Alexandrina Council

Climate Emergency Action Plan



Working together to reduce emissions

In the spirit of reconciliation, Alexandrina Council and its communities acknowledge the Traditional Owners of this region and acknowledge their connections to the land, waters and community. We respect their rights, interests and obligations to speak and care for their traditional lands and waters in accordance with their customs, beliefs and traditions. The Alexandrina Council region intersects the traditional lands of the following Aboriginal Peoples:

- Ngarrindjeri Nation
- Peramangk Nation
- Kaurna Country.

We pay our respect to their Elders past, present and future.

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A message from our CEO and Mayor

Governments, scientists and business leaders around the world now agree that global temperature increases must be limited to 1.5°C above pre-industrial levels to avert the worst impacts of climate change and preserve a liveable planet.

The United Nations has called the transition to a net zero world "one of the greatest challenges humankind has faced". Alexandrina Council agrees.

This Climate Emergency Action Plan is the next natural step to reduce Council and community emissions within Alexandrina, prepare for a changing climate and to seize the opportunities on the road to net zero.

This plan was developed for Council to identify how, as Council and community, we can respond to climate change, and how we can elevate our ambition. Council sought expert advice from Meiklejohn Consulting, to develop this Plan in close collaboration with staff and Council's Climate Emergency Advisory Committee.

Council recognises that tackling climate change while maintaining thriving and liveable places for people is a monumental challenge – one that can only be successful if Council and community work together.

The Climate Emergency Action Plan outlines how Alexandrina Council will play its part in supporting the community to reduce emissions and work towards a stated target of net zero communitybased emissions by 2040. Council will act as a role model for the community by making its own commitments and facilitating change in our community. This strategy aims to assist the community to act now to tackle the challenges of a changing climate, protect and enhance our natural assets, and create a better built environment and a brighter future.

By supporting residents, businesses and industry to act more sustainably, Alexandrina Council can help the community build a prosperous, healthy, thriving and sustainable municipality, and transition towards a net zero emissions future.

Kind regards





Nigel Morris Chief Executive Officer





Mayor Keith Parkes

Introduction



Alexandrina and climate change

In December 2019, Alexandrina Council declared a climate emergency and has since committed to achieving carbon neutrality by 2040. In doing so, Council joined a movement of more than 100 Australian local governments that have declared a climate emergency and are responding to climate change with a greater sense of urgency (Northern Alliance for Greenhouse Action 2020).

For Alexandrina, projected and experienced climate change impacts include;

- Increases in both minimum and maximum temperatures and an increase in the number of heatwaves
- Rising sea levels and increased coastal inundation
- Lower than average rainfall and more intense storms, (Department for Environment and Water 2020).

This, in turn, is forecast to worsen health conditions, place critical infrastructure under stress and at risk of increased damage, increase flora and fauna extinctions and potentially damage the economy, in particular tourism, property and agriculture.

Connecting with Alexandrina 2040

The community of Alexandrina enjoys an enviable lifestyle in a beautiful setting that is valued deeply. In 2021, Council developed the *Alexandrina 2040 Community Strategic Plan* (A2040). Our plan is to help the region thrive for the next twenty years and has identified three key aspirational themes: livable, green and connected.

Green Alexandrina is climate-ready, a place where nature is valued and resources are managed sustainably and creatively for a new economy.

We need to act now to reduce our emissions and help to limit the extent of climate change.

This *Climate Emergency Action Plan* (the Plan) sets out how Council and community can achieve carbon neutrality for the municipality and help protect the unique environment we all enjoy.



Our emissions

In 2019/20, the Alexandrina community produced 361,000 tonnes of greenhouse gases (12.8 tonnes per capita emissions). The three main sources of emissions were:



Transport (46%*), reflecting a reliance on road transport. Electricity usage (30%*) for running homes and businesses.



Agriculture (21%*) reflecting the inputs and processes involved in this large sector.

Transport emissions reflect our dependence on road transport, which is currently based upon internal combustion engines consuming petrol, diesel and gas.

Electricity consumption is from everyday activities, such as heating and cooling our homes, lighting, cooking, heating water for showers and laundry, irrigating our gardens and crops as well as running our businesses.

Our agricultural level of emissions is higher than the Australia-wide emission of 13%, reflective of the fact that agribusiness is the largest industry in our region. Emissions are generated from operating machinery, extensive irrigation, and livestock.

Alexandrina Council contributes just one per cent of all emissions in the municipality from its corporate activities.

Alexandrina Council emissions



Figure 1: Figure comparing Alexandrina Council and community emissions generated in 2019/20 (Alexandrina Council 2022a)

To reach community-wide carbon neutrality by 2040, we need to cut community emissions by 339,633 tonnes of greenhouse gases annually, on top of emissions reduction from changes to the state electricity grid (Alexandrina Council 2022a). Additional emissions reduction will come from South Australia's rapid transition to a 100% renewables-based energy grid by 2030. This also takes into account that we are projected to add another 16,000 residents to the region by 2040 (Alexandrina Council 2022b).

* All data sourced from Alexandrina Council's Carbon Neutral Plan (Alexandrina Council 2022a)

The role of Council

Although Alexandrina Council accounts for just one percent of emissions in the municipality, it has two major roles to play in responding to climate change.

The first is through reducing its own emissions, which are made up of fuels and electricity purchased to keep facilities and services running. These include Council's vehicle fleet, sporting facilities, street lighting and water treatment and pumping.

Alexandrina Council emissions 2018–20



Figure 2: Alexandrina Council corporate and operations emissions (Alexandrina Council 2022a)

Scope 1 emissions are fuels, such as diesel and gas to keep Council's vehicles running and heating for buildings.

