

PROJECT HIGHLIGHTS 2021 - 2022



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HALLS GAP BOTANICAL GARDENS

Rooftop Solar and Battery Project



AT A GLANCE

- Rooftop PV solar for the Halls Gap Botanical Gardens visitors shelter, office and workshop
- Off-grid system
- 4 kW solar
- 6-8 kW battery



It's fantastic to see the Community Association of Halls Gap put their hand up for a community energy project.

A big part of the Grampians CPH is being able to assist local communities with their own energy. This project is a great example of how we can help the community meet their energy needs with simple solutions.

Peter Boadle

Grampians CPH Project Control Group

THE PROJECT

The Halls Botanical Gardens is utilised by a range of community groups including volunteers, schools and the wider community for events and functions.

The project aims to install 4kW of rooftop solar PV and a 6-8 kW battery on the visitors shelter, volunteers office and workshop at Halls Gap Botanical Gardens.

Rooftop solar and battery storage will greatly benefit the volunteers of Halls Gap Botanical Gardens by providing power, which will be used for lighting, minor office equipment, small kitchen appliances and, charging tools and equipment.

This means volunteers will no longer need to bring equipment home with them to charge. The addition of off-grid electricity will provide the option for audio visual equipment for schools and events, increasing the overall functionality of the gardens as a community space.

NB: Grampians CPH's role in this project was to provide advice and technical design, not installation or funding.

KEY BENEFITS

- Reduce greenhouse gas emissions
- Support local business
- Greater functionality of the garden's amenities for volunteers and visitors
- Complements National Park experience
- Helps build community wellbeing

This project is delivered by Sustainability Victoria on behalf of the Victorian Government

WOODBINE DISABILITY SERVICES

Rooftop Solar Project

AT A GLANCE

- Rooftop PV solar on several Woodbine Disability Services buildings
- Working on existing feasibility studies previously completed by BREAZE
- 50 kW solar PV system



The benefits of the G-CPH to the community are seen in a myriad of ways. In the instance of Woodbine, we can see the knock on effects for the community such as freeing up scant funds that were previously tied up in energy bills, which can now be redirected to improving the lives of the Woodbine community.

Paul Duggan

G-CPH Project Control Group



THE PROJECT

Woodbine is a non-profit organisation based in Warracknabeal that provides accommodation, day services and supported employment programs to people with intellectual disabilities.

BREAZE began working on the feasibility of a rooftop solar PV system for Woodbine Inc. in 2019 under the Pilot Community Power Hub Program.

The Grampians Community Power Hub (G-CPH) is assisting Woodbine during the 2021-2022 Power Hub Program to:

- Validate the previously completed feasibility study and assess additional sites
- Carry out RFQ assessments and;
- Connect Woodbine to funding opportunities

As a large organisation with 20 sites, Woodbine will benefit immensely from the installation of solar PV. The system will help reduce energy bill costs and greenhouse gas emissions, which will in turn enhance the ongoing financial viability of the organisation and direct scarce resources towards improving living conditions, social and community supports and employment opportunities for people with disabilities.

NB: Grampians CPH's role in this project was to provide advice and technical design, not installation or funding.

KEY BENEFITS

- Reduce greenhouse gas emissions
- Support local business
- Redirects scarce resources back into services
- Helps build community wellbeing

This project is delivered by Sustainability Victoria on behalf of the Victorian Government



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J-WARD MUSEUM

Energy Efficiency Assessment

AT A GLANCE

- J Ward - Ararat's Old Gaol and Lunatic Asylum Museum
- Assessment of J Ward's energy requirements
- Investigate the potential to disconnect from fossil gas
- Explore the feasibility for additional solar panels



We have been working with the Grampians Community Power Hub to investigate ways to improve our energy efficiency, reduce our greenhouse gases and save on energy bills. An energy audit has been completed and will be used as a basis to produce an energy consumption reduction plan. We currently have a 50 kW solar system on our roof and wish to explore moving from gas heating and hot water to an all electric system.

Peter Waterman

President, Friends of J Ward Inc.

THE PROJECT

Grampians Community Power Hub is working with J Ward Museum, a volunteer run organisation managed by Friends of J Ward Inc., on assessing their energy efficiency. The project will examine ways in which the premises can reduce their greenhouse gas emission and save on energy bills.

The energy assessments will look at:

- Auditing J Ward's current energy consumption
- The potential for J Ward to disconnect from fossil gas powered heating and hot water
- Explore the feasibility for additional rooftop solar PV panels to supplement the current 50 kW system
- Work with J Ward on an energy consumption reduction plan

Grampians Community Power Hub are assisting J Ward by providing advice, refining the project scope, seeking quotes on energy audits and coordinating energy assessment for facility with consultants.

