



beyond  
**ZERO**  
emissions

# Zero Carbon Communities

## Guide 2020

**Zero Emissions • Achievable and Affordable Now • Local Jobs**

## About Beyond Zero Emissions

Beyond Zero Emissions is an internationally recognised energy think-tank, that shows through independent research and innovative solutions how Australia can thrive through a transition to a zero-emissions economy.



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This report was authored by Imogen Jubb and Nicki Colls, with contributions from many leading Zero Carbon Communities. This work does not necessarily reflect the formal position of each contributing organisation.

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## Recognition of traditional custodians

We recognise that Aboriginal people's sovereignty over their land was never ceded and the impact of this ongoing dispossession continues to this day. Beyond Zero Emissions stands in solidarity with First Nations people in calling for the establishment of a First Nations Voice in the Constitution, as described in the Uluru Statement from the Heart. We further support calls for the establishment of a Makarrata Commission on agreement-making and truth-telling between Aboriginal and Torres Strait Islander peoples and governments.

Beyond Zero Emissions maintains an office on the traditional lands of the Wurundjeri-willam people of the Kulin Nation. We pay our respects to all First Nations Elders past, present and those emerging.

# Contents

- Foreword ..... 2
- Introduction ..... 3
- About Zero Carbon Communities ..... 5
- Fight for Planet A ..... 7
- Million Jobs Plan ..... 8
- Why ten years? ..... 9
- Why create a Zero Carbon Community? ..... 10
- Zero Carbon Australia ..... 11
- Getting started ..... 13
- Step 1: Community engagement ..... 16
- Step 2: Emissions profile ..... 19
- Step 3: Targets ..... 21
- Step 4: Council collaboration ..... 23
- Step 5: Project options ..... 28
- Step 6: Transition strategy ..... 32
- Step 7: Reporting and review ..... 34
- Step 8: Storytelling ..... 35
- Step 9: Investment ..... 37
- Leading communities ..... 40
- Next steps ..... 64

# Foreword

While the effects of climate change pose great challenges, there is plenty of room for optimism when we look at the solutions. Beyond Zero Emissions, an internationally recognised think tank, has been working on climate change solutions for over a decade.



Their Zero Carbon Communities initiative supports and connects people, groups, clubs, communities, business and industry, investors and councils who want to see rapid local progress towards zero emissions.

This Zero Carbon Communities Guide is a great resource for those looking to get started. In addition their national Snapshot Climate Tool will support communities as they create effective actions, advocacy, community led projects and strategies and gatherings.

Working on series such as *War on Waste* and *Fight for Planet A* and meeting climate-conscious individuals, communities and organisations working toward solutions for the future of the planet, has been an uplifting experience. Currently, there is so much being done around Australia to reduce our carbon footprint, create new jobs and build a safer, more resilient and connected future.

Faced with the combined challenges of Covid-19, the major bushfire events of the summer, and further impacts of climate change and big weather events, more than ever, communities are working together to determine solutions and pathways to solve these problems.

This updated version of the Guide includes Beyond Zero Emissions' 'Million Jobs Plan', a report on how Australia's renewable energy resources can be harnessed to create jobs and strengthen communities. There are also a growing number of projects, small and large in the pipeline and more and more investors looking to support this transformation.

All Zero Carbon Communities play a vital role in determining their future. Small groups of people, setting a big vision, can lead to dramatic changes in their local area. Zero Carbon Communities are embracing this pivotal moment for Australia, fighting for their local communities. Together we can make a real difference.

*Craig Reucassel*

# Introduction

This publication is a guide for people, groups, clubs, communities, business and industry, investors and councils who want to see rapid local progress towards zero emissions.



Globally, local governments and communities are leading the way on climate action, aligning with the latest climate science and international agreements. Many are already working towards 100% renewable energy goals and zero emissions targets.

BZE launched our Zero Carbon Communities initiative to highlight nation-leading communities championing 100% renewables, to tackle State and Federal impediments to action, and to encourage high ambition communities to put BZE's Zero Carbon Australia research into action.

**Our vision is an ever-growing network of communities across Australia, working together to achieve zero carbon status.**

In 2018, Beyond Zero Emissions published a comprehensive assessment of what councils and communities are doing to tackle climate change, along with the barriers and challenges they face.

The research found that many local councils have corporate and community targets as well as strategies to reduce emissions. However only seven percent of Australian Councils had a community-wide emissions reduction target.

There are massive opportunities for communities and councils looking to drive local job growth and economic recovery, as well as create positive environmental and social outcomes.

The BZE One Million Jobs Plan outlines how there are millions of jobs that can kick start affordable and reliable clean energy, reduce the cost of living and strengthen regional communities.

Many of the dots align for this work to happen at speed – Investors are looking for projects to support that can reduce emissions and improve community wellbeing. The [Zero Carbon Community Investment Reference Group](#) has been working to establish better pathways to connect communities with investors and funding.

This guide offers a simple framework combined with the key steps communities, businesses and industry can take to achieve zero carbon status within ten years. It aims to inspire confidence and action, improve knowledge transfer, publicise initiatives and innovations, offer proven models for action and to point aspiring communities towards the growing number of relevant resources.

We are committed to helping you out every step of the way.

*Imogen, Nicki and the Zero Carbon Communities team*

## Acknowledgements

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# About Zero Carbon Communities

Beyond Zero Emissions' Zero Carbon Communities initiative helps local communities reduce local carbon emissions.

We launched Zero Carbon Communities to highlight nation-leading initiatives for 100% renewables and zero carbon emissions, to tackle State and Federal impediments to action and to encourage local communities to put our research and solutions into action.

Our first collaborations were with Zero Emissions Byron, Baw Baw Sustainability Network, Renewable Energy Benalla and Clean Energy Nillumbik. There are now Zero Carbon Communities in every state and territory.

**Our vision is an ever-growing network of communities across Australia, working together to achieve zero carbon status. Building community support and involvement is instrumental in turning this vision into action.**

Zero Carbon Communities offers a simple framework to work towards zero carbon status. We inspire confidence and action, improve knowledge transfer, publicise initiatives and innovations, offer proven models for action and to point aspiring communities towards the growing number of relevant resources.

**A Zero Carbon Community is any community where people, groups, clubs, business and industry, investors and councils are acting to reduce carbon emissions. This Australia-wide community network is committed to 100% renewable energy goals and zero emissions targets.**

Zero Carbon Communities take targeted action to reduce community-wide emissions. Our program helps communities implement change in the following sectors: buildings and energy, land use, waste, transport and industry.

These communities inspire others to start their own journeys towards zero carbon status, building on each other's work to replicate and scale their approach.

Key benefits of Zero Carbon Communities include significant growth in local jobs and investment, slashed electricity and gas bills for households, businesses and industry and a cleaner, healthier environment for local residents.

## Individuals alone can't solve the climate crisis.

BZE supports Zero Carbon Communities all around the country. We help individuals and communities champion change, engagement, projects, advocacy, strategy and policy at community, local, state and national levels.

We provide data and evidence for systematic solutions such as the Snapshot emissions profiles, a world first tool providing community-wide greenhouse gas profiles for every council in the nation.

We build long term partnerships to develop shared resources, skill sharing and strategy. We provide specific support for emissions intensive regions such as Port Augusta, Collie, the Northern Territory and the Hunter Valley.

With support from our Investment Reference Group we identify and champion locally led lighthouse projects and connect with project developers and funders to fast track investment in emissions reducing projects.







## Fight for Planet A

*Fight for Planet A* entertains, informs and challenges our thoughts on climate change, showing how individuals, families, schools and businesses can help reduce our carbon footprint.

We can all make practical day-to-day changes, and the show explores how five very different Aussie households take on Craig's "climate challenge" to reduce their energy, transport and food carbon emissions.

"The bushfires and COVID-19 pandemic have seen a depressing start to 2020. While the effects of climate change remain one of our planet's biggest issues, it's an area where we can hopefully find some more optimism. There are so many things we can do right now to reduce our individual and communities carbon emissions – we just need to make a start. I hope all Australians will join me in the Fight for Planet A."

Small actions can lead to big changes and we can all play a part, so it's time for Australians to collectively change the way we think about climate change and join the *Fight for Planet A*.

**Are you interested to learn what you can do in your own community to reduce carbon emissions?**

Zero Carbon Communities are featured in the ABC Community Solutions Plan:  
[www.fightforplaneta.abc.net.au/solutionsplan](http://www.fightforplaneta.abc.net.au/solutionsplan).

Small actions  
can lead to big  
changes and  
we can all play  
a part.

# Million Jobs Plan

BZE recently published our [Million Jobs Plan](#). It presents our unique opportunities to demonstrate the growth and employment potential of investing in a low-carbon economy.

We can invest in jobs that will boost renewable energy, create better and more comfortable buildings, build better transport infrastructure, manufacture zero emissions products, restore and revegetate our land, increase recycling and provide education and training for new jobs.

**“We have a great opportunity to move towards a decarbonised Australia while getting our economy back on track.”**  
 – Mike Cannon-Brookes

Our research shows these actions will create 1.8 million jobs over the next five years.

These jobs can benefit every community across the nation.

As part of the Million Jobs project, Zero Carbon Communities from across Australia shared their ideas, feasibility studies and business cases for local projects. Local communities know the projects, skills and value in investing in their region. Getting communities involved in decision making and championing of local solutions is a key outcome of our Zero Carbon Communities initiative.

To download your own copy of the Million Jobs Plan, go to the webpage [here](#).

**beyond ZERO emissions**

**The Million Jobs Plan**

*A unique opportunity to demonstrate the growth and employment potential of investing in a low-carbon economy*

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**The Million Jobs Plan can rebuild Australia's Economy**

- In just 5yrs renewable + low emissions projects can deliver... **1.8m new jobs** ...in regions & communities these are needed most
- 90GW** renewable energy + transmission **200k JOBS**
- 2.5m** retrofits + new buildings **940k JOBS**
- 20,000** electric buses + new green transport **140k JOBS**
- Clean** manufacturing + mining **230k JOBS**
- 27MHA** land regeneration **200k JOBS**
- 90%** waste recycled **80k JOBS**

+ 10,000 new jobs in Training, Education and Research

- Affordable Reliable Clean Energy**
- Reducing Cost of Living**
- Strengthen Regional Communities**

# Why ten years?

BZE recommends a ten year timeframe for transition because it is necessary, achievable and affordable. There are many reasons to move rapidly on reducing emissions.



## Climate science

Emissions need to reduce fast to avoid the threat of severe climate change and costly adaptation measures.



## Ambition

Without ambition to take this challenge seriously we will fail before we begin. Setting an ambitious target is challenging but also inspires leadership and innovative solutions. Leading communities need to aim high and demonstrate that rapid change is possible.



## Benefits

Communities which start down this path will see significant growth in local jobs and investment, major cost savings and a cleaner, healthier environment for local residents.



## Motivation

Many people feel that there is a gulf between the magnitude of the problem and the impact they can make. Acting within a local community can overcome this roadblock by aligning our capabilities for change with a meaningful, motivating response.



## Solutions are cost-effective

Proven and affordable solutions to reduce emissions already exist. The BZE Zero Carbon Australia research, our place based collaborations and our Million Jobs plan, demonstrate evidence-based and cost-effective solutions in the stationary buildings and energy, land use, transport, waste and industry sectors.



## Moral and ethical

With our very high per capita emissions and high living standards, Australians can do their fair share by acting quickly to reduce emissions.



## International agreement

The international community has committed to limiting climate change to well below 2°C and to aim for no more than 1.5°C. This means we must rapidly reduce our greenhouse gas emissions to zero and beyond.

# Why create a Zero Carbon Community?

There is widespread recognition that those who lead the renewable energy race will reap significant economic and social benefits.

Achieving a change of this scale would be significant enough to contribute markedly to the global challenge and tangible enough to feel like we can influence change. There is a lot to be gained by getting started right now.

If we choose to become leaders in the race towards zero emissions, we have the opportunity to secure our food, water and energy supplies for the future and build a new and robust economy as a global renewable powerhouse.

## Key benefits of becoming a Zero Carbon Community include:

- Cost savings
- New local jobs
- New investment and funding
- Reduced emissions
- Economic, social and environmental benefits
- Increased public profile as a leading and innovative community.

