PowerMaD

RENEWABLE ENERGY FOR DEANS MARSH & DISTRICT

Independent Report of Community Feedback on Renewable Energy Options

Photo credit: deansmarsh.org.au/directory-3-2/

1.1 Using this document

Kismet Forward was engaged by Surf Coast Shire to conduct community consultation and prepared this *independent* report based on feedback received through a survey. Work was performed in accordance with the project brief, which was expanded to include two surveys.

Discretion should be exercised in making decisions based on the data in this report. While significant effort was made to reach a broad range of individuals, those who participated self-selected. As with all consultations, the feedback is subjective and not always consistent. For these reasons, while we have endeavoured to reflect the input accurately, the report does not *necessarily* represent broader community opinion.

Kismet Forward has no relationship with Enhar P/L, which was engaged to produce the Options Paper and Action Plan. The two consultancies were individually contracted to perform their work autonomously.

Kismet Forward does not accept responsibility for loss caused by any party's use or reliance on this report.

1.2 Abbreviations and terms used

Contributor	Someone who contributed to this consultation by participating in the Options Workshop or responding to the survey
Cottage	Deans Marsh and District Community Cottage
Council	Surf Coast Shire
EV	Electric vehicle
MaDCAP	Marsh and District Community Action Plan (2019)
MaDCAP goal	The 2019 action in the MaDCAP Action Plan "to power Deans Marsh and District with 100% renewable energy"
n=	The number of people who responded to a survey question
Participant	A community member who participated in the Options Workshop
PowerMaD	This project, which seeks to identify practical ways to achieve the renewable energy aspirations of the Deans Marsh and District community
Respondent	A person who responded to the Options Survey
Support descriptor	Survey questions commonly asked respondents to choose from the following descriptors: 'full support', 'some support', 'limited support', and 'no support'.
The District	Deans Marsh and District, as described in Section 1.2

Acknowledgement of Country

We acknowledge that the engagement activities described in this report took place on Gadubanud Country, part of the Maar Nation, and on Wadawurrung Country.

We recognise the unique ability of Traditional Owners to care for Country and their deep and long-held connection with Deans Marsh and District.

We appreciate their visions for a Healthy Country as described in their respective Country Plans.

We honour their Elders, past, present and emerging and extend this respect to all Aboriginal and Torres Strait Islander people.

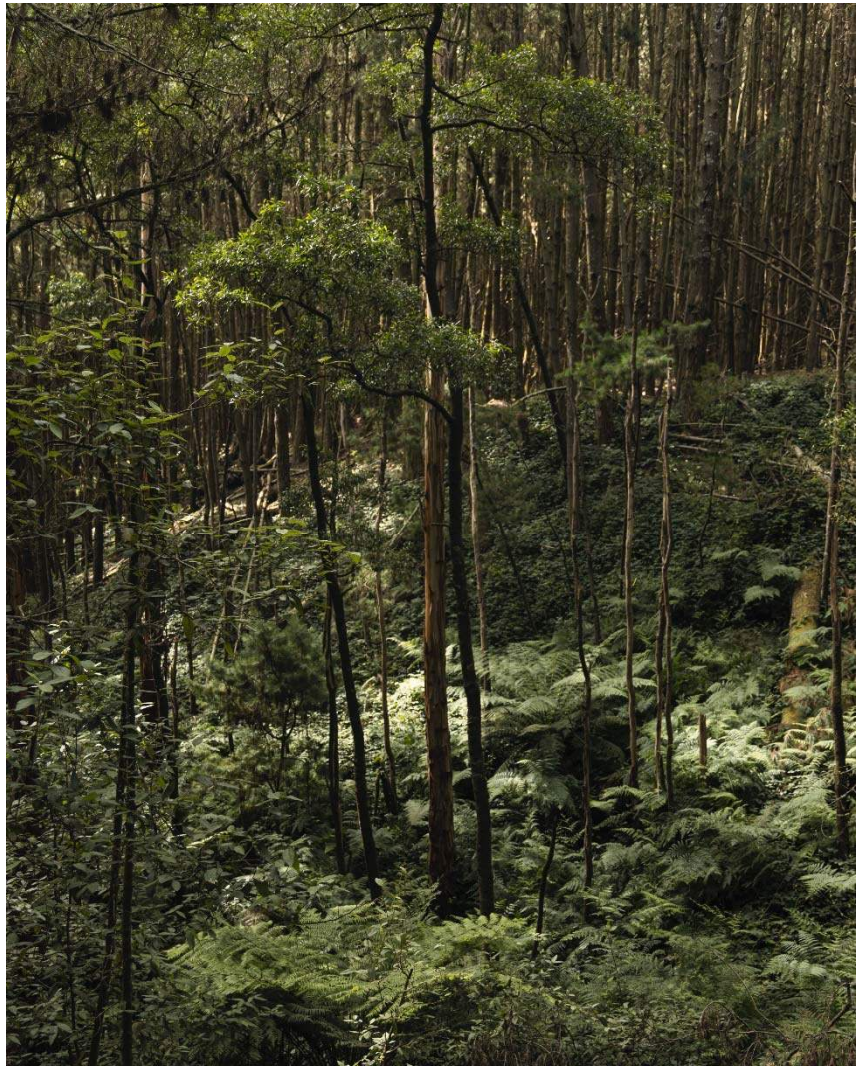


Photo by gryffyn m on Unsplash

Executive Summary

In 2019, the Deans Marsh and District ('District') community developed the Marsh and District Community Action Plan (MaDCAP) that outlines the community's vision, values and key actions. One of its climate change mitigation and adaptation actions is "*to become 100% off-grid, independent and self-reliant using renewable energy sources*."

In July/August 2023, a community workshop and survey facilitated the review and revision of the 2019 MaDCAP energy goal. The revised goal is "to power Deans Marsh and District with 100% renewable energy." This revised goal guided the development of a Renewable Energy Options Paper.

A second workshop was held in October 2023 to help community members understand the options outlined in the paper. A second survey enabled community members to identify their preferred options. cThis report discusses the results of the second survey, which will inform the development of a Renewable Energy Action Plan for the Deans Marsh and District community to implement.

Most supported options were **insulation, draught sealing** and **rooftop solar.**

Strongly supported options were **switching appliances, electrification, home batteries** and **private EVs.**

Less supported options were **off-grid homes, neighbourhood battery, solar farm, carpooling, biogas** and **microgrid.**

Least supported options were **shared community EVs, virtual power plant, big battery** and **small wind turbines.**

Numerous respondents were unsure whether (or not) to support some Options: **biogas, virtual power plant, big battery, microgrid** or **small wind turbines** had higher levels of 'not sure' responses than the other Options. If these are to be pursued, some targeted community education about the benefits and costs of these initiatives could be warranted.

The data revealed several differences in levels of support expressed by respondents who had attended the Options Workshop, compared to those who had not. For example, workshop attendees were generally less supportive of **solar farms** and **small wind turbines**, and more supportive of **carpooling** than other respondents. There are likely to be other factors that distinguish workshop attendees from other respondents, but the data arguably shows the impact of information sharing and education.

Challenges to the take-up of Options were sought to assist the development of a practical, realistic and implementable Action Plan. The following considerations recurred throughout the feedback:

- Cost, including outlay, maintenance, ensuring return on investment and commercial viability, need for financial assistance
- Maintaining infrastructure and ensuring relevant support infrastructure
- Awareness/knowledge about complex technologies, available alternatives, how to achieve the best results
- Practicalities in providing and managing shared facilities and ensuring equity of access
- Challenges in retrofitting old buildings
- Environmental concerns relating to carbon footprints and the manufacture and disposal of batteries and infrastructure
- Ensuring continuity of power supply
- Ensuring reliability and longevity of solutions
- Influencing ingrained community attitudes and behaviours
- Ensuring needs can be met and enabling community members to determine their own level of involvement
- Appropriately locating infrastructure while protecting amenity, valuable farmland and habitat and accessing sufficient sun/wind

Table of Contents

1 Introduction and Background

1.1 PowerMaD

In 2019, the Deans Marsh and District community developed the Marsh and District Community Action Plan (MaDCAP) that outlines the community's vision, values and key actions. One of the key actions focused on energy.

To progress this action, Surf Coast Shire and Deans Marsh Community Cottage secured grant funding for PowerMaD: a project to identify practical ways to achieve the renewable energy objectives of the Deans Marsh and District community.

In July/August 2023, a community workshop and survey informed the revision of the 2019 MaDCAP energy goal. The revised goal is "to power Deans Marsh and District with 100% renewable energy". Aims and principles for the PowerMaD project were also identified. More specifically, the PowerMaD project will produce a Renewable Energy Action Plan, which aims to:

- Reduce greenhouse gas emissions
- Reduce energy costs
- Increase energy efficiency
- Increase renewable energy generation and storage capacity
- Increase energy security (i.e. reliability of supply)

These aims will be achieved in accordance with the following principles:

- Involvement is entirely voluntary (no one will be forced to do anything)
- Decision making will consider social, environmental and economic factors
- Equity concerns will be addressed in all initiatives
- We will learn from others and share our learning with others
- We will act now while also developing longer term actions

A community-based Working Group steers the project.

