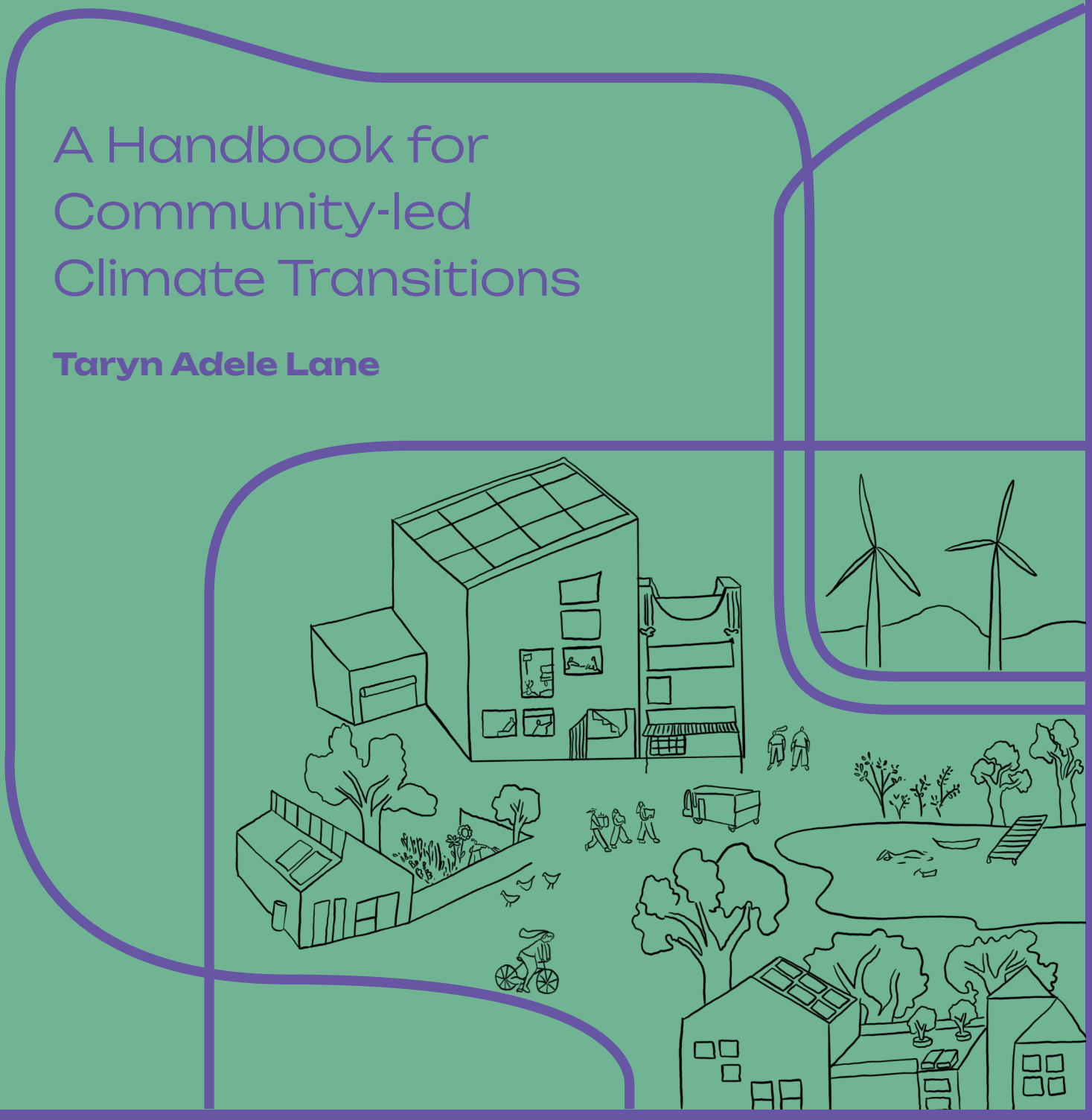
Hopeful Action

A Handbook for Community-led Climate Transitions

Taryn Adele Lane



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1. Foreword

Climate change is happening faster than everyone thought. Net-zero is a double edged sword. Climate scientists wanted to use negative emissions to reduce the carbon in the sky and ocean to a safe level. The fossil fuel industry co-opted these negative emissions to justify burning more of their carbon. The process granted fossil fuel companies hundreds of trillions of dollars worth of future emissions to be "netted out". In reality we need to be at real zero emissions closer to 2035 or 2040, and using negative emissions after that to bring the warming back down under 1.5 degrees. All of this means we need to move much faster than the government or corporations are telling you.

Politicians don't really like this reality because they want to celebrate net-zero 2050 as a success. It was a political negotiation success at the time, but governments haven't followed through and we are not on track. The world is headed for 2.5-3 degrees of warming which is a disaster. We simply must figure out how to decarbonize faster. I believe communities are the answer. By collectivizing the economic and health and climate interests of communities we can build a political force sufficient to counter the mis-information that is sewn and sponsored by fossil fuel producers. With community comes political power that can not only hold our politicians to a higher standard, but can also play hardball against the energy industry players such as the generators, gentailers, retailers and distribution companies that are slow rolling the transition such that they can continue their monopolies. They are working against the sensible investments in electrification that everyday Australians are making - rooftop solar, electric vehicles, reverse cycle A/C, electric water heating, induction cooktops and batteries.

A lowest cost Australian energy system will maximise the amount of locally produced and used electricity. That means not just re-writing the rules to incentivize households to max out their solar and batteries, but incentives for small businesses and retail establishments and schools and churches to put solar over their roofs and carparks as well. It also means re-writing the rules of access to credit. These are investments that will save every home and every community money, but not every home or community will have access to the credit facilities that enable them to buy into a cleaner future.

Taryn has been a pioneer in community energy in Australia. This book comes at an important time. We need to build a community movement large enough to threaten the establishment. We need to have the political

power to make our energy system meet our collective desires for a climate worth living in, and communities that thrive economically because they'll be consuming the energy they generate, store, and manage, themselves. We need this community to be bi-partisan. It will save money in the regions just as it will in the cities. Cheap solar energy doesn't care if you vote liberal or labor or green. It's now the cheapest way to drive, power your home, cook and shower. We can build a new environmental movement that is about building the future we need, not merely oppositional to the technologies of the past. I believe this movement can be centrist, non-partisan, and most importantly of all, centered in vibrant community.

Go forth and experiment with building this new energy community where you live. We need thousands of flowers to bloom and to share their lessons and their learnings.

Thanks to Taryn for this book.

Saul Griffith

2. Acknowledgements

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In addition the author would like to recognise that this handbook was produced with the support of Renew.

renew.

Other key contributors were Saul Griffith, Brendan Lim, Jarra Hicks and Kirsten Moegerlein.

Acknowledgement of Country

The author pays respect to Aboriginal and Torres Strait Islander cultures and to Elders past and present and acknowledges all First Nations peoples throughout Australia and their continuing connection to Country which was never ceded.

This project took place in Djaara Country and the author acknowledges the Dja Dja Wurrung People as the traditional owners and custodians of this land on which the author lives and works.

“To hope is to recognize that you can protect some of what you love even while grieving what you cannot – and to know that we must act without knowing the outcome of those actions.”[1]

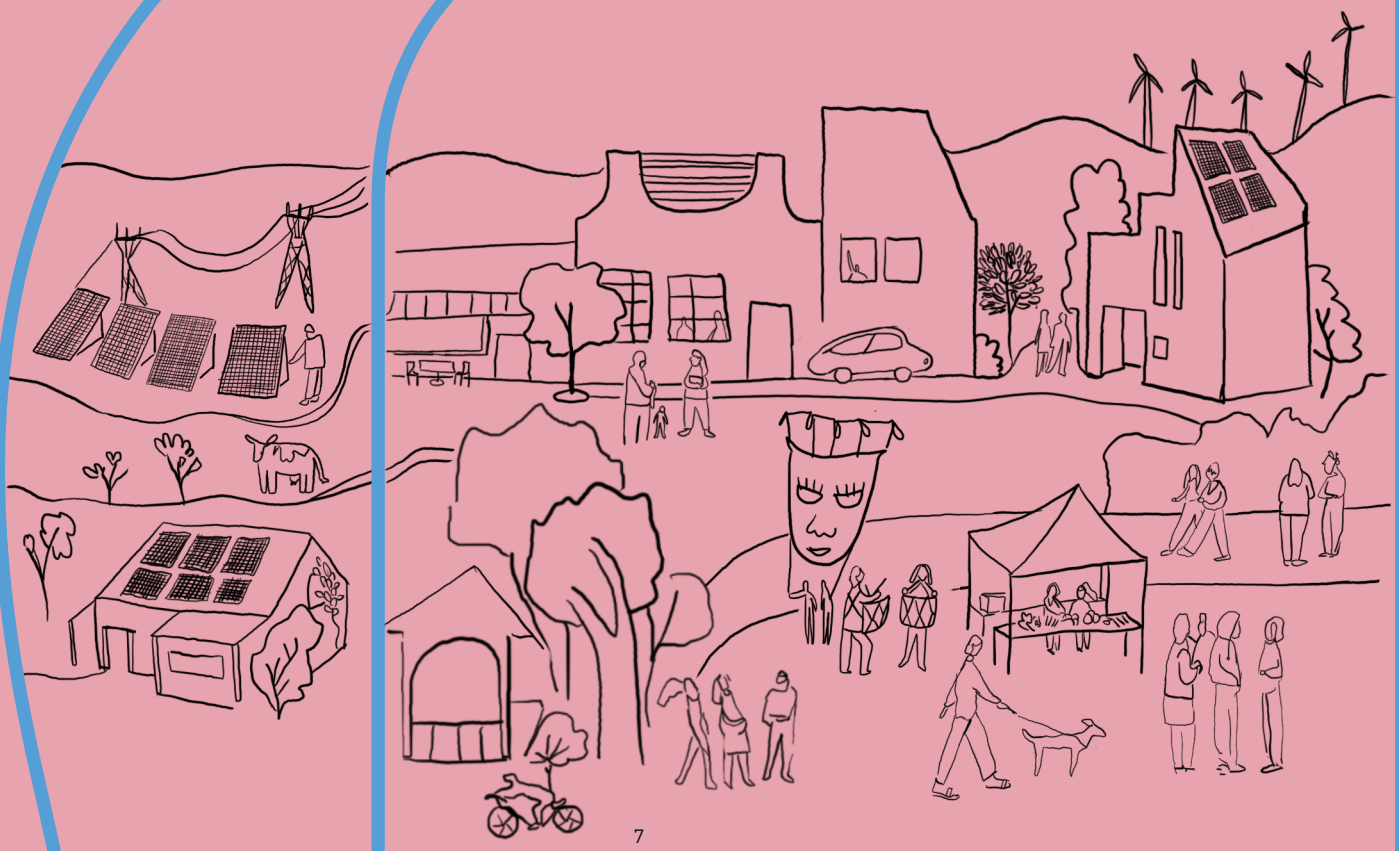
3. Glossary

Net zero emissions	Net zero refers to a state in which greenhouse gas emissions, such as carbon, are; balanced by reduction or removal.
Zero emissions including absolute or real zero	Zero emissions, or absolute zero or real zero is achieved without the use of offsetting.
Carbon neutrality	Carbon neutrality is when emissions are balanced with those that are removed from the atmosphere. It is essentially the same as net zero, but in common usage, it tends to refer more to a current rather than a future state.
Carbon negative emissions Carbon positive Climate positive	Carbon negative emissions occur when more carbon is removed from the atmosphere than is emitted. The term carbon negative is often used interchangeably with carbon positive or climate positive.
Carbon offset	A carbon offset is a unit generated by a project that either stores or prevents the release of greenhouse gas into the atmosphere.
100% renewable electricity	100% renewable electricity refers to electricity generated entirely from renewable sources, such as solar and wind. It is generally certified GreenPower.
Circular economy	The circular economy is a model of production and consumption that promotes sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products for as long as possible. This approach extends the life cycle of products.

Community-Led Development	Community-Led Development (CLD), is a methodology that has 11 key attributes: • participation and inclusion voice • community assets • capacity development • sustainability • transformative capacity • collective planning and action • accountability • community leadership • adaptability • collaboration
Mitigation	Mitigating climate change requires reducing the emissions of heat-trapping greenhouse gases into the atmosphere, primarily from their main sources.
Adaptation	Adaptation involves changes in ecological, social, or economic systems in response to actual or anticipated climatic factors and their impacts.

A full glossary of broad climate change terms is available at: https://www.climatechangeauthority.gov.au/cca-glossary

Introduction



4. Introduction

Finding hope in the noise

This Handbook intends to make climate change a less wicked problem by building knowledge and capacity, determining where there are solutions, and sharing how to take action. Hopefully, it can be a digestible tool for a wide range of people, from early adopters to those newly considering how to take action best. This Handbook is also presented at a moment in time, but we don't yet have all the solutions, so numerous learning and innovations will come in the future.

Community-led transitions are about community members coming together collaboratively to identify goals and implement plans to tackle climate change in a way that builds on community strengths. It derives from the concept of Community-Led Development[2] (CLD), which identifies 11 key attributes:

- participation & inclusion
- voice
- community assets
- capacity development
- sustainability
- transformative capacity
- collective planning & action
- accountability
- community leadership
- adaptability
- collaboration

It is important to note upfront that these 'traits' are not easily quantifiable and are strongly interwoven into society. The terminology of 'transition' in the context of this Handbook means a timely and just transition to a safe climate future. It must be acknowledged within that the dominant role of energy (and therefore the necessary focus) in the overall transition. It is also important to note that 'community-led' in today's context very much means those that are the most active, passionate etc. There are in all cases many voices and sides of the political spectrum that aren't engaged and whom it is very complex to engage in transition work. Community-led may not mean inclusive in all cases.

This Handbook has in some areas, a more regional focus for communities outside of major cities, this is particularly noticeable with the absence

of large focus on industrial emitters and public transportation sector. However, communities within larger cities should still be able to find useful content within the Handbook. This Handbook also aims to amplify existing excellent content from community organisations such as Renew, Rewiring Australia, First Nations Clean Energy Network, Community Power Agency and Hepburn Energy.

Community-led transition also now needs to mean community-led recovery as we are more exposed to climate change events. The information and working examples are plentiful, but perhaps it is challenging to understand what it all means—these new risks, terms, and language—and how we can do anything about it.

With a community-led approach, we can speed up the transition and touch on more social justice benefits and outcomes than passively allowing the transition to pass us by or happen to us. A Just Transition typically refers to a focus on communities transitioning from fossil fuel industries and this withdrawal of economic activity. But we need to be much broader than that and recognise the nuance; we need to put people and the environment at the centre of our transition deployment. This includes workers, communities, indigenous peoples, vulnerable populations and those impacted by climate hazards and events.

As Saul Griddith stated in The Big Switch:

> *"People need a vision for climate success that they can gravitate towards, not a fear they recoil from. It needs to be a vision that engages citizens, and with sufficient detail to calm their anxieties. Australia is poised to be the country that can most easily make this transition and show the world a positive success story. That is the gift that we could give to the world: leadership and vision, and an example of success that other nations and their economies can follow."*[3]

This is for all the people asking what can we do next? It is intended as a way to decipher what these modes of climate action really are and how they can be done. We are living today from the vantage point of a somewhat unimaginable future. As Rebecca Solnit states:

> *"These futures that become the present were made by our actions and inactions. At best by notable individuals, but also by communities, movements, newly framed constitutions, by public engagement, by people who worked toward what seemed at first impossible, then unlikely and then one day became the order of things."*[4]

Where are we at?

The United Nations Intergovernmental Panel on Climate Change (IPCC) warns that drastic efforts are needed to halve global emissions in the coming decade and to achieve zero net emissions by 2050 if we are to limit global warming to a 'safe' 1.5oC. Even under this best-case scenario, significant adaptation to the changing climate will be needed. Regardless, the only way to improve our trajectory is if all citizens, businesses and governments contribute and play an active role. This is a ticking clock scenario, we will transform our society, either by being forced to by the changed climate or by being active in that choice.

In 2024, The IPCC chair stated

> *"2023 was the hottest year on record, with particularly startling extremes in ocean temperatures. Extreme weather events and wildfires ceased to be just part of future projections. They were evident on our television screens and, for far too many of us, were a present reality. And sea levels continue to rise relentlessly with consequences for small island states and low-lying coastal communities. And all this, as we have demonstrated, is down to more than a century of human activities, including burning fossil fuels, and unequal and unsustainable patterns of energy and land use. Our latest report showed that with every increment of warming the world will become more and more dangerous. Beyond 1.5°C warming, we will see new risks will emerge associated with sea level rise, permafrost degradation, biodiversity loss, water scarcity, more extreme weather, food insecurity."*[5]

The IPCC annual report draws together three arenas of climate change mitigation, climate change adaptation and sustainable development as interdependent, not independent, action areas. Speaking to this interdependence, one of the 2022 authors, Edward R. Carr states:

> *"There is substantial evidence that changing the policies and norms around who participates in climate actions enables such connections, and working of these challenges at the local level produces solutions tailored to specific opportunities and needs that can aggregate up to global impacts."*[6]

The reality is that if Australia accounted for the emissions from our coal and gas exports, our situation would look remarkably different and more acute. The role that our exports play in global warming are undeniable; 78% are for other people, but they are created here.[7]

Australia is the world's sixteenth biggest emitter of greenhouse gases; however, we do not account for the impact of our exports on our carbon budgets, so the true story of Australia's contribution to climate change is rarely acknowledged or understood. The companies in Australia that extract and sell coal, gas, and oil from our land and sea are considerable contributors to climate change. In 2018, the emissions from coal extracted by Australia's top six coal producers were greater than the country's entire projected domestic emissions for the year. The ten largest Australian 'carbon majors'[8] produced the equivalent of 669.71 Mt CO2-e in 2018, about the same as 75% of the emissions from global air traffic.[9] The responsibility for addressing these emissions does not fall on the carbon majors, as they simply export the problem.

In recent years, community-led transitions across Australia have shown that communities can play a key role in achieving climate change goals. The challenge now is to encourage local leadership and build capacity in Australian communities to reduce emissions in a timely, socially just manner. Including by taking action to stop dangerous exports as well as creating climate safe alternatives.

Local employment and environmental volunteering are crucial for grassroots action on climate change. Expanding this potential is key to scaling a community-led transition, and there are usable models and replicable practices to drive expansion and make it mainstream.

Let's be honest, this stuff is challenging, working with people in a volunteer and paid capacity to change the norms of our society can seem like it is too hard at times. Time is precious, and there is limited space in our lives. But then there are the positives as well. Some of the unique benefits of a community-led approach can be:

- ✓ engaged and connected local community
- ✓ energy literacy
- ✓ resilient and self-sufficient community assets
- ✓ social licence for the transition
- ✓ increasing global momentum for net zero
- ✓ place-based solutions
- ✓ intergenerational impacts
- ✓ reduced anxiety through knowledge that you are acting where you can
- ✓ sense of empowerment and solidarity

Reflections on community action

"When I started advocating a pilot of whole community electrification in postcode 2515, I found myself feeling very vulnerable. I've done numerous big technical trials and projects around the world before where we had to deliver things far more technically difficult than this, but this was my community. If we fail here, we fail our neighbours. The Electrify 2515 crew felt the same angst. We have to succeed here. These people know where we live!

What Electrify 2515 has proved more than anything else is that people want to do the right thing but there are so many conflicting messages out there they don't know who to trust. By stepping in and being patient and making the case and taking the guilt and the fear away, by answering all the little questions that they might have been embarrassed to ask in a larger forum, the group has gained the trust of a community and changed the conversation on climate solutions.

2515 is a well-off corner of the world; these volunteers, while not fabulously wealthy, have the time and energy to pour into unpaid work. Some might argue about the equity of having suburbs like this benefit first, but I hope this is putting privilege to work. Those with the time and resources are creating a model from which everyone can benefit, making it more likely that all communities can make this transition.

Electrify 2515 has been a thrill to be a part of. It feels like the beginning of something. It has demonstrated to me the power of local action and trust. It is a scalable way for us to tackle climate change, one community at a time."[10]

Saul Griffith

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
- ✓ Collective planning and action
- ✓ Community leadership
- ✓ Collaboration

The problems with definitions

This Handbook is for 'communities' but even the bse definition of communities either being geographical or a community of interest doesn't capture the nuance of the evolving mixture of place based, social group based, and (increasingly) oniine-based communities of interest/influence, and how those dynamic impact community approaches. More and more peoples understanding of climate and energy are influenced by online content and voices.

Let's also be upfront about imperfect language and how it can be politicised and create damaging trajectories through the process of transition.

In the context of environmental conservation and climate policies, the concept of a 'net' approach often allows for the continued loss of natural elements such as carbon and biodiversity, with the promise of compensating for these losses elsewhere and at a later time. For instance, the term 'net zero' in climate policies has led to using carbon offsetting strategies that have postponed the crucial task of reducing carbon emissions and have provided an easy way for polluters to continue emitting at current levels. More and more there is the use of real zero, however that term may also be problematic as communities may benefit from offsetting or 'insetting' projects if done well.

