What's the role of community batteries in the climate emergency response?

Webinar starts at 6.00pm





Using Zoom

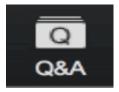




Microphones are on mute tonight



Cameras are off as the session is being recorded



Post questions for the panel in the Q and A section

An introduction to community batteries



What is a community battery?

Chris Wallin, Yarra Energy Foundation

Greg Hannan, CitiPower

Dr Marnie Shaw, Australian National University



The City of Yarra is going 100% renewable.



We've committed to achieving net zero emissions across the Yarra community by 2030.

Yarra Council's electricity is powered by 100% renewables. You can go 100% renewable too.

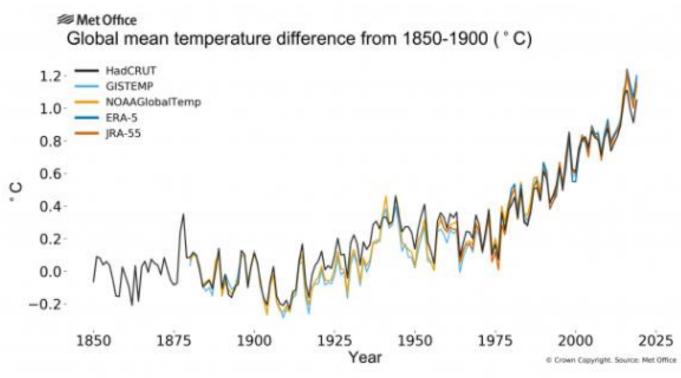
- Switch to 100% renewable electricity with GreenPower
- Go solar Install quality solar at a discounted price through the <u>Yarra Solar Program</u>
- Create an all-electric home Replace gas appliances
- Use less energy Change your habits, and upgrade insulation, draft proofing and lighting

Find out more at www.yarracity.vic.gov.au/RenewableYarra

YARRA ENERGY FOUNDATION

Chris Wallin, Community Battery Project Manager, chris.wallin@yef.org.au

Crisis? What crisis?

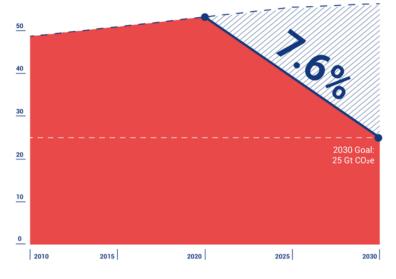


Source: United Nations, https://www.un.org/en/climatechange/science/key-findings

Today, we need to reduce emissions by 7.6% every year from 2020-2030 to limit global warming to 1.5°C.



Emissions per current commitments





Role of a community battery

- A sophisticated electrical device
- Shared by members of a community
- Located within the neighborhood
- Connected to the electricity lines
- Stores 100% renewable energy from local rooftop solar
- Supplies in the evenings and mornings
- Other services





Examples



Meadow Springs, WA (Western Power)



Beacon Hill, NSW (Ausgrid)



Highett, VIC (United Energy)



Who owns and runs them?

1. A community group

Community Energy 4 Goulburn solar farm and battery

2. A community retailer

Enova Community Energy shared community battery

3. A standard retailer

Synergy's Alkimos Beach (WA) community energy storage device

4. An electricity distributor

United Energy's bayside pole-mounted battery systems

5. An independent third party

YEF-Citipower YESS project, aka Melbourne Solar Sponge



Yarra Energy Storage Systems



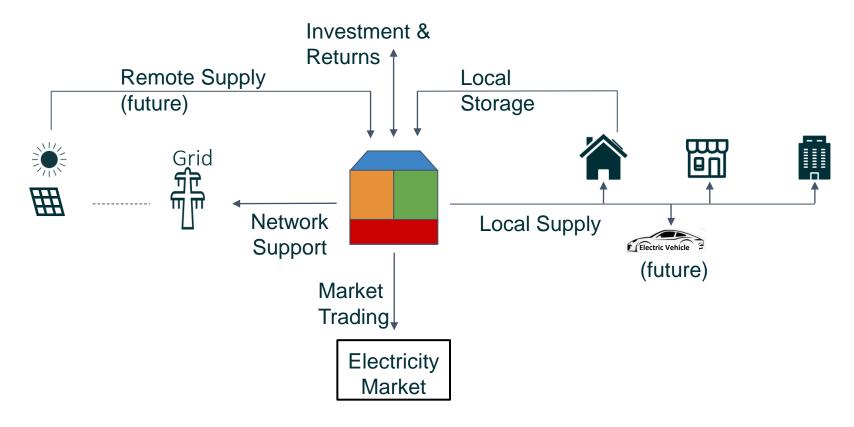
Aims

- A network of community batteries
- · CitiPower-wide deployment
- Ownership by both wholesale and community retail investors
- Services for community customers
- Services to support Citipower's network
- Trading on the electricity market





How does it work?