More information about PowerMaD can be found at https://deansmarsh.org.au/activities-3/powermad-project/

1.2 The District

In 2021 Deans Marsh and District ('the District') had a population of 706. It includes the towns of Deans Marsh (368), Bambra (115), Boonah (18), Pennyroyal (110) and Murroon (95)[1]. The District is in Surf Coast Shire, except for Murroon and parts of Pennyroyal, which are in Colac Otway Shire.

[1] Numbers in brackets show the population of areas (as per the 2021 census) https://www.abs.gov.au/census/find-census-data/search-by-area

1.3 The engagement process

PowerMaD is a community-driven project. Consequenty, a robust engagement process with the District's diverse community is central to success.

A Community Engagement Plan[2] was developed in June 2023 to guide the planning and delivery of engagement activities.

Figure 1 shows the key steps in PowerMaD and the current status of engagement.

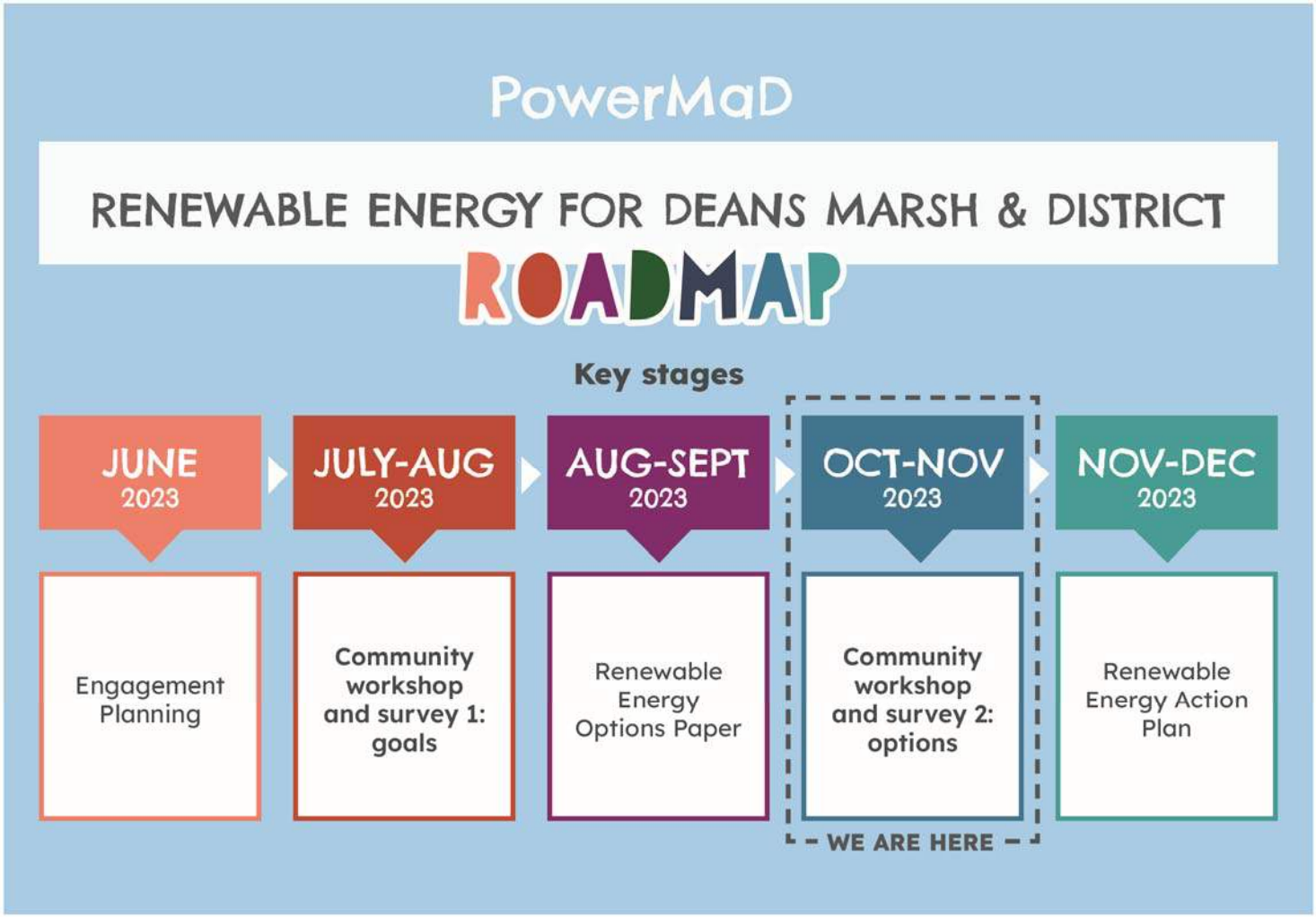


Figure 1: Staging and status of PowerMaD

[2] The PowerMaD Community Engagement Plan is available at https://deansmarsh.org.au/activities-3/powermad-project/

1.4 The First Engagement Stage: Goals and Principles

In June 2023, Surf Coast Shire contracted facilitation and evaluation specialists Kismet Forward to plan, design, facilitate and report on the community engagement components of PowerMaD.

The first workshop was held at Deans Marsh Hall on 30 July 2023 to build community understanding of the PowerMaD project and review/revise the MaDCAP energy goal "*to become 100% off-grid, independent and self-reliant using renewable energy sources*." A subsequent survey described the workshop outputs and asked respondents to comment on and prioritise principles/values and goals.

The results of that process are detailed in an independently produced report, which is available on the Cottage website[2].

The revised goal is "to power Deans Marsh and District with 100% renewable energy."

1.5 (This) Second Engagement Stage: Options

The outputs of the first engagement stage informed the development of an Options Paper by Enhar P/L, which was placed on the Cottage website[3].

A second workshop was held on 22 October 2023 to discuss the details outlined in the PowerMaD Options Paper to inform responses in the subsequent survey. Like the first workshop, this forum was independently facilitated. A presentation developed for the Options Workshop is also on the Cottage website[2]. It was stated at the workshop and in the survey that no decisions would be/were made at the workshop; its purpose was to increase community knowledge about the options outlined by Enhar P/L.

The online Options Survey was opened on 24 October until 9am on 8 November 2023. The purpose of this survey was to help understand the extent to which community members supported each of the renewable energy options that Enhar outlined in the Options Paper for Deans Marsh and District.

In the survey introduction, respondents were encouraged to read the Options Paper or the Options Workshop Presentation to inform their responses. The link to the Cottage website[2] was included in the introduction.

The survey results, collated by the independent facilitator and detailed in this report, will inform the development of a Renewable Energy Action Plan for the Deans Marsh and District community to implement.

[3] https://deansmarsh.org.au/powermad-workshop-2/

2 Who contributed to this stage of the engagement

Thirteen community members participated in the Options Workshop in October, and 75 (almost 11% of the District population) responded to the Options survey. However, 19 of the survey submissions only answered the first question about whether they had attended the workshop). Five of these incomplete surveys were from IP addresses that matched other (more complete) responses. (More than one response to the survey from the same computer was enabled to allow people from the same household to contribute.)

15 (20%) of the survey respondents said they had attended the workshop, including 4 who only answered the first question.

As PowerMaD is relevant to all people living in the District, demographic information (age range, gender and residential location) was collected from Options Workshop participants and survey respondents. As some people attended the workshop and responded to the survey, the data cannot be combined.

We have included 2021 ABS Census data for the District, being an aggregate of data for Bambra, Boonah, Deans Marsh, Murroon and Pennyroyal. Comparing the demographic data of contributors with that of the District enables us to determine how representative the contributors were. This will help identify cohorts that may warrant targeted communications as this project develops.

2.1 The age range of contributors

Figure 2: Age range of contributors

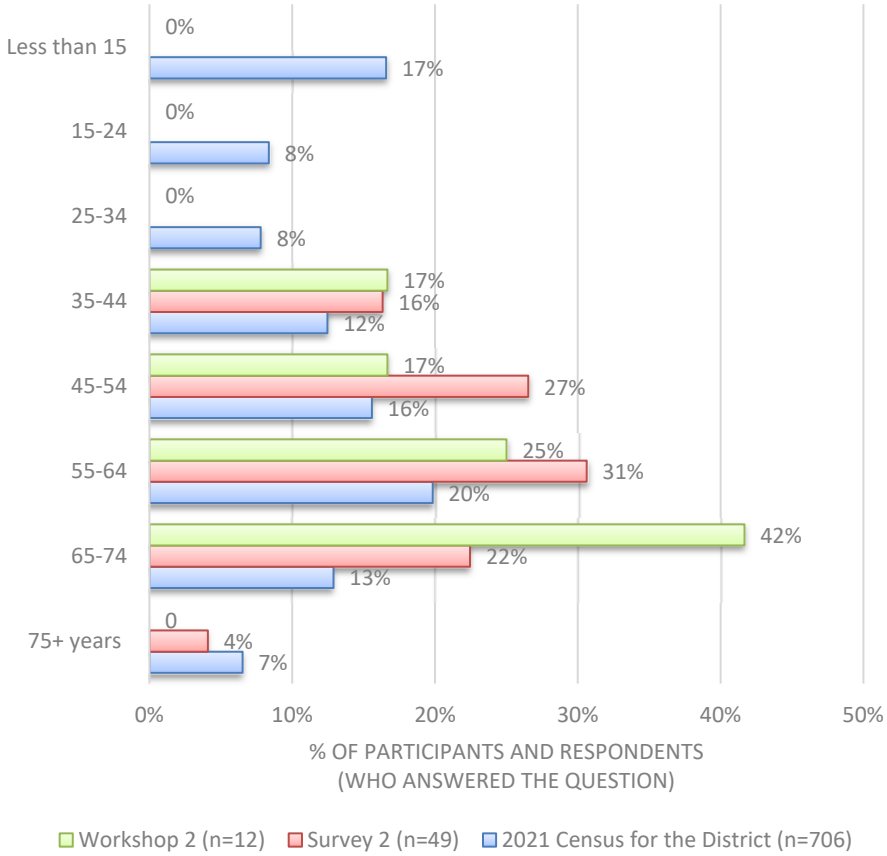


Figure 2 shows the age ranges of 12 workshop participants and 49 survey respondents who answered the question, expressed as percentages of overall contributors. These data are compared with the age structure of the District population.

