

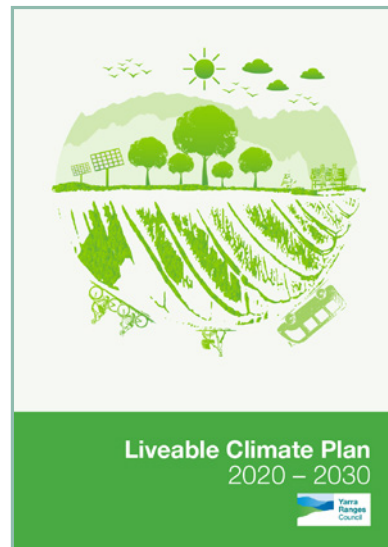
Yarra Ranges Council Annual Sustainability Report 2021



Liveable Climate Plan

In 2019 Council developed the 2020-2030 Liveable Climate Plan and Action Plan. The plan outlined the following guiding principals:

- Reduce emissions with as many co-benefits as possible using an evidence based approach in line with international efforts to limit global warming to 1.5°C.
- Prepare for a changing climate by recognising the risks, planning ahead and working with others to achieve more together.
- Demonstrate responsible climate leadership by doing our fair share, and inspiring others to play their own part to restore a safe climate.
- Integrate broader principles of sustainability, especially drawing on the knowledge of Indigenous Australians and their deep connection with country.



Our Targets



Reduce greenhouse gas emissions by 60% on 2005 levels by 2025



Transition all council services and infrastructure to 100% renewable energy by 2030.



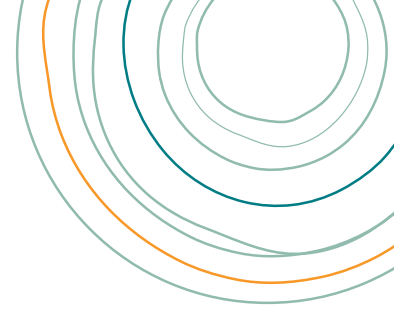
Net zero emissions by 2040



Zero operational energy expenditure by 2040



Greenhouse Gas Emissions



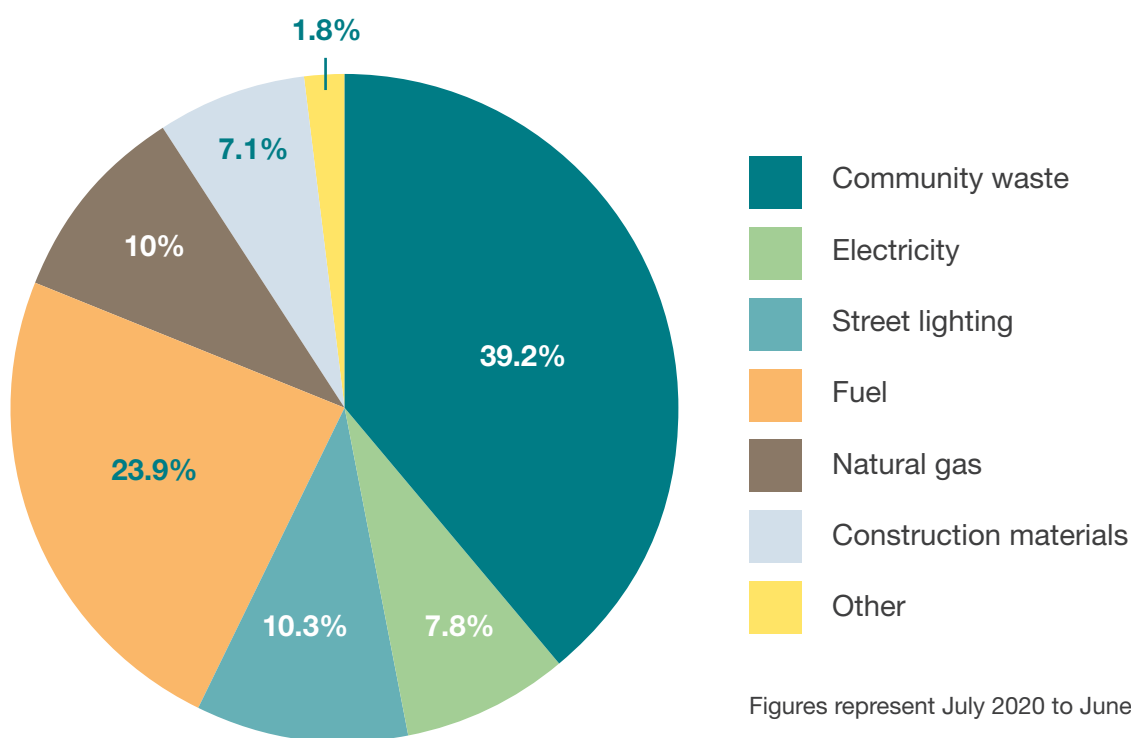
Council measures its greenhouse gas emissions from construction materials, electricity, fuel, natural gas, streetlighting and other smaller sources*. These emissions are accounted for in line with the National Greenhouse and Energy Reporting (NGER) Scheme.

