



MR-BIG Community Engagement Findings Report

Final report

February 2022



Australian
Energy
Foundation

Australian Energy Foundation
Melbourne
Level 1, 200 Sydney Road,
Brunswick VIC 3056
PO Box 276, Brunswick VIC 3056
T 03 9385 8585 E info@aef.com.au

Sydney
13/03, 6 O'Connell Street,
Sydney NSW 2000

[in](#) [t](#) [f](#) [@](#)
aef.com.au
ABN 72 095 439 160

Contents

1. Executive Summary	3
2. Introduction	4
3. Communications	5
4. In-person events	5
5. Information session	6
6. Survey Results	8
7. Specific input from the community	14
8. Discussion and conclusion	16
Appendix A: Survey Questions	17



Figure 1 Opening ceremony for a community battery in NSW

1. Executive Summary

Macedon Ranges Sustainability Group (MRSG) is undertaking a community battery feasibility project named MR-BIG. This document reports findings for that project’s community engagement work, performed by AEF for MRSG. The MR-BIG project includes other work packages, notably analysis of the electricity grid by the technical consultants ENEA Consulting

The MR-BIG project’s community engagement component has found a high degree of enthusiasm for the installation of community batteries within the Macedon Ranges Shire. Community responses have been gathered through a survey, online information session and in-person event.

Key themes identified through this process include:

- Overall enthusiasm for community batteries.
- A high preference for equity in renewable energy.
- Requests for sensitivity in battery location.
- A need for further information on the battery’s business model.

Community members saw a community battery as a method to improve equity in renewable energy. This is illustrated in responses to the question on potential benefits of a community battery. The highest-ranking result was “make access to renewable energy equitable for local community”. People who already own a household solar battery also placed a strong emphasis on this benefit. Specific respondent comments reinforce this finding, identifying issues such as:

- Prioritising access to community members having difficulty participating in renewable energy.
- Ensuring fair use of the battery between local community members.

Another noteworthy finding is that community members saw high value from a community providing power to households during a grid outage or blackout. Subsequent phases of this project should investigate the feasibility of solutions that address equity issues and provide blackout backup.

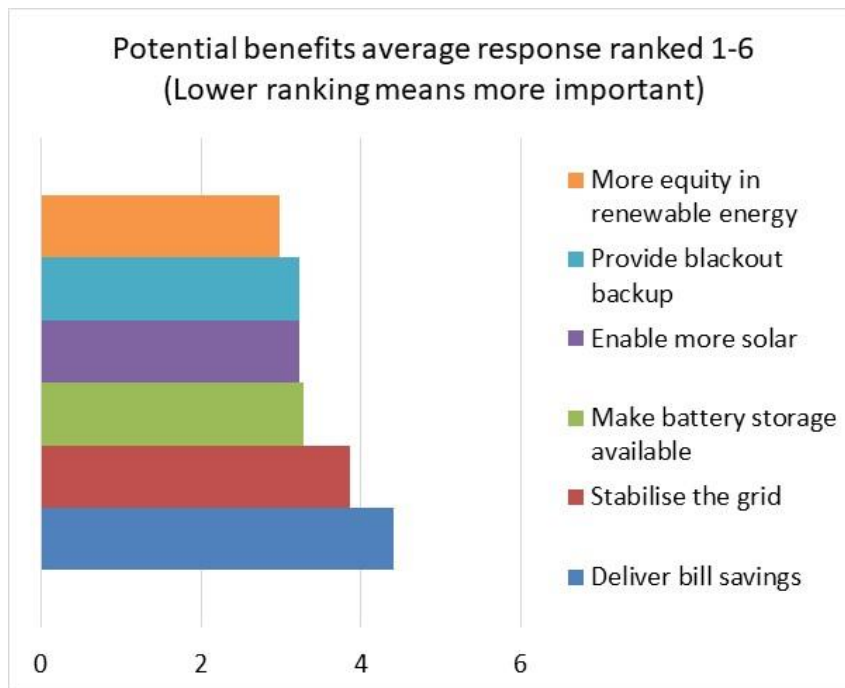


Figure 2 Benefits of Community Batteries

2. Introduction

2.1. Background

Macedon Ranges Sustainability Group (MRSG) obtained a grant from the Victorian Department of Environment, Land, Water and Planning (DELWP) to undertake a community battery feasibility project for the Macedon Ranges Shire community. The project is named MR-BIG (Macedon Ranges Battery Initiative Groundwork) and aims to analyse the demand for community batteries within the Macedon Ranges Shire, build a support base within the community for their implementation and quantify the feasibility, within the Macedon Ranges Shire.