Scope 2 emissions are from electricity purchased from the grid for Council buildings, such as libraries, community centres and Council offices.

Scope 3 emissions are generated by third parties that provide services or assets to Council, such as purchasing paper, water usage and waste disposal.



Already, Council is taking action by transitioning its vehicle fleet to hybrid vehicles and EVs, replacing older streetlights with light emitting diodes (LED), greening public spaces, investing in rooftop solar and battery storage, and potentially purchasing 100% accredited renewable energy.

Council's other major role is as a leader, mentor and facilitator on climate action for the community. How it does that depends on what emissions Council can control, how it can influence others to reduce their emissions, and how Council can advocate to others to help us.



Control

Council can control management of assets and infrastructure, internal policies and carrying out statutory responsibilities.

Support

While Council cannot directly control community emissions, it can educate, collaborate and support the community to help them reduce their emissions.

Advocate

Council can advocate for change to reduce emissions through international, State and Federal Government climate policy. We cannot control the outcome; however, climate action has been identified as a regional priority through community consultation, therefore Council's advocacy is backed by our A2040 community engagement.

By the way it performs its everyday operations, Council will not only reduce its own emissions and ensure the increased resilience of Council's services and assets to climate impacts, but also act in partnership with the broader community. Through this approach Council will demonstrate how the community might reduce their own emissions.

Ultimately, climate change is not the responsibility of one person or organisation. It's up to all of us.



Alexandrina Council's climate journey

Alexandrina Council has a long-standing history of responding to climate change. Our journey started as far back as in 2010.

- 2009 <
- South Australian Heatwave

2011 <

 The new energy efficient library, Council and Community centre opened
 Council installs a 20kWp solar farm at the Goolwa Depot

2014 <

• Council joints the Resilient Hills & Coasts Climate Adaptation Partnership

2016 <

• The Resilient Hills & Coast's Climate Change Adaptation Plan is adopted

2018 <

- Alexandrina joins Cities Power Partnership
 Resilient Hills & Coasts runs community energy business case
- Council undertakes a level 2 energy audit on the Goolwa Library and Administration Building

2020 <

- Council installs energy efficient LED lighting at the Goolwa Library and Administration Building
- Council undertakes Coastal Adaptation Study
 community consultation
 - Council joins Climate Emergency Australia

2022 <

- Council adopts the Carbon Neutral Plan, the Climate Change Policy, and the Coastal Adaptation Plan
- Council replaces the Building Management System with an energy efficient system
 - Community screening of
 - Regenerating Australia

> 1997

- The Millennium drought: 1997 to 2009
- Kyoto Climate Change Conference

> 2010

- Council undertakes an inventory of Council's greenhouse gas emissions
- Council undertakes a preliminary risk assessment of the impacts of climate change on Council's operations and services

> 2012

• Council runs Solar Program for residents

> 2015

- Paris Climate Change Conference
- Council becomes an early adopter of EV charging stations across Alexandrina
- Council starts annual emissions inventory across its operations

> 2017-2019

Drought

> 2019

- Black Summer
- Council declares a Climate Emergency
- Council undertakes Coastal Adaptation Study
- Council undertakes the Climate Governance Risk Assessment

> 2021

- Eastern State Floods
- Councils forms Climate Emergency
 Advisory Committee
- Establishment of Climate Champions, Council's internal working group
- Council installs rooftop solar arrays on 4 Council buildings

> 2023

- Council prepares the Climate Emergency Action Plan/undertakes community consultation on the Climate Emergency Action Plan
- The Climate Emergency Advisory Committee becomes the Climate Emergency and Environment Committee

Our targets

Alexandrina's *Carbon Neutral Plan* shows how we all can achieve carbon neutrality by 2040 (Alexandrina Council 2022a).

This means reducing emissions where we can and offsetting emissions where we can't directly control or influence others to reduce their emissions. Offsetting includes investment in activities that capture or reduce greenhouse gas emissions, such as tree planting or regenerative agriculture.

Both Council and community emissions will benefit from the shift to renewables in South Australia's energy grid. Council emissions will be reduced by 45% and community emissions by 27% as a result of this shift. To reach carbon neutrality by 2040, Alexandrina Council needs to reduce its own operational emissions by 32% and offset emissions by 22%

The Alexandrina community needs to reduce its own emissions by 56% offset emissions by 27%

These are ambitious targets, and we all need to work together to achieve them.



About this Plan

This Plan builds on Council's *Carbon Neutral Plan* (Alexandrina Council 2022a) by establishing actions to be achieved by Council and the community working together.

The actions are set out under the following headings:



Emissions from Council services and operations



Households and businesses



Transport



Farming and greening



Working together for a carbon neutral future

Delivering these actions isn't the sole responsibility of Alexandrina Council. There needs to be a partnership between Council and the community working together to reduce emissions and protect our region from the worst impacts of climate change. The Plan sets out recommendations for how the plan can be delivered through this partnership.

Emissions from Council services and operations

1% of all Alexandrina emissions



Leading the way

Although Council emissions account for just one percent of all emissions produced in Alexandrina, it's important to reduce Council's emissions. Council does this because it makes good sense but also to show others in the community what can be achieved.

Council aims to be carbon neutral by 2040. Achieving that won't be easy but getting there will help demonstrate to the community what can be achieved as well as build expertise to help the community reduce their own emissions.

The *Carbon Neutral Plan* (Alexandrina Council 2022a) identified five primary projects to be undertaken to reduce Council emissions:

- 1. Purchasing electricity for operations from 100% renewable energy sources.
- 2. The replacement of existing public lighting facilities with LED lighting.