## How do we start?

Achieving zero emissions is achievable and affordable in all sectors. But making major change can be daunting. So many factors impact upon the carbon emissions of a community that it can be difficult to know where to start. It can also be hard to see how a small community can bring about visible change when so much seemingly relies upon state and federal policies.

Since 2006, BZE has been researching and developing plans for a Zero Carbon Australia. These Zero Carbon Australia plans cover all sectors, including emissions from buildings and energy, land use, transport and industry. The plans underpin the Zero Carbon Community initiative by providing guidance on what is achievable and affordable. We have also developed place-based research and community engagement to assist regions in their path to zero emissions and diversified economies.

A Zero Carbon Community may choose to focus on all sectors at once or choose one sector to begin with. Different communities have differing opportunities to reduce emissions in each sector and differing abilities to achieve change. Ideally communities would work to reduce emissions across all sectors, but a focus on one sector can be a good starting point.



Since 2006,  
BZE has been  
researching  
and developing  
plans for a Zero  
Carbon Australia.

# Zero Carbon Australia

The BZE vision sees a zero carbon future for all sectors in Australia including stationary energy (buildings and energy), waste, transport, land use and industry.

Based on science and research our groundbreaking Zero Carbon Australia plans outlines and costs a national transition to a zero emissions economy. Our research has been repeatedly validated by external researchers and demonstrates that this vision is achievable and ever more affordable.

Zero Carbon Communities are a vital way to bring about effective implementation of these plans and rapidly reduce emissions.

## Zero Carbon Communities Vision

A Zero Carbon Community is a group of people who have taken on the task of reshaping and decarbonising their local environment. These communities create a way of life that is sustainable and comfortable, with improved health and wellbeing while saving money.

To find out more visit [zerocarboncommunities.org.au](http://zerocarboncommunities.org.au)



### Buildings

In a Zero Carbon Community, residential, commercial and industrial buildings have net zero emissions. Many buildings are net exporters of renewable energy, while energy consumption in all types of buildings is reduced by using a combination of energy efficiency and renewable energy approaches including rooftop solar photovoltaics (PV) and the elimination of gas. Residential buildings roll out BZE's [Energy Freedom initiative](#), turning homes into self-supporting power generators with great thermal comfort for residents. New technology trends are continually assessed with installation of battery storage, smart energy data and other emerging technology used across all building categories.



### Energy

In a Zero Carbon Community, the energy sector has transitioned to 100% renewable energy and is capable of powering homes, businesses, industry and transport. Energy consumption is reduced by energy efficiency. Investment in rooftop solar PV, community renewable energy projects and innovative renewable energy retail reduces costs and allows consumers to benefit from local energy generation and sharing. Australia has become a Renewable Energy Superpower, exporting energy to neighbouring countries.

*Continues over >*



In a Zero Carbon Community, zero emissions are achieved by assessing emissions sources from livestock, deforestation, agricultural crops and soil and manure management. Scalable revegetation and soil management offset emissions and provide income from national carbon farming programs. Regional communities draw down land use emissions below zero, supporting urban communities to achieve their zero carbon goals. Regenerative land use, including forestry and agriculture, is key to removing emissions from the atmosphere.



In a Zero Carbon Community, the waste sector has hit zero emissions through minimizing waste and diverting of materials from landfill through reuse programs and advanced recycling processes. All organic material is diverted from landfill and instead produces energy and compost material. The waste industry is a zero carbon leader with efficient industrial processes and zero emissions trucks. Communities, government and industry collaborate across regions to ensure economies of scale and minimal costs. Households and businesses demonstrate outstanding leadership in waste avoidance, embracing the sharing economy and saving money through avoiding waste and maximisation of all material use.



In a Zero Carbon Community, emissions from private vehicles, car fleets, trucks, buses and rail are minimal. Public transport systems are transformed with electric buses, integrated charge stations and solar powered fast charge networks. Commuter networks share electric vehicles and free web-based carpooling matches travel needs to drivers. High-speed rail and solar powered trains and trams are used. Plans and incentives for cycling and electric bikes are integrated into the overall transport plan with parks, walking and bike trails.



In a Zero Carbon Community, industry makes heat for industrial processes through zero emissions renewable heat sources, steel is made without coal, cement is zero carbon and community members are smart about the way materials are used to reduce waste. Leading communities work to create the industries of the future and take advantage of the natural capital provided by Australia's abundant wind and solar energy sources, reaping significant economic and social reward.

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## Getting started

Every community is unique, and the journey undertaken by every Zero Carbon Community will also be unique.

The Zero Carbon Community concept is ambitious, audacious and a worthy challenge. Despite the challenge of the task at hand – or perhaps because of it – there has been significant interest from communities around the country.

We offer here a set of general steps that each community can customise to get the largest carbon emissions reduction possible.

There are many steps involved to get a community to embark upon a challenge of this scale. While the steps involved are interrelated and won't necessarily follow a linear fashion, a suggested step by step guide is presented as a way to get started in the process.

Community engagement is at the heart of this work as it will be a key component of everything you need to achieve. The steps identified by BZE and the communities already well down the path to zero emissions are described in Figure 1.

This document provides a simple guide to each step involved and a range of case studies from communities already taking action to reduce their emissions and improve wellbeing, local jobs and opportunities for their region.

Community engagement is at the heart of this work as it will be a key component of everything you need to achieve.

## CHECKLIST

# Steps to a Zero Carbon Community



**Step 1: Community engagement**

[See page 16](#)



**Step 2: Emissions profile**

[See page 19](#)



**Step 3: Targets**

[See page 21](#)



**Step 4: Council collaboration**

[See page 23](#)



**Step 5: Project options**

[See page 28](#)



**Step 6: Transition strategy**

[See page 32](#)



**Step 7: Reporting and review**

[See page 34](#)



**Step 8: Storytelling**

[See page 35](#)



**Step 9: Investment**

[See page 37](#)





Figure 1: Steps to a Zero Carbon Community.

## STEP 1

# Community engagement

The first step in the journey towards achieving zero carbon status is finding a core team around which the Zero Carbon Community will form.

A place to start might be with existing sustainability, climate action or economic development groups, from which a working group is established. Over time other stakeholders will need to be brought in, such as council staff and councillors, local businesses and industries and local energy, waste or transport providers.

Ideally, the core team would comprise four to ten people. All should be capable, passionate and committed to achieving a common goal. Over time the core team will need to build support from the wider community to achieve the goal. Levels of engagement will depend on any person's capacity and interest to be involved.

**Core** – the key people who are driving the Zero Carbon Community initiative.

**Committed** – contributors who regularly contribute to the initiative

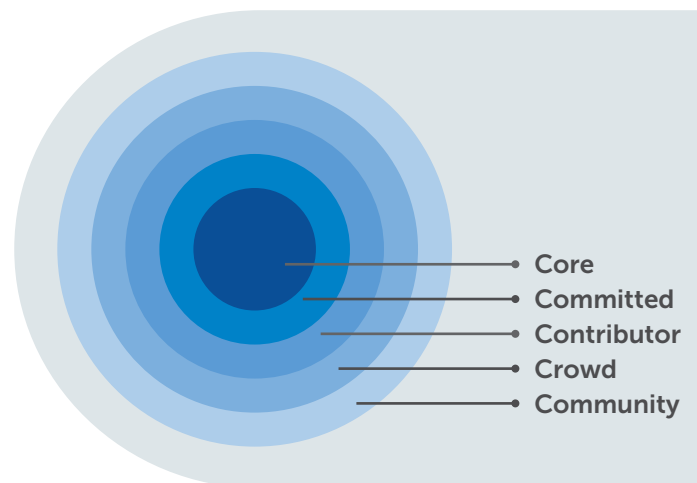
**Contributors** – members of the crowd who occasionally volunteer or donate

**Crowd** – members of the community who participate in Zero Carbon Community initiatives

**Community** – all members of the local community.

Figure 2 shows a model of how a small group can work within a community to achieve change. This model has been used by many organisations to reach beyond an already-converted core group and focus on the broader community.

Community engagement and working productively with a team of people is a major component of the work involved. For any goal there will need to be widespread community agreement about what you are aiming to achieve. Community engagement is essential for a Zero Carbon Community to thrive as it will drive progress and sustainability of the initiative. Challenging people to a serious commitment will attract the most motivated people to your cause.



**Figure 2: Circles of commitment** [www.thechangeagency.org/circles-of-commitment/](http://www.thechangeagency.org/circles-of-commitment/)

## Key steps to community engagement include:

- Identify and engage community and project champions, starting with existing community networks or groups that have related goals.
- Hold community events, inviting community members and advertise widely to encourage participation
- Establish vision and goals for the initiative in consultation with the wider community
- Set up community working groups for each relevant sector
- Establish a fundraising & communication team
- Create opportunities for regular reporting and feedback at key stages with the wider community.

## Governance – Internal process and structure

Setting up an appropriate internal structure is important to ensure your community can work effectively. It is best to establish appropriate processes and structures early on to avoid any confusion or misguided effort.

Relationships with existing organisations and how decisions will be made should be considered.


### Relationship with existing organisations:

- Can the group function as or be part of an existing organisation?
- Do you need to establish a new community group?
- What other partners are involved?
- Is the group going to manage the implementation of the actions, or will partners fund and implement the required actions?
- Is the group going to be auspiced for donations and grants?

### Decision making:

- How will decisions be made and communicated to the wider community?
- How will you share files and information?
- How will the group apply for funds?
- Are roles such as a chair, treasurer, secretary, steering committee or board required?
- Is everyone in the group clear on their role and contribution?

Need governance support? The [Our Community Group](#) provides advice, connections, training and easy-to-use tech tools for people and organisations working to build stronger communities.



Community engagement is essential for a Zero Carbon Community to thrive as it will drive progress and sustainability of the initiative.

## Examples of existing community group governance structures:

**Clean Energy Nillumbik** formed as a group of interested residents in January 2017. The group were supported by BZE and the council’s senior sustainability officer. The founding team included technical skills, marketing, business and community engagement. The group incorporated and developed a name, brand and logo, and leadership and governance structure, with a chair and secretary.

**Baw Baw Zero Emissions** formed as a working group in the existing Baw Baw Sustainability Network. The group has collaborated closely with the Baw Baw Shire Council, Latrobe Valley Authority, the Community Power Hub and the Gippsland Climate Change Network.

**Renewable Energy Benalla** formed under the auspices of the Benalla Sustainable Future Group and has the support of the Benalla Rural City Council.

**Table 1: Examples of ZCC community engagement activities**

Community engagement	Examples
Website	<a href="#">Zero Emissions Noosa</a>
Social media	<a href="#">Zero Emissions Sydney North</a>
Newsletter	<a href="#">Zero Emissions Byron</a>
Events	<a href="#">Communities Leading Climate Action</a>
Petition	<a href="#">Queenscliffe Climate Action</a>
Member of Parliament Engagement Groups	<a href="#">Climate for Change</a>
Information sharing	<a href="#">Climate Action Moreland</a>
Workshops	<a href="#">Southern Otways Sustainable</a>
Council meetings	<a href="#">Hobsons Bay Climate Action Plan</a>
Local news	Climate Change Strike: Coburg protesters turn out to be angels

Photo: Joh Fairley



Coburg’s Climate Strike angels.

## STEP 2

# Emissions profile

A vital step towards achieving a zero carbon transition is to know where your starting point is.

By recording your community's emissions for the geographical area and sectors you want to include, you will gain reliable baseline data for the project.

The purpose of knowing your baseline emissions is to enable your community to understand the sources of (GHG) emissions and knowing where they come from. This will help you prioritise projects according to the greatest reductions possible and create a strategy to reduce your community's emissions. A GHG inventory can then be undertaken annually to track the performance of emissions reduction strategies over time. The baseline emissions refers to the emissions level in the historical base year used for comparison.

[Snapshot](#) is a world first, national tool, providing data for every local government area in Australia. Its common framework allows for comparison between local government areas and the profiles together add up to the national emissions total, meaning that no emissions go unaccounted for.

With an understanding of the largest emissions sectors in your local area, you can target your activities to high impact areas.