NB: Grampians CPH's role in this project was to provide advice and technical design, not installation or funding.

KEY BENEFITS

- Reduce greenhouse gas emissions
- Supports local business
- Redirects resources back into the upkeep and running of the museum

This project is delivered by Sustainability Victoria on behalf of the Victorian Government



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HORSHAM GOLF CLUB

Rooftop Solar Project

AT A GLANCE

- Rooftop solar PV on Horsham Golf Club facilities
- 60.8 kW system
- G-CPH working with Horsham Golf Club in securing appropriate funding



One of the main barriers for community groups progressing with renewable energy projects is connecting to funding.

This has been a key role of the Grampians Community Power Hub - to enable communities to bring their renewable energy vision into fruition.

Sowmya Nagaraj

G-CPH Project Manager

THE PROJECT

Horsham Golf Club (HGC) is a not for profit, community focused sports facility right in the heart of the Wimmera.

The Grampians Community Power (G-CPH) endeavors to work with HGC in securing appropriate funding opportunities and support in applying for Sustainability Victoria's Community Climate Change and Energy Action (CCCEA) round 2 funding to aid in the installation of a 60.8 kW rooftop solar PV system.

Rooftop solar will increase the club's capacity to reduce their greenhouse gas emissions and push the club to becoming a carbon neutral facility. By reducing the cost of energy bills, HGC will be able to reinvest funds back into the club and community, ensuring the clubs viability going forward is secure.

NB: Grampians CPH's role in this project was to provide advice and technical design, not installation or funding.

KEY BENEFITS

- Reduce greenhouse gas emissions
- Supports local business
- Redirects resources back into the upkeep and running of HGC

This project is delivered by Sustainability Victoria on behalf of the Victorian Government

NATIMUK SOLAR FARM

Natimuk Community
Energy Project



AT A GLANCE

- Community owned solar farm in Natimuk
- 1.6 MW energy capacity
- Built on initiatives spanning the previous 11 years including the Victorian Government's New Energy Jobs Fund



The G-CPH helped us connect with our community energy groups facing the same challenges as us and provided us with great resources and support to help progress our project. The community energy space can be a hard slog, and if you have a centralised knowledge base and network of people you can connect with who have the relevant experience and expertise to help you overcome the challenges you are facing, it can really help push you in the right direction

Sean Keown

Vice President, NCE

THE PROJECT

Natimuk Community Energy (NCE) have been building on plans for a 1.6MW community solar farm for more than 11 years. The underlying goal of NCE is to enable the township of Natimuk to become 100% renewable by 2030. This project will assist NCE in reaching their target.

In 2016 NCE were awarded \$399,000 funding from the Victorian Government's New Energy Jobs Fund to enable them to obtain necessary approvals (including town planning and grid connection), develop detailed designs for the site, establish legal entity for ownership and management of solar farm and, develop a marketing plan for the project.

The Grampians Community Power Hub is working with NCE by providing advice, consultation support and assisting with community workshop sessions. These workshops aim to re-engage with the community after ardently working behind the scenes to progress the solar farm.

NB: Grampians CPH's role in this project was to provide advice and technical design, not installation or funding.

KEY BENEFITS

- Reduce greenhouse gas emissions and enable Natimuk to become 100% renewable
- Support local business
- Creation of local jobs
- Reduced energy costs and strengthens energy resilience for the community

This project is delivered by Sustainability Victoria on behalf of the Victorian Government

DAYLESFORD DHARMA SCHOOL

Rooftop Solar PV Project Project



AT A GLANCE

- Daylesford Dharma School campus expansion
- Hepburn Wind supported the school to install 25.5kW solar
- Projected savings of \$4,484 per annum



We've been so grateful to work with all the partners and the funders on this project - Hepburn Energy, Sustainability Victoria, the Hepburn Solar Bulk-Buy and Cola Solar. As our school grows, keeping our operating costs down will help us prioritise our students, teachers and our community.

Mel Ogden

Board Member Daylesford Dharma School

THE PROJECT

Daylesford Dharma School is a small not-for-profit primary school that embraces Buddhist principles. While having a small student cohort of just over 40 students in 2020, the school is growing, with more parents and families seeking to enroll their children.

To support the school's growth, Hepburn Wind assisted staff to install a large solar system that would lower their energy bills and emissions. This assistance included; helping to scope the project, supporting decision-making by the school board, finding appropriate funding, being a co-funder and then writing the grant application.

Applying to Sustainability Victoria's Community Climate Change and Energy Action program, the school was successful and has now installed a 25.5kW solar system which is projected to save the school \$4,484 per annum.

NB: The project received 50% of its funding from Sustainability Victoria, with the other 50% coming from Hepburn Wind, The Hepburn Solar Bulk-Buy (MASH) and a contribution from the school.