- 3. The transition of Council passenger and works vehicles (excluding heavy vehicles, machinery and plant equipment) to hybrid vehicles, followed by a staged transition to EVs powered by 100% renewable energy.
- 4. Shifting heavy plant and equipment and heavy vehicles from diesel fuel to green hydrogen.
- 5. The installation of two additional 100 Kw solar PV systems at both the Goolwa Council Office and Strathalbyn Council depot and the installation of battery storage systems at both locations.

Additional Council emissions not reduced through these projects will be offset, at least initially, through local Council greening projects and the purchase of carbon offsets.

100% Renewable energy

Alexandrina Council will benefit from the ongoing de-carbonisation of the South Australian grid, which is expected to provide 100% renewable energy by 2030.

However, rather than wait, Council is already acting through its participation in the Local Government Association's power purchase agreement (PPA). As part of this PPA, Alexandrina Council continues to advocate for the purchase of 100% certified renewable energy.



Public lighting

Public lighting, such as street lighting and public space lighting is a high ongoing energy cost and a major emissions source for Council.

Existing lighting infrastructure includes fluorescent and high-pressure sodium lamps, which are gradually being replaced across Australia by LED lighting. Although LED lighting is initially more expensive for Council, it has a longer life than traditional lighting types, and requires less ongoing maintenance and involves much lower operating costs over time.

In the long run, shifting to LEDs will save Council up to \$929 per tonne of abated CO2 and a total abatement potential of 615 tonnes of CO2 between 2022 and 2040. This can also be supplemented by additional work by Council to investigate the use of smart lighting and solar-powered lighting in public spaces, to further reduce both costs and emissions. Council has changed the lighting in the Goolwa Administration and Library Building to energy saving LEDs, providing better lighting for staff and library users. Combined with the installation of a 99kW roof solar system, building energy consumption has fallen by 55%, while over \$36,000 has been saved on electricity bills in one year.

Fleet transition

The use of internal combustion vehicles within Council is a major source of operational emissions, accounting for 29% of Scope 1 emissions.

Alexandrina Council will tranisition its fleet first to hybrid vehicles and then to EVs, as part of a transition to low emissions vehicles. This approach will allow Council to continue to serve the community through its operations while also reducing emissions.

Moving from diesel fuel

While EV technologies are maturing rapidly for light vehicles (such as passenger cars), Council will investigate alternatives for heavy vehicles (e.g. trucks) and plant machinery that are currently reliant on diesel fuel.

This will most likely take the form of converting heavy vehicles to green hydrogen as fuel technologies continue to mature.



Solar and battery storage

Alexandrina Council has already installed several rooftop solar systems to reduce emissions and energy costs. Increasing the Council's solar capacity will significantly reduce electricity costs in the future. For example, the existing 20kW solar power system at the Goolwa Depot, has not only offset an estimated 25.5 tonnes of CO2 per year since being turned on in 2015, but it has also saved Council over \$65,000 in total. In 2021, Council added another four solar power systems on Council's buildings, with a total of over 200kW. As a result of the solar arrays, energy consumption will be further reduced between 21% and 46% per building, totalling over 170,000 kW hours per year.

The Carbon Neutral Plan (Alexandrina Council 2022a) identified that by installing two additional

100 kW systems at the car parks near the Goolwa and Strathalbyn Administration and Library buildings, Council can save an additional 246 tonnes of CO2 for a cost savings of \$11,452 per tonne of CO2. These systems would be constructed over car parks at both locations, providing shade for the cars, additional renewable energy for the buildings, and the possibility to install batteries and EV charging stations.

All these projects constitute a major investment for Council. Hence, Council will seek external funding and grant opportunities. As battery systems and EVs continue to drop in price, they will become increasingly attractive to Council to ensure maximum flexibility of the storage and use of its renewable energy.



Local leaders – meet Tim

Tim is a Goolwa resident and Alexandrina Council employee. He lives on the northern edge of Goolwa with his family of four, three cats, and six chickens. In 2019, Tim's family upgraded their small 1.7kW home solar array, added another 5kW solar array and included a 11.4kW home battery. As a family with a tight budget, they chose a company without upfront payments and where a full maintenance guarantee was included. For a weekly payment of \$31, Tim's family significantly reduced their energy bills, their home power usage and reliance on fossil fuels, as well as providing battery power for their home in the event of blackouts. Tim also replaced the ageing hot water system with a heat pump hot water system at a one-off cost of \$99, taking advantage of SA Government's Retailer Energy Productivity Scheme. Replacing the old water system reduced the family's hot water energy cost by nearly three quarters. All up, the quarterly energy bill is on average only 20% of their pre-2019 bills; and the family reduced their carbon footprint by at least 24 tonnes of carbon dioxide equivalent (CO2-e) in the first three years.





Other changes included monitoring the family's energy usage in real time, protection against power outages, and upgrading the home energy systems. Tim has signed up to a 'Virtual Power Plant' which allows homes to directly share power with other homes when needed and allows for a better feed-in tariff and optin for 'peak energy rewards' which incentivises using less power at peak usage times. With the inclusion of more rechargeable electric devices and small home appliances, the family further reduced their carbon footprint. Currently, the family is working towards an electric or hybrid vehicle which will further reduce cost and fossil fuel dependance while taking advantage of their home battery capacity.

Strategic Actions – Council Emissions

Council aims to be carbon neutral by 2040. Achieving this won't be easy, but getting there will help demonstrate what can be achieved, as well as build expertise to help our community reduce their own emissions.