Who does it benefit?

Investors

Return on investment

Citipower

- Reduces the need to upgrade the network
- Relieves network overloads
- Allows for more solar exports*
- Higher power quality
- Stronger ties to the community

Community

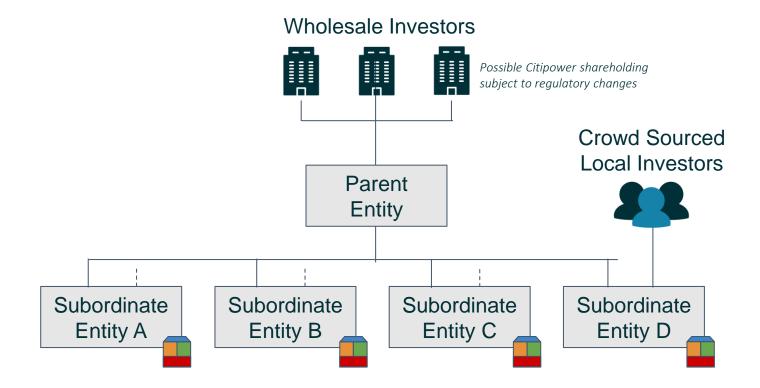
- More affordable 100% renewable energy than home solar+battery
- Visible & tangible renewable energy
- Renters and businesses are eligible
- Builds trust in the energy sector
- Stronger ties within the community





^{*} Under specific conditions

How is it structured?







Current status

✓ Preparation of Investigation Project

✓ Memorandum of Understanding

✓ Investigation Project

Trial project





What's the role of community batteries in the climate emergency response?





