508,432 kWh
Total	16,970,429 kWh

3.4.2 Analysis of gas use

Gas usage represented <2% of Council's carbon footprint in FY2020. Council uses natural gas supplied via pipeline, and bottled LP gas. The Olympic Pool recorded the highest usage (~80% of all natural gas consumed). Bottled LP gas is mostly used by plant and equipment and to provide cooking facilities in Orange's Parks and Gardens. The total gas consumption in FY2020 can be seen in the table below.

TABLE 5: ORANGE CITY COUNCIL – FY2020 GAS USAGE

Gas-consuming site	FY2020 gas usage
Phoenix House	222 GJ
Showground	210 GJ
Orange Food Services	0 GJ
Max Stewart Oval	0.1 GJ
Spring Street Childcare Centre	48 GJ
Depot	274 GJ
Giyalang Ganya (HACC)	221 GJ
22 Sale Street (Orange Cultural Centre)	92 GJ
Olympic Pool	12,351 GJ
Orange Function Centre	78 GJ
Senior Citizens Centre	32 GJ
Community Info & Services	116 GJ
Occasional Child Care Centre	64 GJ
Yarrowong Child Care Centre	35 GJ
Library Art Gallery	1,773 GJ
Showground Caravan Pk	18 GJ
Jack Brabham Park	0 GJ
Sewerage Treatment Works	32 GJ
Showground-Enviro Learning Ctr	11 GJ
Historical Society	20 GJ
Pippin Way	77 GJ
Parks and Gardens (LPG)	80 GJ (3.1 kL)
Total	15,754 GJ



3.4.3 Analysis of fleet fuel use

Fuel consumption accounted for less than 3% of Council's carbon footprint in FY2020. Council's fleet is composed of minor plant and equipment (mostly using petrol), trucks, utes, and vans that use diesel and petrol, and a small number of passenger cars. The table below summarises Council's fleet types along with diesel and petrol usage.

TABLE 6: ORANGE CITY COUNCIL – FY2020 FLEET FUEL CONSUMPTION

Fleet type	Diesel	Petrol
Passenger fleet	50 units	23 units
Utes and vans	71 units	0 units
Heavy fleet	40 units	0 units
Plant and equipment	81 units	320 units
Total fuel consumption	422 kL	37 kL

3.4.4 Analysis of landfill waste generated

The largest portion of Council's carbon footprint in FY2020, accounting for ~62%, is attributed to landfill waste, with minor added emissions due to composting of green waste. Council manages two landfill sites, Ophir Road Resource Recovery Centre and Euchareena Road Resource Recovery Centre. The majority of emissions are from the municipal solid waste (MSW) stream. The table provides an overview of the total landfill waste generated in FY2020.

TABLE 7: ORANGE CITY COUNCIL – FY2020 WASTE GENERATED

Waste stream	Ophir Road Resource Recovery Centre & Euchareena Road Resource Recovery Centre
Waste to landfill (MSW)	9,930 tonnes
Waste to landfill (C&I)	10,355 tonnes
Waste to landfill (C&D)	4,556 tonnes
Greenwaste (composting)	6,568 tonnes
Total	31,410 tonnes

3.4.5 Analysis of wastewater volume

Wastewater contributes ~7% of Council's carbon footprint. The Emissions from Sewage Treatment Works (STWs) calculator (NSW DPIE Water tool based on NGER / NGA) was used to estimate emissions based on the average daily STP inflow and the type of sewage water and sludge treatment used in the STP. Council's estimated wastewater volume in FY2020 is shown below.

TABLE 8: ORANGE CITY COUNCIL – FY2020 WASTEWATER VOLUME

Description	Annual inflow
Orange WWTP – Anaerobic digester Spring Hill WWTP – Anaerobic shallow lagoon	3,318 ML



3.5 Business-as-usual forecast emissions for Orange City Council

With no further changes to Orange City Council’s energy and abatement actions, energy demand could grow in line with population, which was estimated at 1.05% per annum as per Council’s projection.

With the NSW grid expected to continue to rapidly decarbonise, emissions will decline in this emissions source even as population changes, as highlighted below. Likely BAU changes in the carbon intensity of other emissions sources like transport and waste are not known.

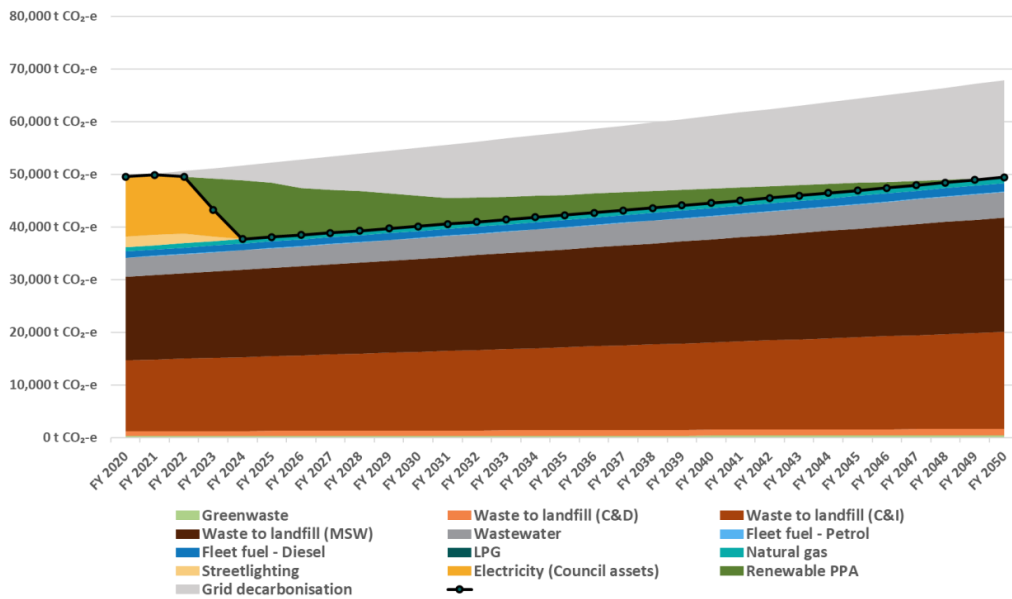


FIGURE 13: ORANGE CITY COUNCIL – FORECAST BUSINESS-AS-USUAL EMISSIONS TO 2050



3.5.1 What else can be included in Council's carbon footprint?

If or when Council seeks to target being net zero for all its emissions, it should account for more emissions sources than are reported in this ERP. These would include, for example:

- Scope 1 emissions from refrigerants used in Council's air conditioning and refrigeration systems,
- Scope 3 emissions in Council's supply chain. For Climate Active⁷ certification for example, organisations will typically include emissions in their purchased goods and services, at least for all operational expenditure, such as paper, business travel, services provided by other businesses to Council, leased assets and water consumption,
- Scope 3 emissions for staff commuting to work would also be included in a Climate Active carbon footprint, as would emissions for staff working from home,
- Other scope 3 emissions, such as those embedded in materials used for capital works, other capital works expenses, Council's investments and the like, could also be included.