In agriculture, the term 'nature-positive' refers to a scenario where the natural world, including species and ecosystems, is not just being preserved but actively restored and regenerated. However, it is essential to note that certain groups, such as Indigenous peoples, peasants, local communities, women, and youth, are often excluded from offsetting mechanisms, certification schemes, and climate/conservation grants and incentives. This exclusion occurs either because their typically small organisations do not meet the established criteria for accessing funding or because their struggles for land and tenure rights, socio-ecological justice, and against extractive industries are not recognised in offsetting efforts.[11]

Regardless of the ways in which certain stakeholders will distort methodologies and definitions to their own advantage, with a community-led climate transition the impetus is on the community to be in integrity with their actions and how they develop and implement their plans, projects and programs. Therefore this debate is largely left out of this Handbook.

Resource

To understand more about what is climate change, check out the Climate Council here: https://www.climatecouncil.org.au/resources/what-is-climate-change-what-can-we-do/

The Transition & First Nations people

5. The Transition & First Nations People

First Nations peoples, particularly in remote communities, are at the frontline of climate change and energy security issues. First Nations peoples have strong local cultural knowledge around caring for and managing Country and should inform the transition. First Nations peoples may also experience cultural or spiritual loss[12] from how proposed projects may impact land and waters on Country.

Nations are rights holders over all of Australia's land and sea, but have recognised legal tenure (through Native Title or Land Rights) to over 50% of Australia's land mass, and it is estimated that in order to achieve net zero emissions by 2060, over 43% of future renewable energy infrastructure will need to be sited on recognised First Nations land.[13] When we consider the scale of transition to achieve net zero, this land known as 'The Indigenous Estate' is sought after for all types of developments relating to clean energy. This includes large-scale wind and solar farms but also mining for materials necessary for these technologies, ports to ship hydrogen out, transmission lines etc. In much the same way, carbon farming is a growth industry for the same land. More and more we also need to consider the waters - not just the lands - on which developments may take place. This is especially pertinent for offshore wind farms for example or on land projects that need port access for shipping.

The First Nations Clean Energy Network is leading with frameworks for how First Nations communities can best participate in the transition. When considering steps[14] for how to engage communities in the transition, they put forward that the issue of energy security must be front and centre. In addition, for remote communities, renewables provide a solution for reliance on diesel generators. First Nations can be owners of clean energy infrastructure, which has been deployed increasingly in Canada but is only just emerging in Australia. In addition, First Nations can and should participate in the clean energy workforce and supply chains.

Additionally, there is a strong role for First Nations for on-land waterways and water systems nation wide. Alongside cultural burning and bushfire resilence actions, which are adapation activities.

EXAMPLE

Marlinja Microgrid

Built in 2024, the Marlinja Microgrid[15] is the first grid-connected First Nations community-owned renewable energy project in Australia.

Marlinja is a remote community on the Medburra and Jingili people's traditional lands, located in the Barkly region of the Northern Territory. Like many remote communities, the 60 residents have been exposed to extreme energy insecurity and diesel reliance. This has looked like high power prices with electricity only available via prepaid cards, and system outages due to the remoteness of the grid particularly during seasonal weather events.

In 2019 the community began working with Original Power on a whole of community solution, and one that could be achieved in other remote communities. In the first stage, they connected solar to the community centre. Residents were involved throughout the process and had the opportunity to train to be involved in the installation.

In 2024, they completed the second stage by connecting a 100kW solar array and a 136kWh battery, which was funded by benefactors. The innovative element is the way that solar savings are passed directly to the meters of the residences. In this way, this community solar array operates just like solar on households that are 'behind-the-meter', but it is a collective array.

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Community assets
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
- ✓ Collective planning and action
- ✓ Community leadership

Resources

The First Nations Clean Energy Network has released several Handbooks to support First Nations, including:

- Community Energy Planning Toolkit for First Nations
- Clean Energy Negotiation Guide for First Nations
- Best Practice Principles for First Nations

They are available via this link:

https://www.firstnationscleanenergy.org.au/network_Handbooks

Additionally the Clean Energy Council Leading Principles Guide is available via this link::

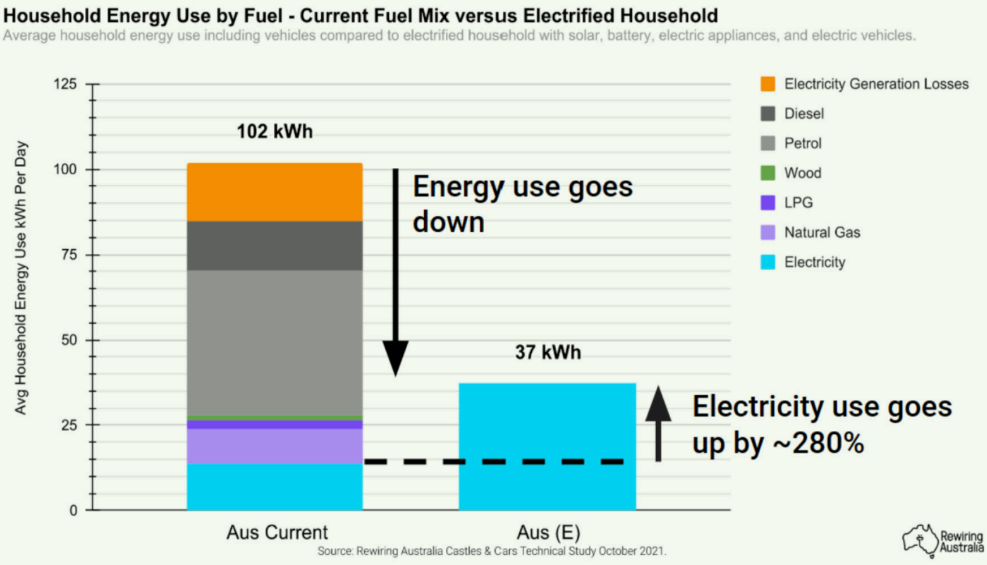
https://stg-live.cleanenergycouncil.org.au/cec/media/background/resources/leading-practice-principles-first-nations-and-renewable-energy-projects.pdf

In the home

6. In the home

> *"If you put on a backpack full of all the fuels you needed to get through the day as an average Australian, it would weigh about 20 kilograms. Every day we burn those 20 kilograms of fossil fuels, which turn into 60 kilograms of CO2."*[16]

Installing solar and electrifying homes and becoming more efficient with our electricity use is ramping up all around the country, with policy setting and subsidies working to make it cheaper and easier to switch fuels. The following graph shows the trajectory of switching - what it means is less energy overall but more electricity needed in the mix.



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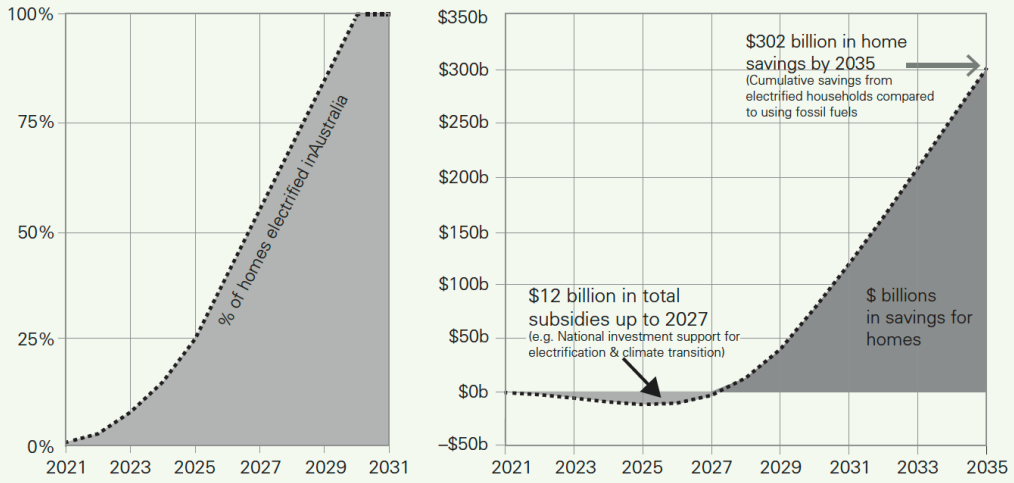
Using less should always be the first principle of reducing your emissions and home, and when you consider electrifying, it should generally be when your appliances are at their end of life or break. Unless there is a cost-saving driver - such as switching your hot water system. Electrification can keep money at the household level; done right it could be the largest wealth transfer we have seen to date - money saved from bills and instead remaining in homes and local economies.

The nationwide economic impact of total household electrification can be seen in the following graphic. It shows that with the right early intervention policy settings and a ramp up to 100% electrified homes by 2030, the profound impact for households can be seen.



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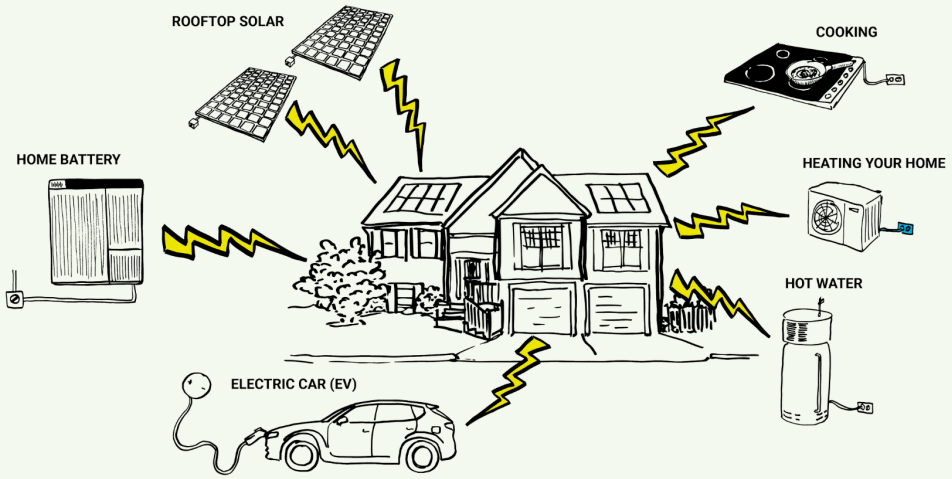
When Australian homes switch to all electric, they will need about 37 kWh of electricity per day, up from the current 14 kWh. Some vehicle charging will be done away from home, but overall, there will be a doubling of electricity delivered over local wires.[19] This means an increased scale of solar PV on rooftops will need to be delivered but also we'll need Home Energy Management Systems (HEMS) to distribute loads, encourage daytime vehicle charging, and utilise different types of batteries for energy storage, including thermal storage in water heaters and house temperature controls.[20]

This section of the Handbook draws significantly from the content delivered by Renew's Getting off Gas Toolkit and the work of Rewiring Australia and Saul Griffith; it is a compilation of existing excellent and current resources. It must be noted however that energy cost savings change over time and are subject to multiple factors such as grid system changes, market forces, production and supply.

Six ways to electrify your home



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Electrification and energy transition at the household level

Australia currently relies on natural gas for about one-quarter of its primary energy consumption and homes use 15% of our national consumption. On average, an Australian household uses 32 gigajoules of natural gas per year, but this varies widely across different states. The demand for gas is highest during winter, especially in the southern regions, from heating needs.[22] Therefore action in the home to reduce gas is a meaningful and valuable action.

Gas usage in Australia varies by location. Over 18 million residential appliances are powered by gas for cooking, heating, and hot water. Approximately 65% of Australian households use gas, with 15% using bottled LPG and the rest having a direct connection to the natural gas network. Tasmania and Queensland have lower gas network connections (5% and 10% respectively) compared to Victoria, the Australian Capital Territory, and Western Australia (76%, 73%, and 68% respectively).[23]

Gas appliances impact health

Gas stoves and heaters can pollute indoor air up to five times more than outdoor air, leading to an increase in respiratory and cardiovascular diseases such as bronchitis and asthma, with children particularly at risk.[24]

There are economic benefits to getting off gas

The most effective way to reduce gas usage in households is through replacing gas appliances with electric ones. Electric appliances use less energy than gas appliances, making them cheaper to run. Electrification is currently the only technically and commercially viable solution for creating fossil-free buildings.

A typical home in Australia spends around $2,000 on energy each year[25] and both electricity and gas tariffs are increasing, but all-electric homes with solar power have the lowest bills of all. All-electric homes with solar power can reduce energy bills by about 75%, but the gap between all-electric and gas is going to grow even more.[26]

Gas has a use-by date and new homes will no longer have gas

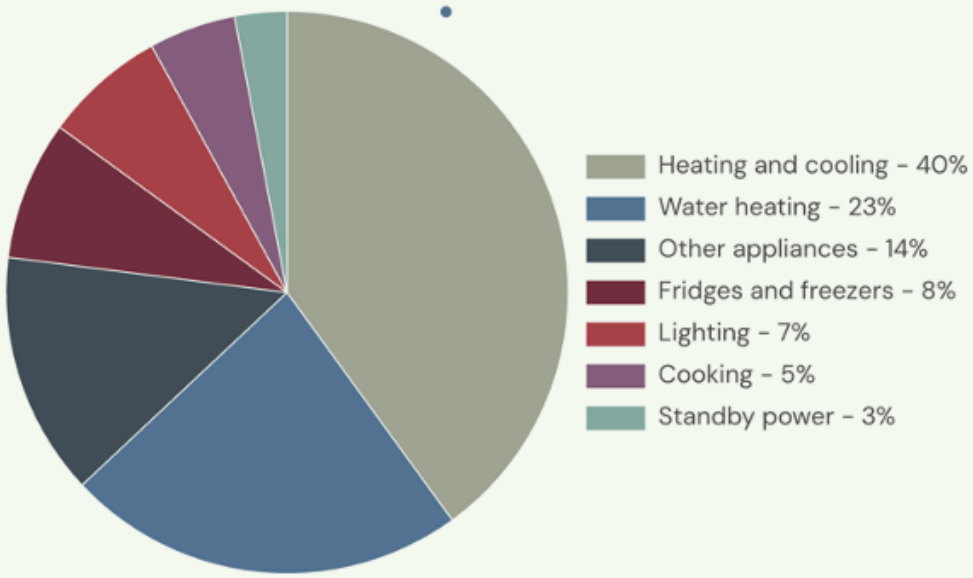
In most states, all new residential buildings must meet energy efficiency requirements equivalent to a 7-Star NatHERS rating. This involves using efficient appliances and/or solar energy. A National Framework for Disclosure of Residential Energy Efficiency Information is under development.[27]

Residential gas reduction can happen now

Removing residential gas is the 'climate work' of the 2020s, it is the best emission reduction activity you can do in your home. Unlike other industrial processes, residential gas can be replaced immediately and is a key opportunity to reduce emissions before 2030.[28]

> *"With the increasing use of renewable energy, electrification plays a crucial role in reducing emissions and providing benefits to households. Modern electric appliances are significantly more efficient compared to equivalent gas appliances. For instance, induction cooktops are over two times more efficient than gas cooktops, reverse-cycle air-conditioners are over three times more efficient than gas heaters, and heat-pump water heaters are generally four to five times as efficient as gas water heaters."*[29]

The following graphic from Renew shows the breakdown of energy use and therefore what the action areas should be to have the biggest gains.



The Renew 'Getting Off Gas cheat sheet'[30] shares the following basic steps to taking action in your own home.

1. Plan: Identify appliances needing replacement and available rebates. Seek advice if needed, especially for renters.
2. Heating: Switch from gas to efficient all-electric options like reverse cycle air conditioning.
3. Hot water: replace gas with efficient all-electric alternatives like heat pump systems.
4. Cooking: Swap gas stoves for efficient all-electric options like induction stoves.
5. Weatherproofing: Improve insulation, draught sealing, and energy efficiency to reduce bills and enhance comfort.
6. Renewables: Power your home with rooftop solar, battery storage, or green power.
7. Disconnect: Eliminate daily gas connection fees by closing your gas account.

Disconnecting from gas

There are two pathways to say goodbye to gas. The first is disconnection which is stopping the service through either capping the pipe or removing the meter (but leaving the pipe from the mains to the house intact). This can be more easily reversed in the future. The second is abolishment which means removing the meter and safely capping the supply pipe at the street. Both have different costs and logistics associated.

Many local communities have also developed their own resources to support homes, connect them to local suppliers and subsidies, and inform them of what steps to take. One example is Electrify Canberra's All Electric Home planner and checklist,[31] which recommends basic, intermediate, and complete electric home actions. Another is maketheswitch[32] which has a calculator to assess appliances.

When we think about electrification, the following appliances are the ones to consider. Firstly the following can be transitioned from gas:

- Cooking
- Cooling and heating
- Water heating

Then the following can be made more energy efficient by purchasing more efficient versions of these technologies:

- Lighting
- Dishwasher
- Dryer
- Fridge/freezer
- Television
- Computer
- Pool Pump

The following can be transitioned from diesel:

- Water pumps (agricultural)
- Tools and machinery

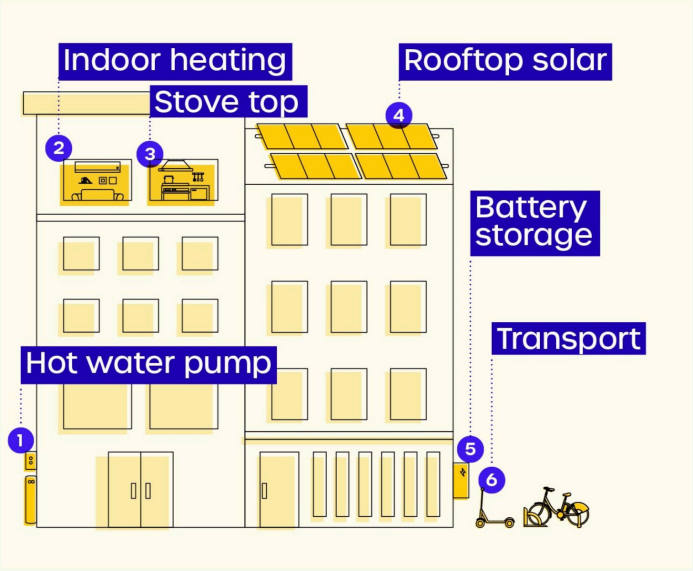
Remember to recycle any older appliances that you are replacing.

Renters, apartments, strata, and body corporates all have limitations regarding what can be done to electrify. For renters, these are some of the actions[33] you can take:

- Requesting electric and efficient replacements when appliances break
- Seeing if your state offers any subsidies for rental properties to get solar or become more energy efficient
- Using portable appliances such as induction cooktops
- Increase thermal efficiency by sealing gaps, using quality curtains and adding shade outside

For apartments and strata units these are some of the limitations[34] to be aware of:

- High-density apartments usually have a central hot water system.
- Visable electrification impacts may need body corporate approval.
- Adding electric car charging infrastructure to existing buildings may be challenging.
- Limited roof space can make solar installation difficult, but new solutions are emerging such as Solar Banks/Gardens (see In the Community section).
- Townhouse owners may install solar panels individually with o*r* without body corporate consent.
- Full abolishment of gas connections requires building-wide action and consent, but closing a gas account is possible.



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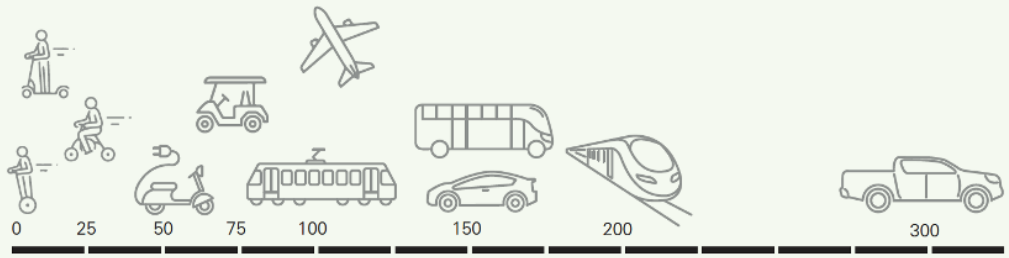
Reducing your transport emissions

Transportation is the second big ticket item all households should consider and fossil fueled vehicles account for 18% of our national carbon emissions.[36] Walking, public transport, cycling and car sharing are all pathways to reducing your carbon footprint. The following graphic represents the energy consumption used per kilometre of electrified transport type.



Watt-hours of energy used per passenger km of various modes of (electrified) transport

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So then why electric vehicles (EV)?