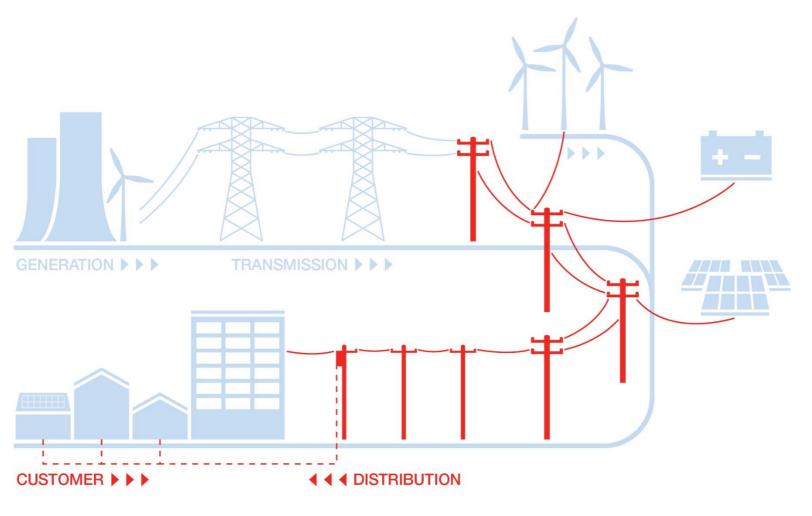
CitiPower and your community

Greg Hannan Head of Network Strategy and Non-network Solutions

07.04.2021



The electricity supply chain in Victoria

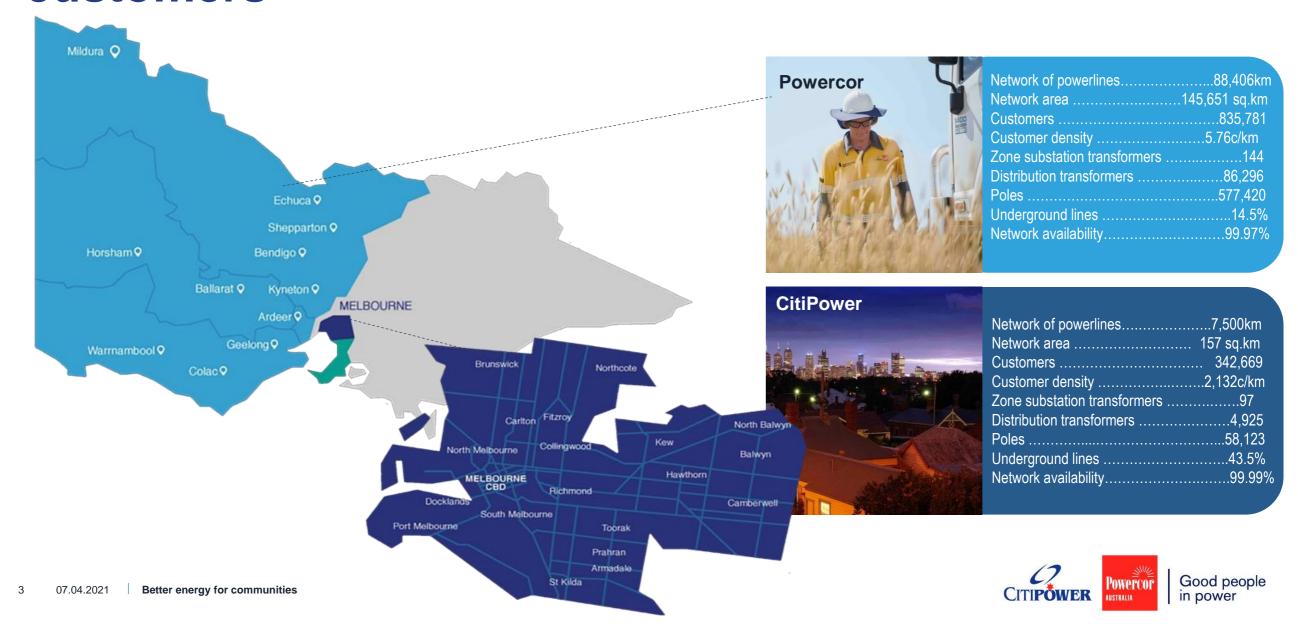


The City of Yarra is serviced by the CitiPower electricity distribution network.

CitiPower and Powercor Australia networks



We provide power to 1.2 million metro and rural customers



Electricity networks are evolving quickly



Prioritising localised storage opportunities is a customer and Victorian Government priority and we are looking to enable customers and support more renewable generation coming on to the grid



The grid at both the transmission and distribution level is required to support the accelerating transition to renewables. We have established a reputation for innovation and our pole top battery trials show how we see a role for batteries to provide network and broader benefits. We are enjoying working with the Yarra Energy Foundation to build momentum for more distribution connected batteries to allow more customers to export more solar.



The Victorian Government "Neighbourhood Battery" program is a very exciting program that we are also looking at.





What's the role of community batteries in the climate emergency response?









Why community batteries? A national perspective

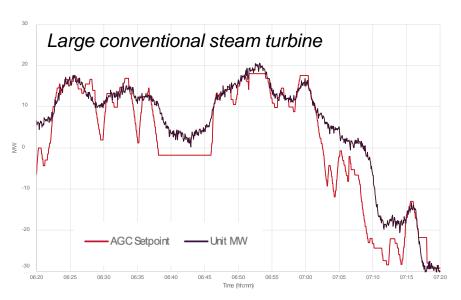
Marnie Shaw
Battery Storage and Grid Integration Program

