AusNet

A guide to achieving your community's renewable energy ambitions

CREST

AusNet's Community Resilience Energy Sustainability and Transformation (CREST) program works with communities to help develop their energy resilience by implementing community-scale solutions.

We do this through initiatives that modernise our network whilst benefiting community energy resilience and reliability.

Key benefits

- Maximizing energy self-reliance and supply resilience
- Accelerating transition to renewable energy and a low carbon future
- Providing communities across our network opportunities to participate in a low carbon economy.

Ready to discuss your community energy project with us?
Email: communityenergy@ausnetservices.com.au

Starting your community energy journey?

Community energy lets community groups initiate, develop, operate and benefit from shared or individual renewable energy sources. Every project is different and tailored to each community's needs and ambitions.

Community energy projects require time and effort from specialist resources. Knowing how best to navigate this journey is crucial.

We've created this guide to help your community achieve its renewable energy ambitions.

ausnetservices.com.au/communityenergy

Getting started

The journey

1 What are the objectives of your community energy project?

Clearly define and agree on your community energy project's objectives
You might want:

- base-level resilience for relief centres and essential services
- community-wide resilience during extreme weather events
- totally renewable or net zero carbon ambitions
- to expand your local economy into renewables to generate additional community revenue by participating and trading in the energy market.

Make sure you engage broadly within your community to define and agree on your community's primary energy objective up-front.

2 Establish your project by organising your community's finance and governance

Before starting your project, carefully consider your source(s) of funding and legal structure.

To establish the project, you should:

- appoint a dedicated project manager
- agree on how your community energy project will be governed, including the committee, community group members or partners you need to involve, and their responsibilities
- set up your project with key stakeholders
- formalise the project and ensure project management practices are followed.

3 Gather information and commission a feasibility study.

Once your project's objectives, finance and governance are agreed and the project is formalised:

- read the community energy information and FAQs on AusNet's website
- submit a network data request to support the feasibility study
- conduct a feasibility study to determine the best energy solution and business model for your community.

Decision point - Is the energy solution feasible for your community?

Yes continue to step 4
No investigate a different solution or stop the project noting the study found it not feasible.

4 Conduct preliminary works and the relevant grid connection process.

If your project is considered feasible:

- start the preliminary works stage
- review and follow the relevant AusNet grid connection process based on the size of your energy solution on AusNet's website.

5 Procure, install and commission the energy solution

Once you complete the preliminary works and get your grid connection approval from AusNet, you can start procuring, installing and commissioning your energy solution.

6 Operationalise your energy solution

This is the final step. You are now ready to connect your community energy solution.
Make sure there are ongoing plans in place for its operation and maintenance.

Key stages of your project

Before you start the journey, learn more about these studies and works so you can tailor them to suit your project.

Feasibility study

What is it?

- Detailed assessment to see if the project and energy solution is achievable
- High-level technical designs of the energy solution
- High-level implementation, operational, maintenance and market revenue costs for the energy solution, including ownership and contracting structure
- Initial community engagement to ensure the design meets the objectives

What is the outcome?

To confirm if the community energy solution is technically and commercially achievable.

Preliminary works

What is it?

- Detailed technical designs for the energy solution
- Detailed plan outlining funding and ownership of the energy solution after project completion
- Analysis of the energy solution's values and benefits
- Market sounding of the energy solution, including gauging market interest, solution and solution sizing, availability and market pricing
- Expressions of interest from local installers
- Detailed community engagement, including site assessments and land lease agreements for energy solution location and ownership
- Detailed costings for implementation, operational, maintenance and market revenue, including ownership and contracting structure

What is the outcome?

A project ready for implementation.

Implementation works

What is it?

- Detailed community and stakeholder engagement
- Purchasing the required components
- Installing and testing major components and integrating them incrementally to build-up the solution
- Commissioning the energy solution within the community, including defining the ongoing operation and maintenance with the solution's owner(s)

What is the outcome?

An installed and commissioned solution with operation and maintenance agreements.

Renewable energy solutions

There are four renewable energy solutions that we typically see implemented in community energy projects. We've provided an outline of these solutions here – you can find out more at **ausnetservices.com.au/communityenergy**.

Grid-connected microgrids

For around 20 – 1000+ customers

A grid-connected microgrid is a self-contained mesh network that facilitates real-time energy generation and consumption among various energy nodes within a defined geographical boundary. An energy node can be anything that generates or consumes energy inside the microgrid's boundary. These nodes are interconnected using the distribution network's poles and wires. An orchestration platform can enable a microgrid to operate dynamically and autonomously in real-time. The orchestration platform has intelligent software and hardware that allows the dynamic management of power for each energy node connected to the microgrid.