The pros of using an EV are:

- Total cost of ownership (TCO) is now close to parity with internal combustion engine (ICE) cars
- Lower cost to charge compared to fueling ICE cars
- Less moving parts means less maintenance and less frequent and costly servicing

- Future potential of vehicle-to-grid charging - vehicles can play a role in blackouts and energy trading
- Overnight charging at home is convenient
- They are quiet
- There are more second-hand vehicles entering the market as well as leasing options, car sharing rental services and peer-to-peer sharing

The cons of using an EV are:

- The affordability of new EVs is dropping quickly as new market entrants start supplying Australia, it is hard to know when is the right time
- Poor charging infrastructure particularly in regional areas can create range anxiety
- What you are charging off matters - it needs to be renewable not coal generation
- EV batteries have a lifespan, temperature and age impact on performance
- EV ranges are impacted by topography - it isn't straight forward as kilometres! This works in your favour in a flat urban setting, and against you in the mountains (going up the mountain, but coming down you recoup your energy).
- EVs available in Australia are still not well suited to rough dirt roads and 4WD needs

Resilient homes

Energy efficiency is crucial for creating more resilient homes in a changing world. This includes maintaining comfortable temperatures during extreme heat and being able to withstand storms and floods. Using on-site renewables is also important for ensuring energy security. It's become essential in regional areas to consider bushfire resilience when building new homes, retrofitting existing ones, or rebuilding after fire damage.

The 2019-2020 Australian bushfires destroyed 5,900 buildings and homes, affecting 2.9 million individuals whose homes were damaged, threatened or temporarily displaced. The Green Rebuild Toolkit[38] by Renew provides resources to assist these individuals in rebuilding their homes and increasing their resilience to future climate disasters. It is an excellent resource that is also relevant for new construction, retrofitting, and rebuilding, whether or not you have been fire-affected.

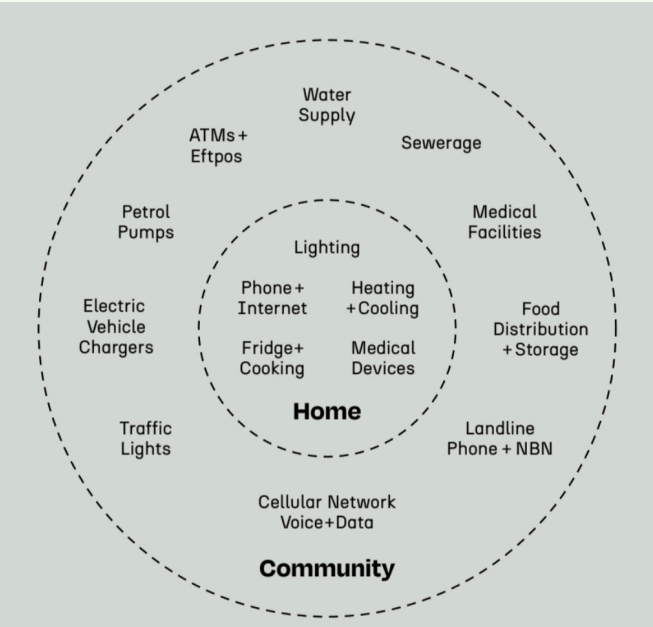
In 2022, floods in southeastern Queensland and New South Wales resulted in 23 deaths. The State Emergency Service received 31,400 calls for help, and over 3,600 homes in the Northern Rivers area were deemed unliveable.[39]

In times of extreme weather events, the power may go out, and reception may be lost for mobile phones and/or the internet. Some preparation can mean a less stressful impact when such events occur. The Energy Ready Toolkit (linked below) outlines reasons to be ready for this:

- Climate change is making extreme weather events more likely and more dangerous.
- Being prepared helps to keep everyone in your community safer during extreme weather.
- Energy is more than a lifeline in a disaster: being energy resilient provides everyday benefits too.
- Resilient communities bounce back faster and stronger in the aftermath of a disaster.
- Working together strengthens community ties, not just in emergencies but all the time.

Resilience is the ability to resist, adapt to, and recover from shocks or stresses. Signs of a resilient community include understanding risks, building on strengths, working together, valuing inclusion, self-organising, adapting, having good leadership, and effective communication.

The following graphic outlines what needs to be considered in regard to essential services in times of an emergency.



[40]

Resources

Rebates available

Rewiring Australia

My Efficient Electric Home Handbook, How to slash your energy bills, protect your health & save the planet by Tim Forcey (2024)

My Efficient Electric Home (MEEH) Facebook Page

The Big Switch, Australia's all electric future, by Saul Griffith (2022)

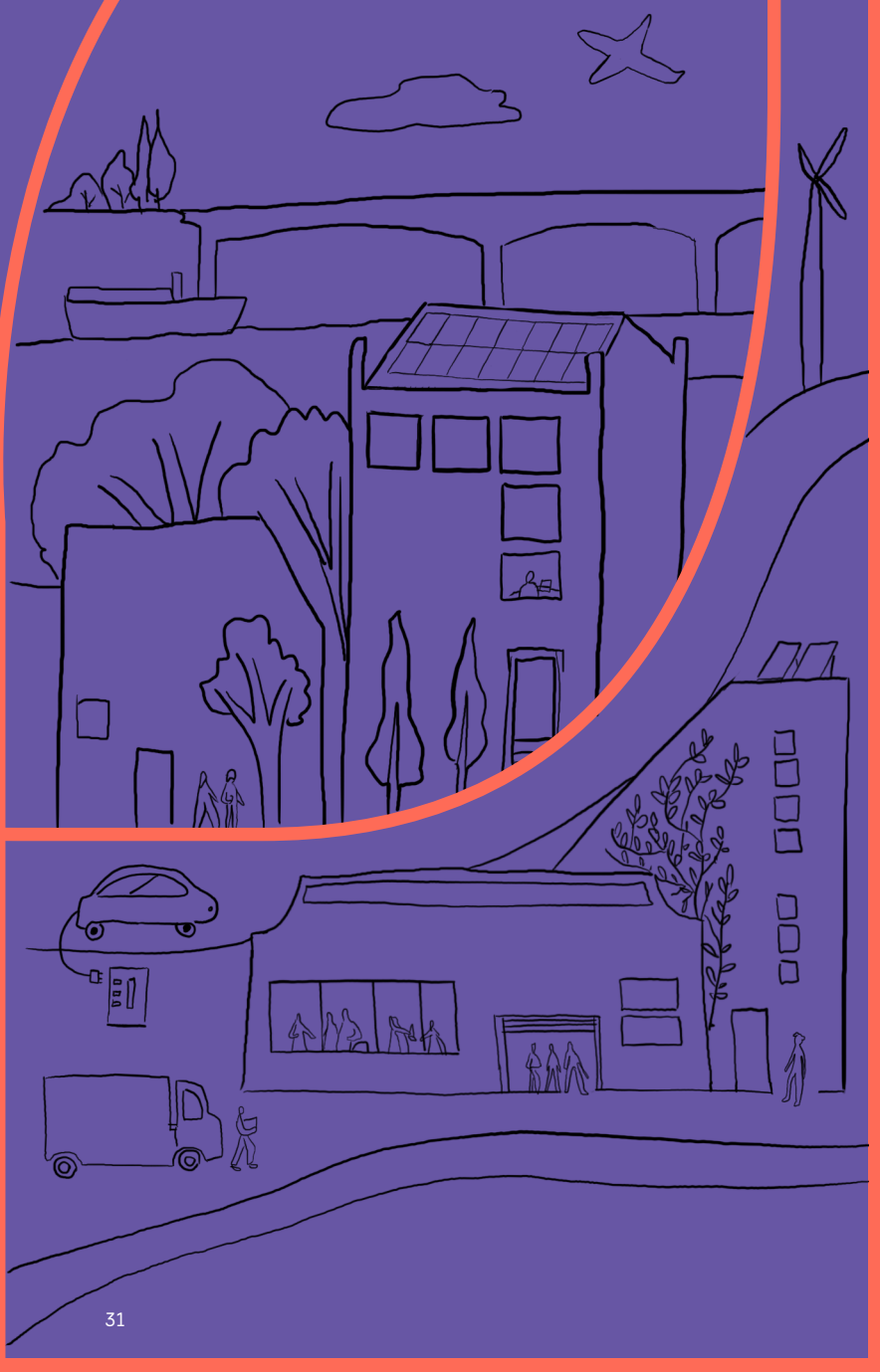
Renew's Green Rebuild Toolkit

Energy Ready Toolkit by University of Technology Sydney, Community Power Agency, Parallel Lines

Design Guidance for Flood Resilient Homes by Australian and Queensland Governments

Maketheswitch

In the workplace



7. In the workplace

There are many large systems and industries that need to decarbonise and those each need bespoke strategies - such as: the emergence of 'green steel'; the role of hydrogen in manufacturing; renewables and electric machinery at mining sites; and, corporate and commercial supply chain transportation such as shipping. However for simplicity, this Handbook is more focused on general principles and more relevant for broad and common industries such as hospitality, retailing, offices, warehousing etc. Regardless of scale, number of employees, if you have a physical or virtual office, and if you don't want to commit to monitoring and reducing your carbon footprint, there is a range of basic principles you can follow that result in common actions.

Using less:

- Energy efficiency in the office
- Water efficiency in the office

Thinking circular:

- Paperless or from a sustainable (ideally recycled) source
- Compost and recycle waste
- Reduce single-use plastics

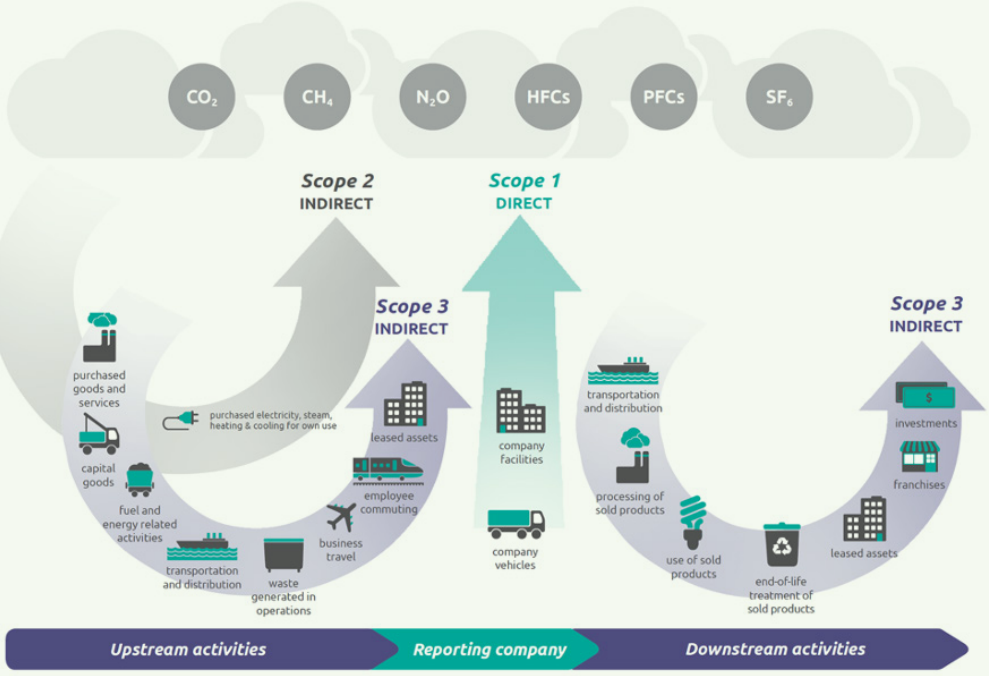
Greening the office:

- Green energy - PPAs
- Sustainable procurement/suppliers
- Travel - preferencing and incentivising use of public transport, bikes, e-bikes, video conferencing, offsetting flights, EV fleet cars
- Certification such as B Corp, or to the international standard on Environmental Management (ISO 14001)
- Ethical banking
- Ethical and low food miles catering
- Volunteering days with local environmental organisations

ESG how does it work?

ESG (Environmental, Social and Governance) reporting involves disclosing performance related to material ESG risks and opportunities, both qualitatively and quantitatively, to explain how these crucial topics influence a company's strategy and overall performance. A diverse range of business scales and types undertake ESG reporting on an annual basis.

A key part of the 'E' (environmental) is undertaking carbon footprint analysis and setting targets. For businesses, the method for how emissions are grouped is Scope 1 (directly produced by your organisation), Scope 2 (purchased energy from an offsite power plant), and Scope 3 (indirect emissions - basically the value chain impacts). The following graphic shares the separation. Most companies account for Scope 1 and 2 in their assessments and strategies.



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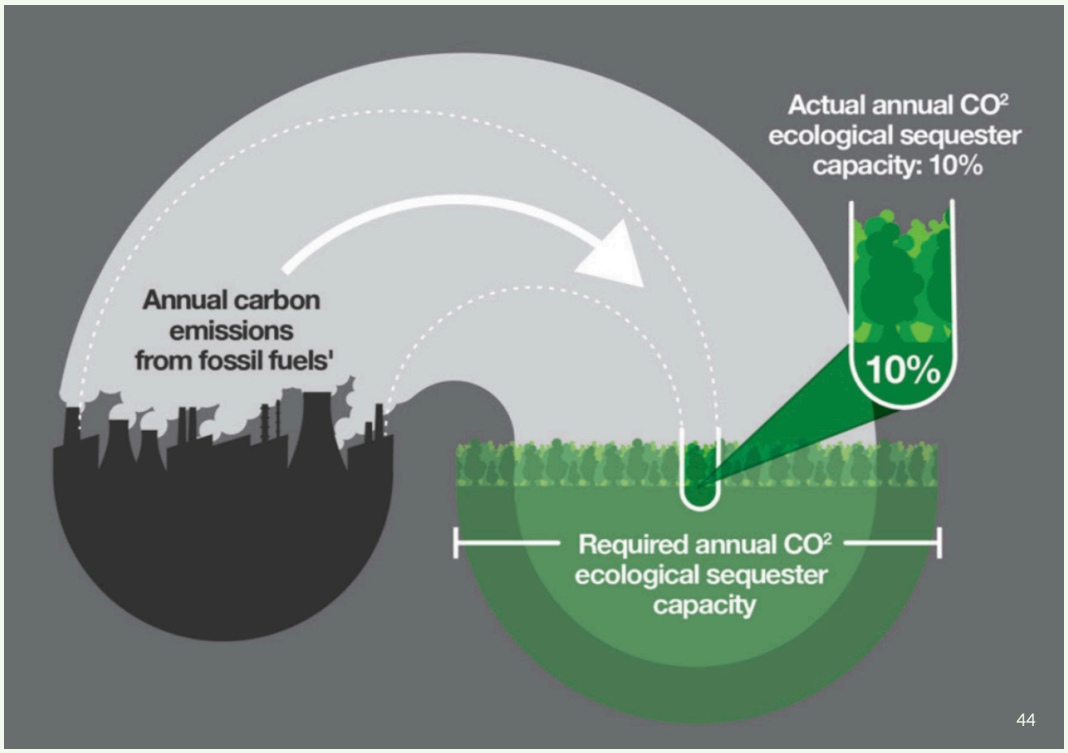
Australia is moving towards making climate reporting mandatory under the Australian Sustainability Disclosure Standards (ASDS).[42] Large organisations will soon need to prepare a climate statement that includes disclosures about:

1. Climate-related financial risks and opportunities
2. Climate metrics and targets, including greenhouse gas emissions
3. Governance and risk management processes.

Corporate greenwashing is of concern across large companies, as many who have a net-zero target do not have accompanying strategies to switch to renewable energy. As at 2022, 49% of ASX200 companies had net zero emissions targets,[43] but most of them propose to rely on carbon offsets. The underpinning issue with this is that the planet does not have

the ecological capacity to offset all global emissions through tree planting and land restoration - there simply isn't the land available and there are challenges with monitoring and ensuring the ongoing success of these initiatives. The earth can really only host around 10% of the necessary carbon offsets as is shown in the graphic below.



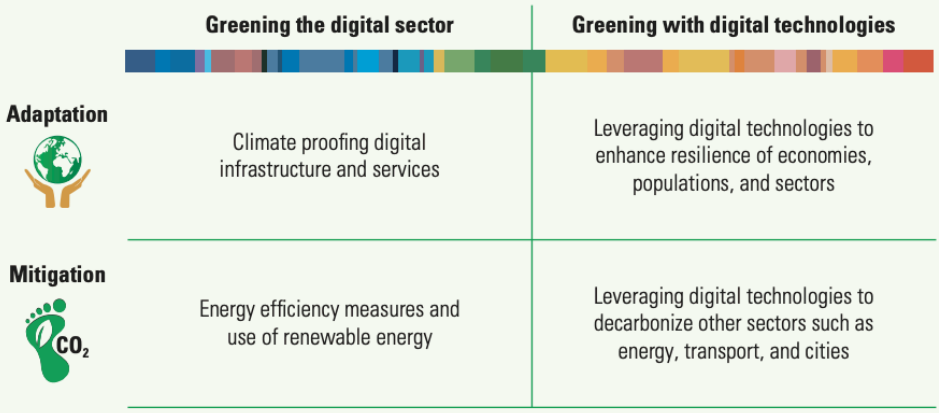
As Greenpeace outlines, "a key test of the credibility of any company's net zero target must be whether it includes an accompanying commitment to 100% renewable electricity.[45] Organisations and businesses of all scales that want to measure their carbon footprint and set targets to net zero, should consider the following:

- Include an overall Science Based Target
- Include a short-term 100% renewable energy target - that can be achieved by onsite renewables (solar on the roof), and/or offsite retail electricity contracts.
- Include staging in the assessment of Scope 3 over time if not immediately
- Only consider high-quality local offsets or 'insetting'

Digital infrastructure and its role and how it interacts with climate change is becoming increasingly in focus as society's data use increases via social media, AI and cryptocurrency, for example. There are direct and indirect ways that it is being considered:

- The making, utilisation and disposal of digital technology has a carbon footprint
- As we become increasingly dependent on digital technology it is also at risk of climate change events
- Through human resourcing efficiencies, they may increase productivity resulting in higher consumption and an increase in emissions
- They can play a role in supporting mitigation and adaptation to climate change, via new ways of mobilising social actions or managing agricultural innovations for example

The following graphic shows the key elements under consideration for this sector.



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Resources

Major initiatives providing technical guidance

RE100: has a focus on supporting companies to commit to 100% renewable electricity. https://www.there100.org/

The Science Based Targets Initiative (SBTI): helps companies and financial institutions worldwide by providing standards, tools, and guidance to set greenhouse gas emissions reduction targets in line with keeping global heating below catastrophic levels. https://sciencebasedtargets.org/

The Climate Active Carbon Neutral Standard (previously the National Carbon Offset Standard): a voluntary standard for managing greenhouse gas emissions, achieving carbon neutrality, and seeking Climate Active certification, providing guidance for measuring, reducing, offsetting, validating, and reporting emissions from an organisation's operations. https://www.climateactive.org.au/

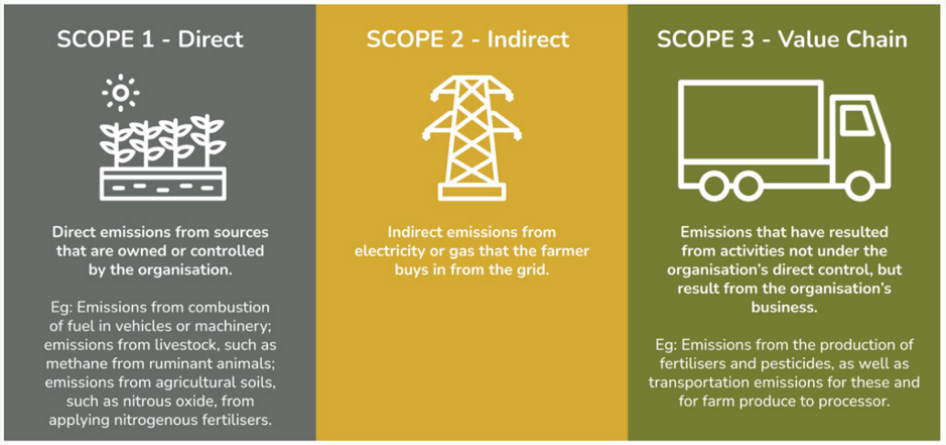
On the Farm

Climate change presents significant challenges for Australian agriculture, impacting farmers through changing weather conditions and extreme events. To stay competitive, increased adaptation and productivity are needed alongside diversifying income. Agriculture is an industry undergoing constant change and farmers can quickly adapt based on market or environmental conditions. Climate change presents an opportunity to improve environmental outcomes, benefiting other sectors. It's important to address environmental challenges and potential solutions holistically. Exciting action is happening across the nation with regenerative agriculture approaches and building soil carbon. From a community perspective and relationships with farmers there is strong value in local food movements (e.g. community supported agriculture) and the impact on food miles and Scope 3 emissions which are explained below.

The types of on farm emissions can be categorised as the following:[47]

1. Fossil fuels
2. Livestock
3. Land use
4. Soil carbon
5. Agricultural inputs
6. Non-agricultural emissions

The following graphic represents what is generally within each scope.