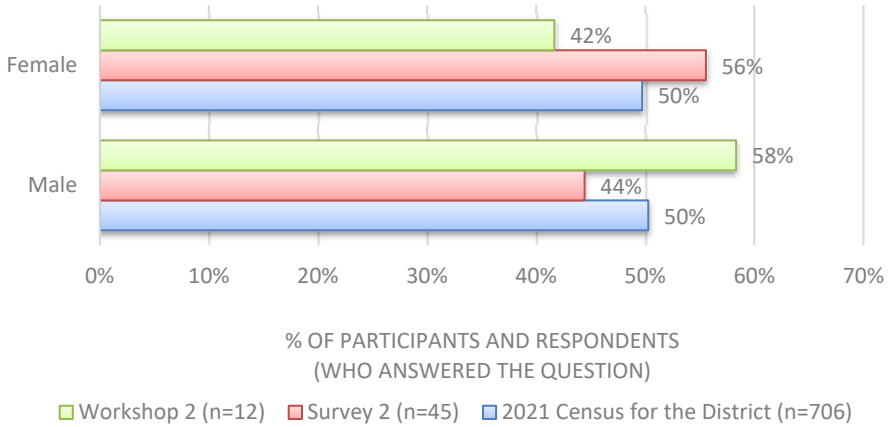
The Census data shows that 67% of the District's population were (in 2021) aged at least 35. In comparison, all Options Workshop participants and survey respondents (whose age was known) were at least 35.

People aged 65-74 were the cohort most represented at the workshop (42%), while those aged 55-64 accounted for nearly a third of survey respondents.

2.2 Gender

Figure 3 shows the gender breakdown of Options Workshop participants and survey respondents, expressed as percentages of overall participants/respondents. Census data is also shown in the Figure.

Figure 3: Gender of contributors



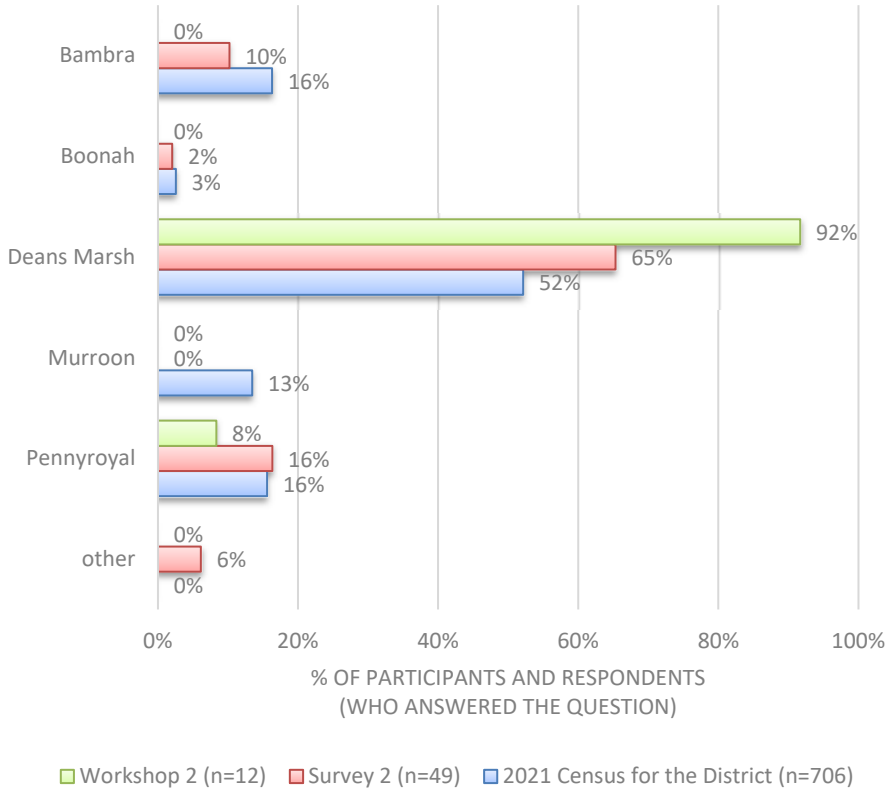
The Census data shows roughly equal proportions of males and females across the District in 2021. Slightly more males than females responded to the survey, while a few more females than males attended the workshop.

No one chose the gender description 'other' in either forum. The Census did not offer any other gender descriptors besides male and female.
A significant 30 survey respondents preferred not to say or skipped this question. One person objected to the question: *"What on earth does someone's gender have to do with a power survey...good way to make them uncomfortable."*

2.3 Residential location

Figure 4 shows the usual residential location of 12 Options Workshop participants and 49 survey respondents who answered the question, expressed as percentages of overall participants/respondents. Census data is also shown in the Figure.

Figure 4: Residential location of contributors



The Census data shows that 52% of the District's population were (in 2021) living in Deans Marsh. By comparison, 92% of Options Workshop participants and 65% of survey respondents lived in Deans Marsh. No one from Bambra, Boonah or Murroon indicated they attended the workshop, and no one from Murron and just one person from Boonah responded to this survey question.

The three respondents from 'other locations' lived in Birregurra or Melbourne.

3 What we heard

3.1 About the reporting of feedback

This section summarises survey responses about the Options. As Options Workshop participants may be more informed about the Options, their responses are separated in the data below. (This assumption should be treated with caution, as other factors might distinguish workshop attendees from the general District population.)

% refers to the proportion of responses compared with the number of respondents who answered the question. This negates the influence of respondents who skipped a question/s.

(n=) refers to the number of people who answered a question.

Weighted averages are shown for each category or cluster of Options. These averages are out of a possible 3 points and are calculated as follows:

- Full support = 3 points
- Some support = 2 points
- Limited support = 1 point
- No support/not sure = 0 points

Verbatim comments (shown in *"italics"*) have been included to demonstrate the range and level of sentiment expressed. Some minor grammatical and spelling fixes have been made to these comments.

Some survey respondents provided information relevant to the project but not necessarily to the question asked. All comments have been consolidated in the appropriate section in this report.

All raw data has been provided to the Working Group.

3.2 Energy Efficiency and Electrification Options

In the Options Paper, Enhar P/L identified four options related to Energy Efficiency or Electrification. These options were summarised in the survey as:

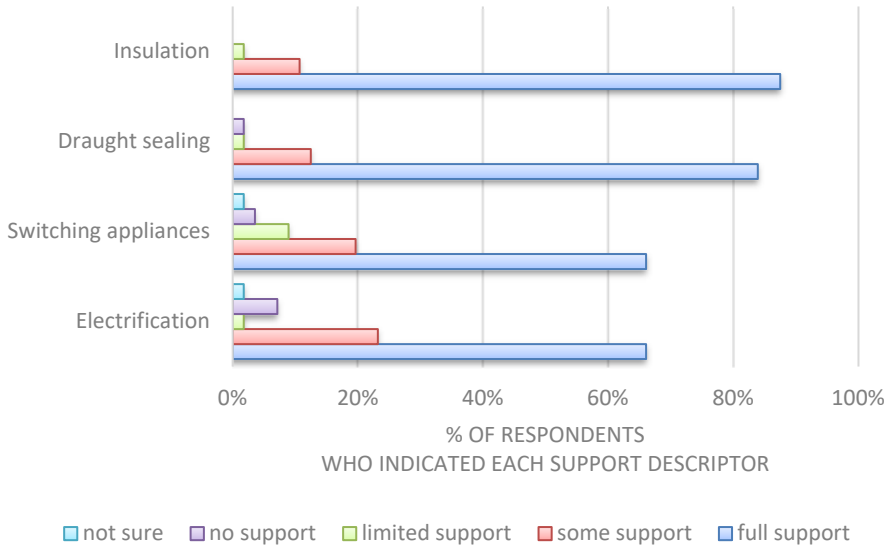
- **Insulation** of homes and businesses
- **Draught sealing** in homes and businesses
- **Switching** to energy-efficient **appliances** in homes and businesses
- **Electrification** (switching away from fossil fuels)

Community support for these Options

Survey respondents were asked to indicate the extent of their support for the four Options described above. Figure 5 shows the range of support demonstrated by the 56 respondents who answered this question.

At least two-thirds of question respondents fully supported each of the Energy Efficiency and Electrification Options, with **insulation** and **draught sealing** garnering the highest levels of full support (88% and 84%, respectively).

Figure 5: Range of Support for Efficiency and Electrification Options
All respondents (n=56)



While overall it was also a reasonably popular choice, **electrification** appears the least supported of the Energy Efficiency and Electrification Options, with 7% of respondents indicating 'no support' for this option. Indeed, Enhar reported that bottled gas is 'common' across the District[4].