KEY BENEFITS

- Helping the climate by saving 35.5tons of CO2 per annum
- Helping the school save \$4,484 each year
- Unlocking income to help the school cohort grow

This project is delivered by Sustainability Victoria on behalf of the Victorian Government

HEPBURN BULK BUY

Heat Pump Hot Water
Bulk-Buy Program



AT A GLANCE

- First heat pump hot water bulk-buy for the region
- 25 systems installed and over 100 community members attended webinars
- Total program value of \$145,000



“The bulk buy has provided an opportunity for households to upgrade their hot water appliance to a market leading and energy efficient product, at an attractive price. And these hot water systems are helping the community progress their zero-net energy and zero-net emissions aspirations.”

Jürgen Rhyon

Co-founder of t2zero

THE PROJECT

One of Hepburn Wind’s key projects as the Hepburn Branch was to deliver the first Heat Pump Hot Water Bulk-Buy in the region. This project was identified as part of the communities shire-wide partnership to reach zero-net emissions by 2030, Hepburn Z-NET.

Partnering with a local energy efficiency enterprise t2zero, the bulk-buy aimed to build community awareness about the effectiveness and efficiency of heat pump hot water and sell up to 25 systems.

Hepburn Wind’s role involved designing the program and delivering community engagement, while t2zero provided quotes, secured system supply and coordinated installation.

A key element of the program was to support aligned organisations, which led to a locally made tank from Earth Worker being included in bulk-buy options. Overall, the program was a great success.

NB: The project received 50% of its funding from Sustainability Victoria, with the other 50% coming from Hepburn Wind, The Hepburn Solar Bulk-Buy (MASH).

KEY BENEFITS

- Combined energy efficiency savings of 795,000kWh over lifetime
- In total community members saved \$70,265 through state and federal rebates
- Greater community awareness and knowledge on heat pump hot water systems

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NEIGHBOURHOOD COMMUNITY BATTERIES

AT A GLANCE

- Community battery for the township of Ballan
- Investigation into neighbourhood battery and solar bulk buy
- Partnering with Hepburn Energy and Central Victorian Greenhouse Alliance for the study



"We, the local residents, are interested to learn more about community batteries and how it could benefit our town and reduce our carbon footprint. It's early days but we will investigate the possibility,"

Rose de La Cruz

Moorabool Environment Group



PROJECTS

BALLAN

Moorabool Environment Group (MEG) have proposed a Community Battery for the township of Ballan. The Grampians Community Power Hub (G-CPH) will provide advice and assist with a feasibility study for the project and assist with a solar bulk buy program.

A community battery for Ballan has a myriad of benefits including:

- Reduction in greenhouse gas emissions
- Creation of local jobs
- Reduced energy costs for the community
- Projected increase in rooftop solar
- Alleviated grid congestion and better use of energy during peak times
- Builds trust in the energy sector
- Strengthens community resilience in the case of emergency events such as blackouts and bushfires

The ownership model and potential location for the battery is yet to be determined via the feasibility study; however, the site will be selected in an area of Ballan that maximises the benefit to the community and network infrastructure.

In January 2022 MEG and G-CPH co-facilitated a webinar on community batteries and what that would mean for Ballan, which you can watch on the BREAZE YouTube channel.

NB: Grampians CPH role in this project is limited to advice and feasibility studies, not installation or funding.

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NEIGHBOURHOOD COMMUNITY BATTERIES



AT A GLANCE

- A community battery hub to store locally harvested solar power for Pomonal
- Suggested site will be situated on Parks Victoria land between the CFA and the local primary school



The Pomonal community is really progressive around climate change action and renewable energy. Having a battery hub would help when there's an emergency, such as the bushfires we've seen come through in recent years.

Dee-Ann Kelly

Pomonal Power Committee Member

PROJECTS

POMONAL

Grampians Community Power Hub and a sub-group of Pomonal Progress Association (PPA), Pomonal Power, are working together on plans for a neighbourhood community battery.

The installation of a neighbourhood battery in Pomonal will have numerous benefits to the community and the environment including:

- Reduction in greenhouse gas emissions
- Increase energy resilience, particularly in the event of bushfires
- Generate employment opportunities for local providers and suppliers during construction, installation and maintenance
- Reduce grid congestion, alleviating power supply costs for residents as well as encouraging uptake of solar by households and businesses

Pomonal's position at the end of the electricity grid line makes them an excellent candidate for a community battery. In these circumstances, power supply can be restricted and unstable, a community battery can help with energy reliability and build confidence in the energy sector.

NB: Grampians CPH role in this project is limited to advice and feasibility studies, not installation or funding.