While these emissions have not been included in this plan, experience with other councils suggests that annual emissions could be uplifted by over 30% on top of operational energy and waste emissions, and potentially much more if all capital works and investments were included.

⁷ Climate Active is a carbon neutral program run by the Commonwealth Government. Climate Active certification is awarded to organisations that have credibly reached carbon neutrality through the development of a robust carbon footprint aligned with the Climate Active standard (based on the GHG Protocol), and have purchased eligible carbon offsets equivalent to their carbon footprint inclusive of scope 1, 2 and 3 emissions. Climate Active certifies organisations, products, services, events, buildings and precincts.



4 Recommended emissions reduction plan

4.1 Emissions Reduction Plan framework & workshop

To develop an action plan to help Council continue to progress current initiatives, and to incorporate emissions reduction considerations in operational and capital design and decision making, a workshop was run with key Council stakeholders. This focused on six key areas, illustrated in Figure 14 below.



FIGURE 14: EMISSIONS REDUCTION PLAN FOR ORANGE CITY COUNCIL

Within each of these areas, background information on actions completed and on the profile of each area was presented, and Council staff were asked to provide input in response to the following questions.

TABLE 9: ORANGE CITY COUNCIL – EMISSIONS REDUCTION PLAN WORKSHOP QUESTIONS

Emissions reduction area	Opportunities questions	Obstacles
Renewable Energy Action Plan (electricity focus)	Opportunities for additional renewables and energy efficiency in the next two years?	Obstacles for additional renewables and energy efficiency?
	Opportunities for additional renewables and energy efficiency in the long term?	
Waste emissions (focus on landfill)	Opportunities for emissions reduction from waste management in the next two years?	Obstacles to reducing emissions from waste?
	Opportunities for emissions reduction from waste management in the long term?	
Gas emissions	Opportunities to reduce emissions from gas in the next two years?	What are the obstacles to reducing emissions from gas?
	Opportunities to reduce emissions from gas in the long term?	
Fleet emissions	Opportunities to reduce emissions from fleet in the next two years?	What are the obstacles to reducing emissions from fleet?
	Opportunities to reduce emissions from fleet in the long term?	
Carbon offsets	Opportunities for carbon offset projects?	Obstacles for carbon offset projects?
Funding	What are your ideas around funding climate action?	
Other opportunities	What additional opportunities could Council consider?	What obstacles are there to progressing further initiatives?
Targets	What short term and long term targets should council consider committing to?	



4.2 Recommended emissions reduction plan and emissions pathway to 2050

4.2.1 Development of an emissions pathway to 2050

Resulting from meetings with stakeholders and analysis of data and reports provided, a recommended emissions reduction plan and a potential emissions reduction pathway that Orange City Council could implement to reduce its carbon footprint in coming years, has been developed.

This is based on a combination of BAU assumptions, known initiatives such as renewable energy power purchasing and streetlighting upgrades, and on possible abatement pathways for sources such as transport, gas and landfill emissions. The timing and scale of any of the measures included in the pathway may well change over time, and this pathway therefore highlights one possible scenario.

TABLE 10: RECOMMENDED ACTION PLAN AND MODELLED PATHWAY FOR ORANGE CITY COUNCIL TO REDUCE ITS CARBON FOOTPRINT

Opportunity	Scenario to reduce emissions	Timing	Recommended action plans
Renewable energy contract	In FY2023, Council will see a 50% reduction in electricity emissions. From FY2024, this will increase to 100%.	<u>Phase 1</u> : FY2023 to FY2050	<ul style="list-style-type: none"> Council’s current renewable energy contract commenced on 1 January, 2023, covering 100% of the total electricity load. Sustain a minimum 100% renewable energy purchase for Council’s electricity use.
Electricity – on site solar PV and batteries	Council will install an additional ~1,002 kW solar PV capacity from FY2024 to further offset approximately 10% of the electricity consumption of Council facilities.	FY2024 to FY2027	<ul style="list-style-type: none"> Implement Council’s plan to install additional solar PV systems at the Orange Showground and Water Treatment Plant, building on the more than 740kW of installed solar PV systems. Continue small-scale solar rollout, adding new units or increasing the size of existing systems on facilities with daytime loads that can be effectively supported by PV, and progress with solar installations on the Theatre roof to better meet the demand at the Civic Centre. Assess the feasibility of installing more midscale solar systems on Council sites, such as the Suma Park Dam Pump Station,



Opportunity	Scenario to reduce emissions	Timing	Recommended action plans
			Waste Water Treatment Plant, sized to meet operational needs and reduce running costs. <ul style="list-style-type: none"> • Incorporate renewables (and storage) in design for new / upgraded works, for example in sewage pump stations (SPS). • Conduct a Council-wide battery storage feasibility study and implementation rollout plan.
Streetlighting – LED upgrades	From FY2023, Council will see an annual reduction of 50% in streetlighting power consumption.	<u>Phase 1:</u> FY2023 to FY2032	<ul style="list-style-type: none"> • Council rolled out implementation of LED streetlighting upgrades in February 2020. No further action is required at this time.
	From FY2033, a further 30% reduction is estimated and is expected to be maintained until FY2050.	<u>Phase 2:</u> FY2033 to FY2050	<ul style="list-style-type: none"> • In the future, implement another bulk upgrade with more efficient LEDs and potentially smart controls.
Electricity – energy efficiency	From FY2021, Council will see progressive site electricity reduction of 5% by FY2030.	<u>Phase 1:</u> FY2021 to FY2030	<ul style="list-style-type: none"> • Continue the energy efficiency retrofitting and lighting replacement projects that Council has been implementing at Council sites, such as the LED lighting upgrades at the airport and Council buildings. • Improve energy efficiency at large sites such as the wastewater treatment plant (e.g. secondary treatment diffuser design). • Ensure that energy efficiency and sustainability are built in to building design guidelines and practices, and develop a review process that evaluates the integration and performance of new technology in building design.



Opportunity	Scenario to reduce emissions	Timing	Recommended action plans
	From FY2031, Council will see progressive site electricity reduction of 15% by FY2050.	<u>Phase 2:</u> FY2031 to FY2050	<ul style="list-style-type: none"> Continue implementing other energy efficiency initiatives such as air conditioning upgrades particularly in offices and community facilities, VSD controllers across water and sewer systems, WTP and STP upgrades (e.g. STP digester system), smart metering, and implement building audits to improve efficiency adoption.
Natural gas & LPG	From FY2024, Council will implement progressive gas-to-electric transition and achieve 100% by FY2030. From this point until 2050, there will be no further emissions from gas usage.	FY2024 to FY2030	<ul style="list-style-type: none"> Adopt a policy of not implementing gas in any new facilities, refurbishments, or equipment replacement projects. Complete the feasibility assessment for replacing gas boilers at the Olympic Pool with electric heat pumps (and implement where the business case is favourable and/or grant funding can be applied to the project). Progressively upgrade gas equipment such as boilers, storage water heaters, and cooking equipment with equivalent electric devices, building on the electric heat pump installed in Council’s admin building replacing a 500kW gas heating system. By 2030, a complete electrification of these systems will be achieved.
Transport fuel – EV Transition Plan	<p>From FY2024. Council will progressively transition 50% of its passenger fleet to EVs by FY2026 and 100% by FY2030.</p> <p>From FY2026, Council will also begin to transition 50% of commercial utility vehicles and vans to EVs by FY2030</p>	<p><u>Phase 1a:</u> FY2024 to FY2030</p> <p><u>Phase 1b:</u> FY2026 to FY2030</p>	<ul style="list-style-type: none"> Implement a staged approach to transition Council fleet towards zero emissions. Develop a fleet transition plan via CNSWJO, including consideration of leaseback vehicle EV incentives. Focus on replacing existing internal combustion units with fit-for-purpose EVs, including passenger vehicles and small plant, building on the 3 x EV and 5 x Hybrid vehicles that are currently in use.