No respondents were unsure of their response to **insulation** and **draught sealing**, which was the case for only 4 of the 17 Options outlined in the Options Paper.

To delve further into the level of support for these Options, Figure 6 shows the results expressed as weighted averages for respondents who attended the Options Workshop, those who did not, and all respondents (who answered the question) combined. (Section 3.1 explains how the weighted averages were calculated).

Figure 6: Level of Support for Efficiency and Electrification Options

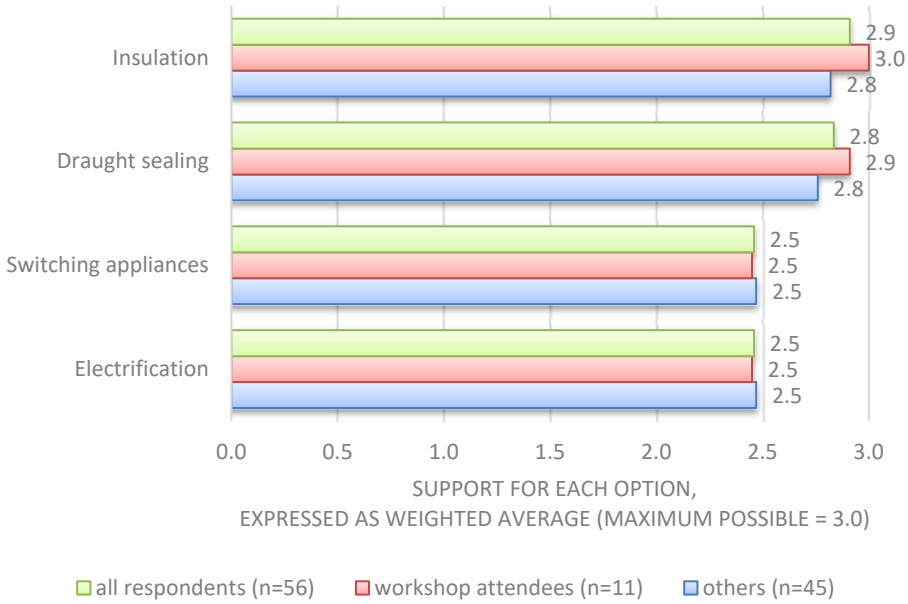


Figure 6 demonstrates that

- There is little discernible difference in the data between respondents who attended the workshop and those who did not. Even if the assumption that workshop attendees may be more

[4] Per Enhar's presentation at the Options Workshop, available at https://deansmarsh.org.au/activities-3/powermad/

informed about the Options holds true, workshop attendance would be unlikely to result in much difference between these Options: all are widely understood (and often practised) in the general community.

- There is little difference in the levels of support for the four options, with **insulation** and **draught sealing** being separated by just 0.1 out of 3.
- Indeed, **insulation** and **draught sealing** were the most supported of all 17 Options described in the Options Paper.
- **Switching appliances** and **electrification** yielded almost identical levels of support.

Challenges

Respondents were asked about the main challenge/s in encouraging a broad take-up of the Energy Efficiency and Electrification Options they most supported. Responses are summarised below. The numbers of mentions by survey respondents who attended the workshop (W) and those who didn't (O) are included in the tables.

Insulation of homes and businesses

Comment	Mentions
Cost	5 (W) 25 (O)
Insulation, especially in wall cavities and under houses, is difficult (especially in older buildings)	2 (W) 5 (O)
Awareness/knowledge about how to achieve the best results	1 (W)
History of problems with government schemes	1 (O)
Access to environmentally sound products	1 (O)
Privacy	1 (O)

Draught sealing in homes and businesses

Comment	Mentions
Cost, need financial aid/government grant, low return on investment	5 (W) 18 (O)
Sealing of old houses (windows, doors, floorboards, out of plumb) is challenging	1 (W) 5 (O)
Awareness/knowledge about how to achieve the best results	1 (W) 3 (O)
Difficult to get tradespeople	1 (O)

Switching to energy-efficient appliances in homes and businesses

Comment	Mentions
Cost, need financial aid/government grant, getting return on investment	6 (W) 29 (O)
Timing of switching/difficulty in replacing appliances with suitable alternatives	2 (W) 4 (O)
Awareness/knowledge about how to achieve/ access the best results/alternatives	1 (W) 3 (O)
Changing habits, convenience	2 (O)
Waste	1 (O)
No backup/alternative during power outages	1 (O)
Privacy	1 (O)

Electrification (switching away from fossil fuels)

Comment	Mentions
Cost, need financial aid/government grant, getting return on investment	4 (W) 22 (O)
No backup/alternative during power outages	5 (O)
Convenience: prefer gas or wood (free)	4 (O)
Awareness/knowledge about how to achieve/ access the best results/alternatives	1 (W) 1 (O)
Timing/difficulty of replacing appliances	2 (W)
Wood and gas are important fuels in the District	2 (W)

Other comments about Energy Efficiency and Electrification Options

Additional Options discussed during the Options Workshop or suggested in the survey included:

- Double glazing of windows (an expensive option most appropriate when windows need replacing) (Workshop)
- Retrofitting windows with plastic and other products (Workshop)
- Pipes on home roofs (which require boosters) (Workshop)
- Heating water at the back of fireplaces (Workshop)
- Turning off water heaters when holiday homes/weekenders are vacant (Workshop)
- Fire for heating, cooking and hot water (Survey)

Additional comments by survey respondents who attended the workshop were:

"There should be no requirement to change our appliances until/unless we decide to."

"Re insulation and draught sealing options - need to investigate owner/renter options of training to do some of this themselves. Perhaps with working bees, etc."

"Not enough detail"

"What are the best ways for a community like ours to achieve the best outcomes in these areas?"

Additional comments by other survey respondents were:

"There may need to be a way to fund energy efficiency through cheap loans for people who can't readily afford it."

"Wood and gas are important fuels in the region, which will be very expensive for residents to give up."

"People have to make decisions - it's hard to force them to do anything unless they can see what's in it for them."

"People who rent or own a home can not always afford to change things. If there was full support to help others to get to a greener way of life, then I support your ideas."

"Moving away from the existing grid does not make environmental sense."

"Very limited. Expected more innovative ideas specific to our Deans Marsh community. Education about insulation and draft reduction has been advertised and shared for years. Remember the insulation program?"

"If we can get a system that is cheaper than current electricity, electrification will automatically occur. We should concentrate on (the) first two and getting a local grid happening."

"Everything done must be practical and make a difference - unless cost is not an issue, which is a personal choice."

3.3 Solar and Storage Options

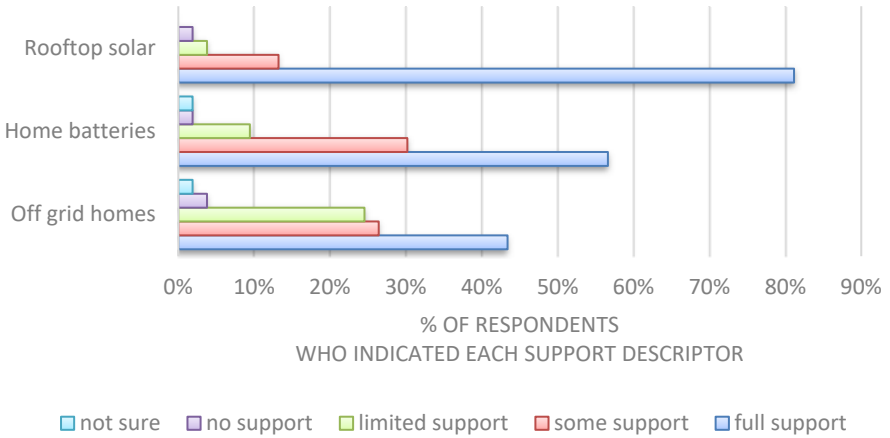
In the Options Paper, Enhar identified three options related to Solar and Storage. These were summarised in the survey as:

- **Rooftop solar** panels on homes and businesses
- **Home** (behind the meter) **batteries** to store and optimise rooftop solar energy
- **Off-grid homes** that meet their own energy needs

Community support for these Options

Survey respondents were asked to indicate the extent of their support for the three Solar and Storage options. Figure 7 shows the range of support indicated by the 53 respondents to this question.

Figure 7: Range of Support for Solar and Storage Options
All respondents (n=53)



Compared with the Energy Efficiency and Electrification Options, there was a greater distinction between levels of support for the Solar and Storage Options.