STRATEGIC ACTIONS			
Task	Responsibility	Year	Estimated cost
Advocate for 100% renewable energy in PPA.	Council	2022-23	Staff time
Investigate and install solar car park, combined with battery use and EV charging stations.	Council	2023-2040	\$1,622,000
Implement LED replacement of street lighting (approximately 2000 lights).	SA power	2023-30	\$400 per lamp (minimum)
Investigate opportunities for solar and/ or the use of smart and solar-powered lighting in public places or Council infrastructure and buildings.	Council	2023 - ongoing	\$240,000
Development of Council's Fleet transition plan; including:	Council	2023-2035	
1. Purchase of hybrid vehicles			1. \$700,000
2. Installing EV charging stations for Council fleet			2. \$22,400
3. Purchase of EVs			3. \$1.5 million
4. Purchase of hydrogen heavy vehicles.			4. \$4.2 million

Households and businesses

30% of all Alexandrina emissions \int

The way we live

In the community, we generate emissions through our everyday activities, whether it's heating the house in winter or cooling it in summer, turning on the lights, where we source our food and whether we buy food produced locally, cooking dinner, having a shower, doing the laundry, watching TV, running a shop or an office.

We don't stop doing these things because this is how we live. What we need to do is change how we do these things.

This might be through changing the source of the energy supplying our home or business by shifting from gas and coal-based energy to renewable energy. It might mean making our homes more energy efficient, so we don't need to use so much energy. It can include using technologies such as solar hot water heaters or heat pumps, LED lighting, and induction cooktops, as well as changing our behaviour to cut our emissions and our energy costs.

It will also mean Council advocating to the South Australian Government for changes in the state-wide Planning and Design Code (the Planning Code) to ensure we have more energy efficient homes, as well as Council supporting the community to prioritise local food and reduce, reuse and recycle to minimise our emissions.



More solar

As a community, Alexandrina already has a high proportion of households with rooftop solar. More than half of households (52.9%) in Alexandrina have installed solar (APVI 2020).

This is backed up by the ongoing transformation of the South Australian electricity grid with a greater reliance on wind and solar, with a target of 100% net renewables for the state by 2030 (South Australian Government 2021).

Alexandrina Council's *Carbon Neutral Plan* (Alexandrina Council 2022a) calls for an increase in the amount of rooftop solar in the community by 5% per annum, which would result in an annual installation rate of at least 815 households installing solar each year (APVI 2020).

While this is less than current installation rates across the municipality, as the number of houses without solar decreases the opportunities for installing additional solar will also decline. This growth in solar installations is expected to be generated through natural ongoing growth without the need for additional promotion by Council.

There are also opportunities for renting households to install solar through leasing arrangements with commercial providers, rather than owning their own system outright.



Changing appliances

One of the best ways to reduce home and business energy-based emissions is through switching to infrastructure and appliances that use less energy.

For example, heating water for use at home accounts for around 25% of residential energy use (Alexandrina Council 2022a). To reduce this and become carbon neutral as a community by 2040, the Carbon Neutral Plan recommends installing solar hot water or heat pumps across 50% of all newly built homes. Currently, just 9% of homes have solar hot water or heat pumps.

Council can support the efforts of new and existing households to increase their uptake of solar hot water or heat pumps through community engagement and education programs as well as advice provided during regular Council processes.

As a climate-resilient community, we can also take up more energy efficient appliances in the home, including reverse cycle air-conditioning, dishwashers, lighting and washing machines. When it is time to replace these items, we should aim to replace with items that are rated as having 'high energy efficiency'. This will be coupled with opportunities to improve the energy efficiency of our houses and offices, such as through better insulation and double-glazed windows.

Finally, the Alexandrina community can also start to shift away from a reliance on domestic, bottled gas to electrifying homes and businesses. This allows for a greater usage of renewable energy, whether through their own solar systems or drawn from the grid as it transitions to 100% renewables. It also allows for integration with home battery storage systems as they become commercially viable in a broader range of cases.

Through its alignment with the South Australian Government's Energy Advisory Service, Council can support the community through the development and support of an Alexandrinafocused campaign to help residents and businesses.

Our homes and towns

How we plan our homes and towns is a major contributing factor to how much energy those homes and towns consume. The ability to change the planning system lies primarily with the State Government.

South Australia undertook a complete review of its planning system in 2014 with new legislation being introduced through the Planning, Development and Infrastructure Act 2016. With the introduction of this new legislation the way in which development was assessed also changed. The most significant changes were the replacement of Council Development Plans and the introduction of the Planning Code, the way in which development applications are assessed and an electronic assessment system.

Within the Code there are general policies that address the environmental performance of buildings; however, these policies are not necessarily being called up by the assessment pathways and therefore not being able to be implemented for the average dwelling application. Council continues its advocacy and interaction with the State Government to ensure that the planning system continues to evolve and be improved. The review of the 30 Year Plan for Greater Adelaide commencing in 2023, provides opportunity to further explore how the planning system can address energy efficiency and other climate change impacts to ensure climate ready communities.

Advocacy is also required within the building sector to ensure new housing products incorporate energy efficient outcomes through product selection and design. The community can play a key role by demanding energy efficient housing thereby changing the standard products currently available.

This can include asking builders for more energy efficient designs and options when building or renovating or actively seeking out energy efficient technologies when upgrading (e.g. replacing gas fired hot water systems with solar heat pumps).

Primarily decisions around housing design and appliances are cost driven so the more it is demanded the more affordable it becomes – the key comes with understanding the long-term financial gains associated with reduced energy costs.



Climate-ready homes



Baseline building compliance is often inadequate to ensure a home is climate resilient. Housing is often poorly sited, designed and constructed to account for flood, bushfire and extreme heat. Vulnerable housing imposes higher living costs and reduces community resilience. It can attract higher insurance premiums and energy bills and reduce thermal comfort.

This is why Council, in collaboration with the *Resilient Hills & Coasts*, has produced information to help homeowners and planners build or retrofit climate-ready homes. The *'Where We Build What We Build'* project aims to encourage building or retrofitting of homes that are climate-ready, by demonstrating that the benefits of doing so outweigh the costs.

