

Everything you've ever wanted to know about the Cobargo microgrid project and possibly a bit more ...

We imagine that ...

Cobargo has a small town-scale solar farm coupled with a battery.

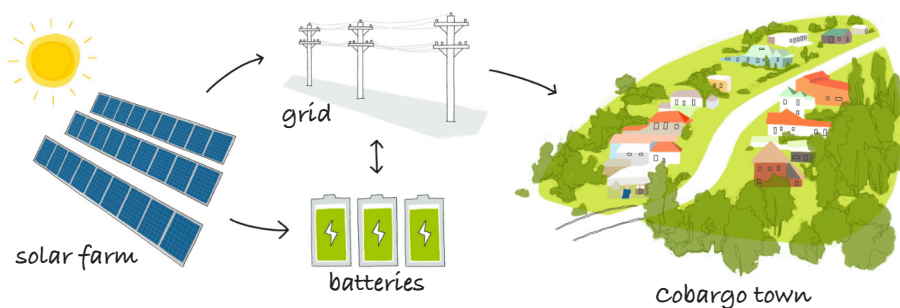
The microgrid enables households and businesses in the Cobargo township and some nearby areas to have power during a total grid outage.

Water and sewerage will keep working while the grid is repaired. Post office and banking, shops, fuel pumps and health facilities can continue serving district residents. Local businesses can continue to operate.

We are also working on innovative approaches to return benefits to the Cobargo community.



Normal microgrid operation when the grid is up



What is a microgrid anyway? How does it work?

A microgrid is a small 'subset' of the electricity system that generates and supplies energy at a local level. The Cobargo microgrid will be a solar farm and battery, connected to the Cobargo grid.

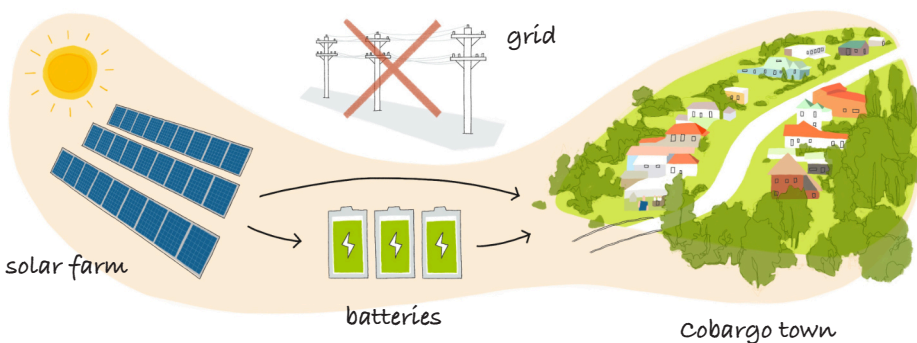
During normal operation, Cobargo homes and businesses will get electricity from the grid, as they do now. The solar farm will supply emissions-free electricity to the grid.

The battery will charge from the grid when electricity prices are low and sell to the energy market when they are high. It will also help keep the grid stable and gain revenue from doing so.

At times of high bushfire risk the battery will hold on to sufficient energy to respond in case it's needed for homes and businesses in Cobargo.

When the grid goes down, the microgrid will go into 'island mode' (disconnected from the grid) and supply electricity to Cobargo from the solar panels (day) and the battery (night, cloudy and smoky days).

'Islanded' microgrid operation when the grid is down



Graphics by Kim de Haan



FAQS

Why do you think a microgrid here is important?

Cobargo is a long way from large-scale generation plants and is connected to them via many kilometres of poles and wires. This makes Cobargo vulnerable to grid outage. Small-scale distributed renewable power generation will help Australia negotiate the energy transition from fossil fuel to renewables. We don't want Cobargo to be left behind just because we are a rural community.

Who will pay for it? Who will own it?

A combination of government funding and private investment will pay for it. It may have public, private or mixed ownership. Individual residents may be able to invest in the project.

Who gets the profit?

Investors/owners and lenders will receive financial returns. We aim for Cobargo residents to receive financial benefit – through a local co-operative or some other governance arrangement.

Who will run it?

Essential Energy will continue to operate the distribution network – poles and wires – and the microgrid in 'island mode'. Options for normal operation of the microgrid are being explored in the feasibility study.

Will electricity be cheaper?

Not the way the energy market currently works. But we are exploring options for local consumers to benefit from local solar generation and storage, and to access retail agreements that provide stable, predictable electricity bills.

Will there be local employment?

Yes! Local contractors will be employed for construction and ongoing maintenance. Businesses will be able to continue trading during power outages and young people will have access to new renewable technology careers.

What about recycling?

Yes that's our aim. Recycling solar panels and batteries is increasingly possible.

Where will it be located?

We don't know yet. The microgrid needs a 13-hectare site that is north-facing, with good road access, low environmental impact, committed landowner/s and supportive neighbours.

Can there be multiple uses of the land?

Yes. For example, farmers in western NSW are grazing sheep in solar farm paddocks with improved productivity as a result of increased shade/shelter, water run-off and pasture.

What happens if the solar farm is damaged?

Like any infrastructure, the solar farm can be impacted by wild weather, floods, and fires. As key local infrastructure it would be protected, but it will not be invulnerable.

What if part of the local network is damaged?

When the microgrid is in 'island mode' the local distribution network will operate normally. If there is a problem on one part of the network, circuit breakers will isolate that section (just as they do now).

Is it dangerous?

It is no more dangerous than solar panels on the roof or batteries at people's homes and businesses.

How big is the planned microgrid?

We won't know until the feasibility study is complete, but our current advice is that a 5MW solar farm with a 5MWh battery will be able to keep the power on during a scenario similar to the Black Summer fire.

Will it need more poles and wires? Can they be underground?

Maybe. A few new poles may be required to connect the solar farm to the existing local pole and wire network. Underground cables are possible but would be significantly more expensive.

Will all homes in Cobargo be included?

Our current advice is that the microgrid will be able to keep the power on within the township and some adjacent areas to the south. When relying on the microgrid in 'island' mode during grid outages, residents may need to reduce their power usage (reduce the load) at certain times by not using power-hungry appliances. This will ensure that everyone has enough power for the basics (fridges, sewage pumps and lighting). We'll know more when the feasibility study is complete.



What have we done so far? ... quite a bit

- Funding for feasibility study secured: Nov 2021
- Feasibility study commissioned including load trial: Nov 2022
- Three whole-of-community consultations: March 2022, April 2023, September 2023
- Six community organisation briefings: May to October 2023

What's next? ... there's a lot more to do

- Continue community discussions
- Complete the feasibility study (May 2024)
- Find a suitable site
- Develop financing model and apply for funding
- Seek grid connection approval from Essential Energy
- Seek Council and NSW development approvals including biodiversity assessment
- Develop a financing/ownership model; apply for funding
- Construction (2026?)
- Connection and operation (2027?)