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As with many of the sectors, the road to transition is emergent and changing constantly. Due to this, there are multiple definitions and debate around some of the key terms being used in the agricultural sector. This includes: carbon farming; insetting versus offsetting; natural capital; climate-smart agriculture; nature repair market; regenerative agriculture; agroecology; and, nature positive.

When developing an on-farm plan for emission reduction the following overall process can be followed:[49]

1. Set goals, such as year-round groundcover and increased soil health.
2. Gather details about your current farm operation.
3. Estimate your current emissions footprint.
4. Consult with other farmers, government, and industry bodies.
5. Implement a project and keep records of results.
6. Evaluate, modify, and expand your actions.
7. Seek and offer guidance from others.

Resources

My Climate View by CSIRO and the Bureau of Meteorology - to assist Australian farmers and producers to better understand the risks and opportunities facing them over the next 50 years.

The Climate Smart Farming Toolkit by the Farmers for Climate Action is a set of tools and resources to help make sure businesses and industries can thrive in the face of continued climate challenges.:

Australian Government climate change impacts on Australian farms

Place-based Hepburn Z-NET Agricultural Guide

The Future Drought Fund (FDF)

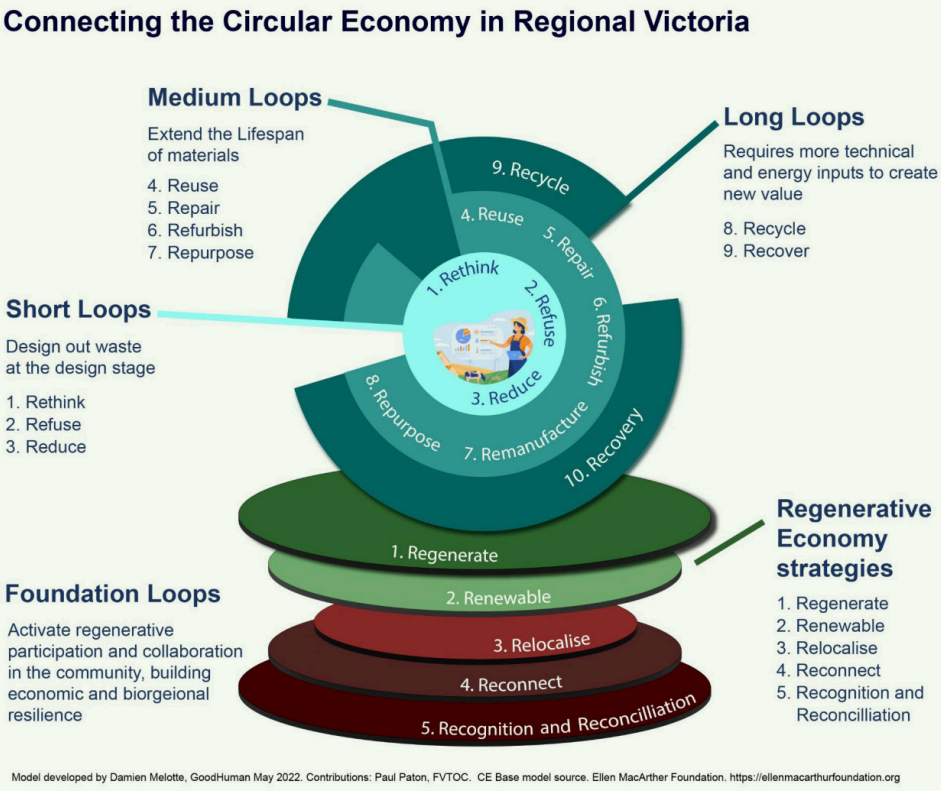
The intersection of renewables and agriculture

Intersection of circular economy

Circular economy has become a high-use term over the past five years. The principles have been around for decades but circular economy has been taken as the terminology of use by governments and institutions. All levels of government are now focusing on it and particularly for the workplace. The overarching idea is that we have finite resources and cannot continue to exist in a traditional linear economy that follows a take-make-waste model. Instead, the circular economy aims to redefine growth and gradually decouple economic activity from the consumption of finite resources while designing waste out of the system.

This model is based on three principles: eliminating waste and pollution; keeping products and materials in use; and, regenerating natural systems. It's really about the potential to build a more economically strong, equitable, thriving and resilient community, through shifting the use of commodities and seeing everything as a valuable resource. From this, more money can stay local as local supply chains are prioritised, more small to medium enterprises can start up to service the opportunities, materials are recycled and reused where possible, local renewable energy supplies businesses and homes, etc.

To understand the opportunities and where they may be able to be harnessed, often a community group or local government could start with mapping the resources (including waste streams) in a local community. From there, using systems thinking approaches (a method to understand the world's complexity through wholes and relationships instead of dividing it into parts), different project and program ideas could be considered. The graphic below highlights conceptually how you might look at circular economy opportunities and how they are interrelated.



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EXAMPLE:

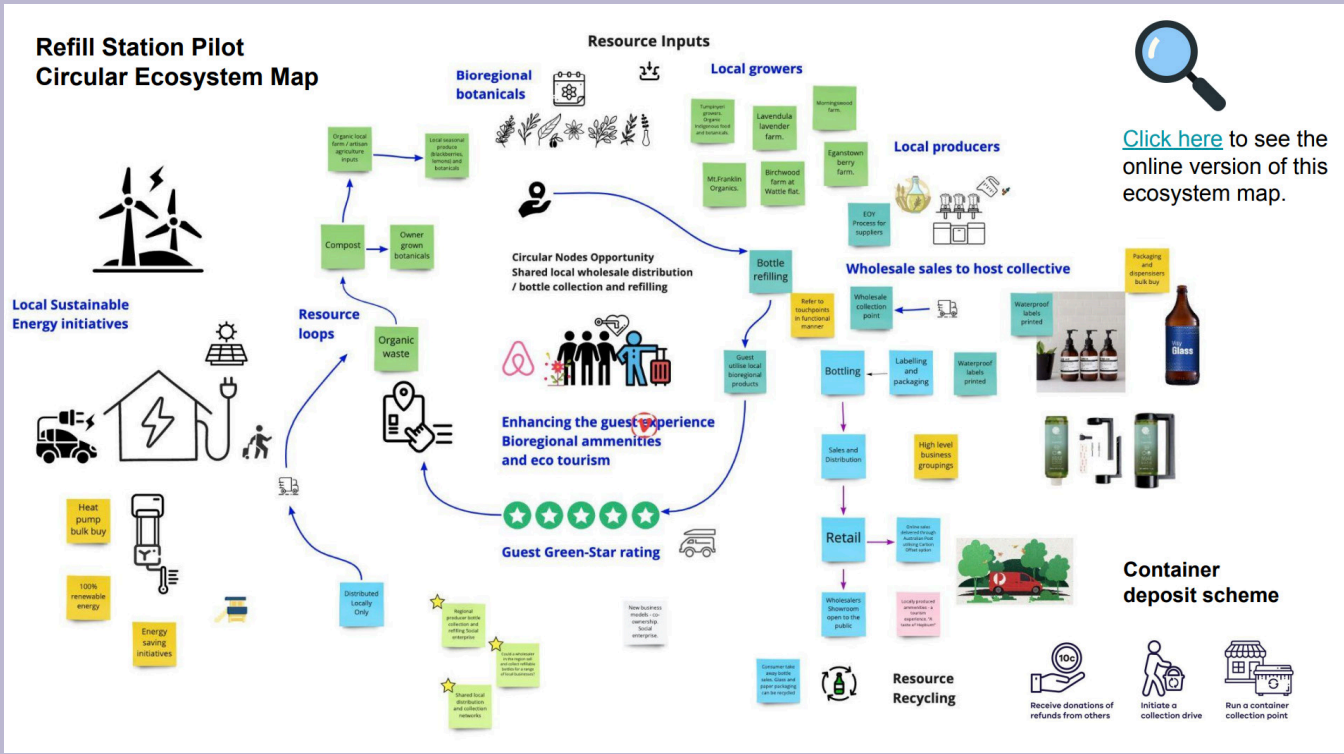
Hepburn Shire

An exploration of circular economy opportunities in a high tourism area of the Hepburn Shire[51] found that the idea of a local refill station for cleaning and sanitation products ideally run as a social enterprise, would solve issues for local AirBnB and other short-term accommodation providers. In addition, it could offer refills for business and the wider community. Refillable containers and the provision of physical stations that enable refilling are of increasing importance and interest in the state of Victoria. The planned phasing out of single-use plastics is a major driving factor.

A draft service flow has been mapped in the Ecosystem Map below. The concept is that a local wholefoods supplier could be a base for the refill station and wholesale supplier of shampoo, conditioners, shower gels, hand soaps, skin products, cleaning products, and other amenity refillables. Local AirBnB owners or their representatives could visit the refill station and pay via weight for refilling their containers. This could be at their desired frequency, once per week/ once per month etc. Local producers could make some of the products and include botanicals and ingredients, that could enhance the guest experience.

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Collective planning and action
- ✓ Community leadership



In the community

8. In the community

In the real-world scenario where we all need to take action towards reducing our emissions, there are many approaches to first framing up what action looks like and then the methodologies that result in understanding the available data and translating it for community action on the ground. The reality is that there aren't many lived experiences of the current transition - it is a small sample size that we can draw from both nationally but also globally for communities. This Handbook is focused on the premise that community-led/ community group involvement and leadership is critical to garner higher levels of action. The next two sections outline some examples of methodologies and methods in more detail.

Whilst not discounting the relevance of all non-energy emissions (land use, waste, agriculture, transport), we cannot avoid the fact that the primary action right now is electrification and this is spelled out in more detail in the sections to come. This is due to the fact that the technological solutions are available and affordable now, and that it is a pathway for everyone in community to participate in, and we need them to. Electrification is really a retrofit project for all the buildings and infrastructure in our communities. This slog of making sufficient our highly inefficient building stock will be made easier by subsidies and minimum standards for rental properties - which are emergent at a state level,[52] and 7-star home standards for new builds which are occurring at a national level.[53]

Strategies to take action can be either led by community groups generally in consultation with local governments, a partnership between the local governments and key community and industry partners or led by the local government in consultation with the community. In general, regional LGAs are often more resource constrained and tend to be led by community or in partnership, whereas inner city LGAs often are council-led on climate action.

> *"In 2016 I completed a Churchill Fellowship looking at how to transition regional Australian towns to 100% renewable energy by learning from European examples. What one of the key learnings from European communities and their journey to 100% renewable was that either community groups or councils can lead, but the most effective*

> *outcomes occur when it is a mutual partnership.[54] When a community leads or it is a collaborative partnership, it is clear that there is genuine buy in and ownership locally of the actions."*
>
> Taryn Lane

Firstly it is important to recognise that any community is part of a larger regional, state, national and global context. Therefore it is equally important to touch on advocacy, large-scale renewables and climate change adaptation as well.

> *"I believe Australia can be the first protopia for a zero-emission economy, a North Star to guide the rest of the planet. We have the space, the climate and the resource advantages that make it easier for us. But first, each of our communities needs to be and can be its own protopia of implementation."[55]*
>
> Saul Griffith

Advocacy

Activism at all levels, is a driving force for change. In regard to how you can take action locally, as outlined in this Handbook, there are many local groups working on climate action, community energy and related activities locally. There is also a complementary overlap with community-led climate transitions and communities striving for greater political representation. There is a long history in Australia of communities advocating to protect nature (end native forest logging) and to stop Australia exporting climate change through coal and gas exports. Some of the significant wins have been Tasmanian forest protections and new national parks being declared.

Grassroots community action was pivotal for the Voices for Indi[56] movement in the 2013 federal election and the Teal wave in the 2022 election, which has seen many independent members of parliament elected on platforms that represent their communities needs, concerns and values. Organisations such as Climate 200[57] have been able to enable community members to donate to support high-quality independent candidates to run for parliament. This is grassroots advocacy having an impact on our nation's politics. 11,200 Australians donated over $13 million to Climate 200 to support 11 independent candidates focusing on climate issues integrity, and gender equality policies.

There is a power in community members being advocates in whatever way they can - whether it be signing a pledge, writing to your member of parliament, organising a protest, or volunteering to support a local government candidate during an election.

Resources:

Prominent Environmental Non-Government Organisations (ENGOs) and campaigns:

Australian Conservation Foundation

Climate Council of Australia

Climate Action Network Australia

Friends of the Earth

Beyond Zero Emissions

School Strike for Climate Australia

Greenpeace Australia Pacific

350 Australia

The role of large-scale

> *"Finally, we need to accept that we won't be 100 per cent renewable: we need to be 150 per cent....with 150 per cent of the generation capacity we need, 12 hours of storage and an approximately 50/50 per cent mix of wind and solar, Australia would have 100 per cent reliability of electricity supply all year round, or extremely close to 100 per cent."*[58]
>
> Saul Griffith

The level of change we are going to experience in our lifetimes is tremendous and large-scale renewables will transform the landscapes around us. The debate around the transition is nuanced and complex with changing priorities for each and every community. We must engage in this nuance and work to find solutions that we all can live with if we are to reach the targets within a safe climate timeline. Changes to our much-loved landscapes can be difficult, but it can be navigated well - and it must.

The primary spatial environment for large-scale renewables is Renewable Energy Zones (REZs). This is where clusters of large-scale renewable energy projects can be developed using economies of scale, supported by electricity transmission network infrastructure.[59] The concept behind this is that costs will be reduced under this model. In most states of Australia, REZs have been announced, and auctions for renewable energy capacity are being held to deliver projects in these areas, both by Federal and State governments. REZs are on land, and there are also Offshore Wind Zones designated around the country.[60] The reality of REZs is that the cumulative impact of so many projects happening simultaneously can be very confronting for communities, on the flip side, the range and scale of potential benefits can be a once-in-a-generation transformation for regional communities if done right.

As Ketan Joshi stated:

> *"What really needs to occur here is the elevation of both community groups and environmentalists as valuable contributors to the collective process of siting clean energy, and ultimately, a better and deeper scepticism of those driven largely by maximising cash rewards....*
>
> *The wealthy and the powerful are the ones that should be sacrificing even a tiny fraction of that wealth if it means achieving a clean energy transition that is both fast and prolonged. They are the ones who need to "get over" the blunt primacy of shareholder value creation and be*

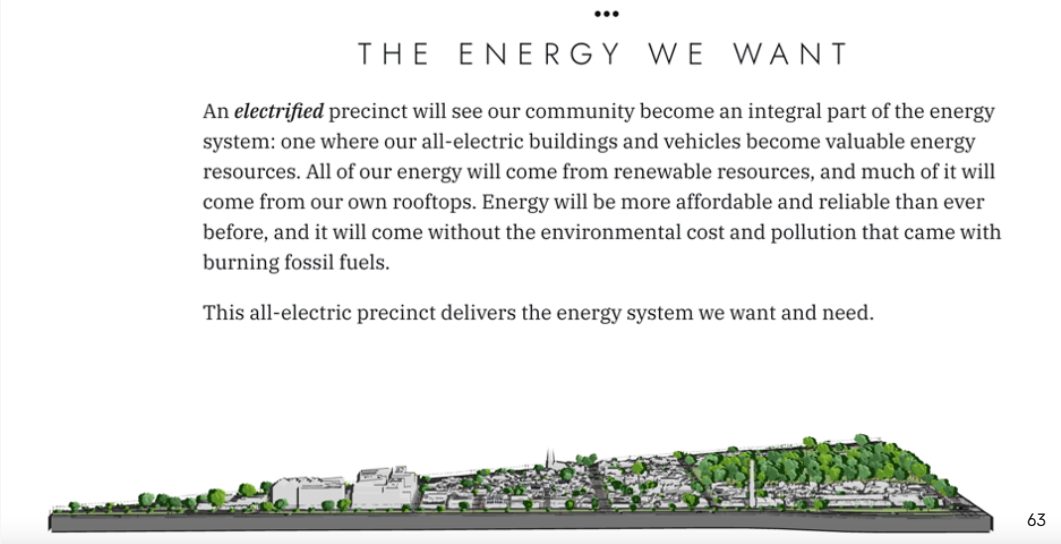
forced through regulation and taxation to care about deep, sustained decarbonisation that aggressively minimises social and environmental sacrifice, and maximises co-benefits as widely as possible."[61]

Although historically not considered in system planning or in the general narrative about renewables, rooftop solar is now the second largest source of renewable electricity in Australia, after wind energy, and the fourth most significant source of electricity overall, providing around 11.2% of the country's power supply on aggregate[62] as of 2023. This means that we really need to consider rooftop solar on aggregate as being on par with large-scale developments, but currently Australian energy consumers are vastly underrepresented in the regulatory systems. Concepts such as Local Renewable Energy Zones (LREZ) are emerging that create this focus.

Local Renewable Energy Zones (LREZ)

In 2024, the Queensland Government announced two Local Renewable Energy Zone (LREZ) pilot projects would be set up in Caloundra and Townsville to help the community generate, store, and share renewable energy locally. LREZs prioritise customers in the energy transition, coordinating local energy resources like solar, storage, and electric vehicles to take full advantage of rooftop solar installations. This pilot project aims to encourage increased renewable energy generation by homes and businesses, with support from batteries and involves a partnership with universities and organisations to inform customer incentive programs and technical standards.

The LREZ pilot project will deploy up to 8.4MW/18.8MWh of battery storage, support an additional 2.8MW of solar PV, and 0.9MW of demand management across around 550 residential and commercial customer sites.



Electrification and energy transition at the community level

At the community level there are many collective ways to approach projects where a community group initiates, develops, operates and benefits from a renewable energy, storage or energy efficiency initiative. These projects are defined as community-owned renewable energy (CORE), community renewable energy (CRE), or community energy (CE). The definition of community can be a community that shares a common interest or a geographical region.[64]

Currently, there are over 120 community energy groups around the country[65] that are in various stages of developing and operating community energy projects. Typically, these are household solar bulk buys, small-scale community solar (<100kW) community batteries, or mid-scale community solar or wind farms (<10MW), and are led by social enterprises, co-operatives and not-for-profit organisations. These groups can provide a core pathway to mainstream zero-net emissions plans and actions across Australia.

Community energy is a real hark back to the past. As Saul Griffith notes:

> *"When the miracle of electricity first became available, there was no place for it in the Australian Constitution, so it was left to states to figure it out. New South Wales, Queensland and Western Australia developed a municipal model: electricity companies owned and operated by city councils. Victoria, South Australia and Tasmania developed in a more integrated way, at first with private companies that were later integrated into state-wide ownership. By the 1920s, most states had evolved towards the same model of both electricity and gas networks operated as state-owned enterprises that had rolled up the previously municipally operated networks."*[66]

The below map shows where the 120 groups are located around Australia.

[67]

How we can define community energy is very diverse. In particular there are models of organisation and control. These overarching models are represented by the following classifications which are generally representative globally. Many projects may overlap with several models.

Model type	**Summary of model**	**Examples in Australia**
Donation/ philanthropic projects	Rooftop solar array on community facility funded by a grant, zero interest loan, donation.	CORENA Fund projects[68]
Community ownership	Whereby a community co-operative, company or similar entity owns and operates an energy asset. Generally small to medium scaled (under 10MW).	Hepburn Energy[69] Denmark Community Windfarm[70] SolarShare Mount Majura Community Solar Farm[71]
Community investment / subscription-based projects	A 'Solar Bank' or 'Solar Garden' whereby citizens that cannot access rooftop solar can purchase a subscription to the electricity generated at a solar farm, this is generally delivered as a discount on their bills. Or another example is where a citizen can invest in a local wind, hydro or solar project and receive financial returns on that investment. This is a financial relationship only. Sometimes this defined as co-investment and can mark up a small part of the project finance or a large part.	Haystacks Solar Garden[72] Sapphire Wind Farm Community Co-investment[73] Clear Sky Solar Investments[74]

Community-Developer partnerships	Where a community partners with a renewable energy developer to invest in or acquire the benefits from a large-scale energy asset, there is generally a governance role played by the community group. It could look like equity provided to a First Nations community for example, in exchange for land tenure.	Partnership between Yindjibarndi Aboriginal Corporation (YAC) and renewable energy company, ACEN Corporation[75]
Community-Council partnership	Where a community group partners with a local government to deliver an energy asset such as a community battery on council land that enables more rooftop solar uptake in the local electricity grid area. Or an EV charging station or community solar project on council facilities.	Yarra Energy Foundation community batteries[76] Lismore Community Solar
Community electricity retailing models	Where a community organisation partners with a licenced retailer to provide a community electricity offer that is branded by the community group, may utilise its generation and have social outcomes more broadly, or this could take the form of a renewable energy switching campaign	Indigo Power[77] Hepburn Energy[78]
Multi-household or neighbourhood models of community energy	A minigrid on a street, a microgrid in a remote community, or a bulk-buy program to support homes to electrify. Could include stand alone power system such as micro-hydro or solar PV and battery storage, or street lighting or Virtual Power Plants (VPPs)	Eurora Microgrid[79] Marlinja Microgrid[80]
100% renewable energy towns or suburb-based electrification	Where a town or suburb sets a 100% renewable, electrification, or fossil fuel free target and mobilises to undertake activities towards this.	Totally Renewable Yackandandah[81] Totally Renewable Phillip Island[82] Electrify Adelaide[83]
Zero net emission towns, municipalities or regional area	Where a town, city, local government area or region has set a community-wide target for zero net emissions and has a strategy to achieve that goal along a timeline	Hepburn Z-NET[84] Zero Emissions Byron[85] WinZero[86]

“One of the best ways to expand energy justice is to follow models that already exist, where you have a far more localized, democratized provision of energy, where you have the shortest distance possible between the energy that you produce and the energy that you consume, and you have, as much as possible, a democratized, cooperative model of funding and supporting that energy.”[87]

REBECCA SOLNIT

Communities impacted by emergencies in recent years have established Resilient Energy Centres (RECs).[88] These centres are not meant to serve as refuge, emergency relief centres, or places of last resort - those are managed by state and local authorities. Instead, they are buildings equipped with backup energy systems to ensure they can operate independently if the main grid fails due to a natural disaster, extreme weather event, or other reasons.