Opportunity	Scenario to reduce emissions	Timing	Recommended action plans
			<ul style="list-style-type: none"> Establish EV charging infrastructure across council facilities such as the Council Depot and seek grant funding to support the deployment of EV fleet and Council charging stations. Invest in staff upskilling in EV maintenance to support transition.
	<p>From FY2031, Council will further transition 100% of commercial utility vehicles and vans to EVs by FY2040.</p> <p>From FY2031, Council will begin to progressively replace all heavy fleet vehicles including plant equipment with electric equivalents by FY2050.</p>	<p><u>Phase 2a:</u> FY2031 to FY2040</p> <p><u>Phase 2b:</u> FY2031 to FY2050</p>	<ul style="list-style-type: none"> Expand fleet electrification to include heavy-duty vehicles and specialised equipment. Continuously trial and integrate advanced EV models and innovations. Collaborate with other councils, regional bodies, and industry partners for large-scale EV adoption. Revisit and periodically update the fleet strategy in future to adapt to changing circumstances and emerging technologies and to reflect more commercially available and fit-for-purpose vehicles in Council’s plan.
Landfill waste	From FY2024, progressively increase waste reduction rate per person and achieve 10% by FY2030, in alignment with the NSW target.	FY2024 to FY2030	<ul style="list-style-type: none"> Focus on community education and exploring new approaches in waste reduction. Implement waste reduction campaigns and community outreach initiatives to encourage responsible waste management practices and behaviour change.
	From FY2024, progressively increase materials recovery rate and achieve 80% by FY2030 and increase FOGO capture to halve the amount of organics going to landfill by FY2030, in alignment with the NSW target.	<u>Phase 1:</u> FY2024 to FY2030	<ul style="list-style-type: none"> Explore reducing red bin collection to fortnightly to boost green bin usage and improve FOGO recovery rates. Initiate a staged phytocapping program for active and future landfill cells, upon achieving the required finished height for effective capping, as part of Council’s staged landfill cell development plan.



Opportunity	Scenario to reduce emissions	Timing	Recommended action plans
	From FY2031, progressively increasing materials recovery rate and achieve 90% by FY2050.	<u>Phase 2:</u> FY2031 to FY2050	<ul style="list-style-type: none"> • Implement passive gas monitoring on capped landfill cells, such as a biofiltration system, for effective emissions management. • Renew the Waste Collection Contract in 2026 and aim to implement feasible improvements, including electrification or hydrogen fuelling of waste collection vehicles and optimised pickup rosters. • Align licensed waste facilities with upcoming new EPA requirements through necessary adjustments. • Advocate for robust product stewardship legislation, ensuring industries are responsible for their waste lifecycle, and promote collaborations between government and industry for effective waste management initiatives. • Advocate for equitable recycling regulations, making recycling bin usage mandatory for industries in alignment with household practices. • Enhance methane collection in landfills where feasible, ensuring optimal gas recovery and utilisation. • Seek to secure funding for alternative recycling streams like plastics (e.g., RedCycle) and glass (e.g., asphalt utilisation), while also allocating resources for efficient leachate transport and treatment in the STP. • Foster a culture of waste minimisation and recycling within the community.



Emissions Reduction Plan: Orange City Council

Opportunity	Scenario to reduce emissions	Timing	Recommended action plans
<p>Carbon offsets / insets</p>	<p>Council will purchase carbon offsets / insets in FY2050 to achieve net-zero status for scope 1 and scope 2.</p>	<p>FY2050</p>	<ul style="list-style-type: none"> • Council has no plans to purchase carbon offsets to reduce emissions. Investigate local insetting capacity through urban greening projects and tree canopy cover initiatives, including the development of an urban forest strategy and implementing tree replacement measures for trees removed.



The assumptions in the previous table are reflected in Figure 15 to show a potential emissions roadmap for Orange City Council:

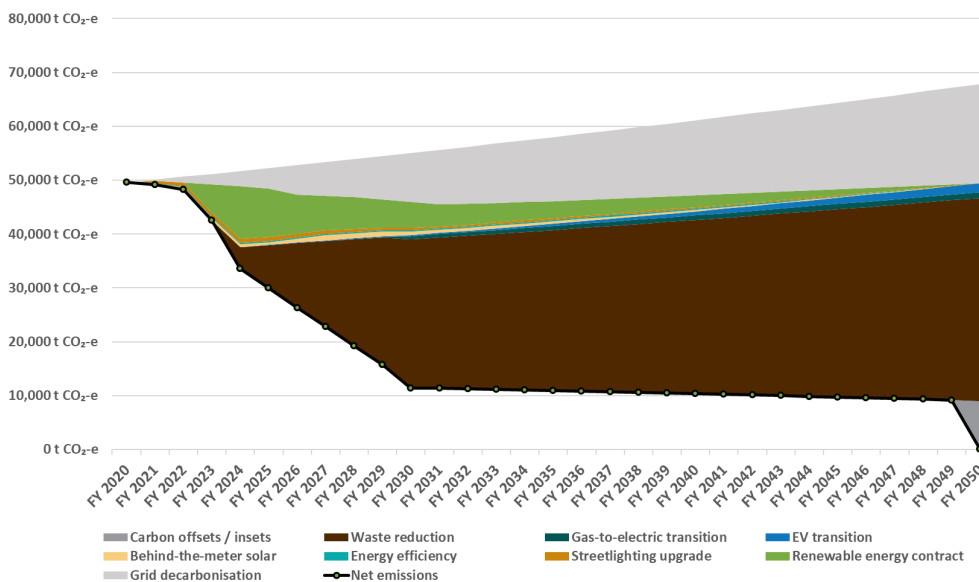


FIGURE 15: ORANGE CITY COUNCIL'S EMISSIONS REDUCTION PATHWAY

4.2.2 Setting emissions reduction targets

Council’s existing targets include a commitment to purchase 100% of its electricity load through a renewable energy contract. Currently, this target has been fully implemented for all Council facilities and streetlighting. Per the Climate Change Management Plan (CCMP) published in 2021, Council has also established additional targets focusing on electricity efficiency and increasing renewable energy adoption. These measures are designed to achieve substantial reductions in emissions aligned with the NSW targets.

The aim of this Emissions Reduction Plan was to identify and map out emissions reduction measures across all emissions sources (scope 1 and 2), and to recommend interim and 2050 targets.