2.2. Scope

Australian Energy Foundation (AEF) undertook the community engagement component of the project as outlined in “work package 1” of the project submission. This includes:

- Information sessions available to all Macedon Ranges residents
- Surveys and feedback sessions to gauge the interests of community members in the making use of features of the community battery
- Expressions of interests to gauge the appetite of community members in potentially investing in local community batteries should that option become available
- Identification of community electricity concerns, local problems and or suggestions that could be incorporated in any future implementation projects

The MR-BIG project includes other work packages, notably analysis of the electricity grid by the technical consultants ENEA Consulting. At time of writing this report, results from that analysis were not yet available.



Figure 3: Hanging Rock, Macedon Ranges Shire

3. Communications

To engage the community, AEF reached out to Macedon Ranges households and businesses via multiple channels. The focus was inviting participation in the information session and survey and raising awareness of the community battery project. Direct emails were sent to AEF's network of people who had subscribed to notifications, numbering 109 households. Messages were sent via social media. MRSG also published information directly in print media (community newspapers) and contacted their own membership. To further incentivise participation, AEF organised a prize draw – see the survey section below for more information.

4. In-person events

On Saturday the sixth of November 2021, an AEF staff member attended MRSG's stand at the Woodend Farmers Market. Discussions were held with many people, including the prospects for a community battery.

Community members were found to feel positive towards community batteries and keen for one to be installed in the area. This engagement also informed the development of the community battery survey for this project.



Figure 4 Woodend Farmers Market

5. Information session

An information session was held for the community on Thursday the 10th of February. Due to the Covid pandemic it was delivered as an online event via Zoom. Presenters included a Senior Consultant from AEF and the MR-BIG Project Lead from MRSG.

Titled “What is a Community Battery and Why should I Care?”, the webinar explained the MR-BIG project and then presented information on community batteries under several topics:

- Where community batteries sit in the broader energy landscape.
- What community batteries are.
- What community batteries can do.
- Current examples of community batteries.
- Future trends.

The webinar was recorded and will be made available on the MRSG Youtube channel. Around twenty people attended. The question-and-answer session was lively, with comments and questions covering a wide range of topics. People were positive toward the prospects of a community battery, with several questions relating to how it would work, how locals can participate and integration into the local grid. The following questions were asked and answered, all verbally by AEF’s presenter.

5.1. Questions and Answers

- a. *“Do these estimates account for electrification of current fossil fuel direct energy use e.g. gas for heat?”*

This question relates to estimates by three different organisations on the amount of energy storage required to transition Australia’s main electricity grid to full renewable energy dominated by wind and solar power. The presenter explained that this varied by organisation with BZE including full, AEMO partial and ANU no electrification.¹

- b. *How could a battery work with a medium-large scale solar PV system (or wind) to benefit the community?*

This question was answered in the context of larger-scale wind farms and solar farms. They can benefit the community, but generally in a less direct way than community batteries.

¹ Beyond Zero Emissions, Australian National University and Australian Energy Market Operator.

- c. *Since the energy distributor cannot make money out of the battery, which third party would be best suited to exploit the battery in the best way, benefitting the local resident but also selling energy to the grid to maximise return. Would the retailers be involved?*

AEF's presenter and MRSG's Project Lead both contributed to answer this, discussing how the electricity system was fragmented by privatisation in the 1990's, raising hurdles for community batteries. Retailers will be involved in almost any community battery business model. A leading "third party" candidate to run a community battery is the Yarra Energy Foundation.

- d. *If we had a government funded community battery aimed at low-income households in each or a selection of the 6 townships in the Macedon Ranges - how many households could be supported (as a substitute for a household battery) by a 400 - 800k battery and would energy retailers cooperate to provide financial benefits back to households via reduced bills?*

The number of households supported by a community battery is flexible, because physical energy flows are pooled via the existing grid. Depending on business model, a likely number is 50-100 households. Financial benefits generally involve a retailer, which again depends on the community battery's business model. Existing precedents for community battery business models are Western Power in WA, Ausgrid in NSW and Yarra Energy Foundation in Vic. At the time of the webinar, potential business models for a community battery in Macedon Ranges Shire were being analysed and explored by the technical consultants for the project, ENEA consulting.



macedon ranges SUSTAINABILITY group

Australian Energy Foundation

enea CONSULTING

FREE WEBINAR
Thursday 10 February, 6.30pm

WHAT IS A COMMUNITY BATTERY AND WHY SHOULD I CARE?