### **Snapshot can help you identify key starting points for activities in your community:**

- 1. Building awareness:** Share your Snapshot with your community and council. Start a conversation about the jobs and projects involved and join a [climate action program](#).
- 2. Advocating for next steps:** Use Snapshot to advocate with your council and community. This could include setting a community target or obtaining council support or endorsement. You can use this report to develop local climate action plans.
- 3. Targeted project:** Select a project based on the sectors that are likely to generate the highest emissions in your community. For example, if agriculture is estimated to make up around 40% of emissions it might present a good target area to propose a distinct project, whereas if natural gas is estimated at only 3% of emissions you know the impacts of your project, no matter how successful, will be very limited.

Any project selection should also be based on local community capacity, interest and value for effort.

The Snapshot community climate tool has been led by Beyond Zero Emissions and Ironbark Sustainability.

Report time period

2017 January – December

# Ballarat

2017 municipal emissions snapshot



Ballarat is a city that is small in area relative to the state average and has a high urban density. It's major emissions source is electricity consumption with the majority of this coming from industrial electricity consumption.

The carbon emissions for Ballarat have demonstrated a very large increase since 2005, with relatively consistent rate of change occurring in the last few years.



Source	Sector	Emissions (t CO <sub>2</sub> e)
Electricity	Residential	225 400
	Commercial	203 000
	Industrial	435 300
Gas	Residential	102 800
	Commercial	23 700
	Industrial	110 600
Transport	On road	382 200
	Domestic air travel	0
Waste	Landfill	36 700
	Water	14 500
Agriculture		36 900
Land Use		-800

Land Use data is not used in the chart nor the displayed total municipal emissions.

#### Characteristics

Land area	739 km <sup>2</sup>
Population	105 438
Gross regional product	\$ 5 632 000 000
Climate zone	7

Figure 3: Snapshot community climate tool.

## STEP 3

# Targets

Setting a target to reduce emissions will give you an indication of the scope and scale of the steps you want to take.

To maintain a safe climate, or to align with the international Paris agreement, targets need to be ambitious and in line with the science of our remaining carbon budget. Rapid reduction of emissions to zero is required to reduce the threat of severe climate change and costly adaptation measures.

The profiles developed in the Snapshot climate tool can inform a local science derived target. Your target can be to reduce emissions in all sectors, or focus on one, or even a subsection of one, such as industrial or residential electricity. Match the target with your interests, skills and capacity.

Snapshot profiles provide communities and councils with an understanding of the scale of reduction and the level of ambition needed when setting targets to meet this challenge. Snapshot also provides a baseline of emissions data that will be updated on an annual basis.

All Australian states and territories have set a net zero emissions target by 2050 at the latest.

Your target should include the overall aim, the geographic scope, the sectors included and the timeframe. Examples of different goals and parameters are provided below.

- **Community wide:** Long term goal should include community wide emissions, not just council operations
- **Multi-sectoral:** Targets should be included for each sector under consideration and preferably across multiple sectors including buildings and energy, land use, transport, waste and industry
- **Rapid timeframes:** Within ten years or as a minimum by 2050
- **Interim targets:** Include 3–5 year interim targets to track progress
- **Zero net emissions:** Long term goal with minimal and decreasing reliance on offsets
- **Zero emissions:** Long term goal of zero emissions.

When your group sets its target, consider including local sources of emissions, levels of interest from the community, business and industry, council support and capacity to make change. BZE recommends setting ambitious targets to match the science as well as global agreements.

BZE recommends setting ambitious targets to match the science as well as global agreements.

## Here are a number of different emissions reduction targets:

- **Zero Emissions Byron** – Zero emissions for the entire Byron Shire region by 2025, covering buildings and energy, transport, land use and waste
- **ACT** – 100% renewable energy by 2020 and all other sectors zero emissions by 2045
- **Yackandandah** – 100% renewable energy by 2022.

Your community may wish to include interim targets as well as an aspirational long-term target.

The timeframe for setting a target can vary, with leading communities and councils setting a 10 year time frame to achieve zero-net emissions by 2030.

**Table 2: Zero Carbon Communities identified from the 2016 BZE Australian Local Government Review**

Target (Community wide)	State/Region/City/Town
Zero emissions	Byron Shire (2025)
Zero net emissions/ carbon neutral	Adelaide (2020), Melbourne (2020), City of Darebin, City of Moreland (2040), South Australia (2050), ACT (2045), City of Yarra, Victoria (2050 – legislated target)
70% absolute emissions reduction	Sydney (2030)
100% renewable energy	Mount Alexander (Renewable Newstead 2017), ACT (2020), Lismore (2023), Uralla (5–10 yrs), Indigo Shire (Yackandandah 2022)

## The following provides an overview of different targets commonly used by communities and councils to guide action planning:

### Zero-net emissions

Zero-net emissions is defined as reaching carbon neutrality. This means that local carbon emissions across all sectors in Snapshot are reduced, sequestered or offset. Communities may also set a zero emission interim goal.

### Zero-net energy

A Zero-net energy community matches its local energy needs with a 100% renewable energy supply. Energy can be imported from the grid or locally generated. This includes all stationary energy – electricity, gas, wood and transportation fuels.

### 100% renewable electricity supply

Reduction of the electricity emissions to zero through renewable energy supply. It should be noted however that the electricity baseline would be captured as a moment in time – each year would vary as usage patterns and technologies change.



## STEP 4

# Council collaboration

Achieving official endorsement for the target and/or initiative from the council as a whole is a proven step to ensure continuing progress and sustainability in any community.

Depending on the area, the Zero Carbon Community initiative might emerge from a top-down endorsement as a council initiative, or from a bottom-up push from the community. In either case, working together with your council will lead to better outcomes.

### Key steps include:

- Engage council staff
- Seek support from Councillors and the Mayor
- Unofficial or official council endorsement
- Council resources for project start-up costs
- A council based project co-ordinator
- Project partners
- Governance arrangements between council, community representatives and external partners
- A project steering committee
- Project champions including the Mayor and council representatives.

Official or unofficial council endorsement is recommended in order for the community to determine governance arrangements for a Zero Carbon Community. If possible it is recommended to ask a council officer to be responsible for negotiating council resources and advocating on behalf of the initiative.

Participation allows the Mayor and council to be recognised globally as a leader in addressing climate change. Public recognition also provides incentives to other Australian councils to commit to addressing climate change.

BZE works closely with several Council based climate programs. We encourage Councils to set ambitious zero emissions targets and to work in collaboration with their communities.

The Zero Carbon Communities program works in partnership with the [Global Covenant of Mayors](#), an international program that supports Councils in tracking progress to zero carbon. Participating Councils benefit from the knowledge of the international community and global recognition.

Many Australian Councils are also part of the [Cities Power Partnership](#). Through this program Council's commit to reducing their own emissions through selected actions. The knowledge hub and events are valuable for officers working on climate action.

Many councils have also signed up to [Climate Emergency Declaration](#) programs and are developing climate action plans.

Beyond Zero Emissions has published a [Local government climate change review](#) that demonstrates practical actions local councils can take and the barriers and opportunities they face.

Beyond Zero Emissions collaborates with these programs to develop supporting research and tools. Councils and communities working together are a powerful force for change.



Figure 4: Measures implemented by council to reduce corporate emissions

## CASE STUDY

# Cities Power Partnership

The Cities Power Partnership is a national climate action program that is driving local governments and communities all across Australia to transition to net zero emissions.

It is Australia's largest network of cities and towns tackling climate change, with over 125 partner councils that represent almost half of the Australian population.

The Cities Power Partnership is made up of council's of all shapes and sizes – from small regional towns to large metropolitan cities. When councils sign up to the program, they pledge five actions to tackle climate change locally, from ramping up renewable energy through to planning sustainable transport systems.

In just three years, partner councils have committed to over 525 climate and energy pledges. Some of the innovative projects councils are taking part in include transitioning council fleets to electric vehicles, installing solar battery systems in thousands of homes and businesses, and even spearheading Australia's first carbon-neutral kindergarten.

### How the Cities Power Partnership works

The Cities Power Partnership gives local government the tools, connections and momentum to take bold action on climate change.

At the heart of the program is connection and sharing between participants. From nation-wide events to an online forum, partner councils have ample opportunity to connect, learn and work together for a better future. Councils also have access to hundreds of resources and monthly webinars by experts to give them the information they need to get local climate and energy projects up and running.

**Local governments are leading the local climate revolution and taking their communities with them.**

To find out more and see if your council is a member, check out [citiespowerpartnership.org.au](https://citiespowerpartnership.org.au)



## CASE STUDY

# Victorian Local Government Power Purchase Agreement (LG PPA)

Over 40 Victorian Councils have come together to drive investment in renewable energy, resulting in pooling approximately 230GWh of electricity.

This is the equivalent to powering 43,000 homes with renewable energy or taking 80,000 cars off the road each year.

The LG PPA is the collective efforts of over 40 Councils from across the state, seeking a new electricity contract for Council operations that is sourced from 100% renewable energy sources – known as a Power Purchase Agreement (PPA).

This landmark collaboration demonstrates the value of local government working together on common issues. The project has been initiated and facilitated by the Victorian Greenhouse Alliances and Darebin City Council.

The new contract is expected to be somewhere between 7–10 years in length and will source renewable energy from wind or solar farms located in regional Victoria. Participant Councils will be using renewable energy to power municipal offices, leisure centres, streetlights and community buildings. The new contract is expected to start from 1 July 2021.

The project's shift to renewable energy will help participating Councils meet their greenhouse gas emissions reduction targets and demonstrate their commitment to addressing climate change. Through the collective buying of renewable energy, the project will help with the investment in renewables in Victoria, increasing energy stability and reducing retail energy prices. Councils participating in this project recognise the benefits of renewable energy for local economies and job creation, environmental purposes, and reducing costs.

It is the largest ever emissions reduction project undertaken by local government in Australia, aggregating approximately 45% of all Victorian Council electricity to switch to 100% renewable energy. The project highlights that large scale co-operation and collaboration is possible to transition to a renewable energy future and address climate change.



## CASE STUDY

# Climate Action Moreland – council engagement

Citizen engagement with Moreland Councillors and staff has played an important role in Moreland City Council being a local government leader for climate action and sustainability.

Climate Action Moreland has campaigned actively with Councillors for the last six years including:

- 2014 petition on Fossil Fuel Divestment which led to a Fossil Fuel Divestment Policy
- 2016 election campaign for all candidates to sign the climate emergency declaration. Council declared a climate emergency in 2018
- Working with Australian Energy Foundation in workshops as part of their Brains trust to develop the Zero Carbon Moreland Plan and associated five year action plan
- 2020 petition on inserting coal development as part of the sustainability filter in Council's Procurement Policy
- Important submissions to council policies on the Urban Forest, Heatwave Action Plan and Moreland Integrated Transport Plan.

From around 2015 I started attending all Council meetings in the public gallery in my role as Convenor of Climate Action Moreland and as a witness to Council decision making associated with climate or sustainability. Occasionally I ask questions in the public question time allocated. Biodiversity loss and extinction is an associated crisis with climate change, and my questions to Councillors on the absence of a Council biodiversity strategy in 2019 (first mentioned as an action item in Council's Open Space Plan in 2004) led to Council allocation of budget in 2019/2020 for the Draft Moreland Nature Plan to be considered for adoption in late 2020.

*John Englart, Convenor, Climate Action Moreland*



Climate Action Moreland outside Mechanics Institute, 2011.

## STEP 5

# Project options

Many Zero Carbon Communities are working on projects to reduce local emissions. We are collaborating with these communities to build understanding and evidence of the best actions and projects they can undertake to reduce emissions and develop local job opportunities.

What would your town or region be like if you reach zero emissions? How many jobs would it create? What type of future are you picturing?

Dreaming, imagining and talking about your desired future will help you and your group begin to co-create it.

Once you have thought of many possible projects, it's time to select the best. In any community, there are many projects that could be developed. It's essential to choose the projects that are most appropriate, cost-effective and likely to proceed. To be successful, initiatives need to make sense economically as well as socially, as cost savings offer the best short-term incentives for councils, businesses and individuals.

### **One method of prioritising your possible options is suggested below:**

Research and analysis

- Consider the baseline emissions profile for all relevant sectors
- Stakeholder mapping – who are they, what is their role, how can they be involved?
- Planned projects contributing to emissions reductions, especially council projects
- Regional information which affects emissions e.g.
  - relevant legislation
  - barriers analysis.