The full report, as well as fact sheets for home owners, builders and planners, can be downloaded on the *Southern & Hills LGA website*.

Living local, less waste

Council is already supporting the efforts of community members who want to reduce their impact through lifestyle changes, including eating locally sourced foods and generating less waste.

Council is committed to working with our community to build our climate change resilience and encourage sustainable lifestyles. Did you know that around 30% of carbon emissions are generated through activities within our food system – from food production through to resource recovery and the 'food miles' embedded within what we consume?



Figure 3: The food system is a cycle of many activities involving the production, processing, transport, and consumption

In response, Council is actively supporting healthy, sustainable and resilient food systems in Alexandrina. By partnering with the community and other government organisations, we are exploring how councils and community can work together to enable resilient and regenerative food systems. Together, we have developed a toolkit to support councils and their communities to have conversations about and take action on creating the type of food system they want for their future.

Through this process Alexandrina Council and the community have developed a shared vision for a resilient food system in our region. Our key themes include:

- Enabling Regenerative Farming
- Supporting Local Food
- Encouraging Sustainable Planning and Design
- Reducing Food Waste
- Learning from First Nations Approaches

Council will continue to work with the community to co-create this vision by connecting key players, encouraging collaboration, providing relevant education and support, promoting the vision and achievements, resourcing eligible initiatives through grants programs and undertaking advocacy. Council is already supporting the efforts of community members and businesses who want to reduce their impact through lifestyle changes, including eating more local, sustainably-produced foods, reducing their waste, and recycling.

Through supporting food literacy programs, such as The Food Embassy's Food Matters program and mentoring, Council is enabling community members to learn about local, sustainable food, connect with local producers and their community, and support community to bring to life community-led initiatives that help build our resilient food system.

One example of a community-led initiative is the Fruit Loopers program developed by Strathalbyn Neighbourhood Centre – a volunteer-run program supporting residents to maintain their backyard fruit trees and increase their harvest. The harvest is then shared with the resident and local community via the Grow Free carts. Council supported Strathalbyn Neighbourhood Centre to grow their idea into a program with mentoring support provided by the Food Embassy.



In addition, Council is supporting businesses to reduce their carbon emissions through innovative research and development. This includes supporting a study of delivery logistics for small-scale food producers in the region. Many small-scale producers invest significant time and financial expenses into delivering their locally-produced food to local outlets as this task is often undertaken by producers individually. This study will explore potential solutions such as a cooperative local delivery service which will increase supply of local food to local shops and restaurants, minimise time and financial impact on producers, and importantly reduce carbon emissions from food distribution.

Alexandrina Council provides all residents with a 50% subsidy on the purchase of compost bins, kitchen caddies and rolls of compostable liner bags to aid recycling of food waste and organics. Community members can also contact the Fleurieu Regional Waste Authority (FRWA) to learn more about organics recycling.

FRWA is an authority formed by its member councils (including Alexandrina Council) to manage their waste and recycling. FRWA operates a three-bin domestic collection service in urban areas (general waste, household recycling and household food and garden organics) and a two-bin system in rural areas (general waste and household recycling). All waste types are collected generally on a fortnightly schedule to encourage and support recycling, thereby significantly reducing landfill and heavy vehicle emissions.

Community members can play an important role in reducing household and community emissions by:

- Choosing locally produced food where possible
- Growing some of our own food in our backyards or community gardens
- Eating more plant-based foods like fruits, vegetables, legumes and wholegrains – this is also great for your health
- Avoiding wasting food and composting food scraps or putting them in the green organics bin
- Promoting these actions with friends, family and networks
- Contributing to community-led initiatives focused on 'living local, less waste'.



Strategic actions Household and businesses

How we plan our homes and towns is a major contributing factor to how much energy those homes and towns consume. Together we can play an important role in reducing household and community emissions.

STRATEGIC ACTIONS			
TASK	RESPONSIBILITY	YEAR	ESTIMATED COST
Increase the number of homes and businesses with rooftop solar.	Community	2023-2040	Market driven
Improved energy efficiency and electrification of homes and businesses.	Community	2023-2040	Market driven
Invest in staff resource to support residents and businesses to invest in renewable energy, improved energy efficiency and electrification in their homes and businesses.	Council	2023-ongoing	\$125,000 per annum
Develop campaigns to support residents and businesses to invest in renewable energy, improved energy efficiency and electrification in their homes and businesses.	Council	2024-28	\$15,000 Staff time (0.4 FTE)
Achieve a 100% net renewable energy grid.	SA Government	Ву 2030	NA
Develop a comprehensive community education and behaviour change program to encourage sustainable lifestyle practices of living local and wasting less.	Council / Community	2023-ongoing	Pending funding
Support businesses to explore, develop and implement innovative ways of reducing carbon emissions associated with their operations.	Council / Community	2023-ongoing	Staff time (0.2 FTE)

Transport

46% of all Alexandrina emissions

26 | Alexandrina Council Michael Fousert unsplash.com

How we move

As a rural community, we are highly dependent upon cars to get around.

More than a third (34.5 percent) of Alexandrina households own one car, and 36.7 percent own two cars (Australian Bureau of Statistics 2022). Seventy percent of us travel to work by car, 4.2 percent walk or ride a bike and 7.9 percent work at home (Australian Bureau of Statistics 2016).

To reduce emissions, we need to shift towards replacing current internal combustion vehicles with low emissions and EVs and explore opportunities to replace short trips with walking and cycling.



Cleaner cars

Australia is at the beginning of a transition to EVs. While current take-up of EVs is low, this is expected to grow rapidly over the next decade as manufacturers stop producing internal combustion vehicles, government support for EVs increases and EV production and competition increases leading to price decreases.