Join the MRSG and experts from the AEF to find out more about how a community battery can benefit the Macedon Ranges.

Make your opinion count!
Tell us what's important to you in our online survey ... and enter the draw for a Home Energy Assessment valued at \$225!

Figure 5 Community Battery Webinar - promotional info.

6. Survey Results

A survey was conducted to understand the views of Macedon Ranges Shire residents. Twenty questions were asked covering a range of areas. For more details, please refer to Appendix 1.

6.1. Respondent information

Seventy-six responses were obtained, spread across many areas of the Macedon Ranges Shire. The top postcodes represent areas including Woodend (3442), Kyneton (3444), Lancefield (3435), Gisborne (3437) and Riddells Creek (3431). This distribution was influenced by relative population size, and by the in-person event and print coverage noted above.

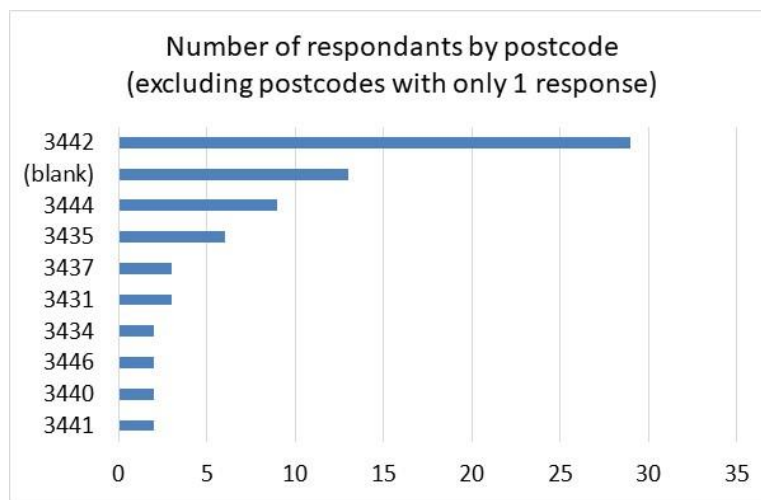


Figure 6 No. of respondents by postcode

6.2. Macedon Ranges Sustainability Group

Respondents were generally familiar with MRSG, with nearly 80% at least “Somewhat familiar”.

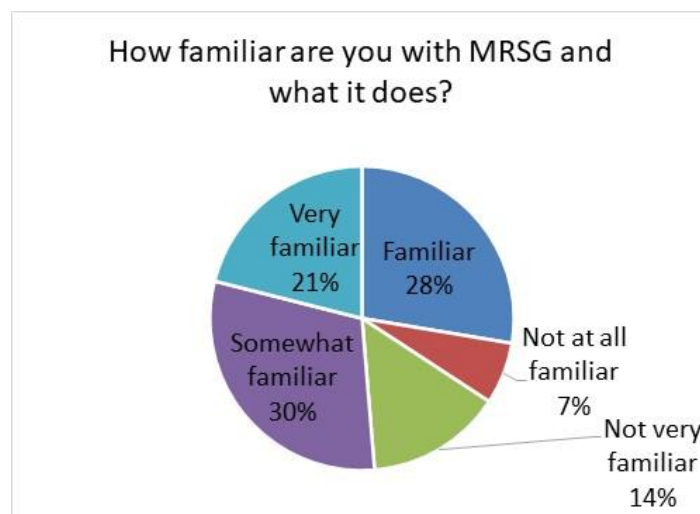


Figure 7 Familiarity with MRSG

Trust in MRSB to lead the community battery trial was high, with two-thirds of respondents rating the group 8, 9 or 10 on a ten-point scale. Another 20% rated the group 6 or 7.