Based on the emissions sources assessed and on the potential abatement measures identified and modelled, the following targets are suggested:

- **Net Zero by 2050:** In the first instance it is recommended that Council commit to align with the NSW State Government target of net zero emissions by 2050, or earlier where cost effective and feasible abatement measures allow.
- **Maintain zero-emission electricity by 2030:** Maintain procurement of 100% of Council's electricity from renewable sources until 2030 through the implementation of renewable energy projects and power purchase agreements.
- **Emissions Reduction in Waste Management and Landfill:** In-principle commitment to emissions cuts aligned with the NSW Waste and Sustainable Materials Strategy 2041, dependent on regional collaboration and government support to achieve the WSMS emissions reduction targets, recognising the significant challenges facing regional councils to reduce emissions from landfill.



- **Fossil Fuel Transition:** Commit to transitioning away from fossil fuels and towards clean energy sources as part of the Net Zero by 2050 target. This includes adopting renewable energy technologies and minimising reliance on fossil fuels across Council operations, facilities, and infrastructure.

4.2.3 Periodically reviewing targets

In NSW, the government is targeting 70% abatement by 2035 accross the state, and net zero by 2050. This space is dynamic and targets may change very quickly; in fact the NSW Government's 70% emissions reduction target was originally 35% by 2030. Factors that may make the case for changing targets can be legislative, technology-driven (e.g. rapid acceleration in clean hydrogen, falling battery storage and EV costs), funding (e.g. to rapidly transition the waste sector to low emissions and circular economy outcomes), and political (e.g. IPCC changing guidance and international consensus to act, imposition of trade tariffs for high-carbon countries).

Other reasons to review targets may include future decisions to include scope 3 emissions, in upstream energy distribution and in goods and services purchased by Council, and the potential need to evaluate new abatement approaches such as carbon sequestration to achieve Council's targets. It is understood that CNSWJO is working to develop a sustainable procurement policy template for member Councils to use should they choose.

Actions and targets by peers may also prompt Council to review its goals. Given this, a strategic priority for Council should be to review its targets periodically, for example in line with each Delivery Program cycle.



Appendix A: Emissions reduction from grid decarbonisation

Coal-fired power stations in NSW and across Australia will close in coming years and will be replaced with renewable energy generation technologies like solar, wind, pumped hydro and grid-scale batteries. These will be mostly developed in designated Renewable Energy Zones (REZ).

The Australian Energy Market Operator’s (AEMO) Integrated System Plan 2022⁸ (ISP2022) models scenarios with differing assumptions for key influencing factors including demand drivers, Distributed Energy Resources (DER) uptake, emissions, large-scale renewable build cost trajectories, investment and retirement considerations, gas market settings and coal price settings, together with assumptions regarding policy settings and transmission infrastructure development.

The resultant scenario outcomes for penetration of renewable energy in the National Electricity Market (NEM) is illustrated below, highlighting the increasing likelihood of a rapid transition to renewables. The NSW Government’s Electricity Infrastructure Investment Bill will facilitate the rapid transition to renewables in NSW, and ISP2022 forecasts reflect this.

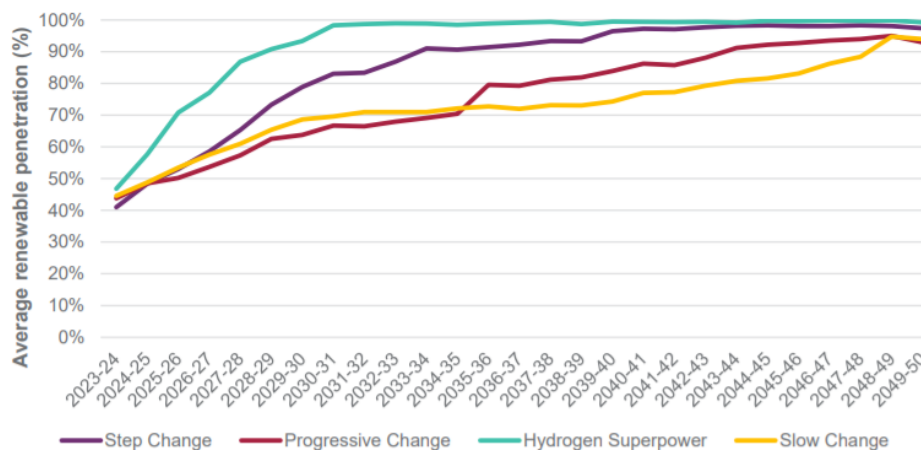


FIGURE 16: AEMO MODEL OF RENEWABLE ENERGY PENETRATION IN ISP2022 SCENARIOS⁹

In addition to AEMO’s projections the Commonwealth Department of Industry Science Energy and Resources (DISER) has developed its projections of grid electricity carbon intensity out to 2035, showing a projected significant decline in the short to medium term. Table 39 from DISER’s 2022 projections¹⁰ is shown below.

⁸ AEMO: <https://aemo.com.au/consultations/current-and-closed-consultations/2022-draft-isp-consultation>

⁹ AEMO: <https://aemo.com.au/consultations/current-and-closed-consultations/2022-draft-isp-consultation>

¹⁰ DCCEEW 2022, Australia’s emissions projections 2022, Department of Climate Change, Energy, the Environment and Water, Canberra, December. CC BY 4.0



Emissions Reduction Plan: Orange City Council

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Australia, all grid connected	0.77	0.71	0.65	0.56	0.51	0.47	0.41	0.35	0.29	0.27	0.25	0.24	0.21	0.20
NEM	0.62	0.57	0.52	0.44	0.40	0.37	0.32	0.27	0.23	0.21	0.19	0.18	0.16	0.15
NSW/ACT	0.78	0.75	0.64	0.53	0.42	0.36	0.25	0.22	0.13	0.12	0.11	0.13	0.02	0.02
QLD	0.88	0.81	0.77	0.61	0.58	0.54	0.54	0.50	0.46	0.42	0.36	0.29	0.26	0.24
SA	0.33	0.31	0.26	0.23	0.15	0.16	0.11	0.08	0.02	0.02	0.02	0.02	0.10	0.11
VIC	0.92	0.82	0.78	0.72	0.72	0.67	0.59	0.44	0.40	0.38	0.35	0.37	0.41	0.39
TAS	0.18	0.03	0.06	0.02	0.06	0.05	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02
SWIS	0.55	0.52	0.50	0.44	0.41	0.38	0.34	0.31	0.26	0.25	0.24	0.24	0.23	0.22
NWIS	0.62	0.59	0.57	0.55	0.51	0.50	0.48	0.47	0.46	0.45	0.44	0.42	0.41	0.40
DKIS	0.61	0.57	0.53	0.50	0.48	0.47	0.45	0.42	0.38	0.38	0.36	0.35	0.32	0.23

FIGURE 17: TABLE 39 FROM DISER’S PROJECTIONS OF GRID ELECTRICITY CARBON INTENSITY

The assumed rate of change in the grid carbon intensity is based on Department of Industry Science Energy and Resources (DISER) estimates, applied to the emissions intensity of the grid as determined using market-based electricity accounting rules.



