



100% Renewable Electricity by 2022

Intro: President, Totally Renewable Yackandandah
Started in 2014

Mission to transition the town to 100% renewables by 2022

Newsflash: it's 2022, but ambitious goal and we we're well on the way

This talk will cover the process, benefits, pitfalls, and collaborations
required for our community- or town-scale battery, Yack01 (scaled energy
storage, ie. Not household scale)

Totally Renewable Yackandandah

Journey so far:

- 58% rooftop solar
- 3 microgrids
- VPP – 200 properties
- all community Blds
- 60% renewables
- Yack01



Resilience

Local
economy

Climate

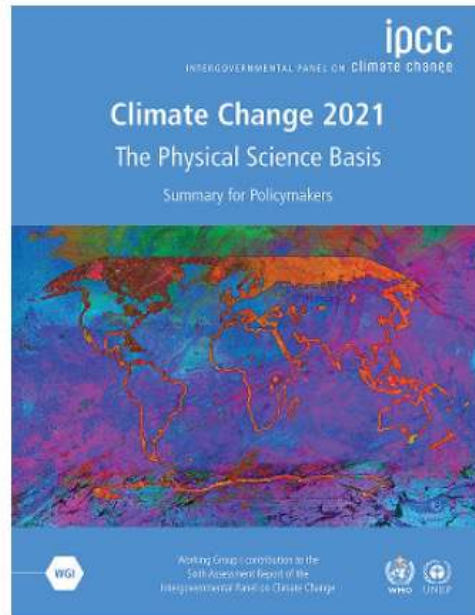


Currently at 60% renewable energy in our electricity usage

A community battery is one piece of the puzzle – there are many other pieces

Why do we do this: resilience; local economy; climate change

Stage 1 Business as Usual



IPCC report tells us that not doing anything to reduce emissions will give bad outcomes.

Not doing anything also means that millions of dollars will continue to go out of our regional community every year, and we will still have an electricity network that has reliability issues and is severely compromised in times of extremes or emergencies such as bushfires.

There were opportunities in transitioning to 100% renewables that bring huge benefits to our community and also reduce emissions.

Business as usual was not attractive to TRY.

**Stage 2
Local
Generation
and
Efficiency**



Re-imagine the electricity supply

Adoption of high-quality rooftop PV with smart energy controllers, and heat pump hot water systems

Creating a network of inter-operable energy plants

Stage 3 Batteries



Addition of batteries as they become affordable

Saving daytime excess solar generation for use at night

Building resilience

Stage 4 Community Retailer



Local exchange of electricity requires an energy retailer

Formed Indigo Power (social enterprise) - Goal of 100% across the region, beyond Yackandandah.

Stage 5 Scaled Generation and Storage



Analysis guided us that we can get to 70% with hyper focused efficiency and rooftop gen/storage.

We need community scaled generation and storage (1-5 MW / 10 MWH) for the last stage

– brings benefits to everyone in the community (equity and access)

Community storage



Benefits

Serves community

- Renters
- Low-income households
- Where installations not feasible

Network benefits

- Stability
- Reliability
- [Resilience]

Islandability possibilities

- If > 2 MW



Community-scale or town-scale storage provides:

- equity of access to locally-generated electricity for everyone in the community
- improved stability and reliability of local networks (and resilience where storage is of sufficient scale)
- town-wide resilience can be provided if storage is > 2 MW – facilitates islandability if network configuration will allow it

Yack01

<https://totallyrenewableyack.org.au/watts-happening/yack01-community-battery/>

How did Yack01 start?

- \$30k grant – feasibility of scaled assets (IOH)
- Site with a transformer – sawmill
- Financing
 - TRY raised \$104k → IP
 - IP WAW loan \$100k (SV)
 - TRY & IP: Vic gov \$171k (New Energy Jobs Fund)



274 kWh
battery

* 65 kW
solar



There is a page on our website with a complete background on Yack01

Started in 2018 with a \$30k grant for a feasibility analysis

Identified the old sawmill site as having a suitable transformer and a large shed roof

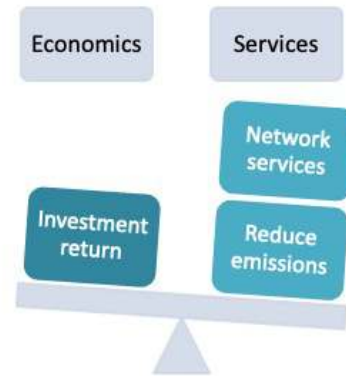
Subsequent funds were raised and borrowed, and augmented by a grant from the Vic government