By 2040, EVs are predicted to become the default choice for all light and commercial vehicle purchases. Future EV models with bi-directional charging will also play an additional role as a home energy storage device.

The Carbon Neutral Plan sets an ambitious target of 100 percent uptake of EVs in the community by 2040, which would avoid 3,612,277 tonnes of emissions (Alexandrina Council 2022a). The Plan notes that much of the shift towards EVs will be driven by Federal and State government policy, as well as by choices made by manufacturers.

However, Alexandrina Council can support this through the promotion of public charging facilities throughout the Council area. Supporting the development of a network should build on previous projects, such as the Fleurieu Electric Highway Project (Regional Development Authority 2018) and align with the State Government's Electric Vehicle Action Plan (Government of South Australia 2020), which will deliver a state-wide charging network by the end of 2023, including several new charging stations proposed for the municipality.

Currently, Council has three public charging facilities in Goolwa, Port Elliot and Strathalbyn as part of the Fleurieu Electric Highway Project (Regional Development Authority 2018). There are additional public charging facilities on private property, including at Milang Lakes Motel and Bremerton Wines.

These top up and destination charging facilities are important to help overcome range anxiety in EV owners.

Council will continue to actively advocate for an expansion of EV charging stations across the Alexandrina Council area, hereby ensuring the best strategic outcome for councils, businesses, communities and EV owners.

Local leaders – meet Josh

Josh is a radiation oncologist who regularly consults on the Fleurieu Peninsula and has had a holiday home at Middleton since 2014. He enjoys spending family time there with his wife, two young sons and two dogs. However, their home would be very susceptible to even low sea-level rises, and this concern has led Josh and his family to take meaningful steps to do what they can to reducing their carbon footprint.

Not long after purchasing the property, they installed 5kW of home roof-top solar and this has meant not only a reduced carbon footprint, but also a significant saving in electricity bills. The house does not have a gas connection, so the concept of "electrify everything" has been applied. Josh has also replaced his existing petrol-engine gardening power tools with battery-operated ones, which are recharged using renewable solar energy. He finds these to be more reliable, easier to maintain, and preferable to use due to being quieter and not having any petrol fumes.

In 2021, Josh purchased an electric vehicle (EV). He drives his EV from Adelaide to the Fleurieu to attend to his patients. There is an EV charger not far from where he holds his clinics, and he is able to top-up the charge on the car while seeing his patients. When charging his EV at home, Josh usually uses renewable energy, rather than relying on the grid. At home, he has a 20kW roof-top solar system and two batteries that each store 13.5kW hours. The solar array, in conjunction with the batteries, have dramatically decreased the family's reliance on fossil fuels. Last year, Josh and his family's home was 97% self-powered, with only 3% of their home energy use being drawn from the grid, despite regularly charging an EV.

Much has been written about 'range anxiety' (the fear that an EV will not have enough charge to reach the destination), but Josh has not found this to be an issue. Rather than filling up at a service station once a week, he now conveniently tops up the charge at home. His EV easily does 300km between charges, even at highway speeds. If he has a longer trip planned, he makes sure the car battery is well-charged before setting off; in his view, this is no different from making sure you have a full tank before heading off on a longer trip in a traditional petrol car. In any event, Josh says he would prefer to feel a bit of 'range anxiety' every so often than to constantly experience 'fossil fuel guilt'. Being a medical practitioner, Josh is happy to drive a car that has no tail-pipe emissions, which are linked to deaths in built-up areas.



Walking and cycling

Although many of us are dependent upon cars for travelling across the region, there are many shorter trips within our towns and villages that can be taken by walking or cycling. On average, most people can comfortably walk up to 2 kilometres and cycle up to 5 kilometres in one session. In some circumstances, such as with electric bikes, we can travel much further.

This is an opportunity for us to get some exercise and avoid unnecessary emissions from driving.

Such trips could include local walks or bike rides for leisure, walking or cycling to town for work, shopping and services and walking or cycling to school. Council and the community can build good walking and cycling habits in conjunction with existing and planned infrastructure, such as the Encounter Bikeway, and destinations, such as schools. This includes both building the footpaths and cycle paths, but also encouraging residents to use them.

South Australian schools can participate in the *Way2Go* program which provides resources to support a shift away from children being driven to school towards walking and cycling.



Strategic actions - Transport

46% of all Alexandrina emissions are from transport. This is because as a rural community, we depend on our cars to get around. There are many ways we can adopt to reduce our emissions if we work together.

STRATEGIC ACTIONS			
TASK	RESPONSIBILITY	YEAR	ESTIMATED COST
Explore opportunities to support the development of EV charging network.	Council	Ongoing	Staff time (0.2 FTE)
Use of the Encounter Bikeway.	Community	Ongoing	No additional cost
Develop behaviour change campaigns, including events and communications to promote use of Encounter Bikeway.	Council	2023-24	\$5,000
Pilot Way2Go program in local schools, including walking and cycling.	Council / School / Community	2024-25	\$15,000
Establishment of additional EV stations.	South Australian Government	2023	No additional cost

Farming and greening 000

21% of all Alexandrina's emissions

Farming emissions

The agricultural sector is our largest industry in Alexandrina, including dairy and beef cattle and sheep farming, broad acre cereals, fruit growing, a thriving wine industry and fishing. Its size and nature means that agriculture represents our second largest source of greenhouse gas emissions, accounting for 21 per cent of all emissions in Alexandrina.

The South Australian Government has identified opportunities to reduce emissions, in its Climate Change Action Plan 2021-25, including carbon farming. Council is keen to support these initiatives, recognising it has a limited role by comparison to higher tiers of government.