Appendix B: Grant funding information

Funding from State and Commonwealth grants is often key to securing funds and approval to develop emissions reduction projects in local Government. The scope, funding and timing of grant funding changes frequently as new initiatives are introduced. In the current environment there are numerous opportunities for funding for regional communities and grants that are focused on energy resilience/security, distributed energy, electric vehicle charging, community batteries, as well as incentives that reduce the upfront cost of electric and fuel cell vehicles.

Key starting points for the identification of grants that can support emissions reduction include:

- Commonwealth Government grants portal at <https://www.energy.gov.au/business/grants-and-funding> links through to grants at Commonwealth and State levels, including to Australian Government financing via <https://business.gov.au/grants-and-programs>. In February 2023, this links to the following grant opportunities, for example:
 - High Impact Partnerships Grant NSW: provides funding to organisations in the primary industries or land sector to set up a new carbon abatement project.
 - Community Batteries for Household Solar Program: supports selected organisations to deliver community batteries in eligible locations to support lower electricity bills and emissions, support storage of excess solar energy and reduce pressure on the grid.
 - Electric Vehicle Fast Charging Grants NSW: program provides charge point operators (CPOs) to construct fast charging stations across NSW.
- NSW State Government funds via <https://www.nsw.gov.au/grants-and-funding> and <https://www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes>:
 - EV fleets incentive: \$105 million Drive electric NSW EV fleets incentive to help NSW organisations including Councils shift to EVs.
 - Helping our highest emitting industries shift to net zero : \$305 million of grant funding to help high emitters significantly reduce their emissions and strengthen their resilience into the future.
 - Regional NSW – Business Case and Strategy Development Fund, which was established to support local councils, joint organisations of councils, not-for-profit, industry and Aboriginal community groups with funding to develop business cases or strategies for regionally significant projects and initiatives, and is helping to fund initiatives such as regional microgrids to improve regional energy security and reduce community emissions
- Funding linked to the NSW Sustainable Waste and Materials Strategy via <https://www.dpie.nsw.gov.au/our-work/environment-energy-and-science/waste-and-sustainable-materials-strategy>, including
 - \$65 million over five years, starting from July 2022 to help with the implementation of FOGO services across NSW,
 - \$37 million Carbon Recycling and Abatement Fund to help the shift to circular design,
 - \$7.5 million to support the installation of landfill gas capture infrastructure

These are some of the sources of grant funding that can help local Councils reduce emissions, increase resilience and lower the cost of energy. The Australian Renewable Energy Agency (ARENA) and the Clean Energy Finance Corporation (CEFC) are also potential sources of funding for Council initiatives.



Appendix C: Revolving Energy Funds

Council can consider the reestablishment of a Revolving Energy Fund to assist with the sustainable funding of initiatives that help to drive emissions down and increase renewable energy.

A Revolving Energy Fund (REF) is a sustainable funding mechanism, whereby savings from sustainability projects are tracked and used to replenish the fund for the next round of investments. In this way, funds used for energy efficiency, renewable energy, and potentially other sustainability projects can be spent multiple times to drive emissions reduction, energy and cost savings. REFs allow a monetary investment to be spent a number of times (through reinvesting energy cost savings) without reducing its value. Several options exist in terms of how a REF would operate:

- It could start with seed funds that do not need to be repaid, such as a one-off internal grant or seed fund, a % of funds from an environmental levy or similar. Savings from efficiency and renewable energy measures are returned to the REF and used to fund future initiatives.
- Savings are largely returned to project owners so that they see the savings on their bottom line, with some savings retained in the REF to fund new measures.
- The REF operates as a loan fund with savings repaid into the fund before project owners have access to the savings. This way, the initial fund level is maintained and can be added to over time.
- The REF could be set up to be a contestable funding source. Projects would need to meet and be scored against agreed criteria to be eligible to apply for funding. Projects with the highest scores could receive funding from the REF.

The diagram below illustrates how a REF could operate.

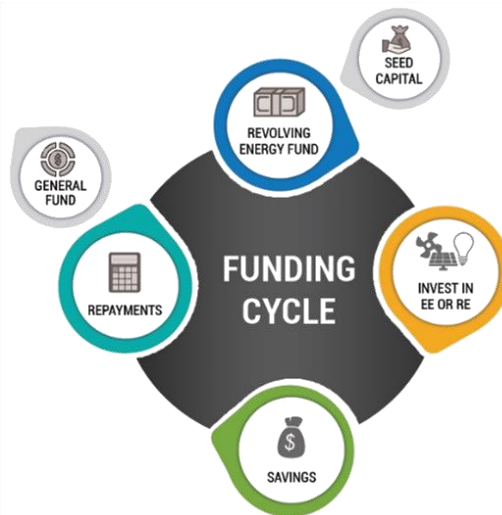


FIGURE 18: REVOLVING ENERGY FUND – TYPICAL FUNDING CYCLE



Key to a successful REF is that it is sustainable and can fund projects that meet an organisation’s goals, while achieving a balance between seed and top-up funds from the budget, returned savings from implementation of projects, and grant funds. The development of an implementation plan, plus an auditable project and savings cashflow model for a REF is a good idea that can help with the design of the fund to ensure this outcome. An example of a REF cashflow model is shown below.

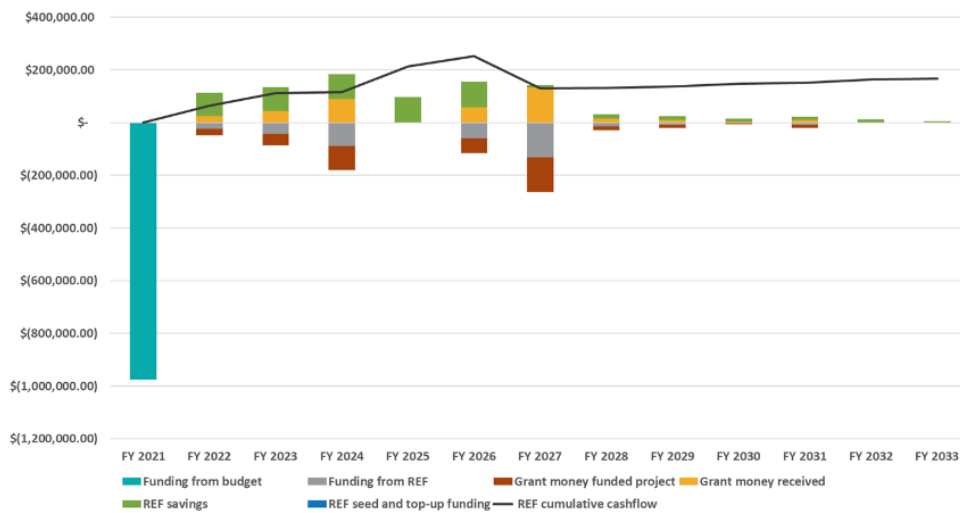


FIGURE 19: MODELLED CASHFLOW OF A REVOLVING ENERGY FUND

By itself, a planned approach to financing / funding of Council’s abatement opportunities will not result in actual emissions reduction. However, a planned approach to funding abatement opportunities at Delivery Program and Operational Plan levels will help to sustain implementation to meet targets. A pro-active approach to identifying, prioritising and applying for grants – allied to having ‘shovel-ready’ projects – will help Council successfully attract funds that can accelerate implementation of the proposed emissions reduction plan.