The primary functions of a REC are:

- Providing 12-16 hours of electricity per day when main electricity lines are down
- Supplying energy to charge electronic devices and preserve food
- Serving as a gathering place for people who cannot return to their homes
- Offering beverages, shower & toilet facilities, cooling or heating, and basic meals
- A place for response efforts or recovery following a natural disaster
- A place for organising and planning resilience activities
- An information hub for potential upcoming natural disasters

First Nations communities, and communities more broadly, can follow the guidance of the First Nations Clean Energy Network, which has outlined the following process for community energy.

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EXAMPLE:

Hepburn Energy

Australia's first community-owned wind farm Hepburn Energy[90] (formerly Hepburn Wind) has made Daylesford the first and still the only example of a local net zero town, and has been operating for over a decade.

The energy co-operative has around 2000 members, the majority of whom are local, who invested just under $10m. Each year the two 2.05MW turbines generate enough electricity for over 2,000 homes. The co-operative is a partner in the local community-wide program (municipality scale) to reach zero-net emissions by 2030 - Hepburn Z-NET.

The co-op is accessible to the local community at $110 to join and own 100 shares equivalent. The benefit-sharing model provides neighbourhood benefits and community benefits, with a focus on supporting the community to reach zero-net emissions.

Each year the wind turbines mitigate around 10,000 tonnes of C02 equivalent. The co-op supports/delivers energy efficiency programs such as audits, bulk buys for heat pump hot water. They have undertaken over many donation solar, battery and heat pump hot water systems for community facilities - including a Resilient Energy Centre for disaster events.

The co-op is working on a community battery for the wind farm for income security, resilience and adaptation purposes as well as mitigation. The co-op operates 5 charging stations for electric vehicles in the Hepburn Shire - ensuring sufficient localised infrastructure.

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Community assets
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
- ✓ Collective planning and action
- ✓ Community leadership
- ✓ Adaptability
- ✓ Collaboration

Resources:

Coalition for Community Energy - Knowledge Hub

Community Power Agency

Resilient Energy Centres, A how to guide

The BREAZE Inc. Regional Guide to Community Energy by Hepburn Energy

Intersection of climate change adaptation

Climate change impacts are complex and broad as they can take various forms, both direct or indirect. The forms can be physical, social, financial, political, regulatory or reputational. Climate change adaptation is defined as the process of adjustment to actual or expected climate and its effects. The 'adaptive capacity' to this is really about the ability of living things - human and non-human, systems and institutions, to adjust to 'potential damage, take advantage of opportunities, or to respond to consequences'.[91]

While local risks and actions are most relevant to a community, we need to recognise that we are living in a privileged country that manages to mitigate and deal with the worst impacts of climate hazards. We are supported by emergency services, funding and subsidies when impacted - whilst certainly not perfect as we've seen in recent bushfire and flooding impacts, we have some processes in place to support and overall see a minimisation of the loss of human life. Other countries can be far more exposed to climate risks due to this lack of system of support. We also must acknowledge that climate change and risks affect essential systems such as global agriculture and local water basins, that in turn, impact many communities as we are now globally connected.

Whether it is a community, village, farm or organisation the flow of how you assess and prepare to adapt to the changing climate is fairly universal from a high level. Firstly, it is about determining the scope and who is involved, what is the geographic boundary under consideration. Secondly, it is about understanding past climate impacts, current risks and future scenarios, projections, and climate variables. Thirdly you consider the climate risks, hazards and opportunities and then fourthly prioritise them as to where you can have an effect. The fifth step is actions that can be taken to manage risks and harness opportunities. Then lastly, you monitor and communicate what has been achieved.

The following graphic shows this process.

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Understanding the scope and how you model it

Modelling climate change adaptation for a community is complex. The IPCC sets out a methodology that is what they use looking globally, and it can be used across any scale with some room for adjustment and place-based considerations.

The elements to show how your community could adapt to climate change would generally include the following:

- Adaptation actions
- Stakeholders
- Action Types
- Hazards
- Hazard Events
- Community Risks
- Adaptation Focus
- Adaptation Approaches
- Climate Variables
- Climate Scenarios

These elements help you comprehensively understand the adaptation landscape in a community.

Under Adaptation Focus, these are the areas that are important to a place and in Australia, would typically include the following:

- Agriculture
- Biodiversity
- Economy
- Health and wellbeing
- Water

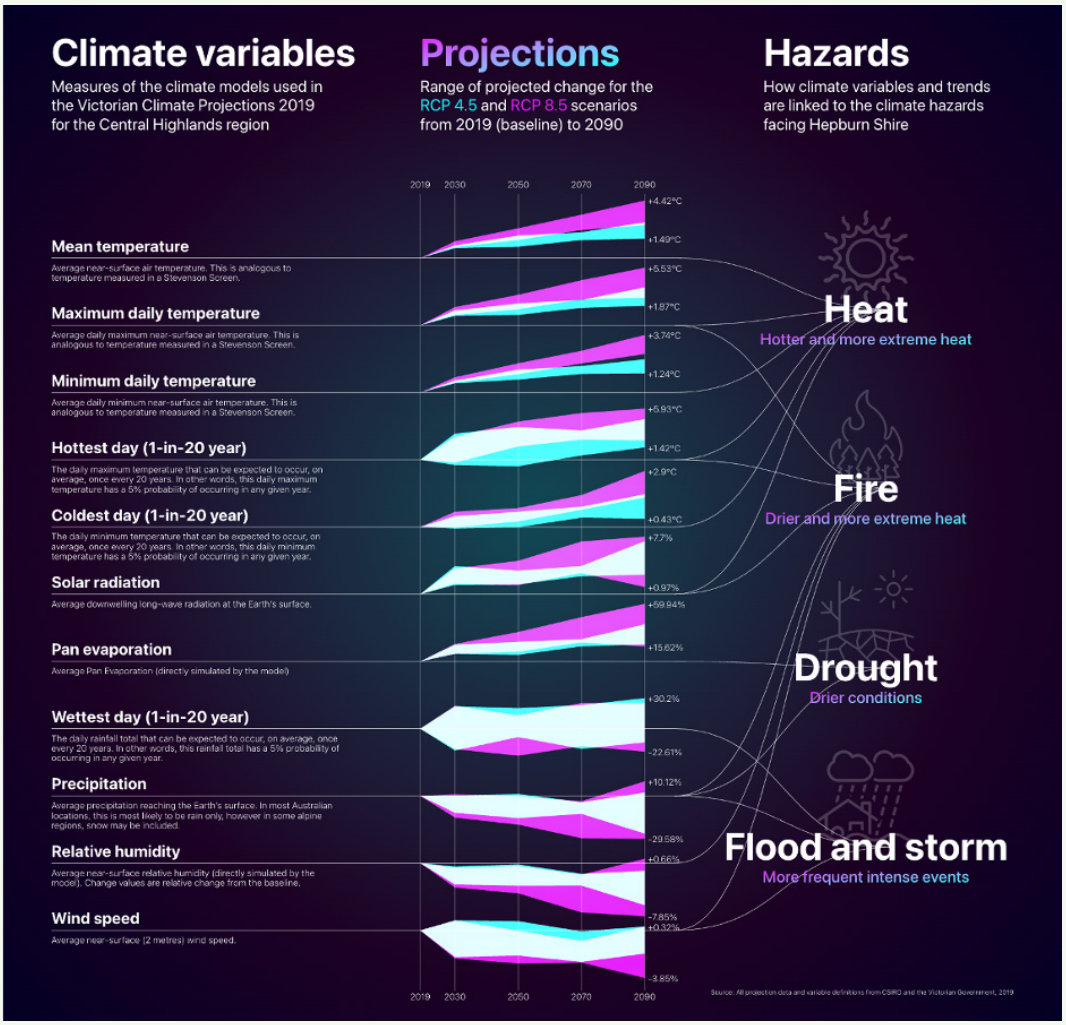
In the Hepburn Z-NET example, a 6th focus area was included based on discussions with Djaara, the Traditional Owners - this was 'Healing Country'. In this case, action items such as Dja Dja Wurrung undertaking cultural burning to manage localised bushfire risk was one example of note.

For Community Risks, the general scope of impacts of climate change are the following broad categories:

- Amenity
- Assets and infrastructure
- Displacement
- Health and wellbeing

Livability
Local economy and production
Nature and biodiversity
Social cohesion and equity

How climate variables and projections connect to hazards is shown in the example graphic below.



Where is the data?

Australia is divided into 54 natural resource management (NRM) regions based on catchments and bioregions. These regions are sensitive to the effects of climate change, influencing the activities of organisations and ecosystem services. They are grouped into clusters aligned with Australia's different climate and biophysical regions. Each cluster has its own unique history, population, resource base, geography, and climate, which leads to distinct priorities for addressing climate change. Extensive research has been conducted across Australia to gain a deeper understanding of how climate change will impact the country's diverse natural resources and NRM activities.

Most state government's within Australia, have an emphasis on adaptation at the local council level, and three of the tools are provided by state governments or local government associations for use primarily by their local councils.

Resources:

NRM data: https://www.climatechangeinaustralia.gov.au/en/overview/impacts-and-adaptation/nrm-regions/

Federal Government: www.climatechangeinaustralia.gov.au

State Government

Victoria: https://www.climatechange.vic.gov.au/victorias-changing-climate, https://vicfutureclimatetool.indraweb.io/

NSW and ACT: https://www.climatechange.environment.nsw.gov.au/home, https://www.climatechange.environment.nsw.gov.au/my-region

QLD: https://www.longpaddock.qld.gov.au/qld-future-climate/dashboard/

NT: https://climatechange.nt.gov.au/resources-and-publications/updates-and-announcements/2020/state-of-the-science-and-climate-change-impacts-report-released

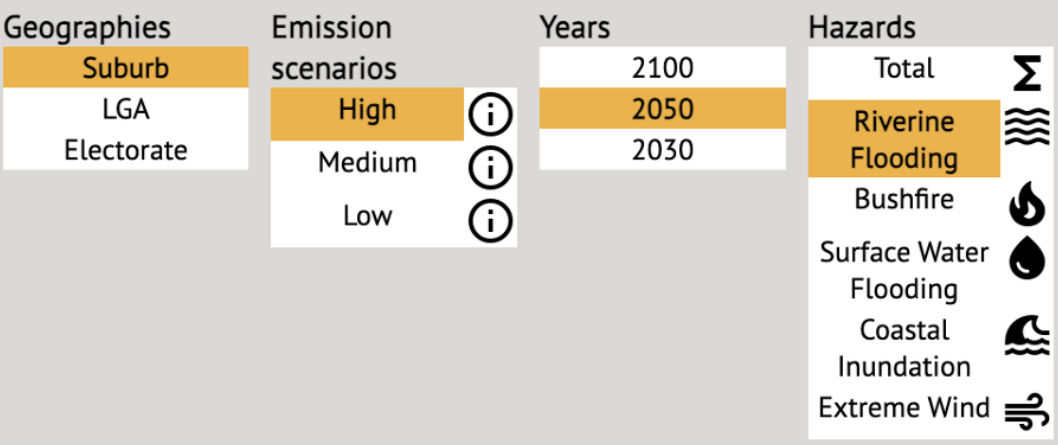
WA: https://www.wa.gov.au/service/environment/environment-information-services/climate-adaptation-strategy

TAS: https://climatefutures.org.au/

Want to understand climate risk for your home?

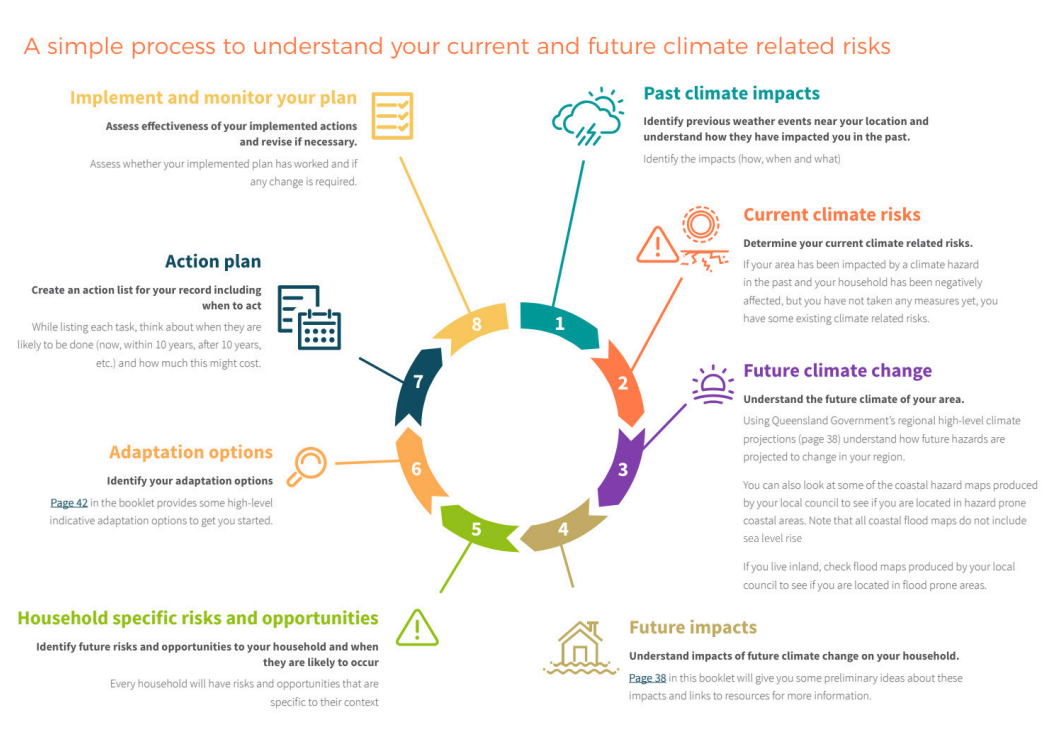
The Climate Council's Climate Risk Map of Australia is an interactive map of climate vulnerable places in Australia. It allows you to select the following areas to view different combination results for your location.

https://www.climatecouncil.org.au/resources/climate-risk-map/



In addition, there is a Climate Change Risk Management Tool for Households from the Queensland Government.

https://www.qld.gov.au/__data/assets/pdf_file/0023/132386/ccrmt-households-full.pdf



Also a toolkit for small business

https://www.qld.gov.au/__data/assets/pdf_file/0026/132398/ccrmt-businesses-full.pdf

Australian Government - Australian Disaster Resilience Knowledge Hub:

https://knowledge.aidr.org.au/

Tip

For more detailed methodologies you can also consider

ISO 14090:2019(en) Adaptation to climate change — Principles, requirements and guidelines

ISO 14091:2021 Adaptation to climate change – Guidelines on vulnerability, impacts and risk assessment

ISO/TS 14092:2020 Adaptation to climate change — Requirements and guidance on adaptation planning for local governments and communities.

EXAMPLE:

Hybrid models of resilience MADRA community-led recovery

In 2019-20, the Mallacoota district in East Gippsland, Victoria was severely affected by bushfires, with 83% of the land area burnt and 123 homes destroyed. This community, with a population of around 1,200, faced significant devastation to wildlife and bushlands.

In response to these challenges, the Mallacoota and District Recovery Association Inc (MADRA)[94] was established and the community came together to work on a model for community-led recovery based on experiences from the 2009 Black Saturday bushfires in Strathewen. This model was endorsed at a community meeting attended by over 500 locals in February 2020.

The community has a vision for recovery, aiming to ensure that everyone in need of bushfire assistance receives it, restore what was lost, prepare for future disasters, and create opportunities that promote resilience, diversity, well-being, connectedness, and economic security.

Community-led development in action:

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- ✓ Community leadership
- ✓ Adaptability
- ✓ Collaboration

A MADRA member stated:

"We are not a 'fourth arm of government'. Community-led recovery means we can no longer simply present problems; we've got to come up with solutions and priorities."

"...as threats from the unnatural disaster of climate change intensify, the communities most affected are pulling together to create more sustainable, resilient, and equitable places for people to thrive. It's about solutions created through collaboration with the people around you, the willingness to learn from others' experience and, in return, to share what you've learned."[95]

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Models for change

9. Models for change

With so many available frameworks, change-making in community is and can be developed in a place-based manner. For some communities, the electrification or 100% renewable framework will create meaning for them, for others the net zero approach or the climate emergency approach resonates in other areas. This Handbook is not recommending some methodologies over others, but rather translating and sharing the models and how you could use them in your community. In many ways, these frameworks can be seen as a community campaign. In that context, it becomes a question of what you think the key actions and language are that your community will be able to attach meaning to and gather around. The 'campaigns' of Electrify or Z-NET, or 100% Renewable or Climate Emergency can all be utilised at the local level. A lot of these models have been around for years, with modernisations, slight variations or tweaking occurring to make them fit for purpose. It is important to note that models can overlap and communities may deploy multiple models over the years, again depending on what campaigns may have social currency in the local community at that time. Some communities may have started with a climate emergency model and then be deploying an Electrify precinct model, for example.

This section aims to clarify and share methodologies for action, for setting and achieving targets and tracking progress along a community's journey. It aims to provide hyper local examples that can help you to make sense of your own community and their transition journey.

Although not made explicit here - all communities on this journey face challenges and have failures. These might include projects that do not work out, community backlash, lack of ability to keep momentum, and challenging internal dynamics of a community group. These are normal and should be shared more between groups as we continue to grow more community activity.

Resources:

National Data Resource - Snapshot Climate

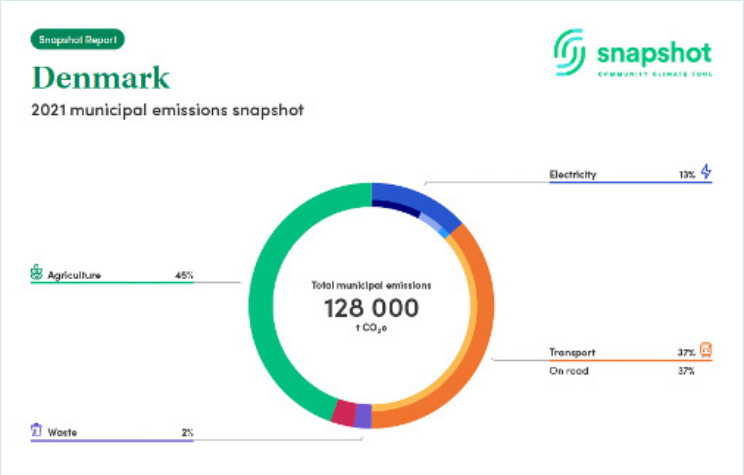
The Snapshot Climate tool is a free resource for councils and communities that provides detailed emissions data for different geographical areas such as municipalities, electorates, states, or postcodes.

Developed by Beyond Zero Emissions and Ironbank Sustainability, this is the only tool in Australia that offers consistent data for all regions. The Snapshot tool uses a standardised framework to enable comparisons between regions. The emissions data from all the local profiles are aggregated to provide a comprehensive national emissions total, ensuring that no emissions are left unaccounted for. It provides easy-to-digest infographics to represent the data.

The tool considers:

- Stationary energy (grid-supplied electricity/gas)
- Transport (on-road use and domestic passenger air travel)
- Waste (landfill and wastewater)
- Agriculture (enteric fermentation, manure management, and synthetic fertiliser use)
- Land Use Change (land clearance and reforestation)

The tool follows the Global Protocol of Carbon Emissions Reporting (GPC Protocol), the main international standard for cities and local government areas. With the scaling of data, there is inherently some uncertainty, and the report is more accurate for municipalities closer to the Australian average, such as for larger towns and urban environments. Local data, particularly for smaller regional communities, are generally not accurate, but the purpose is to provide a high-level snapshot of emissions that are essentially close enough for communities to know their focus areas where they can take action. There is the option for locally supplied data to be inserted as well which may be more accurate for certain areas or measure different aspects than the Snapshots.