From these sources, Council emitted 11,435.7 tCO₂-e* in the 2020/21 Financial Year, a 44.4% reduction against the 2004/05 baseline. Solar export on Council facilities abated 315.1 tCO₂-e, resulting in a net total of 11,120.6 tCO₂-e.

Community waste emissions from kerbside collections generated 7,362.2 tCO₂-e. These emissions are not within Council's control, thus are not included in the net total above.

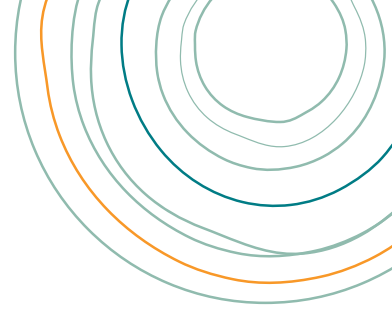
The following graph shows the total emissions calculated for the year, inclusive of community waste emissions.

*Other sources include refrigerants, business travel, water supply, catering and printing related emissions**tCO₂-2 = tonnes Carbon Dioxide Equivalent.



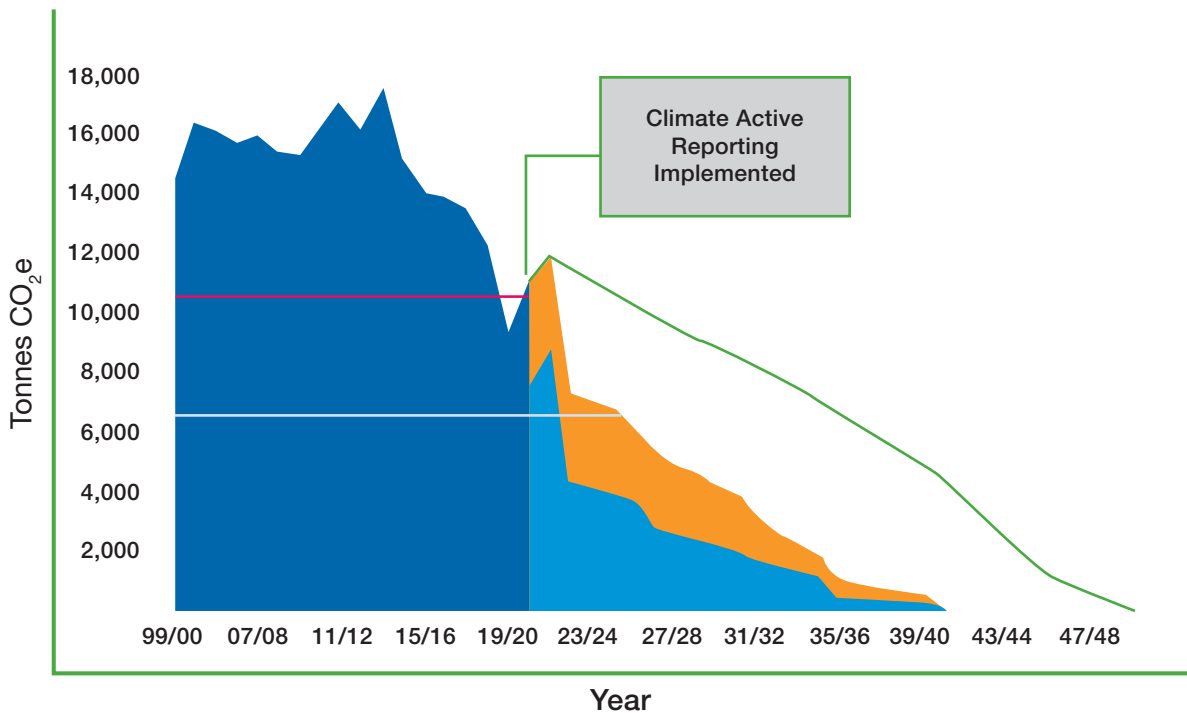
Figures represent July 2020 to June 2021 period