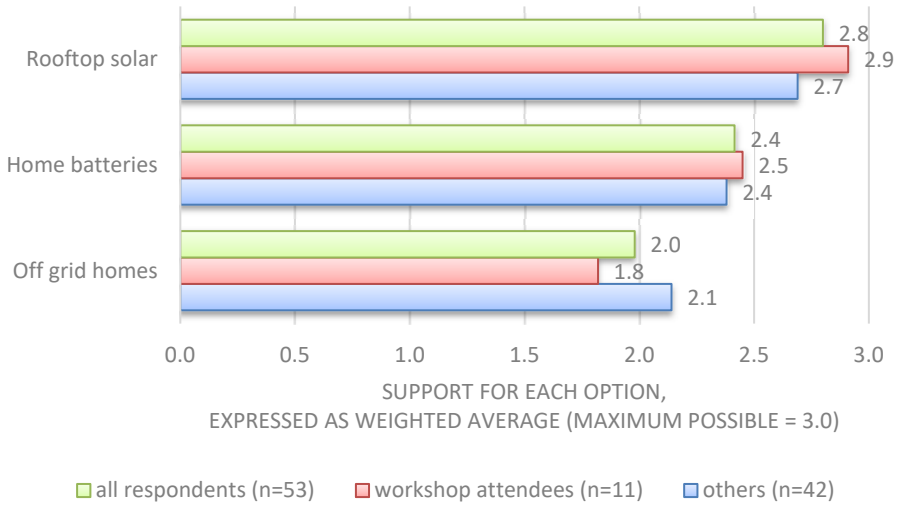
Rooftop solar received the most 'full support' responses of the 3 Solar/Storage Options, being selected by 81% (43) of the respondents to this question. Indeed, Enhar advised that 97 rooftop solar systems are already in the District[5]. No respondents were unsure of their support for **rooftop solar**.

Only 43% (23) of respondents fully supported **off-grid homes**.

To better understand the level of support for these Options, Figure 8 shows the results expressed as weighted averages for respondents who attended the Options Workshop, those who did not, and all respondents (who answered the question) combined.

Figure 8 arguably confirms that the level of support for Solar and Storage Options decreases with the required investment and complexity. In addition, **home batteries** augment (but are not necessary for) **rooftop solar** systems, so somewhat less support for batteries would be expected.

Figure 8: Level of Support for Solar and Storage Options



There was little difference in the support evident in respondents who had attended the workshop, with the possible exception of **off-grid homes**, which was marginally less supported by workshop attendees.

Challenges

Respondents were asked about the main challenge/s in encouraging broad take-up of their most-supported Solar and Storage Options. Responses are summarised below, along with the numbers of mentions by survey respondents who attended the workshop (W), those who didn't (O), and all respondents (total).

[5] Per Enhar's presentation at the Options Workshop, available at https://deansmarsh.org.au/activities-3/powermad/

Rooftop solar panels on homes and businesses

Comment	Mentions
Cost, need financial assistance, feed-in tariffs too low, low return on investment	5 (W) 29 (O)
System efficiency (too many trees, leakage between kiosk and house)	5 (O)
Impact of solar panel manufacturing and disposal	5 (O)
Educating the community, choosing the right product	2 (O)
Roof space	1 (W)

Home (behind the meter) battery to store and optimise rooftop solar energy

Comment	Mentions
Cost, needs to be subsidised, costs – v- benefits	8 (W) 26 (O)
Environmental cost of battery manufacture/mining, disposal, embodied energy implications	1 (W) 7 (O)
Battery lifespan, reliability, efficiency	7 (O)
Need grid or generator as a backup, getting enough capacity, CO_2 implications	2 (W)
Safety	1 (W) 1 (O)

Off-grid homes that meet their own energy needs

Comment	Mentions
Need grid as a backup, reliability, ensuring supply, not enough sun, don't have the expertise to fix problems	3 (W) 23 (O)
Cost, return on investment	2 (W) 16 (O)
Environmental impact	2 (O)
Don't have the expertise to fix problems	2 (O)
This should be by personal choice	2 (O)
Safety	1 (W)

Other comments about Solar and Storage Options

It was noted during the Options Workshop that 97 houses in the District have rooftop solar. The proportion of these homes that have a battery was unknown.

Additional comments by survey respondents who attended the workshop were:

"We have solar, and looking at a battery - interested in learning more about how to most efficiently use a battery / excess solar."

"Why are we being asked to guess what the challenges will be rather than asking us what we personally think? The question is framed incorrectly."

"What are the best options for our community to achieve these outcomes?"

Additional comments by other survey respondents included:

"If this is going to work, it has to be cost effective. Not everyone can afford to go green all the way."

"Solar energy is not good for the environment. Victoria has a major problem with stockpiled solar panels, which cannot be recycled. Solar panels are toxic to dispose of. 95% of solar panels are made by 'slaves' in China. Do you really want to add to all these problems? Think about where the minerals for batteries are mined from. This is a complex environmental problem, and focusing on solar panels is far too simplistic."

"Every home should have solar, and solar without storage doesn't solve the problem. Deans Marsh needs the grid when local renewables don't work. The grid needs storage. I am starting to think that the real problem is the grid, and powering Deans Marsh is not the problem."

"Most are waiting for better battery options."
"Viability of solar options for part-time residents and where houses don't have a useful aspect."

3.4 Renewable Energy Options

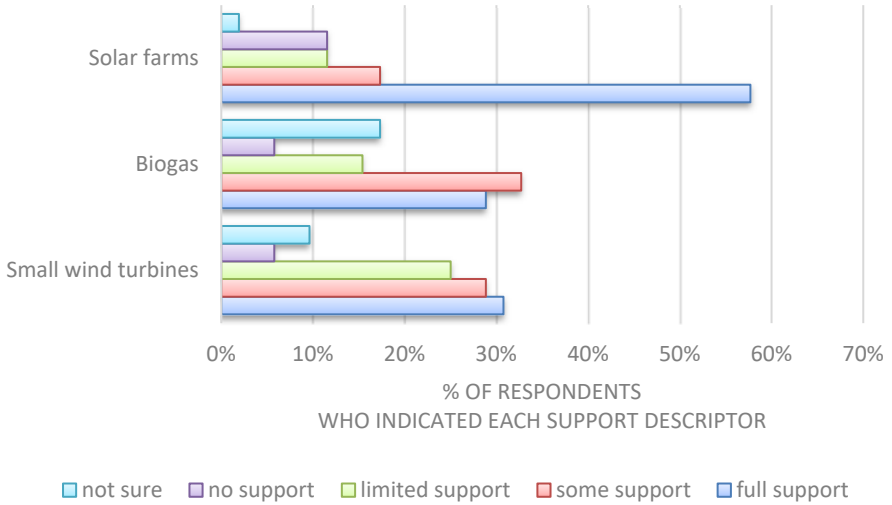
In the Options Paper, Enhar identified three options related to Renewable Energy. These options were summarised in the survey as:

- **Solar farms** that supply electricity to the grid
- Using **Biogas** from manure to generate power
- **Small**-scale **wind turbines** for on-site electricity consumption

Community support for these Options

Survey respondents were asked to indicate the extent of their support for the three Options related to Renewable Energy. The results, as indicated by 52 responses, are shown in Figure 9.

Figure 9: Range of Support for Renewable Energy Options
All respondents (n=52)

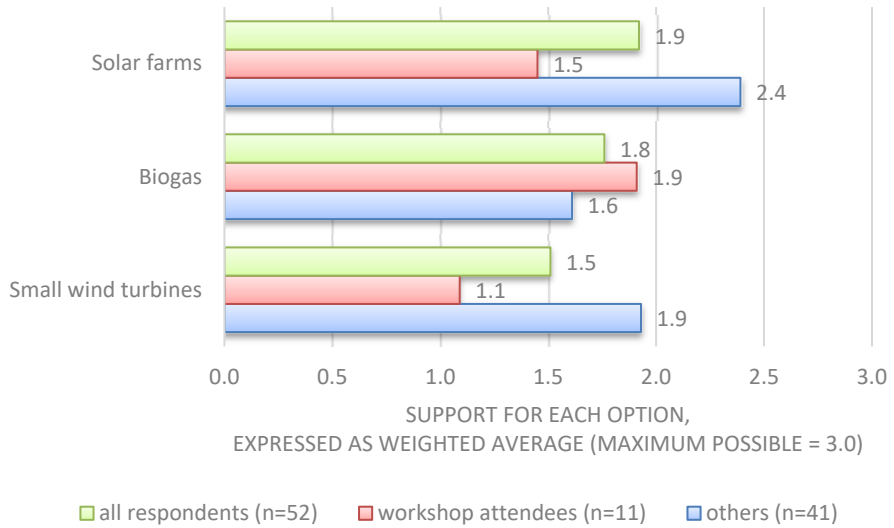


The only Renewable Energy Option fully supported by a majority (58%) of survey respondents was **solar farms**. Only 3 responses (6%) separated the 'full', 'some' and 'limited' support results for **small-scale wind turbines**.

Biogas received the most 'unsure' responses (9 responses or 17%) of all 17 Options in the Options Paper.

To further investigate the level of support for these Options, Figure 10 shows the results expressed as weighted averages for respondents who attended the Options Workshop, those who did not, and all respondents (who answered the question) combined.

Figure 10: Level of Support for Renewable Energy Options



Compared with the previous options, Figure 10 shows a more significant distinction in the responses of people who had attended the workshop and those who had not.

This was especially evident in the decreased level of support for **solar farms** and **small wind turbines** indicated by survey respondents who had attended the workshop. These respondents may have recalled a discussion at the workshop about the suitability of the District's landscape for these options, for reasons including the prevalence of wind, amount of direct sun and amenity.

Challenges

Respondents were asked about the main challenge/s in encouraging a broad take-up of the Renewable Energy Options they most supported. Responses are summarised below. The numbers of mentions by survey respondents who attended the workshop (W), those who didn't (O), and all respondents (total) are included in the tables.