You can view geographies online or download a PDF with further details. There is also the opportunity to compare with your 'neighbours' in the tool.

The geographies

For a community-led transition, defining the 'community' is paramount. It is, in most cases a geographic boundary that establishes a community for the purposes of a community program, but in some cases, it can be a community 'of interest'. For example, a Culturally and Linguistically Diverse (CALD) group across Brisbane may self-define as a community taking action for climate change. Definitions of community in the context of working on the transition could be from the following scales:

- street
- village
- town
- city
- postcode
- local government area
- electricity network area
- region

It is important to recognise that people within any geographic boundary may identify with different regions within a given area e.g. specific townships within a local government area. Regional area community boundaries may be more easily identified compared to urban areas.

Setting targets

Renewable targets and Science-based zero-net emissions targets are being set for community programs across the country, and the number of communities joining the movement is growing. What is common among these community-led transitions is the localised determination to remain within the emissions trajectory of a safe climate, notably decades earlier than the state and federal level of ambition.

When considering what target is appropriate for your community, the most common globally are those on emissions or renewable energy. The third option is zero-net energy, which in many global contexts can also be called a 'fossil fuel-free' target, or it may be coupled under a renewable target more commonly.

Carbon emissions targets can be based on the desired end result, such as net-zero emission by 2030, or carbon neutral by 2030. Or they can be relative and based on a reduction over time, such as, 40% emissions reduction on a 2018 baseline by 2025.

Science-based targets (SBT) are greenhouse gas emissions reduction targets consistent with the necessary decarbonisation level to limit global temperature increase to 1.5 to 2°C compared to preindustrial levels. SBTs align with the goal of achieving net zero emissions by the second half of this century as per the Paris Agreement. SBT target-setting methods are complex and should be considered in the context of your community. Generally, they consist of three components: 1) a carbon budget, 2) an emissions scenario, and 3) an allocation approach.[96]

> Renewable energy targets are similar, they represent the percentage of energy to be sourced from renewables. For example, the end goal target might be 100% renewable by 2027. Or it could be based on a mid-way goal, such as 50% renewable by 2025. There is flexibility within the renewables target; it can include electricity at a minimum, and it can also include stationary fuels such as gas, diesel, and firewood. It can also extend to transportation.

Best practice is having incremental and measurable targets.

Resources:

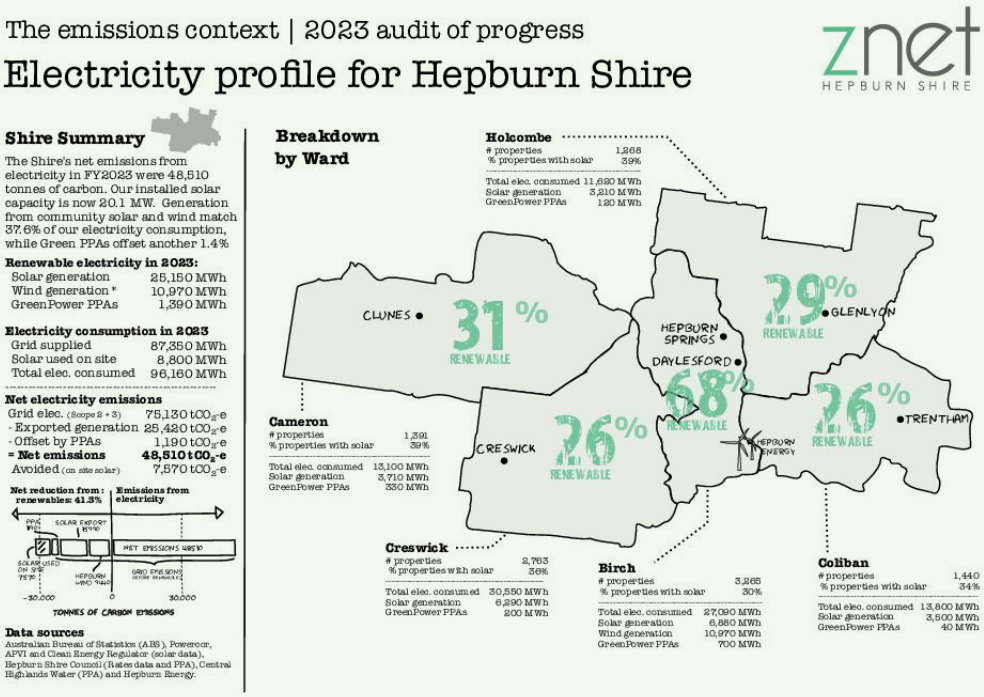
Although business-focused, the Target Setting Guide by 100% Renewables is usable for communities.

White Paper on Setting Science-Based Targets

Progress and impact

Tracking and evaluating progress is key for any community-led activity. Methods of tracking progress could incorporate a number of aspects, including program/project impacts, progress made against targets, and annual or regular audits.

For example, the Hepburn Z-NET program undertakes an annual electricity audit in order to inform their community of the impact of their actions and to support annual zero-net emissions planning. They focus on understanding the local supply of renewable energy (and don't take into account the amount of grid-supplied energy more broadly across the state), in particular, local rooftop solar and the output from Hepburn Energy, the community-owned wind farm.



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One key element of community-led climate transitions is that many of the benefits are environmental and social and can, therefore, be harder to measure as part of the evaluation process. However, social impacts can be measured with a small amount of effort and planning. It is good to know beforehand exactly what you would like to measure so that you can ensure you collate these data points as part of your program delivery, for example.

Overall, an indicator for social impact should:

- Be a good 'conceptual fit'
- Be from a quality data source
- Capture the essentials
- Be achievable and measurable
- Be able to be tracked over time

Monetary indicators that are generally applicable:

- Total investment
- Who invested what: community, council, philanthropic, business, grants, loans etc
- Electricity savings & income from renewable energy and energy efficiency
- Community funding (donations, project host's investment, in-kind)

Environmental indicators that are generally applicable:

- Number of projects
- kW/kWh installed
- GHG emissions

Social impact indicators that are generally applicable:

- Communications & Engagement (value of in-kind and community networks)
- Labour (value of in-kind and voluntary labour)
- People directly involved or benefitting
- Total people engaged: events, communications, website visits, digital media etc
- Labour (value of in-kind and voluntary labour

In addition there are qualitative outcomes that can be surveyed and narrated in when communicating impact. These are meaningful things like community ownership/buy-in, long-term engagement, cooperation, acceptance, social licence for transition and progress. When designing and delivering projects, you might also apply a social justice lens to better enable fair distribution of benefits and mitigate potential burdens on vulnerable community members. Such an assessment is important to bring awareness of who benefits, and who is burdened, by the particular transition path taken.

> *"It should be simple enough to understand the statement that you cannot half-solve climate change. You can't have half the people subscribing to, and affording, the solutions while leaving the less wealthy half behind....many people likely feel that they can't afford the technological wonders that are at least a good part of the answer to climate change: electric cars, rooftop solar systems, a household battery, heat pumps. If we choose to actually address climate change we are de facto choosing to help everyone afford these solutions. We can empower households like never before, and in doing so we will need to make sure that households at all income levels can afford to be part of the transition and benefit from this new abundant Australia."*[98]
>
> Saul Griffith

MODEL 1

Climate Emergency

Overview

The Climate Emergency model firstly focuses on local governments worldwide declaring a climate emergency for their area. To date, over 100 Councils across Australia have passed this declaration.[99] This declaration essentially acknowledges that we are in a state of climate emergency that requires urgent action by all levels of government. From there, communities may utilise the Local Government Climate Emergency Toolkit to design a strategy or use any of the following models as well.

The Toolkit, whilst primarily focused on urban local government areas, puts forward areas where local government can effectively contribute to climate emergency action, these are:

- energy
- transport
- communication
- advocacy
- circular economy
- industry and built environment (including water)
- agriculture and open space
- transparency
- accountability

Data points

This method doesn't focus on data but rather on actions that are achievable. In practice, many Councils have used the Snapshot[100] tool for energy, or a set of consultants to pull together data. However, a Climate Emergency Plan can be developed with only high-level data.

Planning/Action

This model puts forward recommended actions for each action area that can be drawn on as examples. It puts forward:

- Objective
- 1 star Action (minimum)
- 2 star Action (moderate)
- 3 star Action (best practice)
- Who has carriage of these actions
- Key Council documents to embed it into
- Method
- Outcome

Within this are percentage budget allocations for the Council for particular

actions - such as 2% for pedestrian and cycling infrastructure. It also proposes text that can be used to pass these budget allocations to be put into the annual budget and other types of actions - such as policy amendments or community-facing programs.

Targets

This methodology recommends setting a combined 2030 target for council operations and community emissions. A science-based target to limit 1.5 degrees is recommended to either be net zero emissions by 2030 or the more ambitious net negative emissions by 2030.

Community

Traditional Owner knowledge of the local area is expected to be embedded into an emergency plan. The community's role is put forward as driving influence and change through participation in the Council processes. This includes participating in community consultations, making submissions and dialogue with staff and councillors. In addition, the community can benefit from grants available for the establishment of community environmental advisory groups, 'friends of' groups, citizen scientist programs, litter clean-up groups, school programs and climate-focused business networking for example.

Social Justice

There is a focus on the inclusion of culturally and linguistically diverse (CALD) communities particularly around awareness raising within this model.

Implementation

This model is premised on the integration of actions into the broader planning process for the Council - including the Council Plan, monthly reports and staff executive climate emergency key performance indicators (CEKPI) within their contracts for example.

Monitoring/evaluation

Transparency is key, with annual progress made publicly available via frequent reporting.

Resources:

Climate Emergency Australia
Local Government Climate Emergency Toolkit

MODEL 1, EXAMPLE:

Darebin Climate Emergency Plan 2024–30

Darebin City Council has focused on four pillars of action as the foundation for its Plan. These pillars represent the key areas the Council will focus on to address climate change and its impacts. These pillars are the result of many discussions with the Darebin community, community organisations, climate and community experts, Traditional Owners and Custodians, and advisory bodies.

These four pillars will shape our focus over the next decade:

1. Caring for Country: Wurundjeri Woi Wurrung and all Aboriginal and Torres Strait Islander People with a connection to Darebin are empowered and supported to maintain and share their culture and knowledge to protect, preserve, revitalise, and heal Country, which supports self-determination, benefits everyone and maintains a thriving, resilient natural environment.
2. Towards zero emissions Darebin: Darebin homes, businesses, and transport, and Council operations and buildings are efficient, fossil fuel-free and powered by renewables, allowing for a healthy, liveable and thriving community.
3. Community resilience: Darebin's community is connected, safe and resilient to the changing climate, and has safe places to live, work and play.
4. Leadership and Innovation: Darebin Council drives innovation and opportunity through strategic climate advocacy and partnerships across all sectors and is recognised as a Sustainable Climate Economy hub, with a climate-focused and skilled workforce.

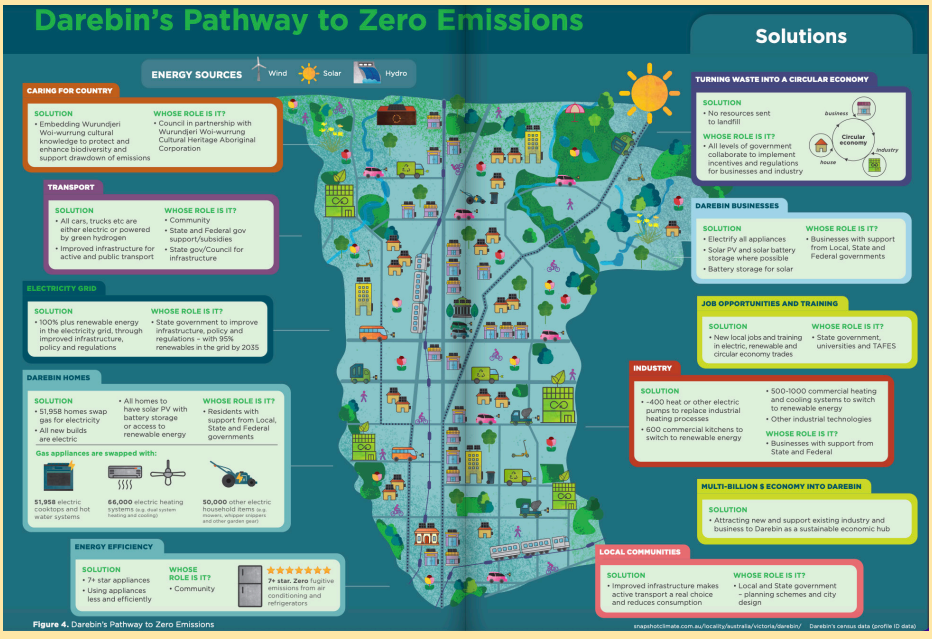


Figure 4. Darebin's Pathway to Zero Emissions

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Capacity development
- ✓ Sustainability
- ✓ Collective planning and action
- ✓ Accountability
- ✓ Adaptability
- ✓ Collaboration

The Plan states

"To meet the Paris Agreement goals we need to switch 3,700 homes, 374 businesses, and 6,300 cars from fossil fuels to renewable energy every year."

MODEL 2

100% Renewable / Totally Renewable

Overview

100% renewable electricity supply deals with electricity only, it is primarily focused on the generation of renewables - but may also touch on energy efficiency and transportation - although in less detail. This is a common approach for communities with an ambition to reach 100% renewable supply. A community could be defined in this instance, as anything as small as a street. A village, a town, a postcode, a municipality, etc., or even contained in the 'local grid' so all homes and businesses are behind a local feeder on the network.

Communities may consider a 100% net target, which means generating more electricity than is used on average but still utilising and accounting for the amount of renewables in the national grid when needed. The 100% gross target, however, means never importing any electricity through the network meter and potentially being able to operate independently from the grid and self-supply.

Data points

If your community wants to use a freely available resource, you can look for your location on the Snapshot tool. In many cases, the Snapshot may not be small enough for your community - as it is limited to municipality or postcode-level data. You may want to plan for your small village, for example, that has three different partial postcodes across it, and in that case, you will need to scale down the available data or use a consultant to do so.

The key data points that you need to explore in more detail is firstly your local network data. Some networks around Australia make that data freely available, others you must request it, and in rare cases, you may need to pay for the data extract. The data will generally provide you with your postcode level and will cover what was imported from the grid locally, and what was exported from local rooftop solar resources (or local wind and solar farms) and therefore what the balance of imports is.

Secondly, there is the national data on The Australian PV Institute[101] site, you can explore PV installations by postcode and system size, going back to 2007. The data is derived from the Clean Energy Regulator (CER).[102] Every month, the CER publishes:

- small generation units (small-scale solar panel, wind and hydro systems) and kilowatt (kW) capacity by installed postcode
- solar water heaters and air source heat pumps by installed postcode.

The data includes new installations, upgrades to existing systems and stand-alone (off-grid) systems.

The data can give you insights into your community's behaviour. For instance, you might see a jump in activity during a community bulk buy program for solar PV. You might notice that your community is below the state average for solar PV installations. You live in a high-tourism area, so potentially, there is low take-up on weekender properties.

Planning/Action

The model generally starts with a local community declaring their ambition to reach 100% renewables and may or may not set a target deadline. Then the community focuses on community projects - such as installing solar on local facilities. They may determine that they need a roadmap to reach 100% renewables with more guidance.

Community

The 100% renewable models have largely been deployed by local community organisations. With the exception of the ACT Government which set and delivered a target of 100% renewable energy by 2020.[103] The model is very much focused on local community groups supporting the community to transition.

Targets

This methodology recommends setting a 2030 target for 100% renewable for a community. A science-based target to limit 1.5 degrees is recommended to be 100% by 2030 or earlier where achievable.

Social Justice

Strong focus on community facilities, community engagement and community leadership.

Implementation

This model is premised on the community group acting as the activator for action in the broader community. This may range from connecting residents and businesses to local energy auditors and solar PV installers to actively developing and delivering a community battery project.

Monitoring/evaluation

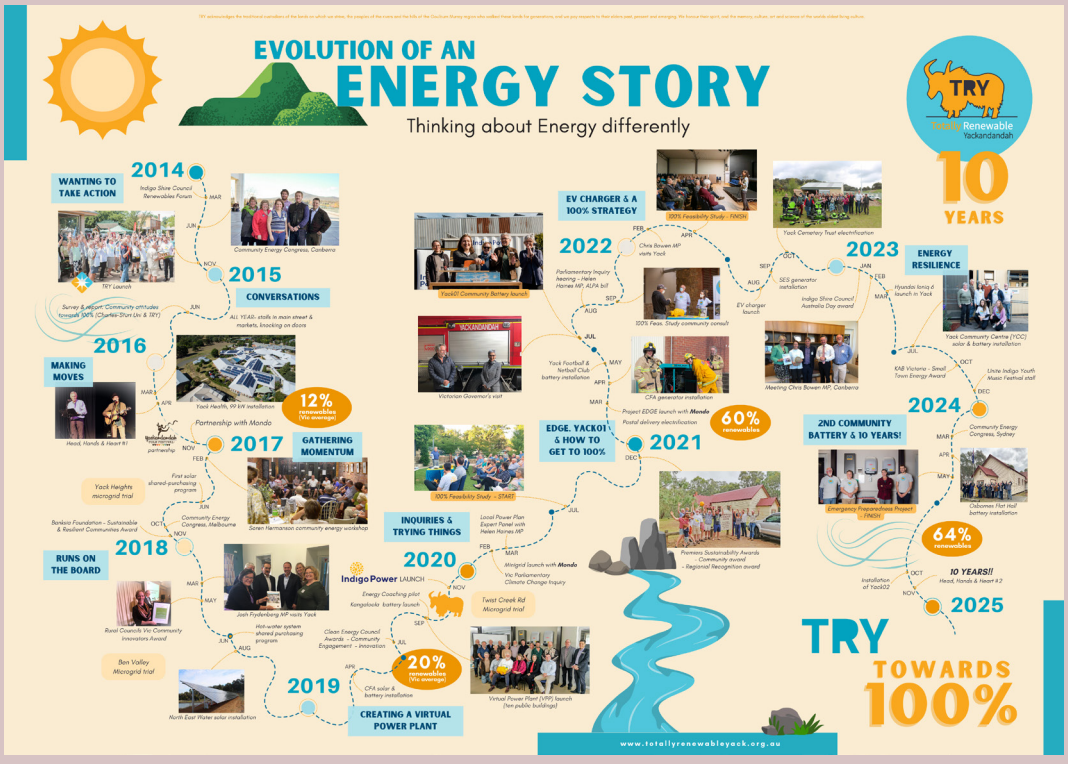
Best practice is to do an annual report on progress toward 100%, at a minimum, reporting on the projects delivered and, if possible, what the data is saying. Within a year, particularly now that there is so much electrification occurring, the trend across Australian communities is that electricity usage is increasing. This can change what you assume the problem to be and how big a problem it is.

Resources:

https://totallyrenewableyack.org.au/

https://totallyrenewablephillipisland.weebly.com/

https://repowermornpen.org.au/



MODEL 2, EXAMPLE 1:

Repower Mornington (community-led)

Repower Morning is a volunteer-led not-for-profit association working across the Mornington Peninsula in Victoria. It is made up of locals who have 'repowered' their lives with renewables. The focus of the group is to get off fossil fuels and repower with 100% renewable energy.

The community group has a model where they analyse the local data network and provide energy emissions for each postcode in their electorate. They work through a core group and a wider group of "Friends of Repower." Their focus is on supporting locals in the uptake of renewable energy and household electrification. They work with industry partners and have an innovative software solution to drive their "Repower and Save" initiative.

The target market is households, businesses and community groups, and supporting them to:

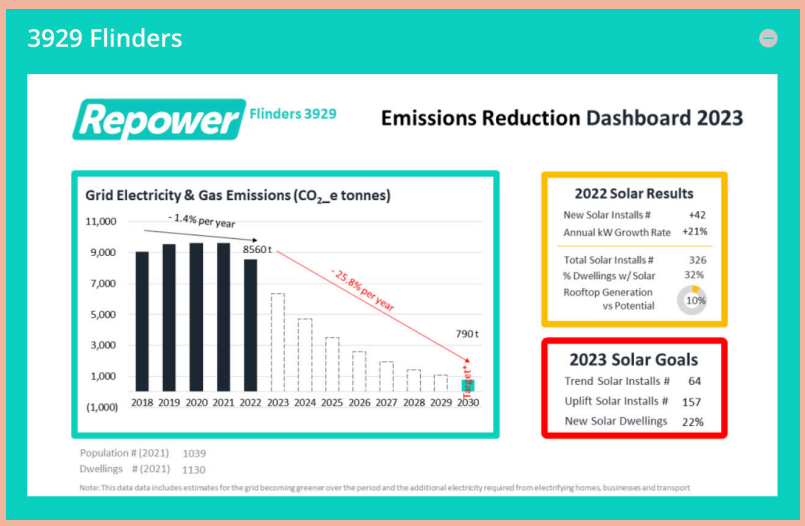
1. Access/generate renewable energy
2. Improve their energy efficiency
3. Get off gas and other fossil fuels for heating, hot water & cooking
4. Have access to electric transport
5. Finance the changes needed

The group has a 'Community-first' ethic, championing a triple bottom line (environmental, social, financial) to ensure common equity and benefit.