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COMMUNITY ENERGY PROJECT

AT A GLANCE

- Investigation into energy independence for the township of St Arnaud
- Potential for community ownership model of small-scale solar, solar & BESS, community battery or a microgrid

NB: Grampians CPH's role in this project is to provide advice and technical design, not installation or funding.

PROJECTS

ST ARNAUD

St Arnaud Community Renewable Energy Association Inc. (SACREA) have teamed up with Grampians Community Power Hub (G-CPH) to investigate the possibility of energy independence for the township of St Arnaud.

G-CPH plan to work with SACREA and the wider St Arnaud community on the feasibility for a community energy ownership model including community engagement & consultation to finalise the scope of the project. The following options will be investigated:

- Small-scale solar
- Solar & battery energy storage system (BESS)
- Microgrid
- Neighbourhood battery

G-CPH will coordinate with consultants, community groups and related stakeholders (C4NET/Powercor) to undertake feasibility studies and community workshops. G-CPH will offer support in looking for funding opportunities and grants to enable the project to advance.

St Arnaud is situated on the end of the power network from Charlton zone substation, which makes the town vulnerable to unstable power supply.

The project will provide opportunities to reduce bills and improve grid reliability. Potential for community ownership exists as well as improving the electrical supply in the Western region of Victoria.

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

Captured from the Grampians Community
Power Hub Webinar - Tuesday 11 January 2022

About Community Batteries

Q. What are the potential benefits of community batteries for residents?

A. Community batteries can have many environmental, social and financial benefits depending on the type of model that is deployed. Some of the benefits may include:

- Discounts on electricity bills
- Enable night-time use of unused energy generated by solar PV during the day
- There is opportunity for investors to get on board and be paid a dividend
- Keeps electricity prices down by reducing peak demand (3pm – 9pm)
- Batteries enable communities to facilitate more residential rooftop solar. As we get closer to the 30 – 40% local grid threshold of rooftop solar PV's feeding into the grid, many new solar applications are being informed by network operators they won't be able to export their excess energy to the grid. This means rooftop solar may no longer be financially feasible for the resident unless they install a battery as well.
- A community battery enables the resident to benefit from exporting the solar without the large up-front cost, the cost of maintenance or the cost of replacing the battery at the end of its lifecycle

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

Captured from the Grampians Community
Power Hub Webinar - Tuesday 11 January 2022

- Creates a cleaner, greener energy network and helps to transition away from fossil fuels
- Contributes to a fairer and more equitable electricity system

Q. Will there be financial benefits for those feeding electricity into the battery?

A. Building on the answer above - this would depend on the model that is deployed. Essentially you want to be using as much of your own solar as you can behind the meter during the day and whatever energy is excess for your needs goes into the battery and used at night or shared amongst your neighbours with smaller systems.

Q. Can you please expand on what behind the meter means?

A. Behind the meter describes what happens before your electricity is exported into the grid. If you have solar and use most of the energy captured during the day for tasks such as washing clothes, air conditioning or using appliances, you're using energy from behind the meter.

When you export your excess energy and you receive a payment for it, that's called in front of the meter.

Q. Where does the power go that is stored in the batteries?

A. This depends on the type of model that is implemented. In many cases the power can be redistributed to other households within the community battery network.

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

Captured from the Grampians Community
Power Hub Webinar - Tuesday 11 January 2022

Q. What factors influence the community battery site?

A. The site will be selected in an area that maximises the benefit to the local community and network infrastructure.

Q. Are the batteries noisy?

A. Every community battery site is assessed for appropriate noise levels that will not impinge on residents in close proximity to the battery. Each site will need to meet the EPA's noise guidelines.

Q. How does it actually work? Are there cables from our rooftop solar to the battery?

A. The battery would connect into the existing network infrastructure in the same way your solar is. In many areas the cables run underground.

Q. What does the battery look like? Does it need a large concrete pad (not environmentally friendly)?

A. This would depend on the size of the battery. For instance, a 100kW battery is something that could quite easily sit on a pole. A larger 5 MW battery – which are about the size of a shipping container - would need a concrete slab due to its size and weight.

As far as the environmental footprint of the battery, there are some really interesting innovations emerging and in most cases the carbon footprint of a battery is paid off within 6 to 12 months in regard to its lifecycle.

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

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One interesting innovation is a brand called Electrified which is taking recycled Nissan Leaf batteries out of cars and redeploing them as community batteries.

Q. What happens to the battery at the end of its life?

A. There are batteries like the Tesla which are now 99.7% recyclable. This is an emerging space, and the lifespan of batteries is increasing (current lifespan is 10 – 20 years) so this will continue to improve over time. Energy storage batteries are on the Australian Government's priority list under the Product Stewardship Act.