Solar farms that supply electricity to the grid

Comment	Mentions
Difficulty finding a site, impacts on farmland, habitat, aesthetics, not enough sun, not appropriate here	4 (W) 21 (O)
Cost, needs to be commercially viable	4 (W) 7 (O)
Not practical for a population of this size	2 (W)
Community attitudes, community engagement is needed	1 (W) 1 (O)
Environmental impact of production	1 (O)
Government backing	1 (O)

Using Biogas from manure to generate power

Comment	Mentions
Cost, needs to be commercially viable	4 (W) 11 (O)
Not practical for a population/dairy industry of this size	1 (W) 8 (O)
Accommodating required infrastructure	8 (O)
Community engagement, education needed	3 (W) 9 (O)
The carbon footprint of intensive farming	1 (O)

Small-scale wind turbines for on-site electricity consumption

Comment	Mentions
Cost, needs to be commercially viable, return on investment, maintenance costs	7 (W) 4 (O)
Effectiveness/reliability questioned, limited lifespan, not enough wind, not feasible	4 (W) 8 (O)
Noise, aesthetic impacts, community attitudes	1 (W) 5 (O)
Community engagement, education needed	2 (W)

Other comments about Renewable Energy Options

Additional Options discussed during the Options Workshop or suggested in the survey included:

- Use of domestic septic systems to produce biogas (Workshop)
- Small town wind option, like Daylesford (Survey)
- Power from waste (Survey)
- *"Grid-scale renewables seem far more sensible. Expand Mt Gellibrand wind farm: two extra turbines would cover all Deans Marsh's needs"* (survey)

An additional comment by a survey respondent who attended the workshop:

> *"We would have to rely on Powercor for any of these. If they don't provide a commercial provider with bang for the buck, they won't provide us with that."*

Extra comments by other survey respondents:

> *"Farmers forced to house transmission lines should be compensated."*
>
> *"Deans Marsh is virtue signaling again."*
>
> *"Has anyone looked at solar radiation levels and wind speeds to see how useful wind and solar can really be here? Needs engineering input - not wishful thinking."*

3.5 Transport Options

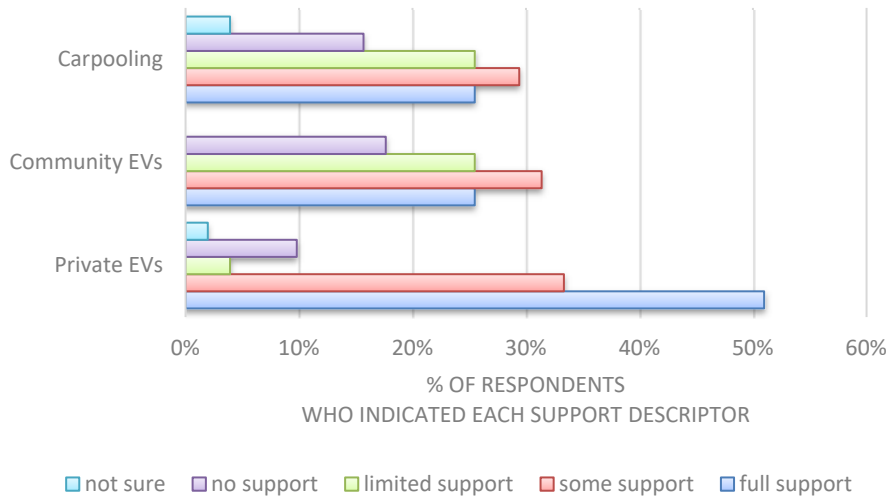
In the Options Paper, Enhar identified three options related to Transport. These were summarised in the survey as:

- **Carpooling,** e.g. to Colac or Geelong for work, shopping, social, etc
- Shared **Community Electric Vehicles** (EVs)
- **Private**ly owned **Electric Vehicles**

Community support for these Options

Fifty-one survey respondents indicated the extent of their support for the three Transport Options, as shown in Figure 11.

Figure 11: Range of Support for Transport Options
All respondents (n=51)



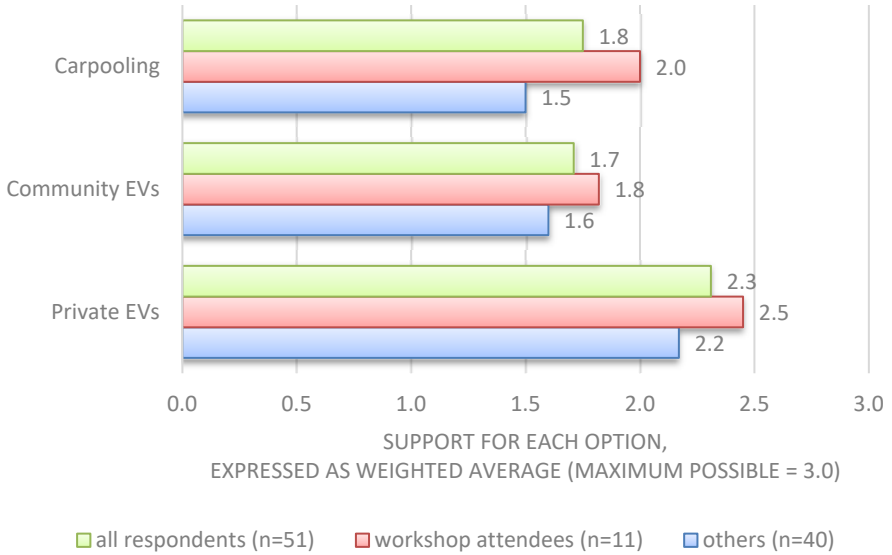
Just over half of the respondents fully supported **private EVs**, while only one-quarter fully supported (each of) shared **community EVs** and **carpooling**.

Community EVs were the most divisive of the Transport Options, with all 'support descriptors' yielding between 9 and 16 (18% and 31%) of responses and no respondents selecting 'not sure'. 9 (18%) respondents indicated 'no support' for **community EVs**, making it the highest 'not supported' Option of all 17 in the Options Paper.

Carpooling received the second highest number of 'no support' responses (8, or 16%) of the 17 Options.

Figure 12 shows the results expressed as weighted averages for respondents who attended the Options Workshop, those who did not, and all respondents (who answered the question) combined.

Figure 12: Level of Support for Transport Options



The weighted averages confirm the level of support for **private EVs** and show little difference in overall respondent support for **carpooling** or **community EVs**.

Slightly more support for each Transport Option was evident among respondents who had attended the workshop than those who hadn't. This was especially the case for **carpooling**.

Challenges

Respondents were asked about the main challenge/s in encouraging broad take-up of the Transport Options they most supported. Responses are summarised below. The numbers of mentions by survey respondents who attended the workshop (W), those who didn't (O), and all respondents (total) are included in the tables.

Carpooling, e.g. to Colac or Geelong for work, shopping, social, etc

Comment	Mentions
Difficulties scheduling and managing, not practical or convenient	5 (W) 28 (O)

Shared Community Electric Vehicles

Comment	Mentions
Difficulties scheduling and managing, who would charge it, not practical, could be dominated by a few	6 (W) 24 (O)
Cost, who would maintain it	1 (W) 11 (O)
Need more EV infrastructure, local charging station	3 (O)
Getting people to look after it, people need different types of vehicles in this area	2 (O)
Environmental cost of manufacture/replacement	2 (O)

Privately owned Electric Vehicles

Comment	Mentions
Cost, uptake will increase as purchase costs are normalised, should be subsidised	5 (W) 20 (O)
Need more EV infrastructure, local charging station	3 (W) 11 (O)
Limitations, need more power or range (e.g. ute, need to tow horses or drive long distances)	1 (W) 6 (O)
Environmental impact of battery manufacture/ disposal	3 (O)
Community information needed	1 (W)

Other comments about Transport Options

Additional Options discussed during the Options Workshop or suggested in the survey included:

- The opportunity to extend the Lorne to Colac bus service beyond the summer months (Workshop)
- An app to manage/schedule use of shared vehicles (Survey)
- An annual public bus serving Lorne, Deans Marsh and Colac (Survey)
- Public transport options should be included (Survey)
- A shared small electric bus (Survey)
- Electric buses (Survey)
- Coordination of a day each week for supermarket deliveries so that one truck visits the area - environmental efficiency and may negotiate a discount? (Survey)

Solutions to some of the questions posed about the potential **community EV** were posed by some survey respondents:

- Hire costs could cover maintenance and upkeep
- Resourcing could come from government, Councils or community groups

Additional comments by survey respondents who attended the workshop were:

"Carpooling is a good idea!"

"Carpooling isn't even an option – why is it (listed) here?"

"Privately owned EVs are only for the rich – not even an option – why is it (listed) here?"

"Need more education on EVs. Need better government support (not taxes)"

"How is this even in the survey?"

Extra comments by other survey respondents were:

"Carpooling – seriously? What about public transport?"

"Other than carpooling it's too early for the other two options."