Through their website, they aim to make it easy for locals to make the switch by providing resources, and links to reputable local suppliers. The focus areas are:

- Renewable Energy
- Electric Heating
- Electric Hot water
- Electric Cooking
- Electric Transport

The following graphic shares the data that they make available for homes on an annual basis.



Community-led development in action:

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- ✓ Sustainability
- ✓ Transformative capacity
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- ✓ Collaboration

MODEL 2, EXAMPLE 2:

Totally Renewable Yackandandah (TRY) (community-led)

TRY was formed in 2014 in the small regional community of Yackandandah located in Victoria and was driven by a desire to address climate change and the recognition of opportunities for economic benefits and network reliability. TRY has worked towards reducing the town's emissions, saving residents money, lowering costs for community groups, and ensuring resilience to power outages. This has also driven research on improving the reliability of the local grid and better incorporating renewables into it.

TRY partners with the local community and relevant organisations to inspire projects transitioning Yackandandah to clean, local sources of energy. TRY has the goal of transitioning Yackandandah to 100% renewable energy. TRY defines its community as the town of Yackandandah and near surroundings, and specifically all homes, businesses and farms behind the local network feeder of the grid. In this area, 2959 people live in 1189 dwellings.

TRY has achieved significant milestones, including multiple hot water, solar system and battery offerings, three pilot microgrids, a Virtual Power Plant of 210 properties, a community battery Yack01, an independent community energy retailer and social enterprise Indigo Power, and a 65% solar installation density on Yack rooftops.

In 2022, TRY released a 100% Feasibility Study examining Yack's current and projected energy usage and analysed the best way to get to 100% renewables. The study looked at current and projected electricity usage, options for local renewable energy generation and storage, associated costs, and financial feasibility. The group is taking a Behind The Meter (BTM) approach to getting to 100% and has defined it as consisting of solar and battery installations on residential, business and community buildings, along with community batteries, backup diesel/hydrogen generators and an energy efficiency program.

The group is also looking in more depth into the islandability and resilience of the local network. This could potentially enable the town to be independent in supplying its own power if the main electricity feeder experiences an outage. The group is concentrating on equipping public buildings so they can still operate and provide services in the event of significant or prolonged outages such as was experienced with the 2019 Black Summer bushfires and increasing severe weather events. Nine public buildings were assessed for emergency preparedness, and generator plug-in points were installed at four facilities and two mobile generators purchased. Solar generation and battery storage capacity were also installed or augmented on two buildings selected for generator plugin points, along with communications capabilities

Where it is not safe to stay in Yackandandah, the units will support the recovery phase once it is safe to return to town.

The TRY model has been replicated across the region and even as far as Phillip Island.

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Community assets
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
- ✓ Collective planning and action
- ✓ Accountability
- ✓ Community leadership
- ✓ Adaptability
- ✓ Collaboration

MODEL 3

Electrify postcodes/precincts

Overview

The Electrify campaign movement has been developed by Rewiring Australia. Rewiring Australia is a non-profit, dedicated to representing the people, households and communities in the energy system. Rewiring Australia supports volunteer groups that run 'Electrify My Community' campaigns in their own community. In addition, the organisation is working on a pilot program for postcode 2515 with the aim of electrifying 500 homes and scaling up the learnings from there. Many other communities and LGAs are running similar electrify campaigns that may or may not be associated with this umbrella campaign.

Data points

The data focus is less about the community footprint of emissions but rather about demonstrating and communicating the cost savings, emissions reductions, and energy system benefits of electrification. This includes data on technologies, subsidies available, accredited installers etc.

Planning/Action

The tips on how to start and build a local electrification campaign are:

1) Build an organising committee
2) Collect Resources
3) Create a plan
4) Spread the word in your community

Then the tips for electrifying your home are:

1. Make a plan
2. Understand what rebates & support is available
3. Install solar panels or buy 100% Green Power
4. Research your electric appliances
5. Connect with local installers
6. Disconnect your gas
7. Time your energy usage
8. Buy an EV (or e-bike or e-scooter)
9. Investigate a home battery

Targets

The methodology does not focus on setting specific targets, but rather it is open-ended, allowing each community to determine what they want to achieve. The approach is based on the fact that 70% of Australia's domestic emissions come from households and businesses. To meet the overall

emissions targets, there is a need to swiftly replace fossil fuel-powered appliances in homes, driveways, and businesses with efficient electric versions that are powered by renewable energy sources.

Community

This community-led initiative focuses on local areas defined by postal code boundaries, aiming to positively influence and support electrification decisions made at kitchen tables and in meetings. Rewiring Australia engages with communities by providing an online collaboration platform, sharing resources, conducting workshops and events, and facilitating joint advocacy and collaborative activities.

Social Justice

This model focuses on inclusion and ensuring homes enjoy the ongoing benefits of reduced energy bills and healthier homes. It also supports the local economy and keeps money in the hands of households.

Implementation

Electric community campaigns can take many different forms, some of the activities groups are doing, include:

- Induction cooking demonstrations
- Educational workshops and information sessions
- Electric Vehicle test drives and open days
- In-home advisory services or business partnerships
- Working with councils for infrastructure such as solar on community buildings and EV charging
- Bulk buys of solar panels and electric heat pumps
- Community surveys and resources

Monitoring/evaluation

Via community activities, the Electrify campaign is seeking to answer what are the challenges and costs of electrifying diverse housing types with varying electrical wiring and constraints and how can it be done more efficiently and cost-effectively? In addition, they are considering how can energy savings be increased for consumers and how financial packages be offered to encourage greater uptake of electric appliances. This is about understanding how the future can work - how our grid can be prepared for a future of greater uptake of electric appliances and cars.

Resources:

https://www.rewiringaustralia.org/
https://electrify2515.org/
https://static1.squarespace.com/static/5c464fbdf407b4298dcc0cb3/t/663c3f3ffa7f5b30ac7cf78c/1715224436655Electrify+Everything+Toolkit+Download.pdf
https://www.rewiringaustralia.org/community
https://www.electrifyadelaide.com/
www.electrifycanberra.org.au/

MODEL 3, EXAMPLE:

Electrify movement (community-led)

The Electrify movement is occurring in postcode and city scale approaches currently. The campaign is still in the early stages and the activities are focused on community building and engagement. The premise of the campaigns is to make it as easy as possible for homes to electrify and taking a neighbourly approach to this. Some of the new areas that are part of this campaign are listed below with their current focus areas.

The Electrify 2515 focus areas are:

- community solar bulk buy
- electric transport bulk buys
- encouraging council to improve EV charging infrastructure and community rooftop solar
- develop education resources
- financial packages
- community batteries and localised tariffs
- pathways for renters, strata properties and low-income households.
- raising awareness, lobbying governments and collaborating with other communities

Electrify Adelaide focus areas

- community survey
- community forum
- sustainable house day

Electrify Canberra focus areas

- suburb letterbox drops
- chat with neighbours, doorknocking
- stalls
- pilot program
- community survey
- apartment zero event

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
- ✓ Collective planning and action
- ✓ Accountability
- ✓ Community leadership
- ✓ Collaboration

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MODEL 4

Energy Focus Method

Overview

Many communities may declare zero-emissions, but they are actually working on the scope of zero-net energy. This is generally defined as a municipality that reduces and matches its local energy needs with a 100% renewable energy supply. Practically, that means that energy can be imported from the grid or elsewhere, but this needs to be matched with local renewable generation. This calculation is averaged over an annual period of time. This includes stationary energy - electricity, gas, wood, and generally also transportation (fuels). What sets this model apart is that they have a roadmap and target year established.

Data points

This model generally uses similar sources as the 100% renewable model, from the energy network provider - the DNSP, there will also be the local distribution grid map and the types of electricity lines. Postcode-level data from them can show the current annual electricity usage. Then use the Census and/or Council rates data to map the population correctly within the boundary. The existing distributed generation - CER / APVI. For the transportation element, the Snapshot tool can be used or more detailed modelling may be sought. In regional areas, wood usage will need to be accounted for and bottled gas estimates. This can be informed by bottom-up community surveys as well as data from local suppliers.

Planning/Action

A community using this model will generally have a 'Roadmap' developed to map out what the route is to the target and within the desired target timeline. A Roadmap will generally set out what the current electricity usage is and existing renewable energy generation in the community. It then models some possible mixes of electricity generation and energy efficiency required to achieve the target within the timeline. It describes a range of available options that may be suitable for driving increased uptake of renewable energy, then recommends specific actions. It will generally include a range of business models and other approaches that may be relevant for increasing renewable energy from the household level through to larger-scale options.

Many modelling software packages are available, such as NEMO (National Electricity Market Optimiser), an open-source electricity sector model.[105]

Targets

This model has a focus on setting a community target for emissions from energy and transportation. Generally these are science-based and reached within the 2030 timeline.

Community

that can be taken in that specific community, with a special focus on those driven by the community

Social Justice

Social justice may be considered depending on the community and model deployed. For example, Z-NET Uralla's Blueprint was developed using Human-centred design (HCD) principles, and social acceptance of different technology types was a key element of consideration alongside technical and financial considerations.

Implementation

A Roadmap or Blueprint will generally be technology-focused. This model is premised on the community group acting as the activator for action in the broader community and developing projects or programs around the technology solutions. This may range from a local sustainable firewood program, to a draught proofing program for example.

Monitoring/evaluation

Best practice is to do an annual report on progress toward the goal, or, at a minimum, to report on the projects delivered and if possible what the data is saying. Some communities do a review of the electricity network data every two years for example.

Resources:

https://www.zeroemissionsnoosa.com.au/

https://zneturalla.org.au/

MODEL 4 / ENERGY FOCUS METHOD, EXAMPLE 1:

Z-NET Uralla

Z-NET (zero net energy town) Uralla came about as an idea in 2014 and the community worked to get the blueprint together with Starfish Enterprises and Moreland Energy Foundation (MEFL), with the aim of assisting the people of the Uralla Shire's transition to energy self-sufficiency, based on renewable sources.

The first step was to work towards the goal of 100% renewable energy for in-home and business use (excluding transport). Z-NET Uralla adopted the Zeronet Energy Town Uralla Case Study (also known as the Z-NET Blueprint) as its foundation document for the direction and scope of projects to be undertaken in the Shire. Z-NET activities are designed in consultation with the Uralla community, to give equal access across socio-economic groups, they have had a particular focus on low-income and rental homes over the years.

The data showed that Uralla's energy consumption:

49% electricity 6% gas 45% wood

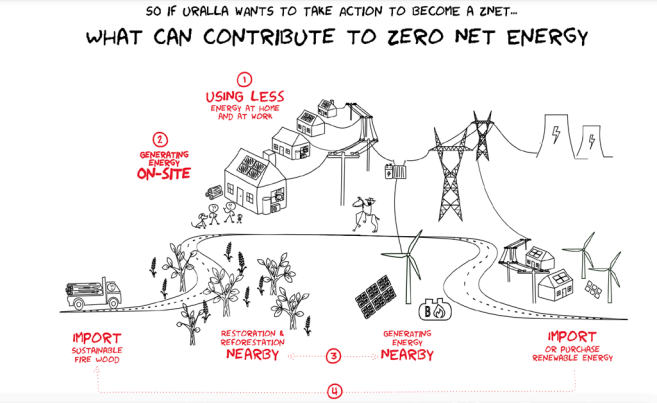
The role of the community group is to provide leadership and education and assessment of innovations and their applicability for the community. The initial focus was on homes and businesses, with volunteer and paid staff undertaking energy audits and recommending next steps to take. Sustainable firewood has been a big focus area given how much of the local energy consumption is from this source. This included the Elephant in the Woodlands project on sustainable practices among landholders, firewood collectors and firewood users and an educational Guide.

The group has also very practical energy efficiency measures such as:

- window and door treatments
- curtain making
- making a window blanket

From the beginning approach, Z-NET Uralla has gone on to have a very holistic scope. Including expanding into the following action areas: waste, water and liveable landscapes.

The group is now supporting a community initiative to develop a co-ownership solar farm and working with Uralla Shire Council to transition to a more secure water supply in the face of the impact of increased climate variability on local water supply from Kentucky Creek Dam.



Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Community assets
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
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- ✓ Accountability
- ✓ Community leadership
- ✓ Adaptability
- ✓ Collaboration

MODEL 4 / ENERGY FOCUS METHOD, EXAMPLE 2:

Zero-Emissions Noosa (ZEN) (community-led)

Zero Emissions Noosa Inc. (ZEN) is a not-for-profit group with a target for 100% renewable energy by 2026, and zero emissions by 2026 (within the scope of energy and transport). In 2018, the group had a ZEN Roadmap delivered which focused on solar power and energy efficiency.

The group sees its mandate as inspiring the Noosa community to repower itself by investing in renewable energy, energy efficiency, zero-emission transport, and innovative local commercial activity.

Noosa's primary emissions sources are electricity consumption (69%), and fossil-fuel powered vehicles (30%). The local Noosa Council also has a commitment to zero emissions for Council facilities and Noosa has a strong environmental commitment.

The group has working groups set up to focus on particular areas of work and then seeks grants to help fund the work.

There is the ZEN Electricity Group which is exploring:

- ways to encourage greater solar take up for businesses and tourism accommodation
- encouragement and support for community organisations with buildings to install solar
- potential to increase embedded networks in strata properties to minimise daily charges and free up funds for solar installation
- a community-owned solar farm
- a Noosa community-owned electricity retailer company.

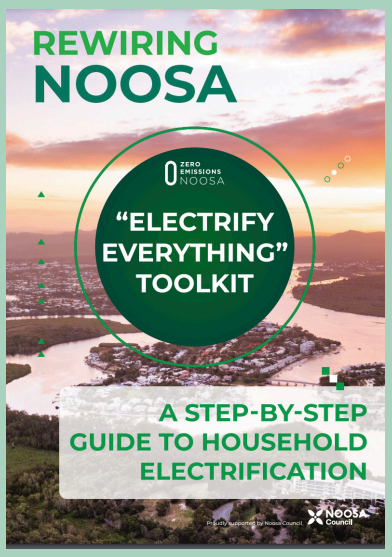
Then there is the ZEN Transport Action Group (ZENTAG) which is exploring:

- cycle skills workshops
- promoting low emission alternatives such as electric vehicles and electric bikes through a range of activities such as guided e-bike rides and the annual Noosa EV & Electrify Everything Expo
- advocacy to all levels of government for strategies to promote low emission transport.

In addition, the community group, supported by Noosa council, released an "Rewiring Noosa - Electrify Everything" guide covering eight different technologies and strategies, including rooftop solar PV, heat pump hot water systems, pool pumps and heaters, home batteries, electric vehicles, and energy monitoring and control systems.

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Community assets
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
- ✓ Collective planning and action
- ✓ Community leadership
- ✓ Collaboration



MODEL 4

Full Emissions Scope Method

Overview

Zero-net emissions is defined as reaching carbon neutrality, in that the local carbon emissions are reduced, sequestered or offset. The origin of the emissions would be categorised into:

1. Stationary Energy
2. Transportation
3. Agriculture
4. Land Use Change
5. Waste and Wastewater

Communities generally have a target and a baseline of emissions calculated, then a Roadmap or Community Transition Plan developed that guides action. Communities may chose to include 'net' as their definition or 'real' zero to mean without offsets. It is a contentious subject but communities may see value in local 'insetting' opportunities and can develop them with integrity if they chose to - the common and valid critique is around corporations and governments greenwashing through offsets and not doing the hard work to reduce emissions.

Data points

The key consideration is gathering data suitable for achieving your (modelling) aim. If you want to model options and actions, you need data (granularity and/or supporting assumptions) to do that; and arguably, that helps to inform a strategy, and (quantifiable) target setting, and monitoring. Alternatively If you want to understand what sectors energy is being used or emissions are coming from, an estimate/aggregate of sector level is all you need.

The purpose of any baseline emissions profile is to identify, quantify and report on a community's distinct greenhouse gas emissions (GHG). The baseline emissions can also help guide where action must be taken to have the greatest impact.

At a minimum, communities can access the Snapshot profile to start the conversation locally and pick key action areas. Whilst there are global standards for emission profiles, methods for meeting the global standards are often based on aggregated data sets (scaled down data from Victoria for example). This reduces duplication and gaps with other communities, but can lack meaning for community members and makes it difficult to measure progress in emissions reduction.

Some community's (Hepburn Shire, Byron Bay) have valued creating a bespoke profile, which not only meets the global reporting standards but uses more granular data when available. In the Hepburn example, they brought together household survey data from 500 homes, local farming data sets, inputs from Hepburn Shire Council and data from Powercor, the electricity network distributor. The purpose was to meet global standards for quantifying emissions whilst creating a pioneering approach relevant to local communities that sought to find meaningful data sets and ground truth the baseline, a bottom-up and Top-down approach simultaneously.

The general approach applied for the emissions baseline profile was to:

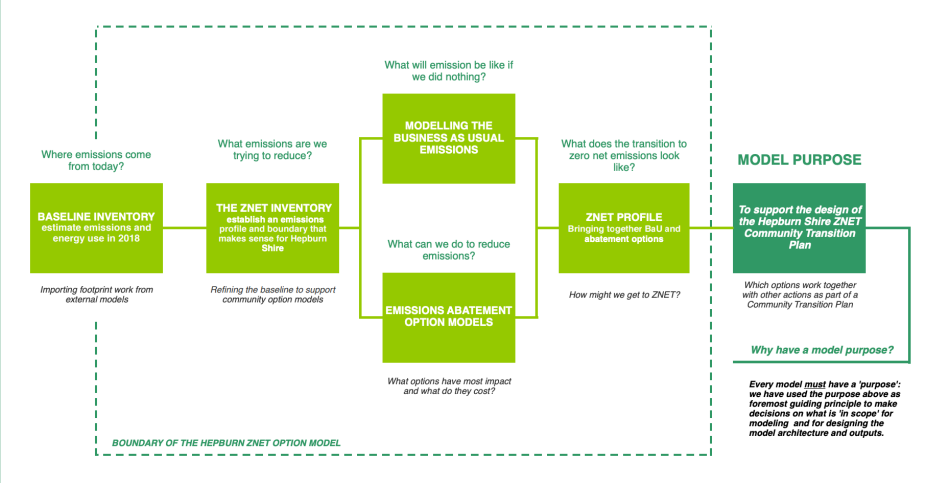
1) Identify all emission activities
2) Apply methodology to activities as required
3) Apply scaling factors
4) Apply GHG emissions factors to convert all emissions to a CO2 equivalent

Planning/Action

Communities can choose to take a high-level approach or a detailed approach. Planning/action is hopefully informed by the 'data'. It's then up for for debate as to what's the best or most appropriate way (i.e. what evidence base is the community comfortable with, in order to take action). A high-level approach would be to provide estimates for types of projects or technologies that would result in the necessary reduction of emissions. A detailed example of this approach can be seen in the Hepburn Z-NET Options Model. The Z-NET Options Model was used for scenario mapping of 138 emission reduction activities. These activities were selected for their technical feasibility, economic viability and social desirability (incorporating social justice considerations).

Options modelling enabled the project team to compare the costs, benefits and impacts of emission reduction activities and prioritise their implementation. These individual abatement options were then grouped and staged logically to develop the Community Transition Plan.

How the various sets of data intersect is depicted in the graphic[106] below.



The usefulness of modelling the options/actions, in this example, is to explore whether it is even possible to reach zero net emissions, and if so how fast, using only available (and economic) technologies/actions. Essentially demonstrating to the community, that setting a target is possible (and getting support/buy-in/ownership). Having the detail provides the community with a 'realistic hope' (with tangible actions).

Targets

With this approach, there is a strong focus on setting a target - often, this will be a community and Council agreed target and a science-based target, with a zero net emission goal being before 2032. The Z-NET model approach affords the community the opportunity to explore a target and to understand what is being asked of them, and what (if any) their alternatives are. A target and plan may be presented in draft for feedback at a minimum.

Community

This model will generally have significant community engagement, both for the design and delivery. Some examples of how the community could be involved are:

- A Community Advisory Panel (CAP) or Roundtable to guide the project
- Community harvesting of project ideas such as through community conversations, surveys and Council platforms.
- Town Hall events with engaging materials to stimulate ideas and discussions
- Community survey on household and business emissions

Social Justice

Social Justice is something that can be designed in to this model. With the Hepburn Z-NET example - a Human Centred Design was used and the overall project applied a social justice lens to better enable fair distribution of benefits and mitigate potential burdens on vulnerable community members. Social justice considerations were integrated into the project assessments. In deployment, there might be a focus on low-income households for energy efficiency retrofits, for example.