### Projects identified in the Million Jobs plan include:

- Solar farm
- New transmission project
- Manufacturing wind turbines
- Battery making and recycling
- Home energy retrofits
- New social housing
- Solar retrofits on community buildings
- Electric buses
- New bike lanes
- Factory electrification (getting off gas)
- Renewable hydrogen
- Green steel
- Green aluminium
- New energy metals (mining, processing, manufacturing)
- Decarbonistal land management
- Indigenous mining (electric mining equipment)
- Land regeneration
- Environment Land and Water rangers
- Coastal catchment and land care
- Recycling plants and processes
- Education, training & research
- Urban farm
- Community renewable energy hub.

### Project research

Beyond Zero Emissions has identified many solutions that can reduce emissions in all sectors. Table 3 presents some projects and solutions that may be of interest to your community. The relative importance of a given solution can differ significantly depending on context and particular geographic, ecological, economic, political, or social conditions.

### Add your own projects

We would love to hear more about projects that could boost jobs and reduce emissions in your local area. If there are projects you are thinking about, or that are underway or complete in your area, we would love to know more.

The first step is to complete [this form](#) and tell us a few more details. Our team will then take a look at all the projects and build your project ideas into our ongoing work. We will be in touch if we need more detail or have any questions.

**Table 3: Examples of projects that can reduce emissions and develop local economies.**  
Adapted from [Project D rawdown](#).

 <p><b>Buildings</b></p> <hr/> <ul style="list-style-type: none"> <li>• LED lighting</li> <li>• Solar PV</li> <li>• Smart thermostats</li> <li>• Insulation</li> <li>• Windows</li> <li>• Green roofs</li> <li>• Heat pumps</li> <li>• Solar hot water</li> <li>• Building retrofits</li> <li>• Net zero buildings</li> <li>• Low-flow fixtures</li> <li>• District heating.</li> </ul>	 <p><b>Energy</b></p> <hr/> <ul style="list-style-type: none"> <li>• Solar PV</li> <li>• Utility solar PV</li> <li>• Wind farm</li> <li>• Pumped hydro</li> <li>• Energy storage</li> <li>• Biomass</li> <li>• Distributed energy storage</li> <li>• Micro wind turbines</li> <li>• Grid infrastructure</li> <li>• Microgrids.</li> </ul>	 <p><b>Land Use</b></p> <hr/> <ul style="list-style-type: none"> <li>• Biochar</li> <li>• Nutrient management</li> <li>• Farm efficiency</li> <li>• Plant rich diet</li> <li>• Regenerative agriculture</li> <li>• Reforestation</li> <li>• Managed grazing</li> <li>• Habitat protection</li> <li>• Indigenous land management</li> <li>• Irrigation efficiency.</li> </ul>
 <p><b>Waste</b></p> <hr/> <ul style="list-style-type: none"> <li>• Waste to energy</li> <li>• Landfill methane capture</li> <li>• Reduced food waste</li> <li>• Composting</li> <li>• Recycling.</li> </ul>	 <p><b>Transport</b></p> <hr/> <ul style="list-style-type: none"> <li>• Bicycle infrastructure</li> <li>• Carpooling</li> <li>• Efficient aviation</li> <li>• Efficient ocean shipping</li> <li>• Efficient trucks</li> <li>• Electric bikes</li> <li>• Electric cars</li> <li>• Electric trains</li> <li>• High-speed rail</li> <li>• Public transport</li> <li>• Telepresence</li> <li>• Walkable cities.</li> </ul>	 <p><b>Industry</b></p> <hr/> <ul style="list-style-type: none"> <li>• Methane digesters</li> <li>• Alternative cement</li> <li>• Alternative refrigerants</li> <li>• Bioplastics</li> <li>• Electrifying manufacturing.</li> </ul>



# Community Solar Projects Decision Guide

February 2017

The decision points in this diagram represent some of the questions and choices groups will need to answer and address in setting up a community energy project.

Being clear on these decisions, choices and associated constraints will help determine which is the most suitable model for your group.

You may find that your unique local context requires adapting an existing model, or, if your group is really dedicated, even developing and testing a new one!

## KEY

TO UNDERSTANDING HOW THESE MODELS HAVE BEEN DEPLOYED

- Successful model with multiple projects in operation
- Refinement and streamlining of an existing model. Model has already been piloted through a now operating project
- Model is being tested through a pilot project
- Hypothetical model - not operating.
- No viable models currently known about or operating

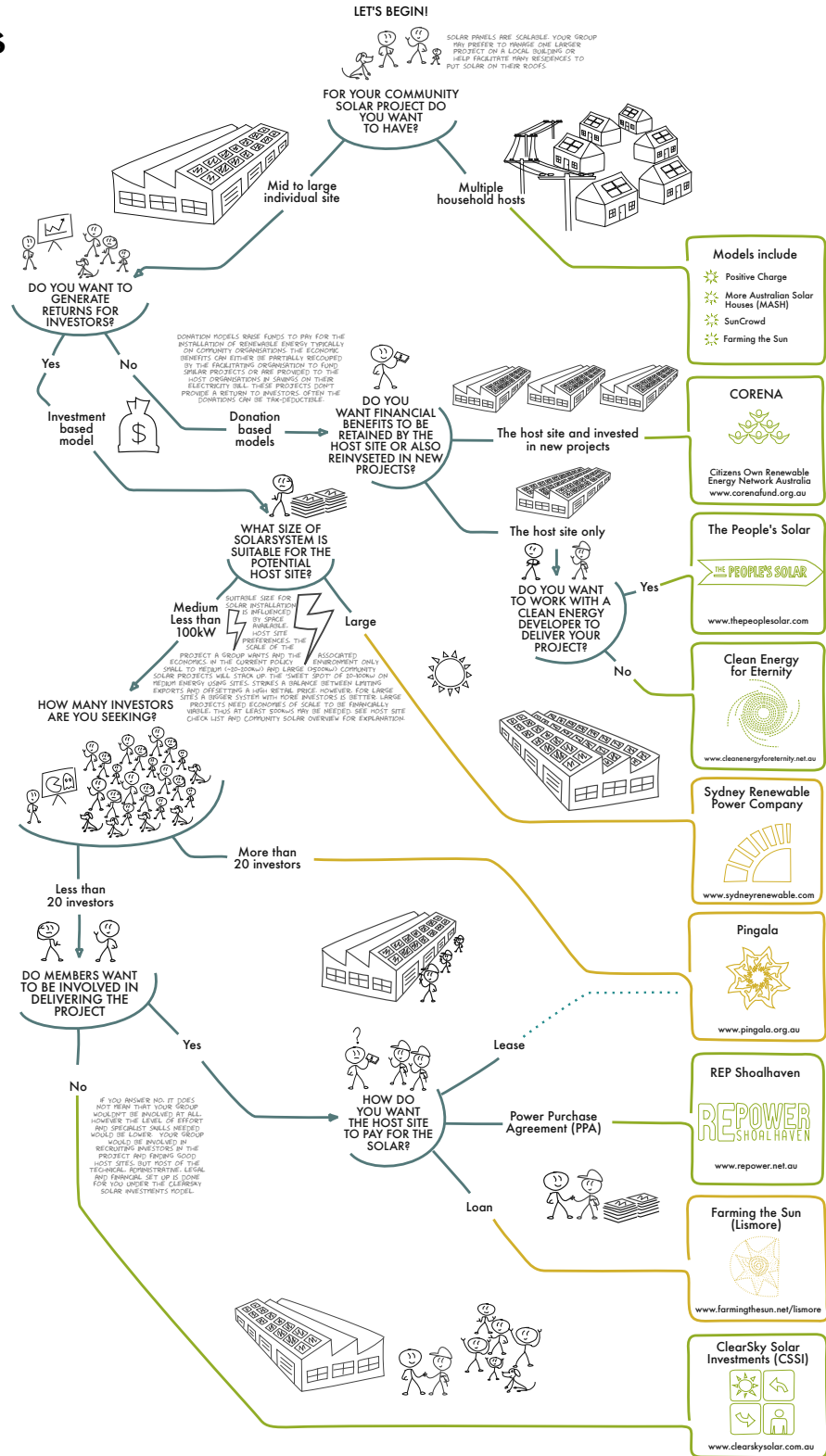


Figure 5: Community solar projects decision guide – developed as part of the as part of the National Community Energy Strategy. Reproduced with permission from the Coalition for Community Energy. <http://cpagency.org.au/wp-content/uploads/2017/03/C4CE-Community-Solar-Projects-Decision-Guide-Feb2017-A3.pdf>

## STEP 6

# Transition strategy

Your Zero Carbon Community transition strategy should include local context, your vision, challenges and opportunities and an action and implementation plan.

A key component to developing a transition strategy is to not reinvent the wheel. Many communities have started on this process and many resources can be modified to suit your needs.

Sign up to our [Zero Carbon Communities network](#) to access the latest action plans, strategies and resources from communities around Australia and the world.

Key questions to consider are below.

### Introduction and context

- What's the context and background?
- Where are we now?
- Who are our stakeholders and the roles they can undertake?
- What are the characteristics of our community (e.g. demographics, industries, housing stock)?
- What does our existing emissions and energy use look like (e.g. current and future energy requirements, identification of opportunities)?

### Vision

Our long-term vision:

- What do we want our community to look like in ten years' time?
- What are our specific goals and targets for the community?

### Challenges and opportunities

Identify problems and outline benefits of taking action:

- What is the future if a business-as-usual approach is taken?
- What has or hasn't worked elsewhere?
- What are emerging issues?
- What are the opportunities for our community based on an environmental, social and economic assessment?
- How will we overcome barriers?



### Action plan

Develop, assess and prioritise our proposed actions:

- Who is going to do what?
- What is the least cost approach?
- What are our resources?
- How will it be funded?
- How can we attract and manage funds?
- What are our project plans?
- How will we monitor progress?
- What are our year-by-year objectives?
- How will we assess proposed actions?
- How will we collaborate with others e.g. to remove policy barriers?

### Implementation plan

- What is our immediate starting point?
- What will happen in the next 12 months?
- How will the community be engaged in this?
- What are the risks to implementation?
- How will we measure, monitor and evaluate implementation outcomes?
- How will we engage partners to implement specific actions?

#### Need help?

A simple guide to developing a Zero Carbon Community Action plan is available [here](#)

Example actions in different sectors are also available [here](#)

## STEP 7

# Reporting and review

Collecting data is essential if you are to effectively assess your progress.

Your baseline emissions will be the ultimate indicator to let you know if things are on track, but every project undertaken will need its own data collection, monitoring and review.

Monitoring and evaluation is necessary to measure progress and inform you on the effectiveness of your current activities/initiatives. Carrying out regular monitoring and evaluation of your action plan will show you how much progress has been made in your efforts towards zero emission. The results of this may require making adjustments to your action plan, assigning roles and responsibilities, ensuring the emission reduction methods implemented are making a difference, and deciding on methods for sharing or publishing the results of your community action plan.

### Steps to reporting and review include:

- Survey your community and stakeholders to find out their interest in your project
- Identify key evaluation criteria
- Regularly monitor progress
- Review impacts annually and make any adjustments
- Review baseline emissions data annually
- Report publicly to all stakeholders, the wider community and investors every six months
- Report to all stakeholders on key phases of individual projects
- Seek external evaluation input
- Keep learning – it is a changing landscape
- Celebrate successes and learn from failures!

It's an excellent idea to look for quick wins at the start of a major change initiative like this. Achieving a small-scale emissions reduction project within a short span of time will demonstrate to your community – and to your group – that your Zero Carbon Community initiative is serious. Success breeds success, so by achieving quick wins your Zero Carbon Community will be better placed to attract funding and investment.

These actions don't have to be expensive or complicated. The City of Boroondara achieved a quick win by draught-proofing their community buildings and subsequently cutting their energy bills.



## STEP 8

# Storytelling

Telling stories may seem simple, but it is a vital way to get your community and stakeholders to care about what you are doing.

Your team can be involved in storytelling in many ways – from taking part in conferences and events, to calling local media outlets with story ideas, to promoting your work on social media, to simply talking informally about what you are doing at the supermarket, sports ground, school gate, library or café. Storytelling lends authority and credibility to your group. It will help if you have a visible name, logo and website that demonstrate clearly what you are working to achieve.