Conversely, without a planned, structured approach to the identification of projects to be implemented, and to the securing of budget or external funds to implement emissions reduction plan projects, there is a greater risk that opportunities are missed, and Council does not achieve its goals within its target timeframe.

The main cost will be the allocation of staff resources and time to plan and implement agreed funding approaches, including management and engagement with internal and external stakeholders, documenting and following a grant application process, and if applicable establishing and managing a Revolving Energy Fund. Key to successful development and implementation of a REF over time is resourcing to manage and govern the emissions reduction plan.



Appendix D: Guidance on value chain emissions

Supply or value chain emissions have been excluded from this plan, but it has been noted that including these emissions could increase Council's carbon footprint by 30% or more. It is increasingly common for organisations – particularly larger ones at this time – to measure and assess the risks and opportunities in reducing value chain emissions through sustainable procurement, partnerships / collaborations and incentives.

Sustainable procurement already allows options like LED streetlights, renewable energy contracts / GreenPower purchasing and buying hybrid vehicles to be developed. Sustainable procurement processes can also reduce the Council's broader scope 3 (value chain) emissions over time through multiple individually small purchasing decisions, such as for building materials, appliances, ICT equipment, etc. Three components to sustainable procurement include:

- Policy frameworks that incorporate a sustainable procurement focus and weight low emissions / good environmental outcomes
- Engagement and training of staff to drive use of a sustainable procurement framework in all aspects of Council operations
- Continual review of equipment and services specifications, to identify opportunities to incorporate the sustainable procurement framework into the procurement and use of equipment and services

Sustainable procurement policy and framework

A sustainable procurement policy can set out Council's intent to procure products and services with consideration of Council's emissions reduction and broader sustainability goals. Council could also develop its internal sustainable procurement guidance, drawing on an appropriate framework, such as the NSW Sustainable Procurement Guide for Local Government¹¹.

This guide aims to help Councils develop and embed sustainable procurement practices in their organisation. The guide presents information on key concepts, certifications, standards and processes and is designed for all council staff involved in any purchasing. The Guide is applicable from major tenders through to one-off equipment purchases.

Council should examine the guide to identify key areas within its procurement processes where this can add value and lead to more informed and better procurement decisions.

Engagement & Training

Decisions to source services and products that deliver best practice emissions reduction outcomes will happen when people who are buying these services and products take these decisions.

¹¹ Sustainable Procurement Guide for Local Governments in NSW, 2017: <https://www.lgnsw.org.au/files/imce-uploads/127/esstam-sustainable-procurement-guide-30.05.17.pdf>



There should be a program of continuing engagement, education and training of staff who procure services and products. This could include:

- Roads and pavement construction and repair / maintenance teams who specify the types of materials to be used, where there may be opportunities to use more sustainable materials,
- Fleet procurement staff who assess vehicle needs and specify new purchases and leases that will impact fuel use and other environmental performance measures,
- Capital works staff involved in the design of new projects such as new community facilities, or new parks & reserves, where energy and water efficiency and onsite renewables and battery storage could be specified,
- Sourcing of professional and other services for Council,
- Operational staff who may repair or replace equipment as it fails, such as appliances, air conditioners, lights, where there are opportunities to ensure that replacements are fit for purpose and energy efficient

Design, Equipment and Services Specifications

Policy, procurement frameworks and training should ultimately lead to specifications for services and works being continually improved to include Council's requirements for low or net zero emissions.

In addition, the evaluation criteria and weighting of responses to tenders and quotes should be periodically revised to evaluate and weight performance against these updated emission requirements, while achieving the other key goals of Council's procurement policy. Products and services where Council could continually update specifications include:

- **Road and pavement construction:** source low embodied emissions materials and encourage potential suppliers to reduce emissions in their materials.
- **Building design policies:** go further than code requirements, by requiring new buildings to be 6-Star Green Star and having a pathway for ongoing improvement in design requirements.
- **Business Services:** by requiring that suppliers of services to Council lower their own emissions (e.g., by being certified carbon neutral), scope 3 emissions can be reduced.
- **Building, sports field and public lighting:** design and replacement with LED and smart controls together with passive measures to reduce demand for lighting.
- **HVAC:** specify efficient fit-for-purpose technologies and smart controls, and specify low and zero-emissions refrigerant gases.
- **Power & appliances:** efficient appliances and 'green IT' options are available, and specifications can be developed that ensures equipment is energy efficient when purchased.
- **Wastewater pumps** are upgraded or rebuilt from time to time. Upgrades offer opportunities to assess system design, evaluate VSD opportunities and improve control systems.

The scope for abatement from sustainable procurement can be sizeable, with incremental gains made via all purchased goods and services over the long-term complementing large abatement from the procurement of electricity from renewables via supply agreements and the sourcing of electric vehicles. Council also has the capacity to influence emissions reduction by its suppliers and contractors, and this may be increasingly important in future years in the context of reducing value chain emissions to reach net zero emissions.



Appendix E: Further information on carbon offsets & insetting

Buying carbon offsets is a common strategy for organisations that wish to be net zero or carbon neutral now, and who then seek to reduce emissions over time so that their offset liability reduces. High quality offsets from both local and international abatement activities can include those that are eligible under the Climate Active carbon neutral program:

- Australian Carbon Credit Units (ACCUs) issued by the Clean Energy Regulator in accordance with the framework established by the Carbon Credits (Carbon Farming Initiative) Act 2011 which has now been amended to establish the Emissions Reduction Fund (ERF).
- Certified Emissions Reductions (CERs) issued as per the rules of the Kyoto Protocol from Clean Development Mechanism (CDM) projects, with some exceptions.
- Removal Units (RMUs) issued by a Kyoto Protocol country on the basis of land use, land-use change and forestry activities under article 3.3 or 3.4 of the Kyoto Protocol.
- Voluntary Emissions Reductions (VERs) issued by the Gold Standard.
- Verified Carbon Units (VCUs) issued by the Verified Carbon Standard (VCS).

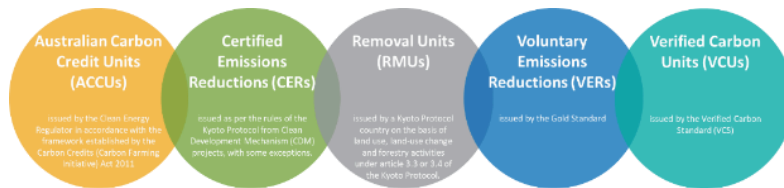


FIGURE 20: ELIGIBLE CARBON OFFSETS UNDER THE CLIMATE ACTIVE CARBON NEUTRAL PROGRAM

If Council considers purchasing carbon offsets, Council should conduct due diligence of the carbon offsets to determine their additionality, integrity and alignment to Council’s values.