Figure 8 Trust in MRSB to lead the project

6.3. Network Issues

About half of respondents reported that they're aware of issues with the electricity network. Most of these were due to frequent outages (blackouts) while about 5% related to restrictions on rooftop solar. These restrictions included solar systems shutting themselves down due to high local voltages, and connection applications being refused or assigned a zero-export limit.

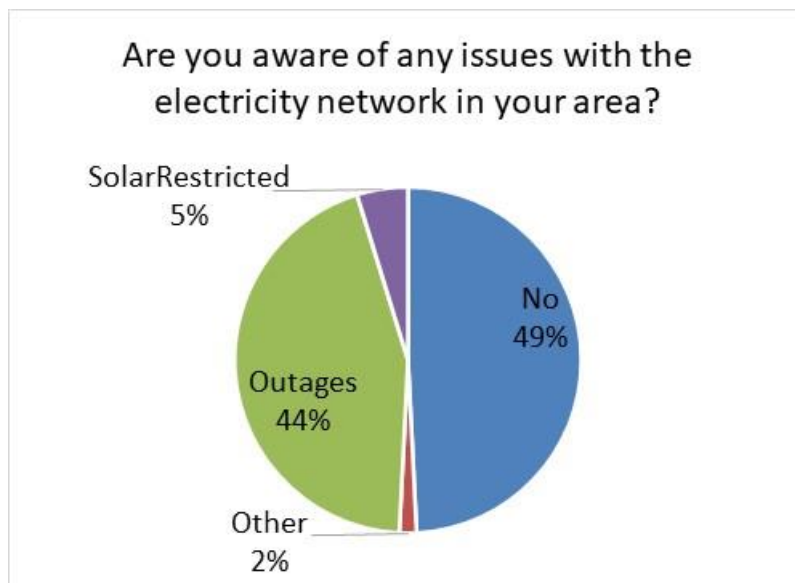
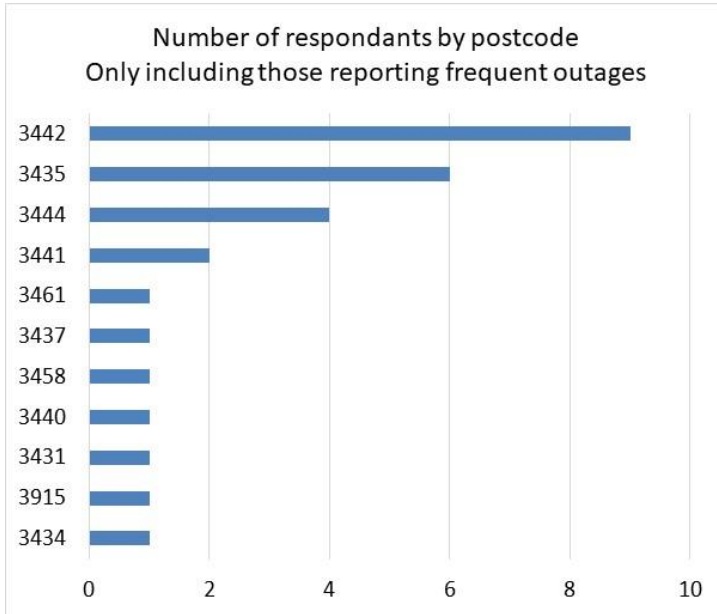


Figure 9 Issues with the local electricity network

The location of survey respondents reporting frequent outages was like that of the general pool of survey respondents.



6.4. Existing Solar

Solar owners are heavily represented in the survey. Nearly three-quarters already have a solar system, compared to about one-quarter to one-third for the general population. One-fifth also have a solar battery, whereas their uptake in the general population is very low.

Do you currently have solar panels?

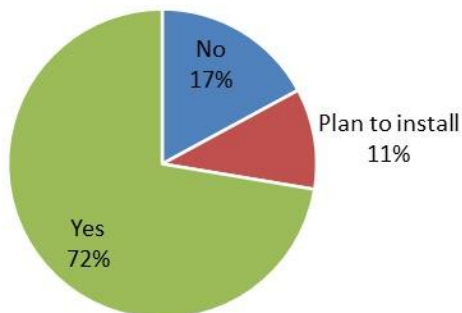


Figure 11 Respondents with solar systems

Do you currently have a household (solar) battery?