As you begin your early projects, you'll find that telling stories of success helps broadcast and celebrate what you have done. Sharing good news will energise your core team and committed volunteers and encourage more community members to become contributors.

The more you demonstrate success the more investment and funding you will attract to your community. Businesses are more likely to invest in a community that is demonstrating a commitment to the future.

The work you do will inspire more communities to become involved. Part of the process is building support at all levels of government for effective policies to enable this transition.

Mobilising the community to engage politicians and demonstrate the changes you are calling for can be instrumental in bringing about change. Some longer-term actions that you wish to undertake may require state or federal policy changes. It is easier to make your case for these changes when you have already demonstrated success in achieving local emission reductions.

[Climate for change](#) provide resources for conversations on climate change and Member of Parliament engagement groups.

It's important to share mistakes as well as achievements, and provide as much information publicly as possible to help other communities avoid pitfalls. Seek help from communities a few steps ahead of you and provide support to those one or two steps behind. There is great opportunity to maximise learning and development opportunities between communities and set up shared mentoring systems.

You can also tell the rest of the world what you are undertaking through campaigns like [100% RE](#).

### **Your communication plan will be the key to mapping out your storytelling work. It might include:**

- Key communication objectives
- Target audiences
- Key messages
- Calendar of events
- Collaboration opportunities with neighbouring councils and communities
- Shared project resources
- Social media channels and strategies
- Case studies and templates to share
- Presentations and events
- Key spokespeople
- Media training.

## STORYTELLING TIPS

# Zero Emissions Sydney North

Thank you Zero Carbon Communities across Australia, you've helped inspire us to create Zero Emissions Sydney North!

We wanted to help build a sustainable community in Sydney's northern suburbs, and really engage people and businesses about the benefits of reducing emissions. We launched in late 2019 and are building our community with info session guests, subscribers and volunteers. Here's a summary,

We'd love people and businesses to reduce their main sources of emissions and become heroes for zero among their family and friends! We develop new programs and champion existing initiatives to rapidly transition to net zero emissions. We've started with energy (main source of emissions in our area) and are developing transport and home efficiency programs next.

**Brand:** By the harbour and sea, our community loves the beaches and bush. We created a visually engaging brand and we've used this look and feel across our Facebook, Twitter and LinkedIn accounts, newsletter and blog.

**Website:** We aim that our website is easy to follow, with high-level information and programs, then FAQs, videos, and downloadable case studies and guides for those who want more detail: [zerosydneynorth.org](https://zerosydneynorth.org)

**Info sessions:** We hold free info sessions for our community, currently about renewable energy and rooftop solar, with info for business, strata, transport and more to come.

**Social media:** We post on Facebook and Twitter very regularly. We share local sustainability stories such as local schools getting solar, low emissions tips, success stories. national news, international low emissions innovation, and our working group updates.

**Newsletter and blog:** We provide tips, low emissions news and updates on our activities in our newsletter. Our subscribers are growing and we share this with others who may be interested.

One example of a way we've engaged people's interest is that we've made an advert for switching to new renewable energy. We had a film shoot! Four hours, multiple takes. Dog treats and a starring role for our children... We made a video, asking viewers to switch to a power company who only supports renewable energy. "What are you really switching on?" aims to make people think about where their electricity actually comes from, and to offer an easy way to support renewables. See the finished video [here!](#) Please come join us and let's support each other's positive impact.



Members of Zero Emissions Sydney North.

[zerosydneynorth.org](https://zerosydneynorth.org) | [facebook.com/ZeroEmissionsSN](https://facebook.com/ZeroEmissionsSN) | [twitter.com/ZeroEmissionsSN](https://twitter.com/ZeroEmissionsSN)

## STEP 9

# Investment

Most actions to support Zero Carbon Communities will pay for themselves over time and so save your community millions of dollars in energy bills and other costs.

The challenge is that investment is required to get projects off the ground.

Ideally your project funding would cover the lifetime of the overall strategy, but it is more likely you will need to seek funding for each key project or project phase including start-up costs and implementation.

It is important to note that while a group of volunteers can make extraordinary progress a transition of this scale is not something that can be achieved on volunteer labour alone. Investment will be required to provide some paid support for core staff to maintain overall momentum, as well as professional services. Your business case for most projects should include wages for some highly trained, dedicated and skilled people to support the work of volunteers.

Funding is also important to access expertise as energy efficiency, renewable energy, public transport, waste and land use projects are complicated, technical and have rapidly evolving business models, finance and governance opportunities. Many projects take much longer than they should or result in poor priorities or design choice if expert advice is not obtained.

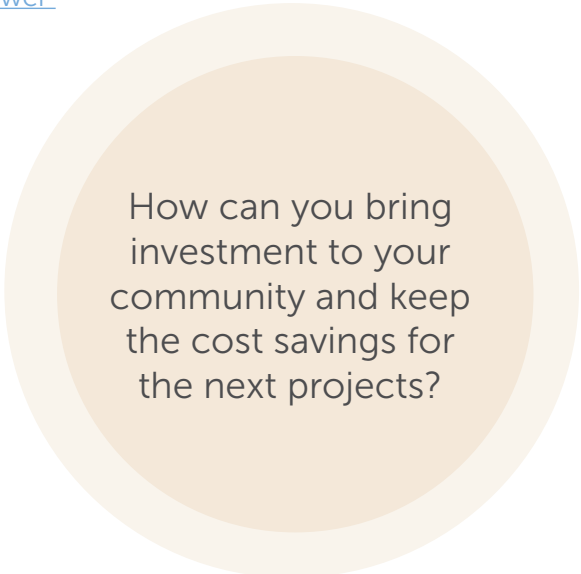
Seek support from your local council including administrative support, in-kind support and funding to get things going initially. Council funding can then be used to leverage state and federal grant funding.

Investigate approaches that will enable scalable business models and financing. How can you bring investment to your community and keep the cost savings for the next projects, which will in turn save further costs?

Different models of funding exist for different types of projects and there are many excellent resources to help consider funding options. A good overview of funding types and information is presented in the [Community Power Agency – Community Energy – a How to Guide](#).

The [Behind the Meter Solar PV Funding Guidebook](#) has been developed as a simple and accessible guide to assist Community Energy groups in the development and delivery of projects.

There are organisations such as [Clear Sky Solar](#) which link community investors with viable solar projects, and grants available from energy retailers such as [PowerShop to support community energy projects](#). There are currently more investors available for community energy projects than projects ready to go with some [community energy projects selling out within minutes](#).



How can you bring investment to your community and keep the cost savings for the next projects?

## Investment Reference Group

The Zero Carbon Communities – Investment Reference Group was set up to help deliver the aims and ambitions of our Zero Carbon Communities.

The Investment Reference Group provides strategic direction and leadership to enable effective investments to rapidly reduce emissions, build local community well-being and make a reasonable return.

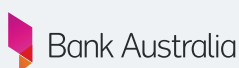
The group investigates existing investment pathways to improve the timeliness and scale of emissions-reducing projects, as well as potential new or ‘game changing’ pathways.

This work demonstrates how to implement solutions that create a zero emissions Australia.

The Investment Options Report provides information about existing investment options and opportunities for Zero Carbon Communities.

### The Investment Reference Group includes representation from:

- Bank Australia
- Business Council of Cooperatives and Mutuals (BCCM)
- Greenhouse Alliances
- Chuffed
- Climate Council
- Coalition for Community Energy (C4CE)
- Committee for Ballarat
- Community Power Hub Latrobe valley
- Impact Investment Group
- Morris Group
- Pollination Group
- Renew
- Renewable Energy Insights





## CASE STUDY

# Revolving Fund model – CORENA

CORENA (Citizens Own Renewable Energy Network Australia) is a South Australian charity with the aim of reducing greenhouse gas emissions.

CORENA's funds come from donations. We then loan money to not-for-profit community organisations for specific projects such as solar installations. We work with each organisation to make sure the project both reduces emissions and pays for itself (generally within five years).

Each loan is interest free. Once the loan is repaid, the organisation benefits by keeping all the monthly energy bill savings. CORENA has raised funds for 32 projects from donors all around Australia. The projects have included community centres, disability support, child care and hospitals. We have funded solar systems, energy efficiency projects and a battery with loans ranging from \$5k to \$100k. We expect replacements for gas appliances and infrastructure for electric vehicles might also become fundable projects in the near future. The decision to fund not-for-profits helps CORENA be sure that the funding ultimately helps communities while it is also speeding up Australia's energy transition.

To date over \$560,000 has been loaned and the equivalent of over 470kW installed. For example, Gawler Community House in South Australia installed a 10kW solar system and replaced halogen security lights with LEDs fitted with sensors. Gawler Community House recently made its final repayment and will now keep the ~\$1,500 per quarter that the project saves. Meanwhile, the loan repayments are being reused to support new community organisations to do similar projects.

This model is at the heart of CORENA's revolving fund. We are always on the lookout for projects to put in our funding queue. If you have a good project for CORENA to fund, submit an Expression of Interest or let your favourite community organisation know about CORENA.



[corenafund.org.au](http://corenafund.org.au)

## CASE STUDIES

# Leading communities

There are thousands of communities worldwide taking on zero carbon challenges. In Australia there are more communities taking action than we can mention here. Explore some of our examples of leading communities, as well as a few just getting started.



The School Strike 4 Climate in Byron Bay.

## Zero Emissions Byron

Zero Emissions Byron (ZEB) has one of the most ambitious emissions reduction goals in Australia. The Byron Shire Council and community are working in partnership to reduce emissions to zero in all sectors across the region within a timeframe of ten years.

Action planning began with key stakeholder forums, where industry bodies, businesses and organisations from each sector came together to compile and assess mitigation actions. ZEB is implementing core projects, particularly focused on community education and engagement.

ZEB holds a major event each year. In 2018 Professor Will Steffan presented the [Big U Turn](#), which has been seen by over 30,000 people around the world.



### Energy

Stationary energy consumption from fossil fuels accounts for over half of the emissions in the region. Mid to large scale solar farms and the rollout of rooftop PV will likely be the primary source of new renewable energy. Reopening the old hydro power station at Laverty's Gap is being investigated, as is the development of a bioenergy facility. ZEB is encouraging and monitoring renewable energy projects in Byron Shire. There is about 12MW of large-scale solar projects in the pipeline in 2020, equivalent to one-third of Byron Shire's current energy use. ZEB aims to encourage the take-up of batteries when the NSW Government's low-interest loans become available.

### Buildings

Households have great ability to contribute to emissions reduction as energy efficiency measures can reduce electricity consumption in homes by up to 50 per cent. Whilst old houses can be retrofitted, it is important that new houses are designed for low energy consumption. [RePower Byron](#) is a partnership between ZEB, Enova Community Energy and COREM, a local renewables group, to promote household energy efficiency, ethical energy providers and solar panels. Commercial building owners in Byron Shire are also being encouraged to improve efficiency and consider building retrofits.

*Continues over >*

[zerobyron.org](http://zerobyron.org) | [zeb@zerobyron.org](mailto:zeb@zerobyron.org)

## Transport

The Byron Shire is a large regional area, with 44 small towns across >560km<sup>2</sup>, meaning a small and dispersed population. In 2019 ZEB initiated the first Northern Rivers EV Forum to highlight the future use of electric transport options and electric equipment. This ground-breaking event featured a forum with industry experts, councils and local EV owners. The new and privately-owned electric vehicle display included electric bikes, electric motors and even an electric rickshaw! ZEB aims to make the Northern Rivers EV Forum the annual go-to event in the Northern Rivers. A section of railway from a local resort into Byron Bay has been restored with an electric solar train and there are many other solutions including improved public transport, train and bicycle infrastructure, electric buses and electric car hire fleets for the 1.8 million visiting tourists.



The new and privately-owned electric vehicle display at the Northern Rivers EV Forum.

## Land Use

Byron Shire is ideally placed to reduce land emissions to zero and beyond through reforestation. Carbon sequestration potential in the area is high and carbon farming can increase vegetation whilst also providing economic resilience to farmers. The main source of land use emissions in our region is from enteric fermentation from cattle for the beef and dairy industries. Manure management in the pig and poultry industries can reduce emissions and biochar can act as an organic fertiliser, and also aid significantly in carbon storage and drawdown of greenhouse gases.