If going carbon neutral in order to reduce Council’s emissions is not supported, another option for compensating for remaining carbon emissions is by creating Council’s own offsets through sequestration. The Emissions Reduction Fund is Australia’s current mechanism to reduce greenhouse gas emissions through a reverse auction scheme. Examples of eligible carbon farming methods under the ERF are planting trees, storing carbon through restoring mangroves and tidal marshes, storing carbon in soil, capturing landfill gas and the implementation of FOGO.

If Council has large parcels of land and/or leverages current FOGO solutions for example, it may be able to participate in the carbon farming market, generate carbon offsets under the Emissions Reduction Fund (ERF) or international carbon offset standards, and then sell them to generate income. Offsets could be sold to the ERF, to the secondary market in Australia or overseas. Offsets created could be used to reduce Council’s own emissions, as well as sell to others depending on the amount of land available.

The scope for abatement from offsetting / insetting is not known. For Council’s operations the amount of offsets required would ideally correspond to any shortfall between actual emissions and a zero emissions position, with mitigation measures ideally reducing emissions by at least 90% in the long term.



Appendix F: Stakeholder workshop results and action plans

F.1 Waste management

Discussion on current waste management and future opportunities and barriers to emissions reduction was framed by the following slide in the stakeholder workshop:

Orange City Council landfill waste	Received waste in FY2019	FY2019 Waste emissions
Municipal Solid Waste (MSW)	9,930 tonnes	15,888 t CO ₂ e
Commercial & Industrial (C&I)	10,355 tonnes	13,462 t CO ₂ e
Construction & Demolition (C&D)	4,556 tonnes	911 t CO ₂ e
Greenwaste	6,568 tonnes	302 t CO ₂ e

Waste management

The targets are to:

- reduce total waste generated by 10% per person by 2030
- have an 80% average recovery rate from all waste streams by 2030
- significantly increase the use of recycled content by governments and industry
- phase out problematic and unnecessary plastics by 2025
- halve the amount of organic waste sent to landfill by 2030.

- Implement FOGO (required by 2030, \$65m support) & improve recovery
- Reduce waste per person
- Increase diversion from landfill
- Gas capture / flaring for any expanded landfill (required, \$7.5m support)
- Potential support to AD and biogas from waste
- Consider council, regional (JO, Netwaste) and State-level actions

Engagement with stakeholders identified the following short term and long term action plan, and barriers that may inhibit progress:

Short term < 2 yrs	Long term	Obstacles
<ul style="list-style-type: none"> Outreach and education of the community; for example collaborating with NetWaste and EnviroCom to achieve better diversion from landfill. Investigate reducing red bin collection frequency from weekly to fortnightly. This will increase usage of the green bin and help lift FOGO recovery rates. 	<ul style="list-style-type: none"> Renewal of the Waste Collection Contract in 2026 and delivery of feasible improvements at that time, such as electrification or hydrogen fuelling of waste collection vehicles, pickup rosters, etc. Make required adjustments on licensed waste facilities in alignment with new EPA requirements (TBC). 	<ul style="list-style-type: none"> Lack of product stewardship and legislation aimed at industry who are producers of waste and making them accountable from cradle to grave. Lack of collaboration between government and industry to get initiatives up and running on a day to day basis. The use of recycling bins is not mandatory for industry, while it is for households. Funding and traction to mobilise alternative waste recycling streams eg for plastics (RedCycle) and glass (use for asphalt).



Emissions Reduction Plan: Orange City Council

		<ul style="list-style-type: none"> • Time is a constraint when using passive gas management systems. • Need to wait to get to a certain capping level before capturing the gas. • Budget for leachate transport and treatment in the STP as a result of open cell landfill system. • Technical innovation to improve the efficiency of methane collection in smaller landfills • Conditions of consent which need to be met given the setup of the waste facility. • Factors that hold councils back from shifting away from landfilling such as EPA's emission standards, volume required, site selection.
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F.2 Renewable Energy Action Plan (REAP)

Discussion on Council's Renewable Energy Action Plan and future opportunities and barriers to emissions reduction was framed by the following slide in the stakeholder workshop:

PPA rollout: 100% of Orange City Council's large and small sites have transitioned to PPA, resulting in a total of 100% use of renewable energy.

Renewable Energy Action Plan (REAP)

- Continue to install onsite solar, plus battery energy storage systems, which reduces emissions in the short to medium term as the grid decarbonises, and delivers long-term cost savings.
- Implement energy efficiency in Council facilities.
- Continue rollout of PPA to 100% renewables.

Site (Feb 2023)	NMI	Solar System (kW)	Year installed/commissioned
22802 - Giralang Ganya (HACC)	4001014668	5 kW	2010
23767 - Courallie Park Child Care Centre	4001015454	4 kW	2010
23301 - Occasional Child Care Centre	4001015079	1 kW	2010
23754 - Yarrowong Child Care Centre	4001015447	7 kW	2010
23939 - Botanic Gardens	4001015539	1 kW	2010
Isely Road Water Filtration Plant	NAAA00A078	35 kW	2020
Orange STP	NAAA00A079	30 kW	2020
Orange Depot	4001000002	100 kW	(75kW 2014 & 25kW 2021)
Orange Aquatic Centre	4001000014	198 kW	2018
Animal Shelter	4001312468	16 kW	2021
Airport	4001017807	99 kW	2020
Civic Centre	NAAA00A075	99 kW	2021
144 March Street	4001008397	20 kW	2022
Wade Park	4001015129	40 kW	2023 (awaiting commission)
Library/Art Gallery	NAAA00A074	99 kW	2023 (To be installed by June 2023)
Total		754 kW	



Engagement with stakeholders identified the following short term and long term action plan, and barriers that may inhibit progress:

Short term < 2 yrs	Long term	Obstacles
<ul style="list-style-type: none"> • Energy efficiency and sustainability in building design. • Renewables in design e.g. new integrating solar and batteries with new / upgraded Sewage Pump Stations. • Battery storage feasibility study and implementation rollout. • Water Treatment Plant: midscale solar installation sized for operational needs to reduce running costs. • Waste Water Treatment Plant: secondary treatment diffuser design for improved efficiency. • Additional LED lighting upgrades. • Additional solar PV on smaller sites and upgrade of solar PV at larger sites. 	<ul style="list-style-type: none"> • Focus on reviewing the performance and integration of new technology in building design. • Collaboration with regional councils to generate renewable energy from waste and also for treating biosolids. • More mid scale solar PV systems. • Waste Water Treatment Plant digester review/upgrade. • Smart metering. 	<ul style="list-style-type: none"> • Budget • Lack of engagement • NSW EPA emissions standards • Local opposition to initiatives like solar PV farms. • Internal resources: having adequate time to research Council’s direction, and lack of project management resources to construct projects. • Land acquisition for further PV rollout.