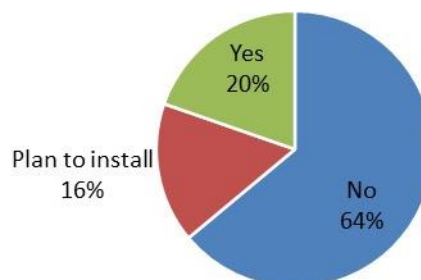


Figure 11 Respondents with a battery

6.5. Familiarity with Community Batteries

Respondents were generally quite familiar with community batteries, with about three-quarters reporting that they were at least “somewhat familiar” with the concept.

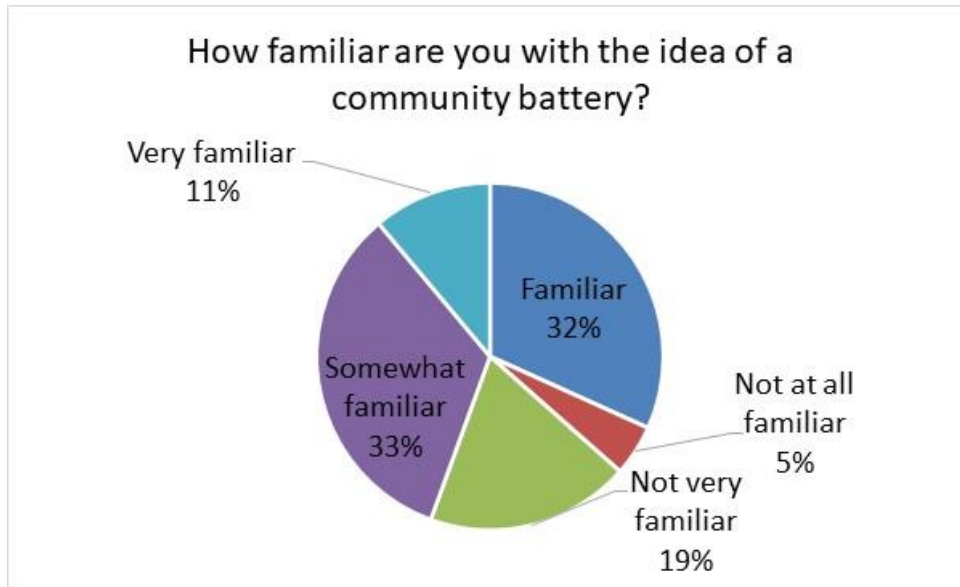


Figure 12 Familiarity with Community Batteries

6.6. Benefits of Community Batteries

Survey respondents saw a broad spread of benefits from community batteries. The highest-ranked potential benefit was “More equity in renewable energy”. Next most important were “Enable more solar”, “Provide blackout backup” and “Make battery storage available”. Grid stabilisation and direct bill savings were seen as lower priorities.

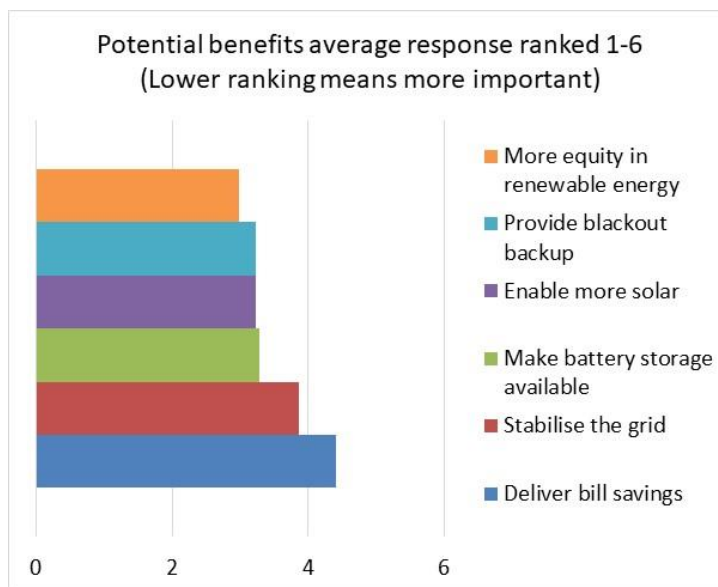


Figure 13 Benefits of Community Batteries

Priorities shift when we focus on participants who already have a household battery. These respondents have a stronger focus on providing blackout backup, stabilising the grid, and enabling more equity in renewable energy. These results are understood to relate to benefits enjoyed by the community, rather than for the individual respondent.