RePlant Byron is a project of ZEB aiming to plant 1.8 million trees between 2020 and 2025 in Byron Shire. Launched in October 2019, 8,500 trees have been planted to date. The objective is to draw down and store atmospheric carbon in trees and soil, while restoring biodiversity and habitat. A carbon drawdown database is being created to include trees planted by other groups.



Community planting with RePlant Byron.

## Waste

The main focus in waste for ZEB is organic waste which generates emissions in landfill. Significant improvements have been made in organics waste management, led by Council, including the introduction of a residential 'green' bin service for food and garden waste, and the processing of garden waste for compost at the local tip. The local waste management business Richmond Waste has introduced an organics bin for businesses. Improvements were made to the local Myocum tip to reduce emissions by flaring gases. Current waste from Byron Shire is sent to a landfill in southeast Queensland where greenhouse gases are captured in a bioreactor. Community education in waste avoidance, particularly single use packaging, is important in reducing emissions from the energy used in the recycling and transportation of waste.

*Continues over >*

## Zero Emissions Byron – Lessons learnt

When ZEB commenced, limited work had been done in Australia on reducing community-wide emissions. ZEB has pioneered and developed strategy as it progressed and has learnt many lessons which can be of aid to other communities now engaged in this work.

### Community involvement

Community volunteers with expertise in various sectors have underpinned ZEB's success. In working groups, these volunteers have undertaken much of the work to date. There has also been a strong emphasis on wider community consultation, including key stakeholder forums.

### Strategy

Strategic planning should be undertaken regularly, detailing the goals, objectives, key actions, timeline, and key performance indicators. Specific yearly action plans should be created, which should measure and report on success against these.

### Council cooperation

Both Byron Shire Councillors and council staff have been key in driving the zero emissions process. Council commitment to the transition includes: a formal resolution; commitment of funds; commitment to pursue funds externally; commitment of staff time; development of action plans for council operations; undertaking reporting; and engaging with other Australian and international councils, governments or organisations.

### Collaboration

Organisations, businesses or groups can help implement specific projects or actions. Partnerships with complementary skills are wonderful, for instance, Beyond Zero Emissions provided technical skills and expertise to establish ZEB and provide ongoing support.

### Governance

It is vital to consider internal operations including: who is driving the project (council, community or combination); the different roles of groups and individuals; the organisational structure needed (e.g. informal vs. incorporated organisation); the decision making structures; communications structures and protocol; paid and volunteer contributions.

### Resources

It can be difficult to source funds for internal operations and administration. In 2016, ZEB incorporated as a non-profit organisation to obtain and manage funds and to cover internal operations, such as development of strategic planning and action blueprint and communication and outreach. Specific projects can be sourced through investors or grants.



ZEB at the School Strike 4 Climate.



## Wingecarribee Net Zero Emissions

Our aim is to achieve zero emissions for the Wingecarribee Shire, at least by 2050, if not before.

As a beautiful, historic and rural area blessed with a number of National Parks Wingecarribee is a biodiversity hotspot, and an important catchment area for the water supply to Sydney, Wollongong and the Northern Shoalhaven – an area representing over 70% of the population of NSW.

Formed in the aftermath of the bushfires (and the local council declaring a Climate Emergency) our role is to represent, and co-ordinate the existing environmental groups in the community.

By working together we can create more awareness of the issues at hand, channel support in one direction, and affect change more efficiently. Because many voices speaking as one become powerful, demand attention, and ultimately, create a better world.

Eventually we'll live in a sustainable, vibrant and resilient community and people will visit from far and wide to enjoy the region. You're welcome to come and join us.

## Zero Net Energy Town Uralla

Z-NET Uralla is a not for-profit incorporated community organisation with the goal to transition Uralla Shire in northern NSW to 100% renewable energy for homes and businesses over the next 5–10 years.

Z-NET Uralla was formally established in early March 2016. The organisation works with residents and businesses within the Uralla Shire to reduce energy use and support the uptake of renewable energy technology. Z-NET Uralla has adopted the Zero Net Energy Town Uralla Case Study (also known as the [Z-NET Blueprint](#)) as its foundation document for direction and scope of projects to be undertaken.

The mission of Z-NET Uralla is to help our people transition to sustainable energy and to allow our community to confidently participate in the unfolding revolution in energy technologies. Z-NET activities are designed in consultation with the Uralla community to give equal access across socioeconomic groups.

Z-NET Uralla provides leadership and education, and aims to provide everyone in the Shire of Uralla with the opportunity, not only of being part of the solution to renewable energy supply, but also the opportunity to build futuristic, vibrant local businesses based on renewable energy. Since 2019 our Mission has expanded to include sustainability in water, waste, transport and food as we transition to a regenerative and sustainable way of living.

Z-NET Uralla's energy goal has been broken down into four steps:

1. The first is to achieve a reduction in energy use of 30% by 2021 through energy efficiency measures.
2. The second is to increase our renewable energy generation by 30% by 2021 through rooftop solar installations.
3. The third is to reach a sustainable harvest level of firewood (harvested wood not exceeding the rate of natural tree death) that balances the need for winter energy with ecological values.
4. In the longer term, as regulatory barriers are reduced we will explore the feasibility of a solar or wind farm for the Shire.



**Cafe Gusto Ross and Kim Burnet making Coffee with Z-NET President Dr Sandra Eady from their 10kW Solar PV system installed as part of the Farming the Sun Bulk purchase offer.**

[z-net.org.au](http://z-net.org.au)



## Gold Coast Climate Action Network

The Gold Coast is one of Australia's most beautiful cities, surrounded by world class golden beaches and world heritage listed rainforests.

The impacts of climate change threatens much of what makes the Gold Coast so special. With so much of the city nestled on a thin strip of land between the hinterland and the ocean, our communities are at increased risk of flooding and fires, devastating cyclones and coastal erosion.

Recognising the risks from climate change to our way of life, a number of community groups and leaders have come together to work on local solutions. Our mission is simple, we support our community to come together to take action to stop runaway climate change. We are a volunteer led network of diverse grassroots groups who support one another to have a big impact fostering solutions all Gold Coasters can support.

We've started to map out a plan to achieve 50% reduction in greenhouse gas emissions for the City of Gold Coast by 2030. We hope more is possible as the City of Gold Coast Council has now adopted an inspiring and bold energy strategy to utilize new technology to harvest energy from the city's natural resources.

Please join us to be more ambitious and enable the 6th largest city in Australia, blessed with so many natural resources, lead the way and become a real Zero Carbon Community.



## Zero Emissions Noosa, Queensland

Noosa Shire on Queensland's Sunshine Coast has the goal of zero carbon emissions by 2026 firmly in its sights.

The Council has set that goal for its own operations (waste, fleet, council buildings) and Zero Emissions Noosa Inc. (ZEN) has set the same goal for the community.

With assistance from Noosa Council and BZE, we have established the key contributors and quantities of our greenhouse emissions. We know we have a major task ahead of us, but we believe progress will be exponential as we begin to deliver real change.

We have the data on emissions from electricity and transport and it is clear they are the key areas to focus on. We also have many tourism accommodations, and many visitors who come by car. We have established two working groups examining ways to reduce electricity and transport emissions. As of 2017, 28% of Noosa detached housing has solar PV, and we are confident our community engagement and research on payback will deliver major increases to other building sectors such as industrial premises.

We will also be documenting the experience of innovative tourism resorts that have gone down the path of genuine sustainability in their operations.

Transport comprises at least 30% of our emissions and probably much more if visitors' cars are included. The transport working group knows that reducing the dependence on the private motor vehicle is a major task, and has already held two workshops with the community to gather their ideas. Electric bicycles may provide real alternatives to commuter travel and we have been monitoring case studies in WA that show positive results.

ZEN will engage with our community to deliver the highest emission reduction possible as part of our global responsibilities. Moreover, there are real commercial benefits in terms of jobs, innovation and the bottom line costs for businesses.



**Noosa community members working on an emission free transport strategy for the shire.**



**Joe Shlegeris and Darren Walters, both passionate supporters of emission-free transport.**

## Toowoomba for Climate Action

Toowoomba is a slow city with a small-town vibe in the Darling Downs region, and the gateway to regional Queensland.

Toowoomba and the surrounding region has the highest vulnerability to climate change in Australia, with a predicted five degrees increase under a business as usual emissions scenario.

The group Toowoomba for Climate Action was formed off the back for the School Climate Strikes in Toowoomba in March 2019, when a large turn out for the demonstration gave momentum for the formation of the group.

Some local students, who volunteer with the group delivered a deputation to the Toowoomba Regional Council. Leading up to the deputation, Toowoomba for Climate Action had been making sure that the issue of climate change is front and centre of attention in the community and ensuring that councillors were aware of this.

The main aim of the group has been to change the conversation in the community about climate change. To do this they have held events, movie screenings and collaborative forums with other local groups on climate change.

They have also written letters to the councillors, have published articles in the local newspaper and have ensured that there is participation in public polls on climate change. In order to secure the deputation they wrote an open letter addressed to the councillors that communicated the urgency of climate change and asked that they take further action, with the first step being to meet with their group.

The final letter had 600 signatories (with another 400 online signatories), which ensured that the attention of the councillors was captured. In the deputation they emphasised the vulnerability that the region has to climate change and the responsibility that different levels of government (including local government) have in mitigating climate change. They suggested that a key way for Toowoomba Regional Council to be proactive about climate change is to establish a Climate Change Advisory Committee.

The advisory committee would be composed of stakeholders and experts from different sectors — including transport, agriculture, green energy and infrastructure. The committee would inform the council on actions they should take in response to climate change.

The Toowoomba Regional Council announced that they would be joining the Queensland Climate Resilience Councils program. If the advisory committee is established it will be easier for the group to push for mitigation targets and further action on climate change. We look forward to seeing what will happen next in this space!



Community members in action.

Photo: Toowoomba for Climate Action Facebook

[facebook.com/toowoombaforclimateaction](https://facebook.com/toowoombaforclimateaction) | [tba4climateaction@gmail.com](mailto:tba4climateaction@gmail.com)

## Climate Action Hobart

Climate Action Hobart (CAH) was formed in 2009 out of a group of locals who regularly participated in the Walk Against Warming campaign.

They are a small group with a large following, which can be attributed to their extensive work raising awareness for climate change initiatives within their community. Community engagement is an important focus for CAH. They run workshops, lobby politicians, support rallies, and share their experience and knowledge with other climate action groups in Tasmania.

In 2010, CAH proved their strength as a climate advocacy group when they published '10 Steps for a Safe Climate'. This plan outlined 10 actions for government ministers to commit to in order to protect Tasmania's climate. The Steps included tasks such as creating a 'roadmap' towards a carbon-neutral Tasmania by 2050. The document was written at a workshop attended by people from all around Tasmania, and presented to the Tasmanian Government. In 2011, CAH again workshopped a set of 'Low or No Cost Actions' for the state government to take on board. While the response has been slow, the government has taken some steps towards climate action, such as assisting low income households to increase their energy efficiency. The Tasmanian Government has also recently announced its plan to reach 200% renewables by 2040.

Currently, CAH focuses more on educating and engaging their community. They have run workshops that skill people up for lobbying, with keynote speakers that have often attracted around 100 attendees each time!

CAH supports many existing climate action campaigns, in a variety of ways. They collect signatures for petitions, hang banners, and even organise "honk-a-thons" around the city (think "Honk for Climate Action" signs!). One of the recent highlights for CAH member Margaret was supporting the 2019 School Strike for Climate protests. This student-led rally saw 20,000 people attend, an extraordinary number for the relatively small population of southern Tasmania. Here, CAH took on the role of traffic marshalls, showing up on the day in their high-vis vests to help keep the protestors safe. Despite the challenges and disruptions caused by COVID-19, CAH remains committed to its work for climate action in Tasmania.



**Margaret Steadman  
at the School Strike.**

[facebook.com/ClimateActionHobart](https://facebook.com/ClimateActionHobart)

## Renewable Energy Benalla

### Renewable Energy Benalla (REB) was one of the first Zero Carbon Communities supported by Beyond Zero Emissions.

This partnership led to the development of a Stationary Energy Transition strategy designed to reduce energy demand, replace with local renewables, and switch to large scale renewables.