Carbon farming

Carbon farming is the capture of carbon from the atmosphere and storing it in soils and biomass (plant-based material that can be used as fuel). Common forms of carbon farming include revegetation, protection and restoration of existing vegetation and the incorporation of carbon into soils. Most of the land on which this takes place is privately owned and so Council can encourage farmers to try carbon farming blended with traditional farming methods.

Forms of carbon farming most suitable for Alexandrina relate to regenerative agriculture, including:

- Carbon sequestration through forestry plantations on low-rainfall, economically marginal land
- Rotating timber growing through traditional farming over long periods (25 years)

- Removing stock from vegetated areas
- The development and commercialisation of seaweed farming and its use as cattle feed to reduce methane
- Soil carbon sequestration and soil improvement through regenerative farming techniques, including no till farming and stubble and pasture retention
- Offset planting
- Management of coastal saltmarsh ecosystems.

Council's role in reducing emissions within the agriculture sector will primarily be through opportunities for information sharing with landholders and connecting landholders with relevant organisations, such as the Landscape Board.

Greening

Council can also seek to draw down emissions through increasing vegetation, including through tree planting and retention, on both Councilowned land and private properties.

Public tree planting (based on the assumption that 365 trees will be planted every year from 2022 to 2039) would enable Council to offset its emissions significantly. These can include those directly planted and maintained by Council on public land, as well as through projects designed to encourage householders to plant on their own properties.

Alexandrina Council recognises and values the huge role community groups and organisations play in greening our region by supporting projects and activities that enable our community to thrive in a Liveable, Green and Connected Alexandrina (Alexandrina Council 2020). Through its *Grants Program*, Council continues to encourage eligible community groups, businesses and individuals to take an active and visible role in creating opportunities for community participation. Increasing township greening will be supported through the development of a tree canopy baseline study. This study will provide us with a map of the tree canopy cover of our major townships as well as a heat map, showing urban areas that will benefit from tree and verge planting and the effects of cooling.

Council also works closely with the *Hills and Fleurieu Landscape Board* to support local communities and land managers in the fight against climate change through restoration, targeted control of pest plants and animals, regenerative agriculture, and resilient food systems.



Local leaders – meet Cittaslow

Cittaslow, or 'slow town', is a whole-of-community approach to promoting quality of life and sustainability in towns and cities based on a partnership between local government and communities. Cittaslow was conceived by a group of Town Mayors in Italy in 1999; drawing on the ideas of 'slow food'. The major focus of Cittaslow is protecting the natural environment while advocating for sustainable and responsible methods in managing the agricultural and the urban/built environment; supporting growth of and access to good quality foods; helping to minimise 'food miles' travelled; and the mass production and globalisation of food sources by prioritising 'local' and 'regional' through markets and community gardens.



Propagating plants - Angela Nesci

As Alexandrina's community emerged from the environmental, social and economic challenges associated with the Millennium Drought, Alexandrina Council worked with a community steering group to achieve accreditation from the International Cittaslow Committee. Thus, in 2007 'Cittaslow Goolwa' became the first member town in Australia. Cittaslow Goolwa is a not-for-profit community association, run entirely by volunteer members with a current membership of around 220 individuals.

The work Cittaslow carries out plays an important part in addressing the climate emergency. It focuses on capacity building through information, facilitation and improving access to healthy and sustainable choices. Community education is one of the key strategies, including monitoring waste disposal, recycling and composting options. For example, at Cittaslow's public events, they



Cittaslow Community Garden Plant Nursery – Iain Langusch

encourage and educate the public to choose the right bins. Cittaslow also helps to raise community awareness by hosting community and school film screenings of environmental relevant topics, such as 'Plastic Ocean' or '2040'.

Goolwa's Cittaslow core programs include: a fortnightly Produce and Artisans Market which supports local growers, producers and makers, and ensures community access to healthy, nutritious local food; a community garden which, aside from leasing some beds to private community members, maintains fruit trees and vegetable plots for weekly provision of produce to the Goolwa Children's Centre, local Grow Free Carts, and the Market stall; and, Cittaslow Corner, a shopfront in the main street showcasing local produce, arts and crafts as well as a range of environmentally friendly cleaning products.

Many Cittaslow members volunteer at regular 'clean-ups' as part of the KESAB (Keep South Australia Beautiful) 'Road Watch – Adopt a Road' program; propagating and planting native trees; and the rejuvenation, maintenance and protection of the Aboriginal edible and medicine plants in Yekeyere Park in Goolwa. Students at Goolwa Public School, the Goolwa Secondary College, and the Investigator Outdoor Campus at Currency Creek are also introduced to sound environmental management practices, planting of native vegetation, and understanding the threats of climate change.

More information on Cittaslow or how to become a member, can be found on their website under <u>www.cittaslowgoolwa.com.au</u>.

Strategic actions – Farming and greening

Agriculture and greening our landscapes provide us with opportunities to farm carbon while continuing to be a thriving community.

STRATEGIC ACTIONS			
TASK	RESPONSIBILITY	YEAR	ESTIMATED COST
Work with other organisations to increase revegetation across our area, including townships, and to promote carbon farming methods.	Council / Community / Landscape Board	2023-32	Staff time / Grants Programs
Retain and increase canopy cover on Council land and in townships.	Council	Ongoing	\$500/tree
Provide one-to-one advice to landholders seeking to undertake biodiversity conservation works on their land.	Council / Landscape Board	2023-32	Staff time
Continue to protect and enhance Alexandrina Council's natural areas and biodiversity.	Council / Landscape Board	Ongoing	Staff time / Grants Programs



Working together for a carbon neutral future

Developing and delivering an effective response to climate change requires a partnership between Council and the broader community, building on and coordinating the strengths of individuals and groups.