Community Battery Management

Q. What are the potential ownership models for a community battery?

A. There are multiple potential ownership models for community batteries including:

- Government agency
- Community group
- Electricity retailer or an aggregator
- Private investor
- Distribution Network Service Provider (Powercor)

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

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Q. How will ownership of the community battery be decided?

A. This will be up to the community on what ownership model they want to implement and what other organisations they want to partner with.

Q. Who pays for the battery?

A. This depends on the type of model implemented however, investment could come from multiple sources including:

- Government or corporate grants
- Investors
- Energy retailer
- Community

Q. Who has responsibility for maintaining a community battery?

A. This will depend on the model that's deployed locally.

One scenario is where Powercor is deploying batteries on the poles they service – in this instance it would be Powercor's responsibility to maintain the battery.

Another model is where the community has ownership of the battery, and they would be structured as a cooperative or a public company. This may work as a subscription whereby a collective of people per household, street or area that will have collective ownership and usage of that battery but then the asset management will be taken care of by say a service provider that the energy foundation will have an arrangement with.

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

Captured from the Grampians Community
Power Hub Webinar - Tuesday 11 January 2022

Community batteries are an emergent space and still evolving how they are managed. Other scenarios in the future may include management by retailers.

Q. Why is Powercor not providing these facilities, power hub, batteries etc.?

A. It's not standard business for Powercor – they're responsible for the management of the electricity grid including the move towards smart grids – this is their current focus.

However, Powercor have shown their support for community batteries by partnering with Yarra City on their community battery and we may see more of this in the future.

Safety and Bushfire Resilience

Q. How can a community battery help with bushfire resilience?

A. Community batteries have the potential to increase resilience in the case of bushfires or extreme weather events. During emergency events it is common for the electricity grid to go down.

As an example, the community battery installed in bushfire prone Mallacoota, is anticipated to improve the town's power reliability by up to 90%.

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

Captured from the Grampians Community
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Q. Can we use the stored electricity when there is a blackout or a bush fire?

A. This depends on if the battery is islandable. The best way to ensure resilience in the case of bushfire or blackout is to have the battery partially behind the meter so that some of the onus is on the building site.

Q. How safe are community batteries?

A. Community batteries are a safe energy storage option that are treated and maintained like any other electricity network asset. Batteries used for community battery operations do not pose a fire threat – in the same way household batteries do not pose a threat. In the instance of a bushfire prone areas, there are batteries designed to be bushfire safe that do not use lithium-ion technology.

What is My Role in the Project?

Q. Do I have to have solar panels to be able to participate in the project?

A. Yes or looking to get solar in the near future.

Q. How can renters take part in this project?

A. Yes, if the house has solar panels.

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

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Q. What will be required of the residents of Ballan?

A. The most important thing to see is local interest – this includes getting the local council on board, the local Chamber of Commerce and participation from the residents. Without this support a project like this could fall to the wayside.

Q. What is the minimum number of participants for the Ballan Community battery to be deemed viable?

A. There's no minimum number of participants as such rather, it will come down to the sites and what the site can facilitate. Much of this decision making will be in the hands of Powercor.

Q. Will the Ballan community battery be available for use by the residents of Mt. Edgerton and surrounds?

A. This really depends on where the project site is and if it is within range of Mt. Edgerton or if Mt. Edgerton will need to look at deploying their own community battery.

Q. What other examples can we look at in other towns?

A. Community batteries are a relatively new concept in Australia however, there are a few other examples we can look to including:

- Yarra Energy Foundation
- Yackandandah
- The Beehive Project
- Ausgrid
- Power Bank

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

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Q. Is it possible entrepreneurs will move in, install batteries and get subscribers for profit?

A. Anything is possible in such an emergent space – one of the possibilities we will start to see more of is Virtual Power Plants (VPPs). A VPP is a cloud-based network of decentralized, medium-scale power generating units such as solar and battery. One example of this is in 2016, AGL Energy announced a 5 MW VPP scheme for Adelaide whereby AGL will supply battery and PV to 1000 households and businesses.

The more participation we have on a local level the more we, the community, get to decide what clean energy transition we want to see in our local area and what partners we want to have in that transition. This is why it is really important to start being active and strategic about these opportunities for the transition to renewable energy because otherwise someone else will fill that space.