In the 2020/21 financial year, Yarra Ranges Council adopted the Climate Active greenhouse gas (GHG) accounting protocols. This shift has accounted for further Scope 3 emission sources related to Council activities and as a result has increased the total net emissions.

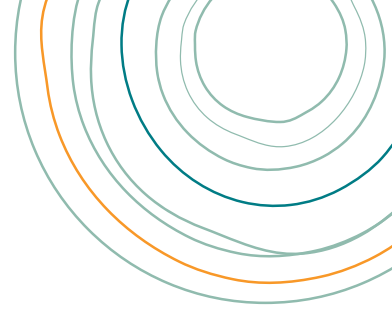
This difference is depicted visually below where GHG Reporting 1 (light blue) shows the projections without additional Scope 3 sources and GHG Reporting 2 (orange) shows the new projections using Climate Active. Climate Active has been adopted to reflect best practice GHG Accounting and in preparation for achieving certified net zero emissions.



- Council emissions to June 2021
- GHG Reporting 2 - climate active + LCP intervention
- GHG Reporting 1 - no climate active + LCP intervention
- GHG Reporting 3 - IPCC target to limit warming to 1.5° by 2050
- 2020 Target
- 2025 Target



Energy



Victorian Energy Collaboration

Yarra Ranges Council signed on to Victorian Energy Collaboration (VECO), the largest ever emissions reduction project by local government in Australia. The groundbreaking project will reduce participating Council's energy bills and greenhouse gas emissions using 100% renewable energy generated in Victoria. By joining the project Yarra Ranges Council will power streetlights which account for 40 per cent of its total energy use, with 100 per cent renewables.

Solar

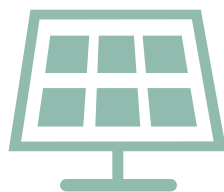
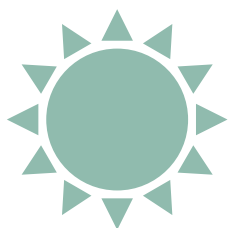
The installation of five new solar systems in 2021 took our total to 51 comprising of 3,991 panels that has a total capacity of over 1.14MW.

The new installations were at:

- Wandin North Community Sporting Pavilion – 7.7kWp
- Robyn Jane Childcare Centre – 20kWp
- Rolling Hills Preschool – 6.24kWp
- Bimbadeen Preschool – 5.46kWp
- Chirnside Park Preschool – 5.46kWp



5 new solar systems installed



a total of community buildings equipped with **51** solar panels

generating over **1.14MW** capacity



Biochar Facility

In 2019 planning of a biochar facility began to align with Council's Liveable Climate Plan goal to source 100% renewable energy by 2030 and be at net zero emissions by 2040.