Grid-scale Battery Energy Storage System (BESS)

For around 200 – 1000+ customers

The BESS is a large battery that acts as an energy storage system and is connected to and works alongside the distribution network. The BESS can enhance the wider distribution network's reliability and resilience through peak load management, power quality improvements and increased hosting capacity for Distributed Energy Resources (DERs), such as roof top solar.

Off-grid microgrids

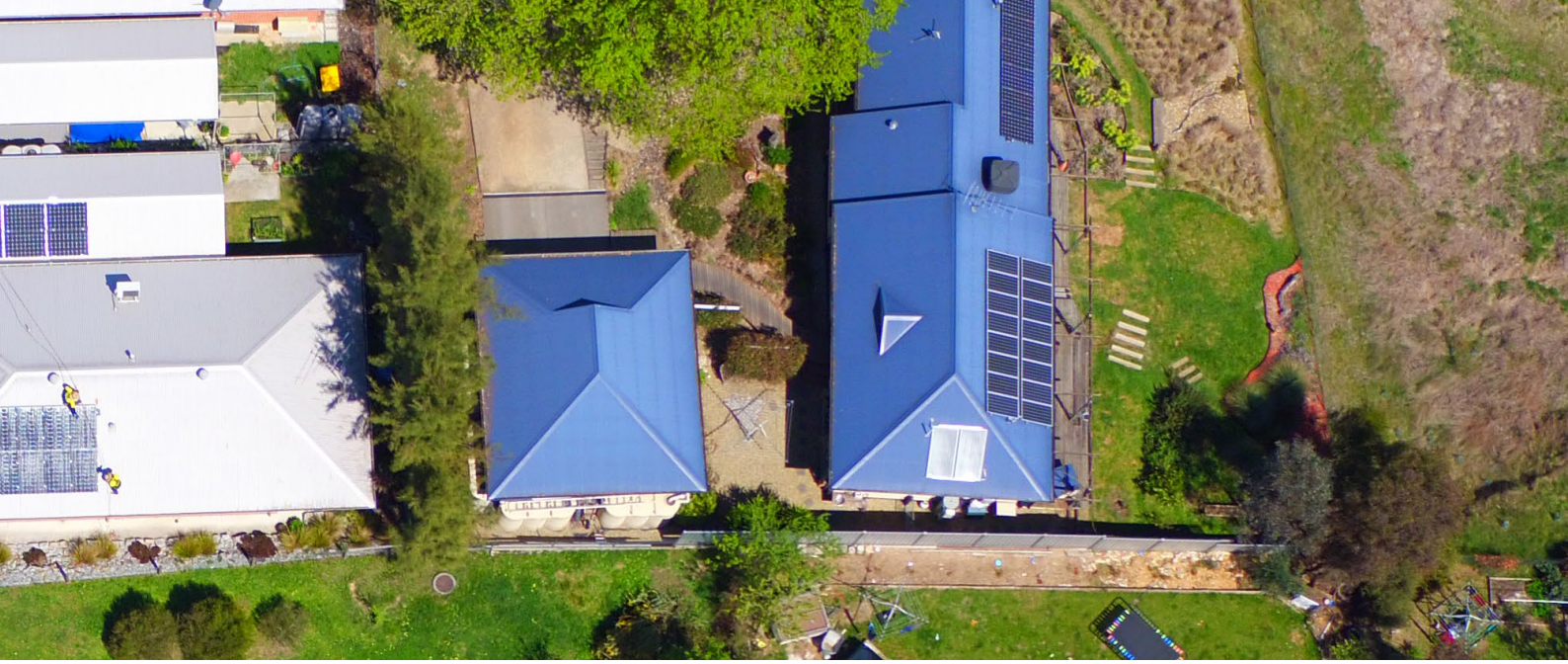
For around 20 – 1000+ customers

An off-grid microgrid is very similar in design and operation to a grid-connected microgrid. The primary difference is that the off-grid microgrid only operates in islanded mode. It's completely disconnected from the wider network (islanding the community full-time).

Stand Alone Power Systems (SAPS)

For around 1 – 5 customers

SAPS are an independent electricity generation and supply system. In our network, these systems are deployed in-front-of-the-meter and are classified as utility-grade. Its various components can operate independently of the distribution network, making it more suitable for remote customers.



Want to know more?

Why do we need to define our community energy project objectives up front?

It's important to be clear about the motivation or driver for your project and ensure your stakeholders agree on the objectives. This will shape decision making throughout the journey, ensuring outcomes match expectations and the energy solution is the right one for you. For examples of common community energy project objectives, see Step 1 on page 4.

Why do we need a community energy project?