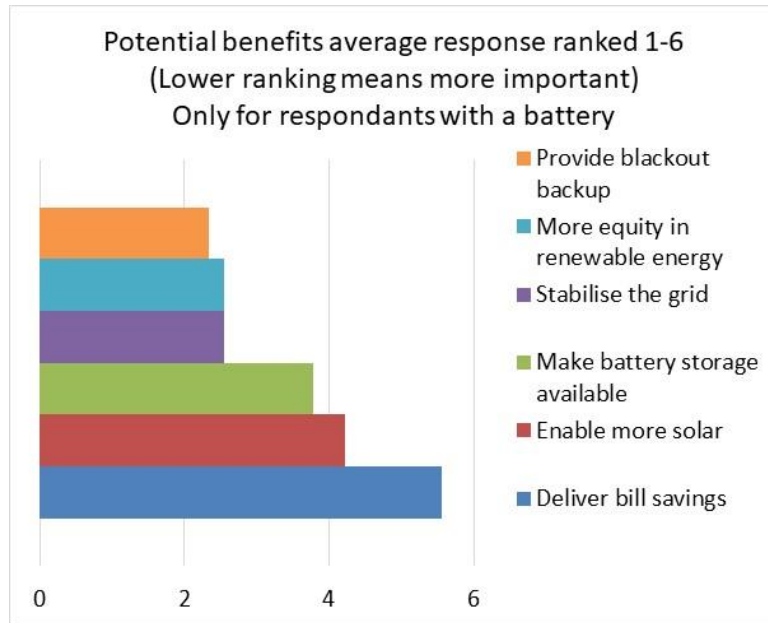


Figure 14 Benefits of Community Batteries, for respondents with a battery

6.1. Interest in Participating in a Community Battery

Participants are positive about participating in a community battery, with none answering “No”. Three-quarters said “Yes” with the other quarter being unsure.

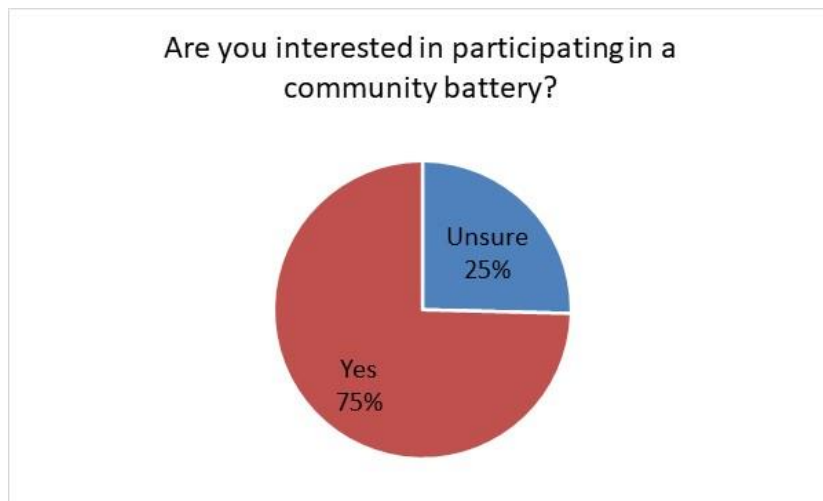


Figure 15 Interest in participating in a Community Battery

6.2.Prize draw

To help attract people to complete the survey, a prize was offered consisting of a virtual home assessment by AEF, to the value of \$225 including GST. MRSG and AEF randomly selected a recipient for this prize. At the time of writing, AEF was in the process of contacting the recipient.



Figure 16 A community battery in Fremantle, supported by Power Ledger.

7. Specific input from the community

7.1. Overall community appetite for community batteries

Survey respondents were very positive toward community batteries, as noted in section 3 above. The survey included many enthusiastic comments such as:

- "Great idea, should be done ASAP."
- "It's THE way of the future, allowing localised decentralised power generation."
- "Fine by us."
- "Very positive."
- "I have no issues with that."
- "Great idea."
- "Great, the sooner the better."
- "Happy to have this."
- "Quite positive and pleased that it's seriously being considered."
- "100% behind it."
- "Yay, as soon as possible please."
- "Would love the idea."