Biochar is a form of charcoal for addition to soil providing many benefits including:

- improved soil structure
- improved soil water-holding capacity
- increased crop yields
- reduced greenhouse gas emissions

By making biochar from woody waste and other plant material, we are stabilising carbon that was absorbed from the atmosphere through photosynthesis when the plants were growing.

The Yarra Ranges region has a lot of woody material, some of which is disposed of through open air burning or being chipped for mulch. A biochar facility allows us to produce a high value product from low value woody material.

The Lysterfield Waste Transfer Station was chosen as it's a Council owned facility, with 3 phase electricity supply and current waste operations on site.

2021 milestones:

- Supply and install contract signed
- Site design is signed off

It's anticipated the facility will launch in 2023 and will produce approximately 1000m³ of biochar. A future enhancement of the facility will see the heat energy produced converted into electricity.

Find out more at
yarraranges.vic.gov.au/biochar

Solar Savers

Yarra Ranges Council is one of 11 councils who belong to the Solar Savers program. The program advises and helps residents install solar as a way to reduce their energy bills and make the transition to clean, renewable energy. During 2021, 30 residents and 1 business installed solar via the Solar Savers program.

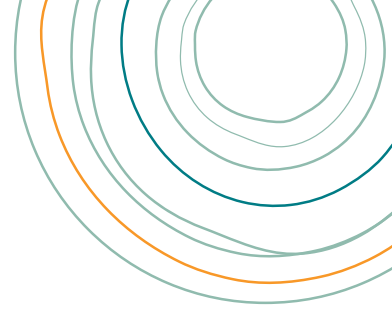
Energy Upgrades for Business Owners

Sustainable upgrade rebates, financing options and opportunities to install solar were presented to businesses during an online session in October.



Biochar image
Simon Dooley





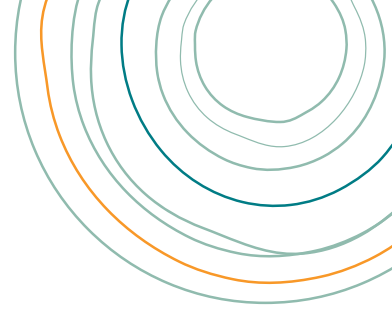
Battery Energy Storage Systems

Battery energy storage systems allowing the capture and subsequent storage of solar energy making it available when the sun is absent, or when mains power is unavailable, were installed at the Yarra Glen Memorial Hall, The Memo Healesville and the Yarra Centre in Yarra Junction.

The chosen sites are Emergency Relief and Recovery Centres (ERRCs), typically ready for use during bushfire season, however, the 2021 June 9 storm demonstrated the need to have these centres ready year-round.

The Yarra Glen Memorial Hall was activated as an ERRC for several days after the storm event when Yarra Glen was cut off with no power and the main route out of town was also inaccessible due to flooding. Priority electrical circuits that provide lighting and power were kept alive from the battery system and locals could come in to charge their phones and devices, use the wash room facilities and seek any further help from the council officers on duty. Even though the weather was very overcast after the storm, the battery's "state of charge" kept above 53% during the days the ERRC was operational.