F.3 Sustainable / EV fleet transition

Discussion on Council’s potential transition to a sustainable/electrified fleet and future opportunities and barriers to emissions reduction was framed by the following slide in the stakeholder workshop:

Orange City Council's current fleet & fuel type

Vehicle type	Diesel	Petrol
Passenger fleet	50	23
Utes and vans	71	0
Heavy fleet	40	0
Plant and equipment	81	320
FY2020 emissions	1,146 t CO₂-e	85 t CO₂-e

Sustainable transport

- Strategy: transition to hybrid + EV plus charging, start with cars, whole fleet by 2050
- Trial car & ute EV over 2-5 years to test suitability
- Align with NSW gov EV Strategy?
- Stay abreast of incentives & technology for plans
- Assess Council locations for EV charging, future depot needs
- Upskill Council staff to maintain and service EV
- EV transition pathway may be
 - Short term: mowers, small plant, cars
 - Medium term: garbage, utes, vans
 - Long term: trucks, large plant

The NSW Government's EV Strategy will drive sales of EVs to more than 50% of new car sales by 2030-31, preparing the NSW road network for a low-emissions future.

Under this EV Strategy, the NSW Government is:

- Making it easier to afford an EV by providing incentives and phasing out stamp duty on eligible EVs.
- Transitioning the NSW Government passenger fleet to EVs by 2030.
- Investing \$171 million to build world class road network of ultra-fast charging stations.
- Introducing a distance-based road user charge (RUC) for eligible EVs of 2.5c/km (indexed to CPI) from 1 July 2027 or when EVs reach 30% of new vehicle sales, whichever comes first.

Engagement with stakeholders identified the following short term and long term action plan, and barriers that may inhibit progress:

Short term < 2 yrs	Long term	Obstacles
<ul style="list-style-type: none"> • Investigate possible conversion to 100% EV for the small commercial fleet. • Investigate charging options for Council sites, including at the depots. 	<ul style="list-style-type: none"> • Convert heavy fleet to either EV or hydrogen. • Rollout of charging stations. 	<ul style="list-style-type: none"> • Pressure on electricity supply due to increased demand. • Manufacturing capacity and innovation to produce the right sustainable vehicles for the job (fit-for-purpose). • Upfront cost for vehicles and plant items. • Lack of rapid EV charging stations.



F.4 Gas transition (natural gas and LPG)

Discussion on electrification of Council’s gas-consuming equipment and sites and future opportunities and barriers to emissions reduction was framed by the following slide in the stakeholder workshop:

Site	Type of equipment	Size
Showground	Hot Water System x 4; Cooking Gas x 1	12-24 KW each; 2 KW
Max Stewart Oval	Gas Hot Waters x 1	2 KW
Spring Street Childcare Centre	Hot Water System x1	12-24 KW each; 2 KW
Depot	Gas Heater x2; 2 x Gas hot waters	4 KW; 12-24KW
Giyalang Ganya (HACC)	Gas Duct System x 4	7- 10 KW each
22 Sale Street (Orange Cultural Centre)	Gas Duct System x 1	7- 10 KW each
Olympic Pool	Gas Boilers x 5, HWS x3, Gas Fryers x 2	2 GW (in total)
Orange Function Centre	Cooking Gas x 3	15 KW
Senior Citizens Centre	Ducted Gasx 1, Hot Water System x 1	7- 10 KW each
Occasional Childcare Centre	Ducted Gas System x 1	7- 10 KW each
Library Art Gallery	Gas Boiler	500 KW
Showground Caravan Park	Hot Water System x 4	12 -24 KW each
Jack Brabham Park	Hot Water System x 5	12 -24 KW each
Showground-Enviro Learning Centre	Gas Wall Heaters x 7	4 KW each
Pippin Way	Gas Duct System	7- 10 KW
Parks and Gardens	Bottled gas (LPG)	

Gas consumption: Council consumed a total of 15,674 GJ of natural gas and 3.1 kL of LPG in FY2020.

Gas to electric technologies

- Replace gas heating with electric heat pumps for hot water and pool heating, electric technologies (BBQ, induction cooktops) instead of gas for cooking



Engagement with stakeholders identified the following short term and long term action plan, and barriers that may inhibit progress:

Short term < 2 yrs	Long term	Obstacles
<ul style="list-style-type: none"> Feasibility study leading to replacing the boiler at the aquatic centre (end-of-life replacement). Installation of heat pumps at other Council buildings. 	<ul style="list-style-type: none"> Implement Council policy to use electric solutions instead of gas in both sustainability guidelines as well as building design guidelines. 	<ul style="list-style-type: none"> Funding Engineering complexity and adjustments required for electrification. Mindset challenge from traditionally thinking gas is cheaper to now converting to electric. Technical capability and trade skills to implement electrification.

F.5 Carbon offsetting and/or sequestration

In order to achieve net zero emissions by or before 2050, Council may have to consider the role of carbon offsets, whether through purchasing offsets or by creating its own offsets through sequestration. Aside from Council’s own emissions, there may be opportunities for Council to utilise land to sequester carbon that other entities may wish to purchase. This could potentially be done by Council, or in collaboration at a regional level and with agriculture businesses.

Council has no plans to purchase carbon offsets. There are a few initiatives within the council aimed at urban greening / urban tree canopy cover, which are mainly from a biodiversity perspective.



Council has embarked on a pathway to draft an ‘Urban Forest Strategy’ with the use of a consultant. Council will also replace any trees taken down for various reasons, at another location.

F.6 Funding of emissions reductions

Council can allocate internal funds to finance emissions reduction projects. This may involve redirecting existing budgets or establishing dedicated funding streams specifically earmarked for sustainability initiatives. By leveraging internal resources, Council can take direct control over the funding process and prioritise projects that align with its emission reduction objectives.

Currently, there are various funding options available to support emissions reduction efforts that Council can utilise:

- **Internal funding:** The Council can allocate internal resources and budgets to support emissions reduction initiatives.
- **Grant opportunities:** External funding can be accessed through grants offered by government agencies, non-profit organisations, and private foundations.
- **Joint Organisation:** Collaborating with regional stakeholders through Joint Organisation initiatives enables pooling of financial resources for larger-scale projects.
- **Revolving Energy Fund (REF):** Establishing a REF allows the Council to reinvest energy-related cost savings into future emissions reduction initiatives, creating a self-sustaining funding mechanism.

This diverse range of funding options provides Council with a comprehensive toolkit to secure the necessary resources for achieving its emissions reduction goals.

From the engagement with stakeholders, the following summarises Council’s preferences for funding emissions reduction actions.

Initiatives	Obstacles
<ul style="list-style-type: none"> • A Revolving Energy Fund (REF) was implemented ~12 years ago to support solar PV investments, but is now dormant. This could potentially be re-instated. 	<ul style="list-style-type: none"> • A REF used for solar PV installations on general Council facilities cannot be used to fund investments in water & wastewater section (e.g. at the WWTP and WTP).

F.7 Emissions reduction targets

Setting emissions reduction targets is a vital step in tackling the urgent challenge of climate change. One of the key insights gathered from the workshop with Council stakeholders was their desire for assistance in establishing bottom-up targets as a result of this project. This indicates Council’s recognition of the importance of targeted actions at the local level to drive meaningful change.

Suggested targets for Orange City Council’ emissions reduction pathway are discussed in chapter 4.