7.2. Locations

Most respondents did not note any concerns about location, but some did for example:

- "Not in my street. Use a community space."
- "I would like to know location & possible health & amenity side effects."
- "OK if done sensitively. Needs to fit into landscape and use underground connects where ever possible."
- "Fine with it. The challenge is finding a suitable space where it would be protected (e.g. from traffic) and not create an eyesore. We live near a park that already has a water pump facility on it, so that would seem a logical place to put one from an aesthetic perspective."
- "Fine as long as it doesn't catch fire."
- "I guess a little bit NIMBY - there are already issues with TV, mobile and radio reception in the area - batteries should be placed away from housing if possible."

A couple of specific locations were suggested for a community battery:

- "It could be incorporated into the 1000 lot subdivision planned for Amess Road, a greenfield site."
- "I have written to Vic Govt Ministers and MRSC suggesting the Amess Road subdivision be on community Battery and solar panels"
- "McClusky Street, on the west side of Riddell. Yes, happy to have it here."

7.3. Reports of solar restrictions

As noted in section 3 above, in the question on network issues a small number of respondents selected solar restrictions. Only one comment focused on this issue:

- "Power grid unreliability and ability for our solar systems to produce max output."

7.4. Need for further information

Many survey participants expressed the need for additional information on community batteries. Some survey respondents would have already attended the information session but other wouldn't have, reducing their awareness of community batteries in general and MRSG's project. Comments include:

- "What fees & charges? Will it end up costing the end users? Power companies are for profit, they would not jeopardise their income. What legislation is/will be in place to protect end consumers/users?"
- "Need to know Cost and ongoing obligations"
- "Need to know if I would be better to have my own installed or use the community one."
- "Need to know impacts benefits bushfire hazards"
- "Does it emit radiation or noise. At my age, providing both are minimal, bring it on!"
- "How does it affect our current output savings.... we receive credit payments, do not want to lose these if we have no extra benefits."
- "How can I participate and benefit from its installation?"
- "How to "bank" to it if we are generating from solar. How usage is moderated - what stops someone running their AC flat out and using up the battery capacity before we get to flush our toilet? How much would it cost to be involved? "

7.5. Comments on other issues

A variety of comments touched on other issues, such as ownership, financing and equity of access:

- "Good idea, difficult to finance as expensive but could work in the wealthy Macedon areas."
- "Fine so long as access and usage is equitable. I don't want to have minimised usage options because someone down the road is powering their pool, 7 tvs, 5 air cons and a spa".
- "I'd prefer my own but unable to afford so a community battery would be next option."
- "I able to afford my own batteries, but I would be willing to support others who cannot afford a battery to access a local community battery."
- "If the battery is actually owned by the community, I think the community would benefit, educate others, take power to deal with DNSP, etc."

8. Discussion and conclusion

The MR-BIG project’s community engagement component has found a high degree of enthusiasm for the installation of community batteries within the Macedon Ranges Shire. Community responses have been gathered through a survey, online information session and in-person event.

Key themes identified through this process include:

- Overall enthusiasm for community batteries.
- A high preference for equity in renewable energy.
- Requests for sensitivity in battery location.
- A need for further information on the battery’s business model.

Community members saw a community battery as a method to improve equity in renewable energy. This is illustrated in responses to the question on potential benefits of a community battery. The highest-ranking result was “make access to renewable energy equitable for local community”. People who already own a household solar battery also placed a strong emphasis on this benefit. Specific respondent comments reinforce this finding, identifying issues such as:

- Prioritising access to community members having difficulty participating in renewable energy.
- Ensuring fair use of the battery between local community members.

Another noteworthy finding is that community members saw high value from a community providing power to households during a grid outage or blackout. Subsequent phases of this project should investigate the feasibility of solutions that address equity issues and provide blackout backup.