Implementation

Communities may choose to have a few high-level projects based on the big emissions they are trying to tackle or they may be more detailed. In the Hepburn example, there is a a 46 item Implementation Plan that outlines the actions that can result in net zero.

A Marginal Abatement Cost Curve (MACC) is a widely used economic analysis tool that can support the implementation of actions. It shows the costs or savings expected from different opportunities/actions, along with the potential volume of emissions that could be reduced if implemented.

Monitoring/evaluation

An affordable solution is for a community to use the free Snapshot tool to track the annual progress of emissions if it is representative of your local community (particularly for larger urban communities). However, for some communities, this data may be too aggregated and not representative (regional small communities, for example). In these cases, a full emissions assessment can be very expensive and also not an option to do regularly.

A community could instead choose to focus on evaluating programs and projects as its primary method of measuring impact. This might include the kW/kWh installed, the resulting GhG emissions saved, the $$ value of the community benefit, and the number of people benefiting for example.

Another method is to stage when you do a full emissions assessment, this might be every 3-5 year for example. Or you could pick an element to frequently monitor, such as electricity and gas usage and do a detailed energy audit annually. For the Hepburn Z-NET model for example, there is a strong focus on tracking progress of projects and programs but also via annual electricity audits.

Resources:

https://winzero.com.au/
https://zerobyron.org/
https://zerocarbonmerri-bek.org.au/
https://hepburnznet.org.au/
https://wararack.org/

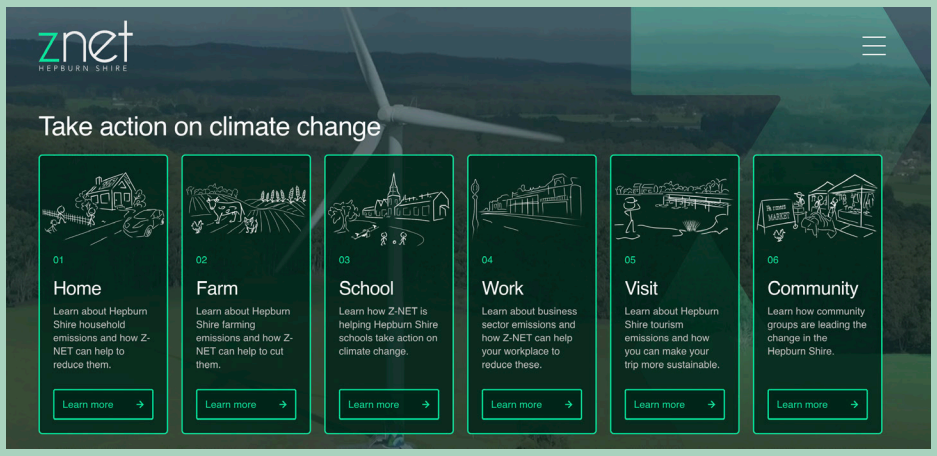
MODEL 4 / FULL EMISSIONS SCOPE METHOD, EXAMPLE 1:

Hepburn Z-NET (community-council partnership)

Located in the Hepburn Shire in Central Victoria, Hepburn Z-NET is a collaborative partnership bringing together community groups, organisations, experts and Council to shift the community to zero-net energy by 2025 and zero-net emissions by 2030.

In the Hepburn Shire, there is a longstanding history of environmental leadership. There are hundreds of operating 'energy towns' around the world, and an expressed desire or official mandate from several communities across Victoria to become one. However, there is only one operating zero-net energy town example in Australia - Daylesford. Hepburn Energy the community-owned wind farm generates enough renewable energy to offset the town.

The concept of reducing emissions in the Hepburn Shire therefore had a significantly different starting point. The group, led by Renew and Little Sketches, built upon the work of Z-NET Uralla and the model they built for a Zero Net Energy Town. The acronym was adjusted for Hepburn to represent the broader scope of the second Z-NET program to instead mean Zero-Net Emission Transition. The Z-NET Blueprint evolved to encompass a wider carbon emissions inventory than stationary energy.



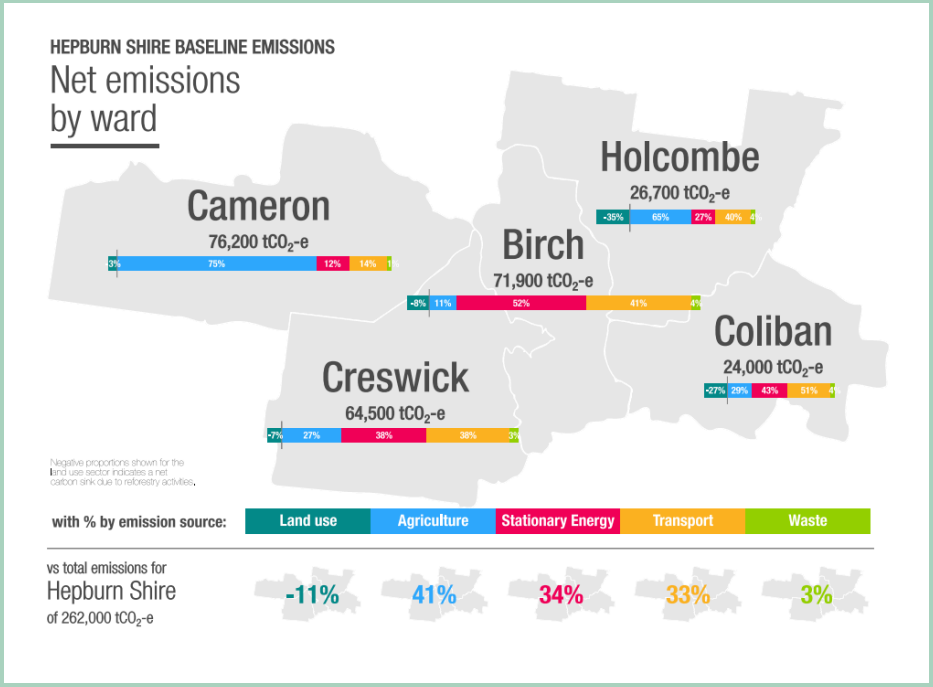
Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Community assets
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
- ✓ Collective planning and action
- ✓ Community leadership
- ✓ Adaptability
- ✓ Collaboration

It also considers transport, agriculture, waste and land use. Due to the significant tourism sector in the Hepburn Shire,the tourism profile has also been communicated to bring awareness to how significant the impact this sector has. However, tourism is not considered within the boundary for emission reduction opportunities.

In 2019 the group released a blueprint of the Shire's emissions, with strategies to cut these in Hepburn Shire homes, workplaces, farms, transport and tourism. These strategies were co-developed with community members, considering locally appropriate options.

As a community of small population (16,604 people) and with limited resources they deliver community programs through partnerships, this includes; local suppliers, the local water authority, DJAARA the Traditional Owners, local installers etc. Hepburn Energy and Hepburn Shire Council have an MoU that provides the structure for them to act as secretariat for the group and governance is by a collective impact model - with 10-20 community members.



The group has been working collectively on projects over the years that contribute to reducing emissions. In particular, Council has been working on waste streams, 'insetting' and their own facility emissions; Hepburn Energy on renewables, local electricity product, energy efficiency and electrification; local sustainability groups on Repair Cafe's and energy resilience programs; local farmers on composting programs for local waste streams and regenerative farming. Since the 2018 baseline year, as of 2023 the community has built over 10 MW of rooftop solar, effectively doubling what was there. The community has met the 2029 target for new rooftop solar in 2020. Z-NET programs such as community bulk buys have delivered $6.5m of community value since 2019.

The group has also gone on to expand the mitigation focus of Z-NET into adaptation and circular economy.

MODEL 4 / FULL EMISSIONS SCOPE METHOD, EXAMPLE 2:

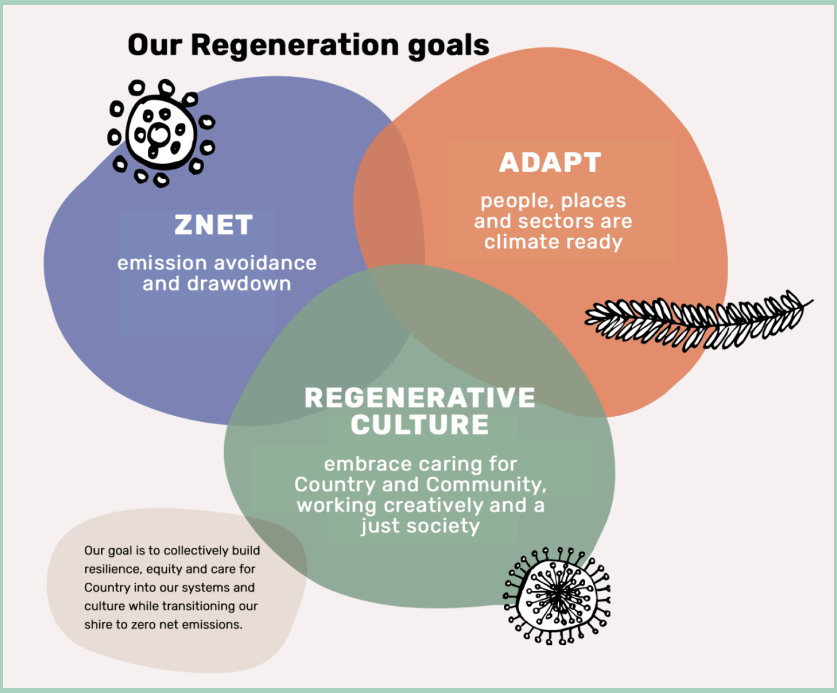
Wararack (community-led)

Although no longer active, Wararack was a coalition formed to renew the Mount Alexander Shire in Central Victoria. The goal being to collectively build resilience, equity, and care for Country, while transitioning the shire to zero net emissions. The group released a Community Climate Transition Plan (2023–2030). The transition aims to measurably reduce carbon-emitting activities; ensure security of everyday needs such as food and housing; and promote conviviality within the shire community as they adapt to an unstable climate.

The three pillars and principles are znet, adapt, and culture. The Plan focused on caring for Country and arts and culture strengthening more broadly. Wararack promoted action that helps us collectively reach net zero emissions, better prepare for climate impacts, embrace change, and forge new ways of doing and thinking. This transition to regenerative living is a holistic response to the climate crisis and is tasked with holding this transition to a climate-safe future for the next generation and beyond.

Themes of action:

- emergency preparedness
- connecting community & Country
- research and creating new knowledge
- practical action and outcomes
- monitoring, assessing and tracking
- developing green spaces and creating shade
- supporting healthy natural environments and biodiversity
- encouraging connected neighbourhoods
- pilot programs
- discussion, learning & capacity building
- storytelling, communication, advocacy & activation
- reducing carbon emissions
- minimising waste



Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Capacity development
- ✓ Sustainability
- ✓ Collective planning and action
- ✓ Community leadership
- ✓ Adaptability
- ✓ Collaboration

MODEL 4 / FULL EMISSIONS SCOPE METHOD, EXAMPLE 3:

Zero Emissions Byron (community-led)

Zero Emissions Byron (ZEB) was initiated in 2016 with the purpose of accelerating Byron Shire's transition to net zero emissions. A 2016 study revealed the shire's baseline emissions in 5 sectors:

Land Use
Transport
Waste
Buildings
Energy

The groups focus is on public awareness on actions that anyone can take, via public events, expos and forums, webinars, e-newsletters, and street stalls, and projects to support carbon-reducing initiatives.

An update for the baseline was undertaken in 2017/18 and again for 2020/21. These updates share the complexities that come with measuring emission and progress in a changing rural area. Overall emissions in Byron Shire have risen by 9% over 5 years, along with a population increase of 7%. An 11% increase in electricity use was seen through that period, rooftop solar installed capacity tripled from 11.5MW to 34.4MW. There was also a significant increase in waste emissions. Agricultural emissions have fallen, largely due to reduced livestock numbers, as have landfill, waste water and public transport emissions.

The group has also been respondent to local community emergency events and needs. For example, they released a You Tube series on Making Homes Flood Resistant.[107] They have also published a Good Fire Restoration Plan - an action plan to enable the restoration of good fire on private property. The goal of the project is to raise community bushfire safety, restore dormant carbon sequestration, conserve biodiversity, and continue Aboriginal connection to Country. The group initiated the Replant Byron Alliance to draw down carbon via vegetation restoration.

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Capacity development
- ✓ Sustainability
- ✓ Transformative capacity
- ✓ Collective planning and action
- ✓ Accountability
- ✓ Community leadership
- ✓ Adaptability
- ✓ Collaboration

MODEL 4 / FULL EMISSIONS SCOPE METHOD, EXAMPLE 4:

WinZero (community-led)

Wingecarribee Zero Emissions (WinZero) is located in the Southern Highlands of NSW and was initiated after the 2019-2020 bushfires. The goal of the group is to unite like-minded and passionate individuals to protect the environment, take climate action, and live sustainably. Also known as the Wingecarribee Shire, the Southern Highlands has just over 50,000 people spread out across 2,330 square kms.

For their baseline, the group uses the Snapshot tool and focuses on emissions and actions for:

Electricity / Transport / Gas / Waste

The principles of the group are to inform, support and empower their community to transition. Their current focus is on Fossil Fuel Free.

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Voice
- ✓ Capacity development
- ✓ Sustainability
- ✓ Collective planning and action
- ✓ Community leadership

MODEL 4 / FULL EMISSIONS SCOPE METHOD, EXAMPLE 5:

Zero Carbon Merri-Bek (council-led)

Community-led development in action:

- ✓ Participation & inclusion
- ✓ Community assets
- ✓ Capacity development
- ✓ Sustainability
- ✓ Collective planning and action
- ✓ Accountability
- ✓ Community leadership
- ✓ Adaptability

An example of a council-led transition that enables and amplifies community action, is The Merri-Bek City Counil in the northern suburbs of Melbourne. The local government area has over 180,000 residents and has a strategy that focuses on the Council taking action on climate change and the community taking action. Under the community stream, the Council supports the following action areas:

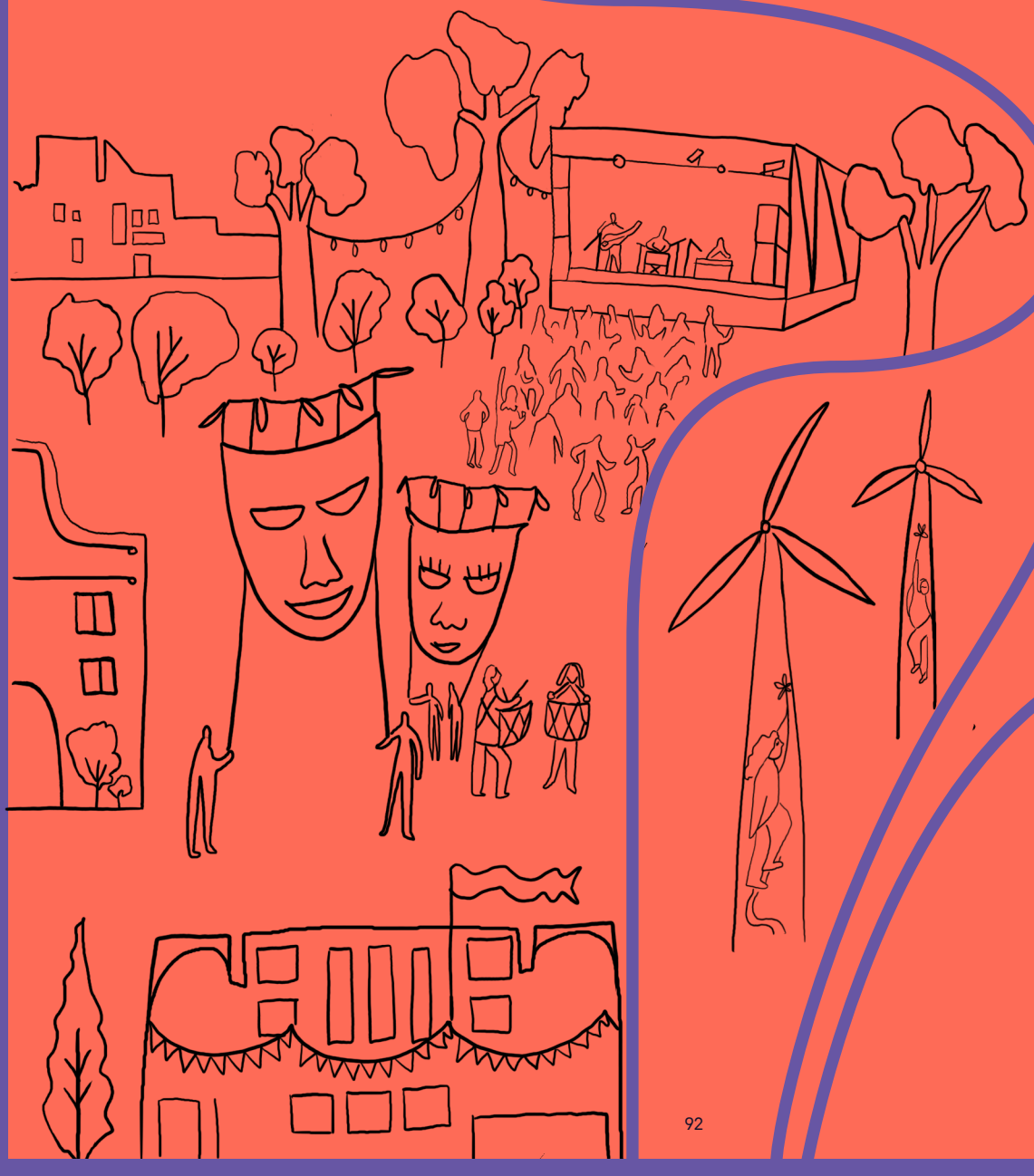
- go solar, reduce energy and/or go all-electric for homes, renters, apartments and businesses, including low-income
- get active with a local group or an industry climate declare group
- smart garden programs and community gardens
- sustainability programs for schools
- repair, reuse, borrow and swap
- sharewaste program, compost hub, & litter collection actions
- join walking and riding programs
- Ride & Stride schools active transport behaviour change program
- electric vehicle charging
- The Adaptation Game – Merri-bek climate drill
- advocating to state and federal government

The Council is also walking the talk with their own facility and operational emissions. They have been certified carbon neutral since 2012 - the third in Australia.

“There are school buildings, railway stations, surf clubs, RSLs, church roofs and commercial buildings, all ideal for generating energy and income for the community with solar. When we start thinking about this as a community problem rather than an individual responsibility, whole new spaces open up……we can envisage a situation where one-third, and maybe even one-half, of our electricity comes from our roofs and is much cheaper than it is today. Another quarter or third might come from the local community, more if you are in a rural location. The remainder will come from the existing and expanded national network. Even if the price of the electricity from the larger network goes up a little (but this isn’t certain: it should go down), the electricity will be abundant and cheap. In fact, it will be free or close-to-free some hours of the day and during the summer months.”[108]

SAUL GRIFFITH

In this time we need art



10. In this time we need art

Climate change and the transition as we know is incredibly complex to communicate and mobilise people around. Art can bridge this gap and provide connection, emotion, reflection and discourse around this complexity. It can enable better understanding of climate concepts, climate science and how we can interpret data. Artwork can be in any form such as data visualisation, performing arts, visual arts, film and media or street art and public installations. Art can amplify climate change via the following means:[109]

Emotional impact and raising awareness
Cultural reflection and community building
Advocacy and activism
Education and engagement
Visualising solutions
Long term impact and global reach

EXAMPLE:

Gusto

This is a 21-metre tall mural on the bottom of one of Hepburn Energy's wind turbines named 'Gusto'. The co-operative has a long-standing relationship with David Booth, known as the street artist Ghostpatrol. In 2013 and 2015 Ghostpatrol painted each of the wind turbines which drew global acclaim as the first in the world murals on wind turbines. The artwork has given visual personalities to the wind turbines who were named in 2011 'Gale' and 'Gusto' by a local school girl.

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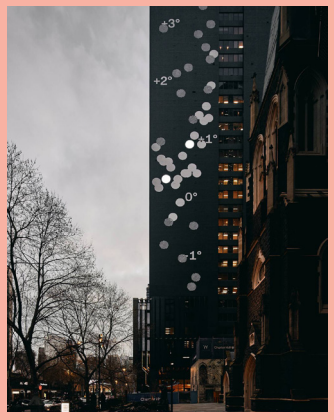
Climate deviation tracker

Located in Melbourne, at the former Bureau of Meteorology headquarters, this installation is a climate deviation tracker by Stanislava Pinchuk titled Axionome. The installation collects hourly temperatures from its surrounding city block and compares the data against local historical weather records. At night, two lights reveal the day's temperature deviation in the critical context of global average warming of 1-3 degrees.



111

“Have we taken steps to show that our liberation is tied to that of others?”[112]

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