3.6 Grid Options

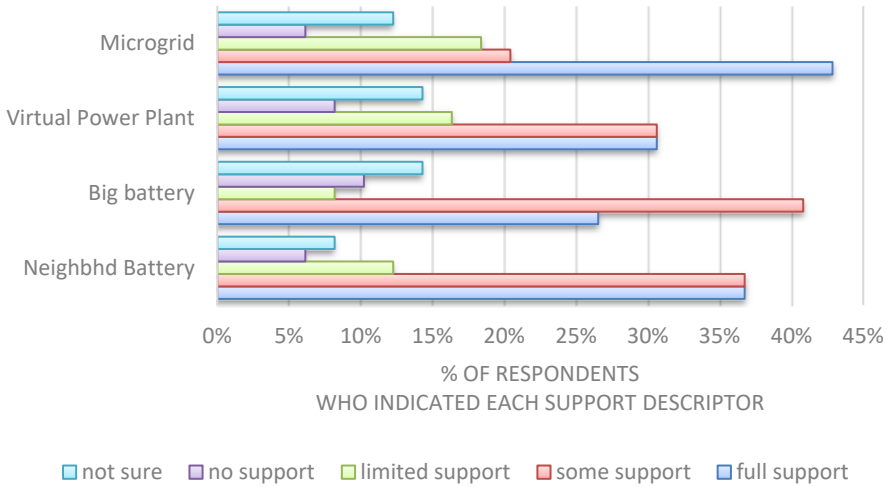
In the Options Paper, Enhar identified four Grid-related Options, which were summarised in the survey as:

- Deans Marsh **Microgrid** – a small 'subset' of the electricity grid that provides energy generation and storage at a local level
- **Virtual Power Plant** – a network of connected home batteries
- **Big** (front of the meter) **battery** linked to transmission network to support renewable energy generation
- **Neighbourhood Battery** to improve energy reliability and provide energy storage capacity for locally generated solar power

Community support for these Options

Survey respondents were asked to indicate the extent of their support for the Grid options. Figure 13 shows the range of support indicated by the 49 respondents who answered this question.

Figure 13: Range of Support for Grid Options
All respondents (n=49)



None of the four Grid Options were fully supported by a majority of respondents, and all were met with a relatively high number of 'not sure' responses (4-7 or 8-14%). Deans Marsh **Microgrid** had the highest proportion of 'full support' responses, at 43%.

Big (front of meter) **battery** had a relatively high number of 'no support' responses (5, or 10%).

To further investigate the level of support for these Options, Figure 14 shows the weighted averages for responses by respondents who attended the Options Workshop, those who did not, and all respondents (who answered the question) combined.

Figure 14: Level of Support for Grid Options

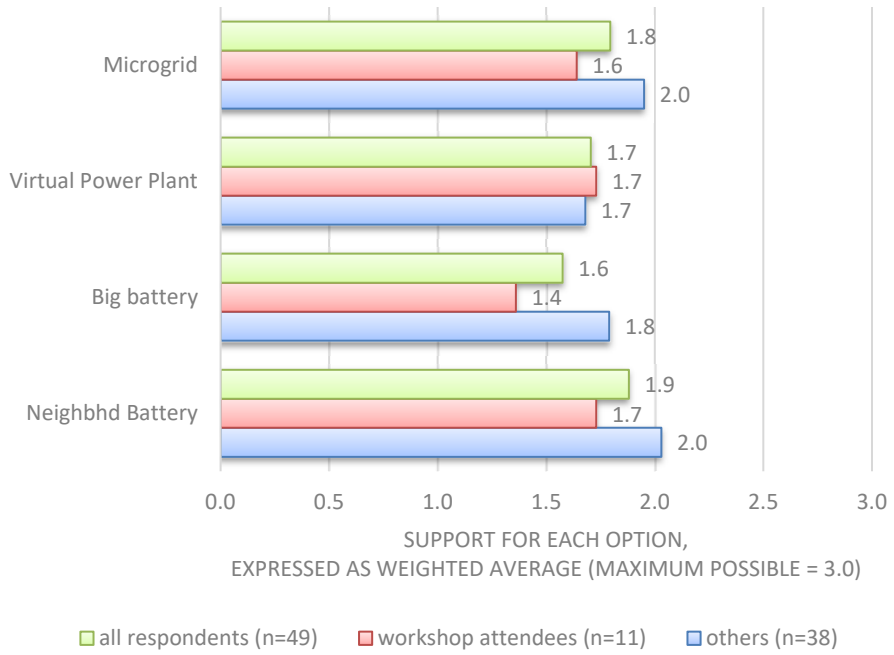


Figure 14 shows little difference in the overall support for the four Grid Options. Respondents who attended the workshop indicated slightly less support for the **Microgrid, Big battery** and **Neighbourhood Battery** than other respondents.

Challenges

Respondents were asked about the main challenge/s in encouraging broad take-up of the Grid Options they most supported. Responses are summarised below. The numbers of mentions by survey respondents who attended the workshop (W), those who didn't (O), and all respondents (total) are included in the tables.

Deans Marsh Microgrid – a small 'subset' of the electricity grid that provides energy generation and storage at a local level

Comment	Mentions
Cost, cost-v- benefit	3 (W) 14 (O)
Differing community opinions	1 (W)
Suitability, reliability (inc of local energy sources)	1 (O)
Ongoing maintenance and support	1 (O)
Community education needed	1 (W) 2 (O)
Placement of infrastructure, distance to homes	4 (O)

Virtual Power Plant – a network of connected home batteries

Comment	Mentions
Cost, cost-v- benefit	1 (W) 9 (O)
Practicalities of sharing, fairness	4 (O)
Suitability, reliability (inc of local energy sources), need more homes with batteries and excess power	3 (O)
Community education, more information needed	1 (W) 2 (O)
Distance	1 (W) 1 (O)
Needs government support	1 (O)

Big (front of the meter) battery linked to transmission network to support renewable energy generation

Comment	Mentions
Cost	1 (W) 9 (O)
Reliability	1 (O)
Enables continuity of grid connection	2 (O)
Community education, more information needed	1 (W) 2 (O)
Distance	1 (O)

Neighbourhood Battery to improve energy reliability and provide energy storage capacity for locally generated solar power

Comment	Mentions
Cost, cost/benefit questionable	2 (W) 10 (O)
Placement of infrastructure, distance to homes	1 (W) 2 (O)
Suitability, reliability (inc of local energy sources; needed by The Store and dairy farms)	3 (O)
Community education, more information needed	1 (O)

Other comments about Grid Options

Additional Options discussed during the Options Workshop or suggested in the survey included:

- The opportunity for a community-owned small, transportable battery, which could be charged by solar panels on homes or community facilities and stored centrally for use by community facilities during blackouts or emergencies. [The Enhar representative commented that an EV could provide this function] (Workshop)
- Contact an organisation such as Powercor to see if they would be willing to use Deans Marsh as a test case for one of their initiatives (Survey)

Additional comments by survey respondents who attended the workshop were:

"These all rely on Powercor. If they were commercially viable options, I'd definitely support them, but if not then don't consider."

"According to the presentation, there was no real advantage in the neighborhood battery, but how does that differ from a big battery? We need a grid that is reliable if the main transmission lines are out."

"I liked Deb's comment regarding the battery storage - how long do they last with energy? Cost per battery for charging more than camp lights and fridge are relatively expensive. I think we should make a priority of a Community Hub Building which takes into account all of these solar/biogas options and can be off grid for a couple of days during power outages - a space where the community can recharge their phone, cool off/ warm up, be safe during severe weather."

"I feel like I'm wasting my time here."

Additional comments by survey respondents who did not attend the workshop were:

"Unsure of the reliability implications of these options."

"Any storage/renewable options must be used to supplement grid connection, not replace it."

"How does this work if you don't live in town?"

"Duplication would not be sensible."

"These are all exciting prospects!"

"This is purely an engineering exercise and should be treated as such."

"Best option is community grid and storage."

"These questions are for the residents of the Deans Marsh township to comment on."

3.7 Other (general) comments

Finally, survey respondents were invited to make other comments about the project. Those not already covered previously are shown below.

"When is the nuclear power going to be actioned?"

"Love the project. This survey is totally inadequate."

"So far (the) information received is often at a level above the comprehension of the general community, this … makes those confused ignore the initiative - doesn't mean they wouldn't agree but (they) just don't understand."

"I think it seems to have been a very beneficial process."

"The Action Plan needs very clear steps that are realistic for the community to carry out."

"I would like to see the Action Plan list specific and achievable projects our community can undertake. Not just a list of areas that 'could be explored further'."

"Ongoing need to review and keep up-to-date with new technologies."

"Is Winchelsea still getting town gas, or has that project been scrapped?"

"There should be a push for ways to reduce energy needs as well as more sustainable ways to generate energy."

"Great project - how do we progress to the next level?"

"Please don't take us off the grid!"

"I am not supportive of this project as a resident of Deans Marsh. Solar power is a farce. Victoria already has a major

problem with disused solar panels. Batteries are also extremely toxic to dispose of. Morally, solar panel production is questionable, with the vast majority made in China by 'slaves'. There is already an existing working grid and infrastructure. We should continue to use it and lobby government instead to mass produce cleaner energy. Deans Marsh is already a weird enclave and doesn't need to get any more isolated. People need to educate themselves more deeply about the true environmental cost of "renewable" energy sources."

"What input has Powercor had to the Project?"

"Thank you to everyone working on this project, much appreciated!"

"Just keep on trying to come up with the cheapest way all can benefit from it. Listen to all the options that are not going to destroy our beautiful area."

"Disappointing. For the amount of funding, expected more innovation and detail from the consultant."

"I have doubts that it is going to deliver anything useful. I would wait until other current projects are complete and reports are available. These projects are established and have government funding - to the tune of millions of dollars. Deans Marsh can learn from these experiences and see if anything could be adopted/adapted from these learnings."