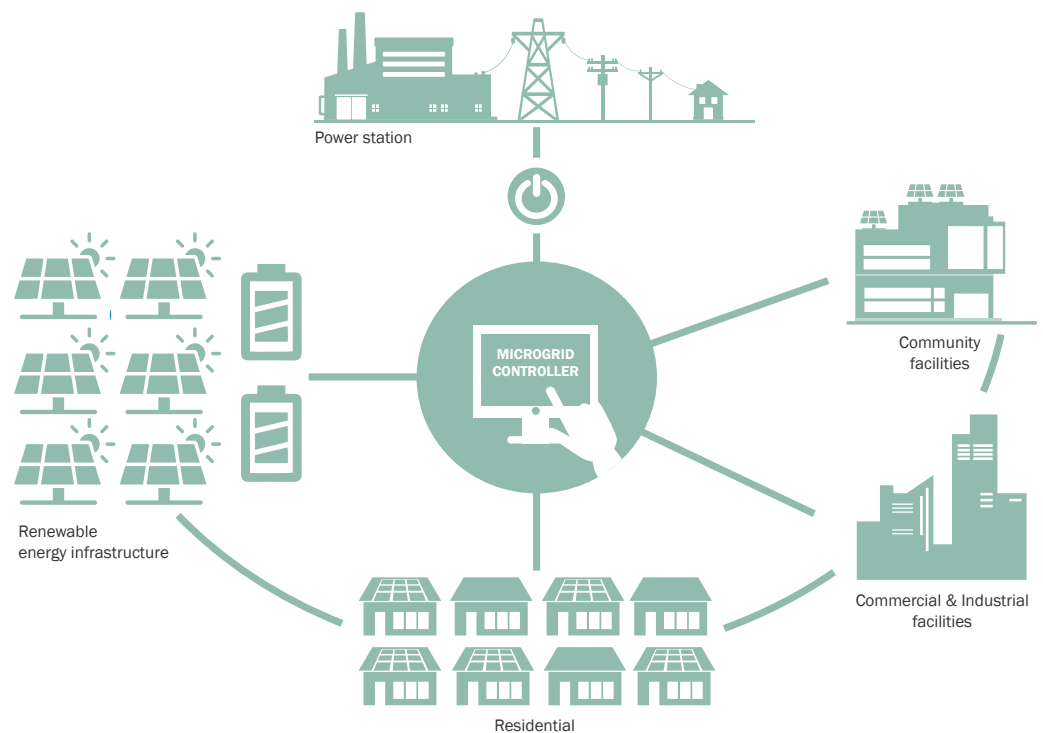


There were a number of key learnings during this period:

- Only essential power and lighting circuits are part of the back up circuits. The batteries are not large enough to include heating, cooling or kitchen uses that typically use more power.
- For renewable energy sources, microgrids may be able to play a key role in the future where energy can be shared between buildings.
- Diesel generators are likely to play a role in powering facilities when insufficient renewables are available.
- Catastrophic events cutting mains power can happen any time of the year not just during the summer bushfire season.
- “Shower and Power” is an important service Council can provide the community that are affected by long term outages.

Council has since partnered with Monash University and received federal government funding to conduct a microgrid feasibility study that is focussing on Healesville and Yarra Junction. It is envisaged that the feasibility study will demonstrate the value of microgrids in terms of financial outlay, encouraging the use of renewables and improved energy resilience.

Find out more at yarraranges.vic.gov.au/microgrid





Transport

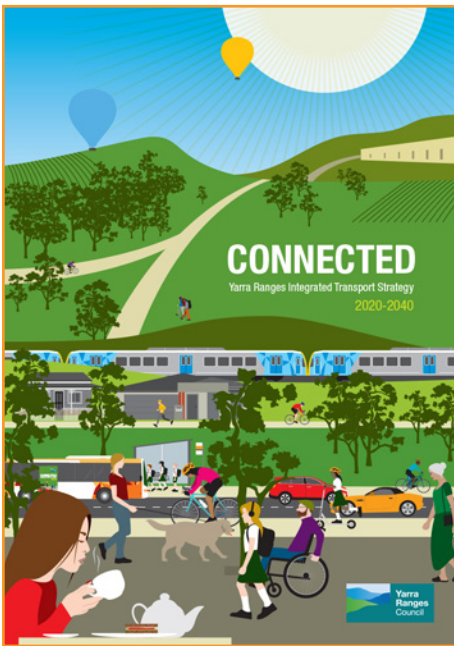
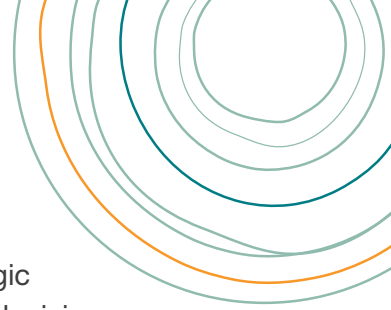
Council Purchases Hybrid Tipper Trucks