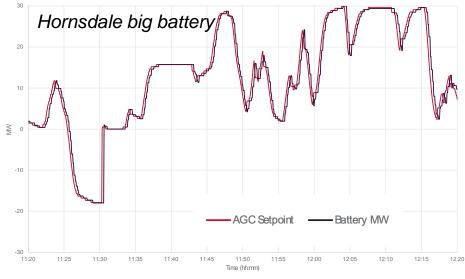






Comparing Regulation Response



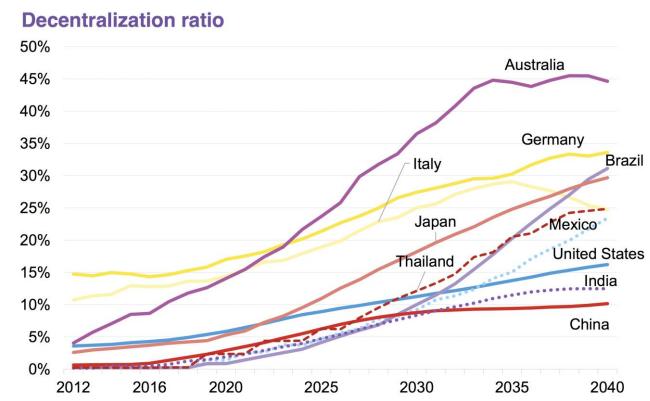








~ ratio of rooftop solar compared to total energy requirements



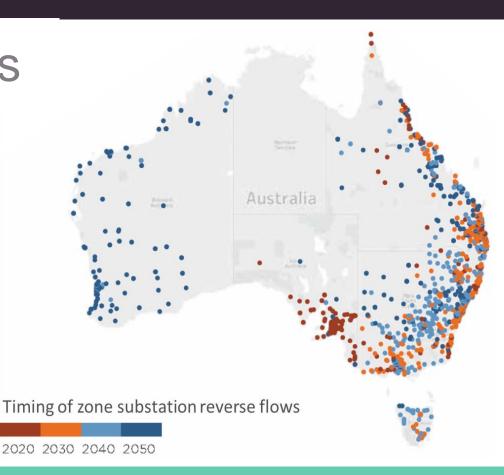
Source: Bloomberg New Energy Finance Note: decentralization ratio is the ratio of non-grid-scale capacity to total installed capacity.





Reverse power flows

- Grid not designed for reverse power flows
- Solutions include energy storage, tariffs, control of solar exports



CSIRO modelling, Energy Network Transformation Roadmap, April 2017





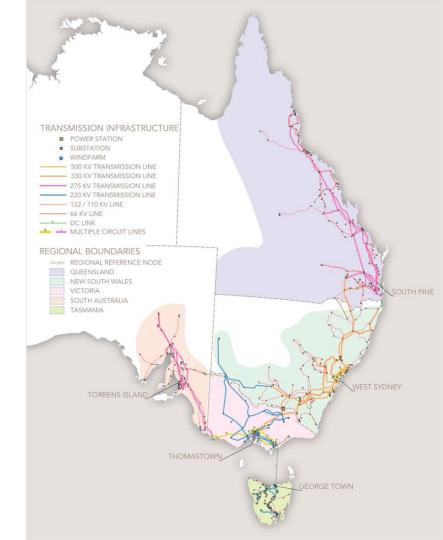
The community battery in Princess Mary Reserve at Beacon Hill. Picture: Nadine

Morton





The National Electricity
Market (NEM) is the
longest interconnected
power system in the
world

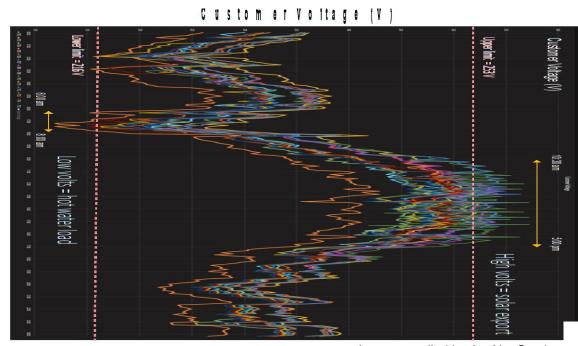






Increasing Dynamic Range for Voltage

Voltage observations from the **Networks** Renewed project in the **AusNet Services** network (VIC).



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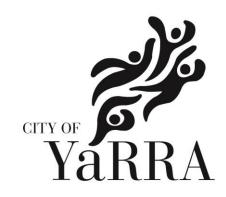


Questions?



YARRA ENERGY FOUNDATION









Battery Storage and Grid Integration Program

More information



- YESS Solar Sponge community battery https://www.yef.org.au/our-stories-and-events/seeking-victorias-first-solar-sponge-community-battery-network/
- Citipower / Powercor <u>www.citipower.com.au</u>
- ANU Implementing Community Scale Batteries Report -https://arena.gov.au/assets/2020/12/implementing-community-scale-batteries-bsgip.pdf
- Victorian Government consultation on neighbourhood batteries Have your say by 23 April: https://engage.vic.gov.au/victorian-neighbourhood-battery-initiative-consultation
- 100% Renewable Yarra <u>www.yarracity.vic.gov.au/RenewableYarra</u>
- Yarra Solar Program <u>www.yef.org.au/yarrasolar</u>
- Sustainable renovations in heritage areas Webinar Wednesday 19th May, 7-8:15 pm. Register here: https://www.eventbrite.com.au/e/sustainable-renovations-in-heritage-areas-tickets-147445366059