"Thank you for all the hard work that has gone into the PowerMad Project to date. A worthwhile attempt at contemplating what can be improved locally in the face of what is essentially a global problem."

"I'm not sure how we ended up with this survey based on what was discovered/discussed at the (Options) Workshop."

"A waste of money. This survey shows that there is very little understanding of our community's capacities, needs or interests. The Action Plan will be full of platitudes and no meaningful direction or specific steps that need to be taken."

"Great intent and range of options. Thanks to the working group. I look forward to making the changes I can and supporting the community's goals."

Seven survey respondents requested that their email addresses be added to the contact list for future project updates. These have been passed on to The Cottage.

4 Independent facilitator's reflections and next steps

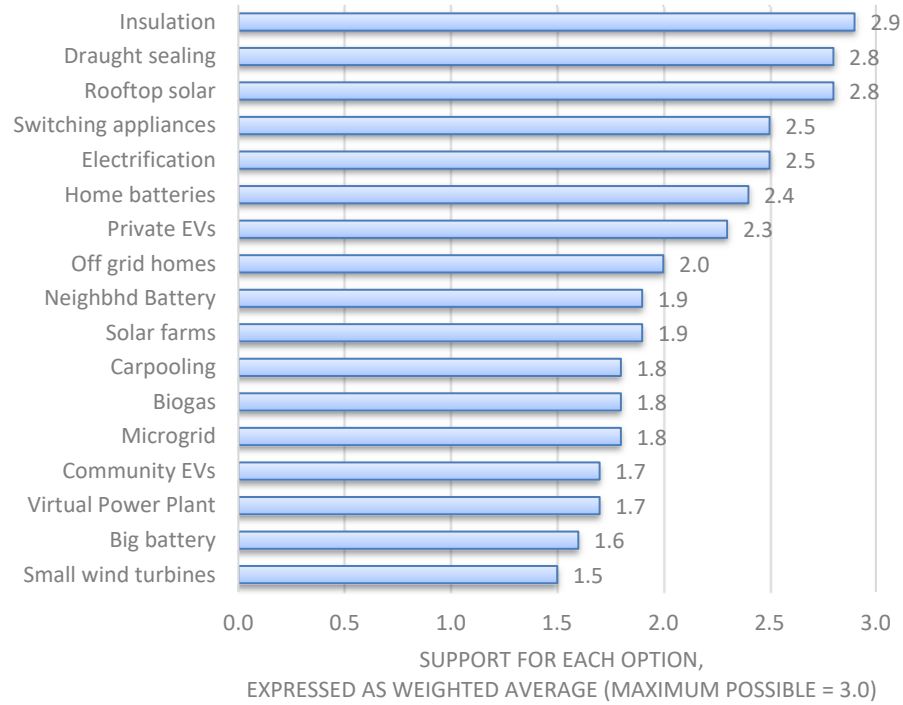
Survey participation

- There was a high number of people who skipped questions. It is possible that some may have exited and later returned to the survey to complete their responses.
- The above theory may explain why 15 people indicated they had attended the Options Workshop, which only had 13 participants. Indeed, 11 responses to each question could be attributed to respondents who had attended the workshop. (The question about whether a respondent had attended the workshop was mandatory, so people returning to the survey had to answer that question again.)
- According to Census data, 33% of the District's population is aged under 35, yet no one in that age group completed the survey or attended the workshop. As was stated at both workshops, younger generations will be living with the outcomes of this project or the impacts of lack of action. It is respectfully recommended that project leaders continue their efforts to engage younger people and hear their insights and aspirations.
- Comparisons between the residential locations of respondents and the Census data reveal that people from Bambra and Murroon were underrepresented in this consultation.

Support for Options

The weighted averages for overall support for all Options (for all respondents who answered the respective questions) are shown in Figure 15.

Figure 15: Ranking of all Options



The ranking shows that the 17 Options can be clustered according to levels of overall respondent support:

Most supported options (with weighted averages of more than 2.5/3.0) were **insulation, draught sealing** and **rooftop solar.**

Strongly supported options (with weighted averages of 2.1- 2.5/3.0) were **switching appliances, electrification, home batteries** and **private EVs.**

Less supported options (with weighted averages of 1.75-2.0/3.0) were **off-grid homes, neighbourhood battery, solar farm, carpooling, biogas** and **microgrid.**

Least supported options (with weighted averages of 1.5-1.75/3.0) were **community EVs, virtual power plant, big battery** and **small wind turbines.**

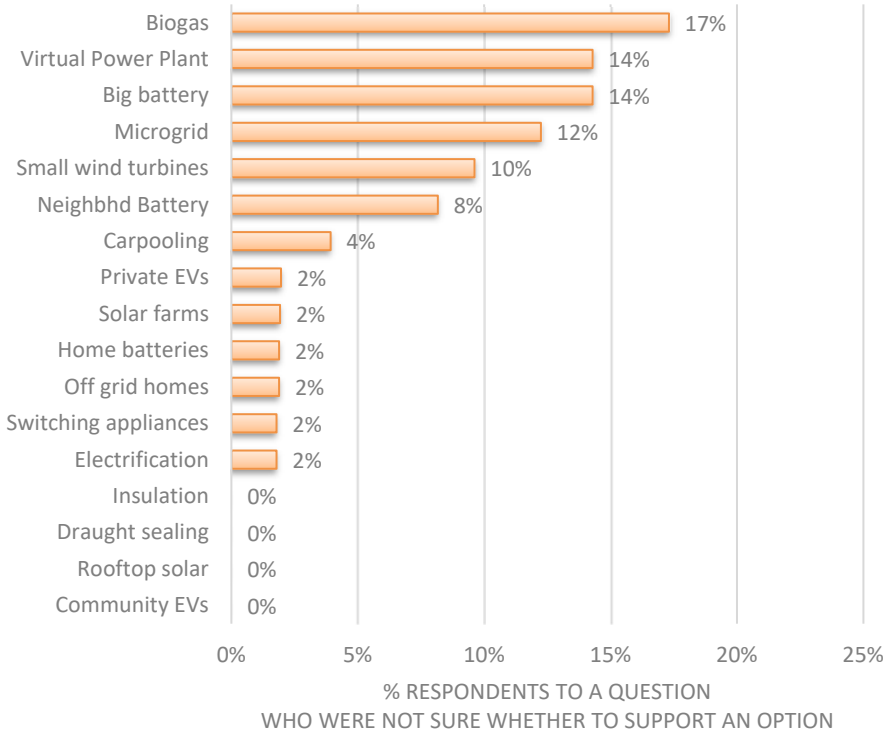
Opportunities for education

Figure 16 shows the proportion of respondents unsure whether to support various Options.

If Options such as **biogas, virtual power plant, big battery, microgrid** or **small wind turbines** are to be pursued, some targeted community education about the benefits and costs of these initiatives could be warranted.

Respondents were much more confident in expressing opinions about initiatives such as **insulation, draught sealing, rooftop solar, community EVs, electrification, switching appliances, off-grid homes, home batteries, solar farms** and **private EVs**.

Figure 16: Unsure Responses



This report highlighted the responses of people who attended the Options workshop - and who therefore had the benefit of discussing the 17 Options with the consultant from Enhar. The intent was to see whether this increased knowledge had any impact on the level of support for various Options. As suggested earlier, there are likely to be other factors that distinguish workshop attendees from other respondents, but the data arguably shows the impact of information sharing and education.

The differences in the weighted average scores between respondents who attended the Options Workshop and other respondents are shown in the table below.

	Workshop attendees *more* supportive than other respondents	Workshop attendees *less* supportive than other respondents
Negligible or no difference in level of support *(difference in weighted averages 0 - 0.09 out of 3, or less than 3%)*	Switching appliances Electrification Home batteries Virtual Power Plant	
Slight difference in level of support *(difference in weighted averages 0.10 – 0.39 out of 3, or 3-13%)*	Insulation Draught sealing Rooftop solar Biogas Private EVs Community EV	Off-grid homes Neighbourhood battery Microgrid
Some difference in level of support *(difference in weighted averages 0.40 – 0.69 out of 3, or 13-23%)*	Carpooling	Big battery
More difference in level of support *(difference in weighted averages more than 0.7 out of 3, or more than 23%)*		Solar farms Small wind turbines

Challenges

Challenges to the take-up of Options were sought to assist the development of a practical, realistic and implementable Action Plan. While Sections 3.2-3.6 detailed the challenges for individual Options, The following considerations recurred throughout the feedback:

- Cost, including outlay, maintenance, ensuring return on investment and commercial viability, need for financial assistance
- Maintaining infrastructure and ensuring relevant support infrastructure
- Awareness/knowledge about complex technologies, available alternatives, how to achieve the best results
- Practicalities in providing and managing shared facilities and ensuring equity of access
- Challenges in retrofitting old buildings
- Environmental concerns relating to carbon footprints and the manufacture and disposal of batteries and infrastructure
- Ensuring continuity of power supply
- Ensuring reliability and longevity of solutions
- Influencing ingrained community attitudes and behaviours
- Ensuring needs can be met and enabling community members to determine their own level of involvement
- Appropriately locating infrastructure while protecting amenity, valuable farmland and habitat and accessing sufficient sun/wind

Where to from here

The feedback detailed in this report will be used by the renewable energy consultant, Enhar Pty Ltd, to develop an Action Plan during November-December. That stage constitutes the conclusion of PowerMaD.