In a step toward our 2030 goal of replacing plant and equipment with viable zero emissions alternatives, Council took delivery of eight Hino hybrid tipper trucks in 2021. The trucks will be used for township maintenance duties and works at sporting fields and in our parks and bushlands.

The hybrid trucks have both a diesel engine and an electric motor which can provide the driving force either independently or together, depending on the driving conditions and power required. Charging of the batteries is via the engine, and extra charging is also generated from truck deceleration and braking, which captures the energy from the engine and wheels and turns it back into electricity again.

The hybrid truck provides an increased efficiency over pure diesel engine-trucks, with a fuel saving of up to 26%, thereby reducing greenhouse gasses proportionally.





Integrated Transport Strategy

Connected, the Yarra Ranges Council’s Integrated Transport Strategy is the key strategic document that guides transport planning and decision-making over the next two decades.

In 2021 we began to develop a Footpath Prioritisation Framework criteria to guide decision-making of footpaths in the Yarra Ranges for the next 10 years to include missing links and built up areas. This will also guide Council’s Capital Works Expenditure Program and provide the community with information and a reference point for future construction of footpaths.

We also undertook initial investigation into the development of a trial using smart parking technology to improve access and raise awareness of availability to parking.

Council also continued to advocate for improved public transport services through the Eastern Transport Coalition by developing a list of key issues with worked examples for bus routes and priorities which can be used to advocate for funding and support in State Budgets and upcoming elections in 2022.



eBikes

Six eBikes were added to the Yarra Ranges fleet in 2021. The bikes, which are used by builders working on the Warburton Mountain Bike Project and staff who conduct trail inspections, get between 80km and 130km per charge depending on power used. The use of bikes allows access to areas that other vehicles cannot travel and also reduce our carbon footprint.



Electric Vehicle Charge Points at Belgrave Station

The Sustainability Team negotiated with the Department of Transport for the inclusion of electric charge points as part of the planning process for the new Belgrave Station.



Sustainable Assets

Ecological Sustainable Development

In 2021 we compiled information, such as bill costs, water tank installations and LED lighting on Council building assets to support funding applications for Ecological Sustainable Development (ESD) upgrades and improvements.

We employed an officer to service planning referrals.

We maintained membership with Council Alliance for the Sustainable Built Environment (CASBE) and the Built Environment Sustainability Scorecard (BESS).

CASBE facilitates networking between Councils, providing a more consistent approach to ESD within the planning process. Subscription to the BESS tool supports those in the planning process to include ESD in their developments so that new builds are responsive to future changes in climate and energy use.

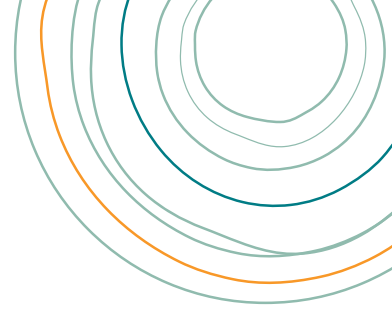
Small Plant Power Tools

In 2021 Council purchased 22 small plant power tools including:

- a battery powered chainsaw
- battery powered blowers
- a battery powered hedge trimmer
- a battery powered brushcutter

The battery powered gardening tools currently on the market are most suited for domestic use and do not perform well for heavy duty jobs due to the power limitation and battery operating time. As the market develops we hope to transition more of our gardening tools to battery powered.





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