Yack01 is a pilot facility: the first Behind-the-Meter (BTM) retail-facing community battery in Australia

Collaboration

Partners

- Indigo Power
 - Project manager
 - Owner/operator
- Mondo
 - Network connection
 - Purchase battery
 - Dispatch of power via Ubi
- Ben Gilbert – Landholder
- Funders



Pilot project is a balance of economics versus services: how to ensure services (both providing electricity and reducing emissions) while providing a return to the community and investors

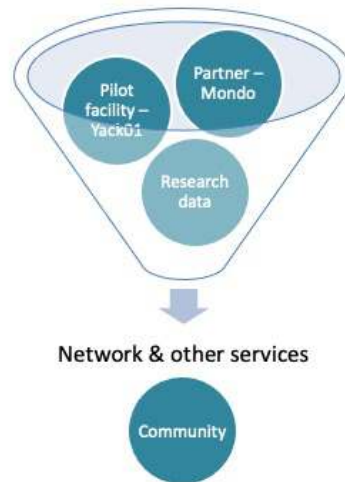
The Mondo Ubi is a smart energy controller that helps with control of electricity flows and data collection

As a pilot project, data is being collected for research purposes and will help in working towards financial viability

Collaboration

Developing a business model

- Working towards providing network services
- Less need for grants



Combination of our partner Mondo, a pilot facility Yack01, and research data, is working towards providing other electricity network services that can earn a return (in addition to the direct sale of electricity to customers).

i.e. we're developing a business model, aiming to maximise the financial sustainability of a community battery and thus lessen the need for grants to get it established.

Community storage



Many challenges along the way, in addition to the basic fund raising required

Final thoughts

- Whole of community
- Opportunity & action led
- Collaborations
- Knowledge sharing



Final thoughts about what makes our journey progress:

- try to engage the whole of the community
- opportunity and action led – take opportunities when they appear
- lots of collaborations
- share whatever knowledge we've learnt as much as we can

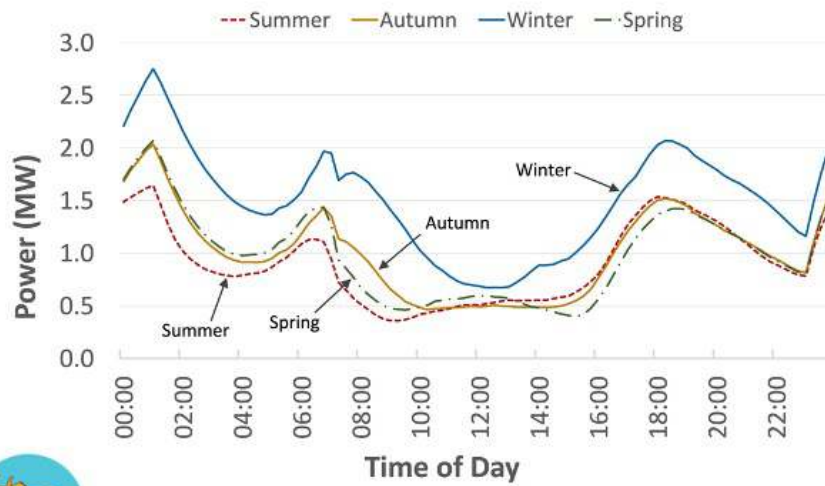
Thank you



Flicking the switch made by the Yackandandah Mens Shed for the launch of Yack01, 8 July 2021:

From L to R: TRY President Dr Juliette Milbank, Victorian Energy and Environment Minister, the Hon Lily d'Ambrosio, Indigo Shire Mayor and Councillor, Cr Jenny O'Connor, Indigo Power Board Chair, Ann Telford, and local Federal Independent MP, Dr Helen Haines.

Yack Imported Energy Usage



Extra slide: Energy imported into Yackandandah from the main electricity grid – daily average by season over three years (mid-2018 – mid-2021)

Taking opportunities

- Key partners/collaborators
 - Infrastructure providers
 - Council
 - Largest electricity users
 - Areas of greatest need
- Follow the grants/funding sources
- Small wins build license
- Courage and persistence

Yack CFA Resilience project
✓ 5 years to get permission
✓ 3 years of staged fund raising



Extra slide