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Delivering the Plan

The community and Council currently work together through the *Climate Emergency and Environment Committee* (the Committee) comprising Elected Members of Council and community representatives. The Committee meets regularly and provides guidance for implementing this plan.

That doesn't mean it's all down to the Committee or Council to do everything in this plan. Rather, Council will support activities undertaken by groups, individuals and businesses across the region. This allows each of us to respond in the best way we can.

Education can include providing information and guidance about specific actions that groups, businesses and individuals want to perform. For example, this could include information about how to become a carbon neutral household by purchasing and installing battery storage in the home or which trees and vegetation should be planted in different environments.

Support from the Council can take the form of linking with external funders, such as the State Government. This might include making people aware of subsidies for installing rooftop solar or more energy efficient appliances, or grants for community-based environmental actions such as tree planting or support for walk and cycle to school programs.

Networking is about bringing people together to share their experiences. This might be in the form of different groups across Council doing similar actions, celebrating progress or learning how what works in one area of action might also work in another.

Delivering across our region, nation and global

Council understands that being part of a larger network helps us to achieve our goals quicker. This is why Council is part of a wider group of climate partnerships, such as the Resilient Hills & Coasts, the Cities Power Partnership, Climate Emergency Australia, and the ICLEI Network.

The *Resilient Hills & Coasts* is a collaborative, cross-sector partnership between our five neighbouring councils, Landscape Boards, Regional Development Australia and the South Australian Government, working to strengthen the resilience of our communities, economies and natural and built environments to a changing climate.

Resilient Hills & Coasts is one of eleven Regional Climate Partnerships across South Australia. The *Regional Climate Change Adaptation Plan* reflects community values and identifies priority actions to reduce the vulnerability of those values to climate risks. Its *current priorities for actions* (2020–2025) are:

- Climate-ready development: Leverage leadership and networks to encourage residential and infrastructure development that avoids natural hazards, is built to maximise resilience, and is energy efficient and water sensitive.
- Climate risk reduction: Support partners and communities to map, understand, plan for and adapt to climate risks, especially those arising from coastal, bushfire and urban heat hazards
- Resilient agriculture: Build on and spread regional best practice in enabling agriculture that is regenerative, water smart, resilient to a variable climate, and supports carbon farming as part of a zero emissions pathway.

Its achievements include:

- Coastal hazard mapping and adaptation initiatives, such as Alexandrina's *Coastal Adaptation Study*
- Increased regional capabilities and uptake of water sensitive urban design and urban greening
- The Where We Build What We Build Project, providing evidence on the climate resilience of our region's housing stock and the economic benefits of building or retrofitting to a climate ready standard
- Climate Risk Governance Assessments by five councils, to assess and embed climate risk management throughout council businesses
- Leading the low carbon transition, including by joining the Cities Power Partnership, installing solar generation, transitioning to LEDs and electric vehicle fleets, and exploring options for a *Community Energy Program*
- Bushfires & Biodiversity: building balanced, long-term regional resilience.

Alexandrina Council has joined the Cities Power Partnership as Australia's largest network of local councils leading the way to a thriving, zero emissions future.

Because of its Climate Emergency Declaration, Council is also a partner of *Climate Emergency Australia*, a network representing local governments in Australia that have declared a climate emergency.

To act globally, Council has also joined the ICLEI Network, an international network of more than 2500 local and regional governments committed to sustainable urban development.

Alexandrina Council has joined these partnerships because we need to work together at a global, national and local level to tackle the challenges of climate change.

Advocacy to others

Despite our best efforts, not everything we want to achieve will be within the control of the Council or the Alexandrina community. There are bigger changes taking place through South Australia and nationally, that can either support or hinder our efforts to reach net zero by 2040.

These include the large-scale infrastructure changes taking place to shift the South Australian electricity grid to 100% renewable energy, changes to the state planning scheme and national construction codes which guide where we live and the types of houses we live in (and the emissions we produce as a result), and support for innovative emissions reduction projects, such as regenerative agriculture.

Council continues to work with other councils within South Australia, across the country and internationally to push higher tiers of government to provide the financial support and policy frameworks we need.

Council will also encourage and support existing and new groups within the community to come together to advocate for climate friendly policies and programs from state and federal governments.

Measuring progress

It's important to measure and celebrate our progress as the actions in our plan are rolled out through Alexandrina.

This includes understanding what works when it comes to emissions reduction. Some actions we take because they're easy to do but they may not make much of a difference in reducing emissions. Council will continue to record its annual carbon emissions and provide the data annually on its website.

Ultimately, we all need to make sure that our emissions are decreasing in line with our target of being net zero by 2040.

Strategic actions – Working together

Developing and delivering an effective response to climate change requires a partnership between Council and the broader community, building on and coordinating the strengths of individuals and groups.

STRATEGIC ACTIONS			
TASK	RESPONSIBILITY	YEAR	ESTIMATED COST
Continue regular Committee meetings advising Council on climate change matters.	Council / Climate Emergency and Environment Committee / Community	Ongoing	Staff time (0.1 FTE) Community time (6 meetings per year)
Assess community education needs and develop supportive programs.	Council	2024-25	Staff time
Conduct a scan of relevant groups within the community to assess capacity to support the community to reduce emissions.	Council / Community	2024-25	Staff time (0.1 FTE)
Develop networking and supportive opportunities for relevant groups.	Council / Climate Emergency and Environment Committee / Community	2024-25	Staff time (0.1 FTE)
Maintain memberships of climate partnerships.	Council	Ongoing	\$4,000 per annum
Measuring reduction of Council's corporate carbon emissions.	Council	Ongoing	\$20,000 per annum
Develop metrics for measuring progress of implementation of the Climate Emergency Action Plan, and report back regularly.	Council	Ongoing	Staff time



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