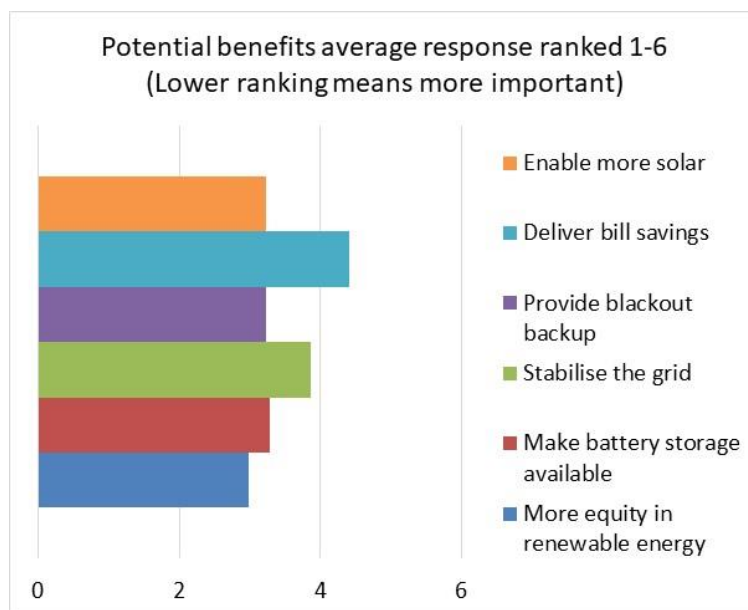


Figure 17 Benefits of Community Batteries

Webinar attendees and survey respondents would be to some degree self-selecting in that the type of person participating in these initiatives is more likely than an average member of the public to be enthusiastic about renewable energy. Such self-selection effects are difficult to avoid.

Appendix A: Survey Questions

The survey included the following questions.

MRSB

- How familiar are you with who Macedon Ranges Sustainability Group is and what it does?
 - Very familiar, Familiar, Somewhat familiar, Not very familiar, Not at all familiar, Unsure
Select one response
- On a scale of 1-10 (1=not at all, 10 = very highly), how much do you trust Macedon Ranges Sustainability Group, a local not-for-profit organisation based in Macedon Ranges to lead the community battery trial?
Answer sliding scale

Some information about you and your home

- Do you currently have solar panels?
 - Yes, No, Plan to install
Select one response only
- (If answered 'yes' to solar) Are you aware if your solar's export to the grid is limited?
 - Yes, No, Unsure
Select one response only
- (If answered 'yes' to the above) If your solar's feed-in to the grid has been limited by Powercor, what is the export limit in kilowatts
(Numerical answer)
- Do you currently have a household (solar?) battery?
 - Yes, No, Plan to install
Select one response only
- Are you aware of any issues with the electricity network in your area? (*sliding scale for each*)
 - Frequent or extended outages.
 - Appliances not working properly at times, e.g. garage doors.
 - Solar inverters shutting down at times.
 - Solar installations disallowed or heavily restricted.
- Do you rent or own the home that you live in?
 - Rent, Homeowner, Other (please specify)
Select one response only
- What is your postcode
Open ended (number format only)
- What is your age range.
 - 18-24, 25-34, 35-44, 45-54, 55-64, 65+, Prefer not to say
Select one response

Community Battery information

- How well do you understand what is a 'community battery'?
 - Very familiar, Familiar, Somewhat familiar, Not very familiar, Not at all familiar, Unsure
Select one response only
- What do you think are the most important potential benefits of a community battery to you?
 - Enable more local solar generation, deliver bill savings, provide blackout backup, stabilize the grid, make battery storage available for local residents, make access to renewable energy equitable for local community
Make this a ranking. Number them 1-5.
Are there any other benefits that are important? Open ended – text box
- How do you feel about having a community battery installed in your street or neighbourhood?
 - Open ended – text box*
- What would you need to know if a community battery was to be installed in your street or neighbourhood?
 - Open ended – text box*
- Would you be interested in using a virtual battery service as a way of storing your solar exports for use later in the day?
 - a. Yes, No, Unsure
- Would you be interested in investing in a community battery?
 - Yes, No, Unsure
Select one response only

Please provide reasons for your answer (open text)_____

Close out

- Would you like to be know more about community batteries and the MR-BIG project?
 - Yes, No
Select one response only
- *What is your preferred communication method?*
- *AEF and Macedon Ranges are planning an online community forum on community batteries in the late January/early February 2022. Would you be interested in attending? Please input your email address below:*
 - a. *Email address.....*
- *Would you like to see other types of information about community batteries and the project: (select all that apply) E-mail newsletter, Website updates, information sheets, webinars, podcast, social media posts, anything else? (Please specify)*
- Thank you for your time. Do you have any other comments, questions, or concerns?
 - Open ended – text box*