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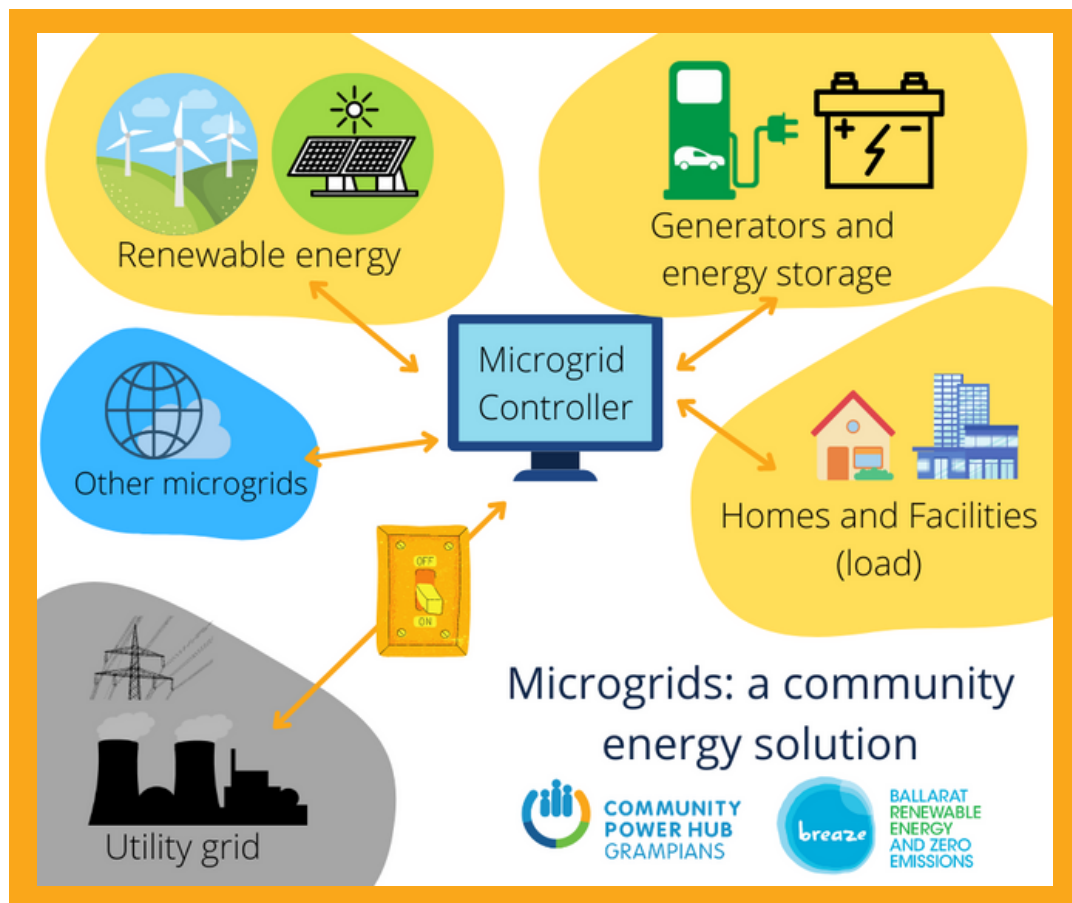
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MICROGRID FAQ

Adapted from the Grampians Community Power Hub Webinar + general questions -
Tuesday 11 January 2022

Q. What is a Microgrid?

A. A microgrid is a localised energy grid which connects consumers to an electricity supply. A microgrid can be islandable or, it can be connected to the larger grid.



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Q. How does a microgrid work?

A. A microgrid connects to the main grid but can be switched off and operate on its own using locally generated energy. This local energy can come from renewables such as wind and solar or from or fuel burning generators.

Q. What are the benefits of a microgrid?

A. Microgrids have many benefits to the community including:

- Microgrids offer grid security by enabling the community access to electricity in times of emergency and extreme weather events that would normally disconnect them from the main grid network.
- Offer better electricity reliability to remote communities.
- Have the potential to reduce costs by reducing the need for extra transmissions lines to remote areas and in theory reducing the costs to all grid customers.
- Help to accelerate the transition to clean energy.

Q. We have had a great deal of opposition to automated towers going through productive farming land. Would it be feasible to microgrid towns along the proposed transmission line route rather than send all the power to Melbourne to be then redistributed to consumers?

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A. One benefit of microgrids is that you reduce the need for distribution poles and wires. However, it's hard to say without looking at the network topography. Microgrids typically work better at the fringe of the grid with one connection point to the main grid.

If many communities adopt localised approaches to electricity, such as virtual power plants or microgrids, this means the amount of electricity that needs to be distributed goes down. However, the broader vision that's being painted in the energy industry is that by having really robust transmission lines we can move large volumes of electricity around the country really effectively. So if it's shady in one spot during the day from cloud or smoke then you can draw power from wind farms or sunny spots elsewhere without having to fall back on fossil fuels. In short term, there is not much relationship between transmission and local microgrids.

Q. ARENA has 50 million (AUD) in funds for microgrids projects, what exactly is involved and what stage does it need to get to before you can apply?