A few years on local champions led by John Lloyd from the Benalla Sustainable Futures Group and Larissa Montgomery from the Benalla City Council have been working on a wide range of energy projects.

Our Vision is for Benalla to become a zero net energy town by reducing and balancing energy demand with 100% renewable energy supply.

REB works in collaboration with the community and relevant organisations to achieve the following objectives:

- Implement the [Benalla Stationary Energy Transition Strategy](#)
- Promote energy efficiency and reduce energy use within the community
- Create awareness, promotion and support for renewable energy by the community
- Achieve a significant increase in local renewable energy generation
- Keep increased financial benefits locally.

Most energy emissions in Benalla (82%) come from electricity use in residential homes (27%) and industrial and commercial (55%) businesses. This equates to approximately \$26 million per year in electricity costs to the community. Much of this expense is wasted in drafts, air leaks around openings and outdated heating and cooling systems.

We provide free energy assessments for households and businesses to help reduce energy bills and improve the comfort and quality of our buildings. We conducted bulk buy of solar and battery systems and hosted a range of community forums on opportunities for local businesses and potential for a renewable energy 'hub' at the local industrial estate. There are a range of utility scale renewable projects underway, notably the Winton Solar Farm which has started construction and pledged to partner with REB to [provide a community support role](#).

We are excited about the opportunities for our region and keen to learn from and share skills with other communities with a similar vision. Our electorate, Indi, has a vibrant network of 13 local groups developing community-owned renewable energy. Collaborating with the Zero Carbon Communities network and close connections with other community energy and sustainability groups in the region has really helped move things forward.

[reb.org.au](http://reb.org.au) | [facebook.com/Benalla-Sustainable-Future-Group-661236013914384](https://facebook.com/Benalla-Sustainable-Future-Group-661236013914384)



## Gippsland Climate Change Network

The Gippsland Climate Change Network (GCCN) is a not-for-profit that was formed in 2007 to support climate action across the region.

It encompasses six local councils, and boasts over 70 different participating organisations and community groups. GCCN is also a member of the Victorian Greenhouse Alliance. The Gippsland region is a key energy area in Victoria, being home to coal-fired power plants such as the former Hazelwood plant. With such extensive energy supply infrastructure already in place, the region is primed for transition to renewables. Since their formation, GCCN has been involved in several, wide-ranging projects to facilitate this transition.

As GCCN board member Ian Southall says, 'little' projects can be big in small country towns, as switching to renewables can make a big difference to energy bills and emissions! GCCN has worked hard on the Latrobe Valley Community Power Hub, which in 2019 ended its two-year trial period. The Hub proved successful and continues with projects such as transitioning off-grid Victorian town Licola from diesel power to solar and batteries. GCCN works with many other community groups around the Gippsland region, such as the Baw Baw Sustainability Network, to achieve emissions reductions goals for small businesses and local agriculture. GCCN mainly provides funding for feasibility studies and the crucial expertise needed for these projects, sometimes supporting groups with other costs as well.

Another recent highlight has been the Renewable Energy Roadmap for Southern Gippsland, which GCCN worked on throughout 2019 in partnership with three other organisations. GCCN also provides support to numerous proposed, large-scale initiatives such as the 'Delburn' and 'Star of the South' wind farms, the Frasers Solar Farm, and the Gippsland Renewable Energy Park. Large projects such as this will underpin many small-scale community activities.

GCCN has been able to adapt to the challenges of 2020, supporting a 6-part webinar series, "Gippsland Smart Futures", through the Power Hub. The series covers topics from financing community energy through to home energy solutions. Community engagement is, of course, essential to GCCN, but they have no trouble gathering local support. As the energy industry is so historically prominent in the region, the work that GCCN does helps provide essential jobs and economic support for many locals.

While GCCN has been making inroads for many years now, there is still a lot to do. As Ian says, there is enormous potential in the region – Gippsland has the resources, ingenuity, and people to be a key player in Australia's renewable energy future!

## Hepburn Z-NET

### The approach

Building on the work of Hepburn Wind to make Daylesford the first zero-net energy town in Australia, Hepburn Z-NET is seeking to make the Hepburn Shire the first zero-net emission shire in Australia, demonstrating the social, economic and environmental benefits of decarbonising. This community collaboration seeks to reach zero-net energy by 2025 and zero-net emissions by 2030 and aims to cut the 262,041 tonnes of carbon produced each year within this 15,000 person shire. The program was successful in winning the 2019 Premiers Sustainability Award and was a finalist in the Banksia Award.

The Hepburn Z-NET approach was a detailed bottom-up method to develop a place-based carbon emissions baseline, options for reducing these, harvesting community projects and working with the community to create clear action pathways and building local engagement and literacy around emissions reduction. [The Community Transition Plan](#) captures these steps in detail and is the masterplan for Hepburn Z-NET. Hepburn Z-NET is governed by a Roundtable of community representatives and secretariat support is provided by council.

### Community programs

By collaborating and partnering with council, local organisations, community groups and universities, Hepburn Z-NET has launched a number of programs designed to help community members take action. These programs include the Hepburn Solar and Battery Bulk-Buy, EV Bulk-Buy, EV Charging Network, Energy Assessments and Energy Savvy Upgrades, a 7.4MW community solar farm and various others. More programs will be rolled out to help households, farms, businesses, schools and tourists lower or offset their emissions.

### Find out more

To learn more about Hepburn Z-NET jump onto the website, which offers tailored information about Hepburn Shire emissions, the Community Transition Plan, community action underway and many more resources at [hepburnznet.org.au](http://hepburnznet.org.au). To find out more about the open source Z-NET model that your community can use go to [z-net.org.au](http://z-net.org.au)



Hepburn wind farm.

[hepburnznet.org.au](http://hepburnznet.org.au)

## Neighbours United Moreland and Darebin

### Neighbours United Moreland and Darebin provides support to individuals and climate action groups in their community.

Neighbours United Moreland and Darebin are a small group of volunteers, who provide a space (and home-baked afternoon tea!) for anyone in the community who is interested in climate action. Neighbours United publishes a monthly newsletter with a focus on what's happening locally, but also includes updates on what their state and federal MPs are doing.

Each newsletter includes a profile of a different local climate action group, to put on a spotlight on the different ways people are working on sustainability around Moreland and Darebin.

With the help of a volunteer from the local group 'Newlands Parents for Climate Action', Neighbours United hosts a monthly 'Climate Action Series'. This series is free and open to anyone, aiming to share skills and information about climate action. The focus alternates between workshops on community resilience, which has included skills such as bike maintenance and how to mend clothes; and advocacy, such as media training for climate activists, understanding the Australian fossil fuel industry, and how to engage MPs.

As well as Newlands Parents for Climate Action, Neighbours United supports groups such as Darebin Climate Action Now, Climate Action Moreland, and Newlands Friends of the Forest. They engage with the local councils for Moreland and Darebin, who have each declared a climate emergency – Darebin was the first council in the world to do so.

Neighbours United also supports individuals in their area. They connect like-minded people and encourage them to form small action groups that usually focus on one aspect of the community that could be made more sustainable. They've had up to 12 of these groups working on projects at a time! One example is a plastics reduction group that formed after the members met each other at Neighbours United. Together, they implemented a trial 'Plastic-Free Zone' in their community. Another group focused on transport, campaigning to increase the frequency of train service on the Upfield line that runs through the area, and emailing the Council about local problematic traffic areas.

For Neighbours United, it's important that people are able to pursue climate action in a way that makes sense for them. Seeing individuals that they support "find their feet" in climate activism is really encouraging. They continue to empower and support individuals and groups, and seek to keep raising community awareness and engagement as best they can in the future.



At the 2020 series launch event.

[facebook.com/communityclimateaction](https://facebook.com/communityclimateaction) | [neighboursunitedca@gmail.com](mailto:neighboursunitedca@gmail.com)

## Clean Energy Nillumbik

Clean Energy Nillumbik (CEN) was formed in 2017 as one of the first Zero Carbon Communities. They support businesses and individuals in their area to access solar energy, with the goal being 100% renewable energy for the Nillumbik Shire.

While Nillumbik is quite sustainably-minded, CEN is always working on raising awareness in the community. Daryl Brooke, Chair of CEN, says that it's important that people know how to generate and use renewables and make it work for themselves. To help achieve this, CEN runs education and engagement activities, such as "Speed Date" days with sustainability experts, and the 'Practically Green' Festival. This sustainability-focused festival was previously managed by the local council, but recently CEN won the right to manage the festival for the coming few years. This is an exciting opportunity for CEN to continue raising awareness and engagement within their community!

CEN is also proud to work with other environmental groups and organisations. In 2019, they partnered with Renew Australia and supported the Sustainable House Day in September that year. The Nillumbik Shire boasted six houses on display, with around 400 attendees. This was another great opportunity to connect with the local and wider community. CEN has established a wide network, and some of their volunteers overlap with other local groups, such as the Nillumbik Environmental Action Group. CEN's collaboration also extends to the Shire's local community bank, as they plan to support many 'rooftop' renewable energy projects, usually of around 200–300kW, within the next 5–10 years. CEN is committed to providing this support and education for the future, so that the Nillumbik Shire can become 100% renewable.

The Nillumbik Shire Council is currently conducting a public tender process for the financing, design, construction, ownership and maintenance of a proposed Solar Farm located at the former landfill site. CEN has been involved with the Community Banks solar farm investment project from the beginning. For both council and community the goal is to build a financially sustainable community energy business model in Nillumbik that provides for our community to invest in and purchase locally generated renewable energy.



CEN's Speed Date  
a Sustainability  
Expert event.



CEN at the 'Practically  
Green' Festival.

[facebook.com/cleanenergynillumbik](https://facebook.com/cleanenergynillumbik)



## Totally Renewable Phillip Island

Totally Renewable Phillip Island is composed of a number of community groups such as Phillip Island LandCare, the Conservation Society and Community Centre, which have gotten together to make the area, well, Totally Renewable.

The goal is for Phillip Island to become carbon neutral by 2030 using collective efforts to use clean and efficient energy, reduce pollution and to offset carbon emissions. Their carbon neutral goal is envisioned as reaching zero net emissions, using a combination of reducing emissions and sequestering emissions. They've also developed a 'renewable energy roadmap', which is a state government sponsored initiative.

But, why 2030? That year has been marked as the tipping point for being able to reverse climate change. Thus, the collective decided to go with that deadline, and furthermore, to get the whole community involved. For them, this is necessary for achieving their goals.

They held a public meeting that had 160 people attend on the day, and was also live on Facebook to define goals and set targets.

Totally Renewable Phillip Island have had a huge amount of community engagement from their 11,000-people-strong population, which of course swells during peak holiday periods. The people are well and truly ready for action to be taken, and to take things into their own hands. To find out more, [listen to our podcast](#) on BZE radio!



**Totally Renewable Phillip Island's education program works with students to tackle their own projects around their school.**

[facebook.com/totallyrenewablephillipisland](https://facebook.com/totallyrenewablephillipisland)

## Southern Otways Sustainable Inc.

Southern Otways Sustainable Inc. (SOS) is a not for profit community group established in May 2018, with a vision of Southern Otways communities powered by 100% locally generated renewable energy.

Driven by the failure of governments generally to address climate change, SOS currently has a two phase approach to achieving their aspiration:

1. Build renewable energy capacity by increasing local rooftop solar (with their first community solar bulk buy program in 2019)
2. Investigate and support renewable energy beyond rooftop solar (by initially developing a Renewable Energy Roadmap with the community).

With the assistance of Colac Otway Shire and Beyond Zero Emissions, SOS is in the final stages of developing the Roadmap, so local communities can consider renewable energy options relevant to their circumstances. By focusing the Roadmap on Apollo Bay (the largest and toughest nut to crack), SOS hopes to demonstrate to smaller local communities that 100% renewable energy is both achievable and in that community's interest.

"We estimate Apollo Bay spends more than \$4.5M on power, which is lost from the local economy each year, every year. Developing this roadmap has helped us identify strategies that empower our community in ways other than just the RE goal" Lisa Deppeler, Treasurer, SOS.

With the pandemic making this community engagement exercise challenging, the team under the guidance of facilitator Liz Franzmann, has moved to the virtual space. Smaller online workshops with well-connected community members scoped the community's interest and attitudes, before taking a digital survey to the broader township for further input.