Setting up a project gives you the best chance of achieving your community energy ambitions. This includes keeping to project time frames, managing costs and achieving quality result for your community. Strong governance ensures accountability during key stages of delivery - often when things go wrong. The 'Key stages of your project' section on page 5 will help you identify the suitable solution and ownership structure for your project.

How can we finance our community energy project?

Your finance options will be specific to your community and may change, but some options include:

- grants from local councils, the Victorian Government (e.g. DEECA) or Federal Government (e.g. ARENA)
- community donations, fundraising, crowd funding, revolving funds
- community group funding or investment
- loans.

How do we organise ourselves as a community to start the project?

The governance structure will be specific to your community and the skills available. You may want to consider:

- leveraging an existing committee or council
- establishing a committee specific to this project (incorporated or unincorporated)
- more complex structures as the group matures – e.g. a cooperative or unlisted public company
- partnering with a commercial entity or university.

What is a grid connection enquiry and the grid connection process?

Most of the time, your proposed community energy solution will require a connection into the existing grid. It's important to contact us early in the planning stages so we can make sure the existing grid infrastructure can support the specific requirements of your project in your chosen area.

You will need to consider:

- the energy solution you plan to connect
- the size of the connection
- where you want to connect.

Who can help with your community energy project?

You can get expert advice and support from a variety of experienced professionals. Here are some suggestions for each phase:

Feasibility Study

- Electrical, structural or civil engineering consultants or engineering delivery partners - ideally specialising in community energy solutions
- Financial analysts
- Specialist hardware providers
- Universities specialising in renewables.

Preliminary Works

- Electrical, structural or civil engineering consultants or engineering delivery partners - ideally specialising in community energy solutions
- Design studies contractors or providers specialising in civil testing, hydrological studies, acoustic assessments, cultural heritage, flora and faunas, emergency service assessments, planning requirements, legal opinion.

Implementation Works

- Electrical, structural or civil engineering consultants or engineering delivery partners - ideally specialising in community energy solutions
- Selected commercial electricians
- Clean Energy Council accredited installers
- AusNet's connections team
- Retailer or wholesaler.

What does ownership involve and what responsibilities should we consider?

The owner is responsible for the capital, operations and maintenance costs. They should have direct input into how the solution operates and how benefits are realised. Due to the complexity of setting up ownership structures based on your community energy ambitions, we recommend getting specialist advice.

Examples of possible ownership models are listed below:

Ownership models	Advantages for the community	Risk and challenges
Community owned: community owns the solution outright	Pride of ownership and furthering renewable ambitions Better guarantees for reliability Potential to keep financial returns	High-level of ongoing expertise required within the community to operate the asset(s) Exposed to commercial or market risks Needs a high-level of capital contribution Difficult solution to operate
Third-party owned: can include aggregators, retailers, battery manufacturers	No upfront capital from the community Not responsible for operation and maintenance costs Focus on generating revenue	Getting operational changes proposed/ implemented Potentially less input into system design and operation A third-party will expect a return on investment
DNSP (Distributed Network Service Provider) owned: DNSP owns the solution outright	No upfront capital from the community Not responsible for operation and maintenance costs DNSP will prioritise network reliability and resilience over market revenue	Limited input into system design and operation - this will be based on the level of community consultation
Joint venture: owned by both the community and a third party	Community is exposed to less risk than sole ownership	Competing interests Can be a difficult relationship to manage Third party will expect a return on investment.

What are the various types of engineering contract structures?

An engineering contract structure relates to how your community energy solution asset(s) is procured, delivered, installed and run over the course of its operational life. There are three common contract structures included below.

Build, Own, Operate and Maintain (BOOM)
A third party builds, owns, operates and maintains the asset(s). This model is associated with a third-party ownership structure.

Build, Own, Operate and Transfer (BOOT):
A third party builds, owns, and operates the asset(s) for a certain period to recoup costs. At an agreed point in time, they transfer it back to community ownership.

EPC (Engineering, Procurement and Construction):
A contractor is responsible for the:

- engineering services
- procurement and production of all necessary construction materials and parts
- construction and commissioning of the energy solution.

When the project is complete, the contractor hands the asset(s) to either the community or the third-party owner, depending on the ownership structure.

What is the difference between behind-the-meter and in-front-of-the-meter energy solutions?

Behind-the-meter includes energy solutions installed on the customer's side of the electricity meter – for example, rooftop solar panels or a home battery. These are typically residential systems and the customer is responsible for this energy solution.

In-front-of-the-meter includes energy solutions installed on the network side of the customer's electricity meter – for example, a neighbourhood battery (BESS) or SAPS. They are not resident owned and operated, instead the network service provider or another entity may be responsible for this solution. Most community energy solutions would fall into the in-front-of-the-meter category.

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