A. The fund is known as the Regional Australia Microgrids Pilot Program (RAMPP) funding and one of the prerequisites to be eligible to apply is you need to have a feasibility study completed and presumably that feasibility study will demonstrate that a microgrid is practicable and have some structure about what that looks like.

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Q. Is there a process that can be used to determine if communities suitable for microgrid such as level of community engagement, size of the town, grid set up etc.?

A. There's probably not so many strict limits that might apply, at this point in time the Victorian government and the Federal government are starting to invest in a range of microgrid trials to understand the true scope and value of a microgrid. Both levels of government and network providers seem to see a strong opportunity for microgrids in remote settings that are vulnerable to power outages such as bushfire prone areas or being on the fringe of the grid locations. Microgrids are a new and emerging space and this is something being addressed in current studies.

Q. What happens to the excess power generated within the microgrid?

A. There is no excess power as such, in that the grid generation and consumption must match. In the instance you have a situation where an enormous number of houses are generating power, your voltage is potentially going to surge so that's where community batteries potentially have an important role to play as well as household batteries in managing voltage.

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MICROGRID FAQ

Adapted from the Grampians Community
Power Hub Webinar + general questions -
Tuesday 11 January 2022

One of the essential features of a microgrid is the capability to have smart controls over individual systems so that the whole collection of participating sites are working cooperatively. A smart controller in a microgrid typically has the ability to be able to both scale up or scale down the performance of generation, regardless of the source (e.g. solar, wind or a diesel generator etc.). In this situation load banks such as hot water systems or other discretionary loads within the microgrid - pool pumps, air conditioning, electric cars - could be utilised within the microgrid to use excess electricity.

Q. How do consumers connect to the microgrid? Is there a second set of wires beside the grid wires?

A. No, the intention is to use the existing and already funded network assets and the real point of difference is that you adopt a property by property level of control to get that microgrid to work with the existing network.

Q. Has an effective power islanding system been developed in rural Victoria?

A. Two towns in Victoria that have never been connected to the grid are Licola and Moora Moora. Within the last two years, Licola has converted the microgrid which was entirely powered by generators to be focused mainly on solar panels and batteries. The generator continues to provide power when it is required.

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Q. Are microgrids feasible in urban areas?

A. Yes, they are. Microgrids in urban areas were investigated as part of the Victorian Government's microgrid program. One of the advantages within urban centres is the network is fairly built out and there is a lot of capacity to take on renewables and additional renewable capacity.

Q. What is resilience versus reliability?

A. In terms of microgrids, reliability relates to the grid's susceptibility to fail or not. Resilience relates to if the grid has failed, its ability to restore quickly.

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NEIGHBOURHOOD COMMUNITY BATTERIES FAQ

Captured from the Grampians Community
Power Hub Webinar - Tuesday 11 January 2022



BIBLIOGRAPHY AND FURTHER READING

- Yarra Energy Foundation - Community Battery FAQ
- Solar Choice: Dr Helen Lewis, Chief Executive of the Australian Battery Recycling Initiative
- AusNet Services to Install Gippsland's First Big Battery at Mallacoota
- Community battery finally installed in bushfire-prone Mallacoota
- Regional Australia Microgrid Pilots Program
- U.S Department of Energy - How Microgrids Work

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FURTHER READING AND RESOURCES

www.communitypowerhub.net.au
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WEBSITES

- Community Power Hub - www.communitypowerhub.net.au
- BREAZE - breaze.org.au
- Hepburn Wind - www.hepburnwind.com.au
- Natimuk Community Energy - www.natimukcommunityenergy.org
- Council and Community Action in the Climate Emergency - www.caceonline.org
- Victorian Neighbourhood Battery Initiative Consultation - engage.vic.gov.au/victorian-neighbourhood-battery-initiative-consultation
- Yarra Energy Foundation - www.yef.org.au

RESOURCES

- Coalition for Community Energy (C4CE) Knowledge Hub - a robust list of webinars, case studies and resources for all things community energy - <https://c4ce.net.au/knowledge-hub/>

WEBINARS AND VIDEOS

- Grampians CPH Webinar I: Community Energy Forum, 6th Oct 2021 - <https://youtu.be/N1ADSVboINc>
- Grampians CPH Webinar II: Previous Successes, 22 Nov 2021 - <https://youtu.be/Qr4KJfkuh0E>
- Grampians CPH Webinar III: Ballan Community Battery, 14 Jan 2022 - <https://youtu.be/x0fmbFFI8BQ>
- Grampians CPH Webinar IV: Microgrids, 6 April 2022 - <https://youtu.be/8-x6CithRMk>
- Launch of the Gippsland Community Power Hub, 2 Oct 2021 - <https://youtu.be/MtAxIPaulcw>