"Apollo Bay has had a history of solutions foisted upon it under the guise of 'community engagement'. Our community has the reins this time and is contributing with an energy that gives great confidence in true community engagement outcomes" Matt Armstrong, Chair, SOS

"Due out September, this Roadmap should be a fine demonstration of what's achievable with the teamwork of community, BZE and government, despite a shoestring budget." Gail Bateman, Dep. Chair, SOS



Photo: SOS

## Totally Renewable Yackandandah

Standing in front of a packed house at the 2017 Earth Hour concert, Yackandandah residents Chris and Karen received their 'Golden Yak.'

These Golden Yaks – made by the Men's Shed using repurposed election signs – are a symbol of the energy transition underway in the small north-east Victorian town of Yackandandah. Totally Renewable Yackandandah gives Yak awards to businesses, groups or households undertaking at least two types of energy improvements. Karen and Chris had won their Yak with a double-glazed passive home, solar hot water and a stand-alone power supply.

The unplugged Earth Hour concert is part of the low-carbon 'Yack' folk festival. The festival owns a solar installation which generates sufficient electricity throughout the year to more than offset the power used during the event. The festival takes place in many of the community buildings across Yack that have invested in energy efficiency and solar power. Our museum, primary school, kinder, community centre, petrol station, council office and depot, supermarket, Health Service/Hospital, Men's Shed and the Football/Netball club all boast solar panels.

All this is evidence of a town embarking on a journey to a 100% renewable electricity supply by the year 2022. Fortunately others are recognising the importance of the journey. Network operator AusNet Services are working with Yackandandah to build one of Australia's first mini-grids. This concept allows a community to save, generate, store and share electricity locally. Our vision is for most power users to have their own solar panels, batteries, smart control systems and a local community electricity retailer.

At the same time, our forward thinking water authority North East Water is just about to install a solar system on Yackandandah's potable water treatment plant.

Our journey is far from complete, but the trajectory is clear and the passion is growing. Yackandandah has a strong history of self-determination, and now many of us are taken by the idea of a power system which reduces emissions, saves money, stabilises the grid and builds our local economy.



**TRY Golden Yac –  
Matt Grogan.**

## Denmark, Western Australia

The small coastal community of Denmark in southwest WA developed its reputation as a green community in the 1970s and 80s. Efforts by individuals to reduce energy consumption in Denmark over the years were dramatically scaled up to a community level in response to a 2007 crisis.

The town lies at the edge of the South West Integrated System (SWIS), more than 400km from the main coal-fired power generation hub at Collie. This results in transmission losses in the order of 35%.

A popular tourism destination, Denmark's population swells by 200-300% during summer and Easter holidays. During Easter 2007 peak demand resulted in a major disruption to the electricity supply to Denmark and neighbouring Walpole, severely impacting visitors and tourism operators, as well as local businesses.

The SWIS network provider, the state-owned Western Power, was called upon to substantially upgrade transmission lines in the affected areas. But local environmental groups initiated a different response, aimed at reducing energy demand and massively increasing the local generation of renewable energy.

The community-initiated Green Town Project, Denmark-Walpole was led by Western Power and the local communities, as well as relevant state agencies and local governments, chambers of commerce, Denmark Community Windfarm Inc, environment groups, the Great Southern and South West development commissions, and a Denmark-based solar installation business.

A statutory requirement for Western Power to prove a business case to the Australian Energy Regulator for transmission line upgrades lent weight to Western Power's investment in the project.

Over six years the partnership developed a range of initiatives aimed at reducing peak demand and deferring a proposed major line upgrade. The result was a 10% reduction in overall energy consumption, creation of local jobs in renewable energy production, and reduced carbon emissions. The initiatives included:

### Research and Demonstration

- A household appliance energy inventory
- An efficiency program aimed at the largest consumers
- Research and development on battery storage options
- Trial of energy monitoring units (EMUs).

## Efficiency Improvements

- Minor upgrades to lines
- Replacing incandescent lights with CFLs
- Smart meters
- Home and business energy audits.

## Education and Awareness

- Market stalls
- Banners on town entries
- Workshops with rewards
- Free advice
- Work with accommodation owners.

## Fuel Switching

- Solar Hot Water subsidies
- Installation of domestic PV (an estimated 16.9% of dwellings in Denmark had installed solar by February 2017, with a total capacity of >1780 kW)
- Construction of a community-owned and -operated windfarm.

This project set the foundation for future initiatives with the Shire of Denmark endorsed as a waterwise town in 2018 resulting in significant water reductions. The Shire declared a climate emergency in September 2019 to drive stronger climate action to reduce emissions to limit global warming to 1.5 degrees Celsius. The Shire is currently working with the community to develop a Sustainability Strategy and action plan as a priority, with the aim of providing recommendations to Council to meet targets. It is using the One Planet Living Framework as guiding principles in developing the Strategy.

Green Skills Inc has expanded the Denmark Tipshop to reduce consumption and provide goods to local households in need. Green Skills also auspices the very active Plastic Reduction Denmark group with their wash trailer which is part of the group's campaign to end the use of one use bags and containers in the Shire.

The Denmark windfarm is exploring options to install further renewable energy, either wind and/or batteries, onto the grid as it has achieved excellent return on the current windfarm and now has capacity to reinvest.

The windfarm is Western Australia's first community owned energy project, with the 116 investors coming largely from the local community. Approximately \$20,000 of dividends has been ploughed into local sustainability projects.

The Denmark community is now looking at future projects such as battery storage for the wind farm, a research project on the connection between water and energy, and other distributed energy options.



## Hunter Diversification Journey – Community and Collaboration is central

The Hunter Diversification project is a two year project working with the Hunter community, government and industry to build the capacity to future proof the Hunter.

We are working on the ground to enable the research, collaboration and conversations to enable people and communities to contribute their own ideas to shape the future.

The Hunter Project started from the passion of the BZE Newcastle volunteers. Their tenacity, energy, contacts and preliminary research gave BZE confidence that the Hunter was a place that we could support through the BZE approach, crowd sourced and expert verified research.

BZE isn't the only group thinking about how to diversify the Hunter. Great groundwork has been done by Hunter Renewal who we will continue to collaborate with. There is the development work being done by the Hunter Joint Organisation bringing together councils and building tools, knowledge and commitment around new circular industries. Work is also being done by other wonderful local organizations such as NENA, the Hunter Community Alliance, Citizens for Climate Change, and a multitude of other local initiatives aimed at giving their communities a voice. Other organisations which are working hard on these ideas are Department of Premier and Cabinet, Department of Primary Industries, Committee for the Hunter, The Port of Newcastle, The University of Newcastle, The Hunter Knowledge Hub through Newcastle Institute for Energy and Resources, Institute for Sustainable Futures at University of Technology Sydney and many others.

From the worker perspective we are also talking to the unions of the Hunter. Having them in the conversation around new jobs, training, safety, upskilling, and supporting them in their journey to support local, lasting, secure, well-paid jobs backed by safe and fair working condition.

Through this we hope to support and enable our zero carbon communities to have the capacity to go on their own journeys and develop their own pathways.



# Energy Transformation Association for the Kimberley

## Vision & mission

Energy Transformation Association for the Kimberley (ETAK)'s vision & mission is to facilitate and advocate for the transformation of the energy landscape in the Kimberley to add value and benefit to our members and to provide an affordable, secure, and sustainable energy future for the Kimberley.

## Why ETAK?

The 2017 Electricity Network Transformation Roadmap highlights that energy transformation is occurring on an unprecedented scale and predicts that up to 45% of consumers will generate their own electricity by 2050. Whilst this transformation is occurring rapidly on the East Coast and on larger networks in WA, the Kimberley Development Commission has reported that the Kimberley appears to be lagging behind the installation rates of renewable being experienced the rest of Australia. This is despite the Kimberley having significant renewable energy resources coupled with higher energy use in the region due to significant cooling and air conditioning loads.

A number of businesses, industries, energy suppliers, indigenous organisations and individuals have joined together to form ETAK with the aim of fostering sustainable and economically robust development of the Kimberley underpinned by affordable and reliable energy.

## ETAK's activities

ETAK provides advocacy and a common voice for the community and its members in the pursuit of energy transformation for the Kimberley. ETAK's focus is on working with government, energy suppliers and projects to remove barriers which are impeding the energy transformation.

ETAK seeks to inform the community on all aspects relating to the energy transformation and supports and promotes projects which align with its objectives.



## Australian Capital Territory

Canberra is a national and international leader in city-level climate change action and delivery and we are proud of this.

We are leaders because we have:

- 100% renewable electricity and commitment to maintain this to meet any growing demand
- A target of being net-zero emissions by 2045
- Non-partisan support for the above (Liberal, Labor and Greens).

Our climate policy is working. In 2010 the ACT Government set legislated greenhouse gas reduction targets and started to invest in renewable energy. As of 2020, 100% of our electricity is from renewable sources, reducing emissions from the electricity sector to zero, a decrease of 29% compared to 1990 levels, and the government has committed to maintain this.

Our zero emissions target is by 2045, and we have an interim target to reduce emissions by 50–60% (from 1990 levels) by 2025, the main sources now being transport (~60%), use of gas, and waste. Importantly there is a commitment to delivering this without the use of carbon offsets.

We have committed to phasing out gas by 2045, and programs and subsidies are being increased to help households improve their energy efficiency and switch from gas to electric appliances. We have completed the first stage of electric light-rail in the city's north, a key step to electrifying our transport, and have started to purchase electric vehicles for government. The Living Infrastructure Strategy sets a target of the equivalent benefits of a 30% tree canopy cover and 30% permeable surfaces by 2045 to cool our city and increase biodiversity. We are investing in recycling services and have policies to phase out single-use plastics.

The Canberra community is highly engaged with climate change and related environmental and social issues. Thousands of people contributed to the development of the 2019–25 Climate Change Strategy, and some 20,000 people are members or supporters of a wide range of community-based environmental and activist groups including 350.org, the Australian Youth Climate Coalition, the Women's Climate Congress, local catchment groups, wildlife and biodiversity groups, Living Streets, Pedal Power, collective composting, community gardens, hands-on workshops, tree-planting, and more.

In November 2015, 10,000 Canberrans joined hundreds of thousands of people in cities around the world for the, then, biggest day of people-powered climate action in global history. More than 15,000 Canberrans – students, parents, grandparents, firefighters, faith communities, unions and workers, farmers, health professionals, business people, public servants, artists and musicians – took part in the 2019 Global Strike for Climate, joining millions of people worldwide, showing that concern for our future climate is escalating.

[Continues over >](#)





**National Day of Climate Action on the lawns of Parliament House, Canberra, January 2020.**

Effective community ownership will be an essential part of delivery of our zero net emissions goal. With the challenge for reducing emissions further relying on the community to make more sustainable transport choices, and potentially changing personal behaviours to achieve a collective benefit, the pathway to net-zero emissions needs to be community-driven. Local groups are working with government, business and industry to develop and build community ownership to ensure our community is engaged and committed to a shared vision of achieving net-zero emissions as soon as possible.

We also need our pathway to net-zero emissions to be equitable, socially just, economically viable and not displace our emissions into other jurisdictions. The response to the 2020 bushfires and Covid-19 pandemic showed that Canberrans are capable of supporting each other as a community, rallying both in person and more effectively than ever online. We will continue to develop collaborative pathways that work for all sectors of society to ensure a just transition to a genuinely sustainable city.





## Next steps

Zero emissions is achievable and affordable in all sectors. If you are interested in starting as a Zero Carbon Community get in touch to be part of this groundbreaking work.

- Join the [Zero Carbon Communities network](#)
- Start a Zero Carbon Community with a small core team
- Set an ambitious target in collaboration with BZE, your local community and your local council
- Use this guide to get going!

### Support Zero Carbon Communities

If you like what you have just read you can help provide meaningful support to communities undertaking this work.

**Donate:** [bze.org.au/donate](https://bze.org.au/donate)

BZE is developing our model to achieve our vision of an ever growing network of communities across Australia working together to achieve zero emissions. We encourage interested parties keen to collaborate in this work to get in touch.

**Contact us:** [info@bze.org.au](mailto:info@bze.org.au)





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