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FURTHER READING AND RESOURCES

www.communitypowerhub.net.au
grampianscph@breaze.org.au

- Yarra Valley Community Power Hub Full Launch, 7 Sept 2021 - <https://youtu.be/dlyMgImMMCc>
- Yarra Valley Community Power Hub: Home Energy Efficiency Webinar Recording, 16 Dec 2021 - <https://youtu.be/xdJ-42VuIlM>
- Home Energy Efficiency Webinar & Reverse Cycle Air Conditioning Bulk Buy, 16 May 2022 - <https://youtu.be/WQc-z-yTUu8>
- City of Yarra: Community Batteries, 8 April 2021 - <https://youtu.be/fpcwQqjWE0>
- Port Phillip's partnership with the Metro Community Power Hub Webinar, 22 Sep 2021 - <https://youtu.be/I5wbM0PGHwU>
- Interest in community battery for Port Phillip webinar, 17th March 2022 - <https://youtu.be/9Paj7oY9wzE>
- Community battery renewable energy storage - analysis from The Australian National University (ANU), 2 June 2021 - <https://youtu.be/npwhuildLGg>
- All-Energy Australia conference, 26 October 2021 - <https://youtu.be/NYzGmqIN74U>

NEWS ARTICLES

- The Ballarat Courier: New leaders for Grampians Community Power Hub appointed, 7 Nov 2021
- The Horsham Times: Wimmera makes strides in renewable energy, 4 Dec 2021
- Melton | Moorabool Star Weekly: A possible community battery for Ballan, 5 Jan 2022
- The Ballarat Courier: Could a community battery be a big green step for Ballan?, 10 Jan 2022

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FURTHER READING AND RESOURCES

www.communitypowerhub.net.au
grampianscph@breaze.org.au

- The Wombat Post: Community School Funded to Reduce Greenhouse Gas, 18 Feb 2022
- The Ballarat Courier: Microgrids a consideration to prevent power outages in region, 20 March 2022
- The Ballarat Times: Microgrids aiming for big energy, 20 March 2022
- The Horsham Times: Free webinar aims to help region transition to community-owned renewable energy, 24 March 2022
- BREAZE: Minister d'Ambrosio launches Grampians CPH 31 March 2022
- City of Yarra Victoria's First Ever Inner Urban Community Battery Officially Unveiled in Yarra, 6 June 2022

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HOW TO LOBBY FOR A SAFE CLIMATE



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A toolkit for individuals and groups
to enable action in the climate
emergency.



Want your local council to act faster on climate change? Want to inspire your community to get involved and make the transition to a sustainable future?

This toolkit is designed to help you take the next steps in building a safe climate campaign from councils up - adapted from Council and Community action in the Climate Emergency (CACE). CACE is helping councillors, council staff and community members enact urgent climate

emergency action in their community. In the CACE toolkit they describe 46 key actions we can take to address the climate emergency - here we've outlined some of the key steps to get you started. The complete toolkit can be found on the CACE website - www.caceonline.org.

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HOW TO LOBBY FOR A SAFE CLIMATE



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**A toolkit for individuals and groups
to enable action in the climate
emergency.**

Want to know what you can do to get your Council to acknowledge or declare we are in a climate emergency and mobilise your community and move them into emergency mode?

WHAT STEPS SHOULD WE TAKE?

1. Get your Council to acknowledge or declare we are in a climate emergency
2. Mobilise your community and move your council into emergency mode.

WHAT CAN YOU DO?

- Attend climate rallies
- Attend climate-related public events in your local area

- Join one of the groups campaigning on the Climate Emergency and get active in supporting the campaign
- Write to your local, state or federal politician and demand emergency action to reverse global warming
- Visit your local, state or federal politician and demand emergency action to reverse global warming
- Join one of the political parties campaigning on the climate emergency and get active in supporting the campaign
- Set up your own local Climate Emergency action group
- Talk to friends, family and anyone who will listen about what we can do to ensure a safe climate future

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**A toolkit for individuals and groups
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emergency.**

WHAT SHOULD A ROBUST CLIMATE EMERGENCY PLAN LOOK LIKE?

So, your Council has declared a climate emergency - that's great! However, a declaration is only as good as the plan that follows. Without actionable targets for short and long term, the emergency declaration becomes inconsequential. Here are some of the recommendations to look for in a robust Climate Emergency Plan adapted from the CASE Local Government Climate Emergency Toolkit:

- Transparent and Accountable Actions
- Set a net zero target for 2030

- Declare a Climate Emergency and commit to Climate Emergency Action Plan / Climate Emergency Response
- Make a public declaration
- Consult and engage with the community on plans and actions
- Enable community leadership
- Tackle transport and energy operations for Council and the community
- Work towards a circular economy



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