Hepburn Energy

Community Sparks

Social Feasibility

Introduction: Community Sparks

The ***Central Victorian Greenhouse Alliance*** (CVGA) has been funded to plan community batteries across the Hepburn Shire as part of State Governments' *Neighbourhood Battery Initiative*.

This project, called 'Community Sparks' seeks to:

- ***assess the technical feasibility*** of community battery sites in the Shire and assess one site in several partnering LGA's
- work on a ***decision-making tool*** for regional communities interested in batteries
- ***conduct social feasibility*** across the Hepburn Shire
- produce community ***education materials,*** drawing on technical and social feasibility results

Project Lead, Partners & Funders

Central Victorian Greenhouse Alliance *is the project lead for Community Sparks. They work across Central and Northern Victoria supporting climate change mitigation and adaptation activities.*

Hepburn Energy *(formerly Hepburn Wind) is a community-owned co-operative wind farm located on Leonards Hill, with over 2000 members.*

The Hepburn Shire Council *is the LGA and has as a strong background delivering and collaborating on projects to improve local sustainability.*

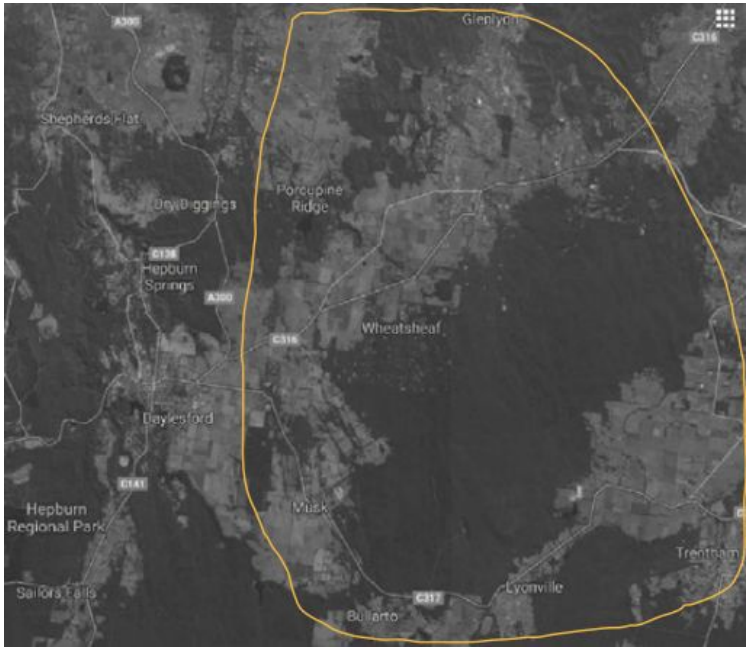
Department of Environment, Land Water and Planning *is the State Government body funding the Neighbourhood Battery Initiative.*

Project origins: Hepburn Z-NET

Hepburn Z-NET is a ***collaborative partnership*** bringing together community groups, experts and Council to shift the Hepburn Shire to zero-net energy by 2025 and ***net-zero emissions by 2030***.

Hepburn Z-NET found that battery storage would be critical to help the shire reach zero-net energy and address grid reliability issues.

This is because the Shire has relatively low capacity on the distribution network, particularly around ***Glenlyon, Trentham, Lyonville*** and ***Wheatsheaf***. Additionally, towns like ***Clunes*** already have too much solar.



Solutions being considered

Various technical solutions may be viable in different locations, offering different benefits tailored to the needs of that community. In general these battery systems would offer one or more of the following:

- Improved ***network capacity***
- Improved ***energy independence***
- Improved ***energy market participation***

In terms of scale and grid placement, these batteries would be:

- between ***100kWh - 1MWh***
- on the ***transformer level***

Solutions other than front-of-the-meter community batteries may make sense for some communities. These alternatives could include microgrids, transformer upgrades and behind-the-meter solutions.

The social component

As part of the Community Sparks project, we're eager to learn more about community interests and needs. To do this Hepburn Energy is delivering the ***social feasibility component*** of the project, including:

- Social feasibility study, including:
  - a ***detailed survey*** with >250 respondents
  - a ***focus group*** with 15 participants
- Community engagement on social and technical feasibility findings
- Community education resources

The following report summarises the findings from the survey and focus group, ***highlighting community priorities***, ***areas of concern*** and ***gaps in knowledge***.

These are used to make recommendations about community education materials and how best to present findings back to the community.

Social feasibility partners

Hepburn Energy's work on this project was supported by the State Government's *Community Power Hubs* program. The co-operative is delivering the 'Hepburn Branch' of the ***Grampians Community Power Hub***, which is led by Ballarat based sustainability group, BREAZE Inc.

Hepburn Energy was also supported by their research partner University of New South Wales in this process.

Learning about survey respondents

This next section presents results on ***who*** filled in the survey, their ***use of and knowledge of energy and efficiency tools*** and their wider ***energy system understanding***.

Survey respondents

There was a total ***273 respondents*** with 27 being ineligible to complete the survey due to living outside of the Shire.

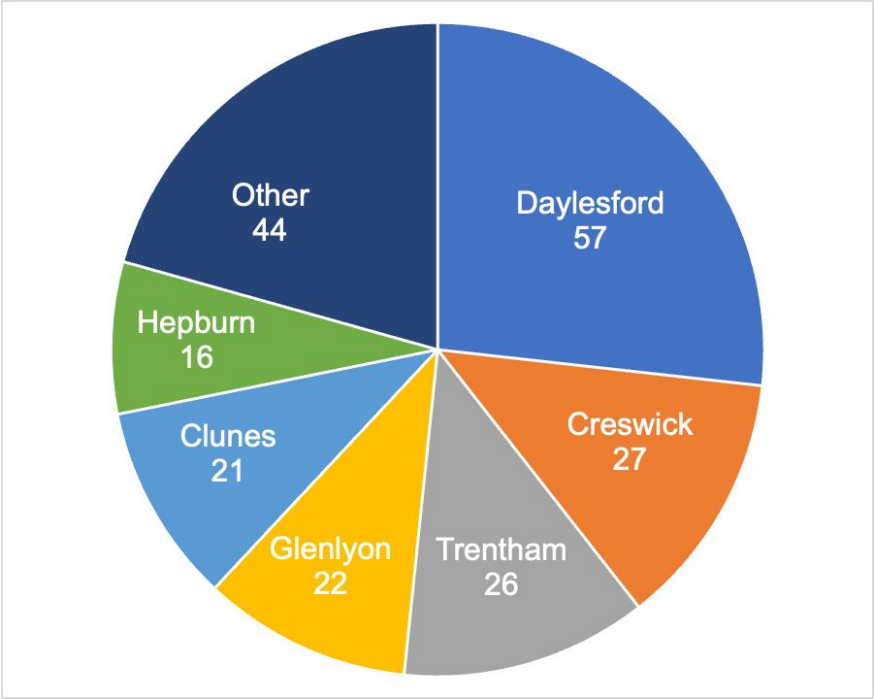
Slightly ***more women*** participated than men, at 55% to 44% respectively and ***most were in the 50s or 60s***.

Over two thirds of respondents ***owned or rented a residential or holiday property*** in the Hepburn Shire.

Respondent towns

Respondents came from ***39 towns***, with the greatest representation from ***Daylesford*** (57), ***Creswick*** (27), ***Trentham*** (26), ***Glenlyon*** (22), ***Clunes*** (21) and ***Hepburn*** (16).

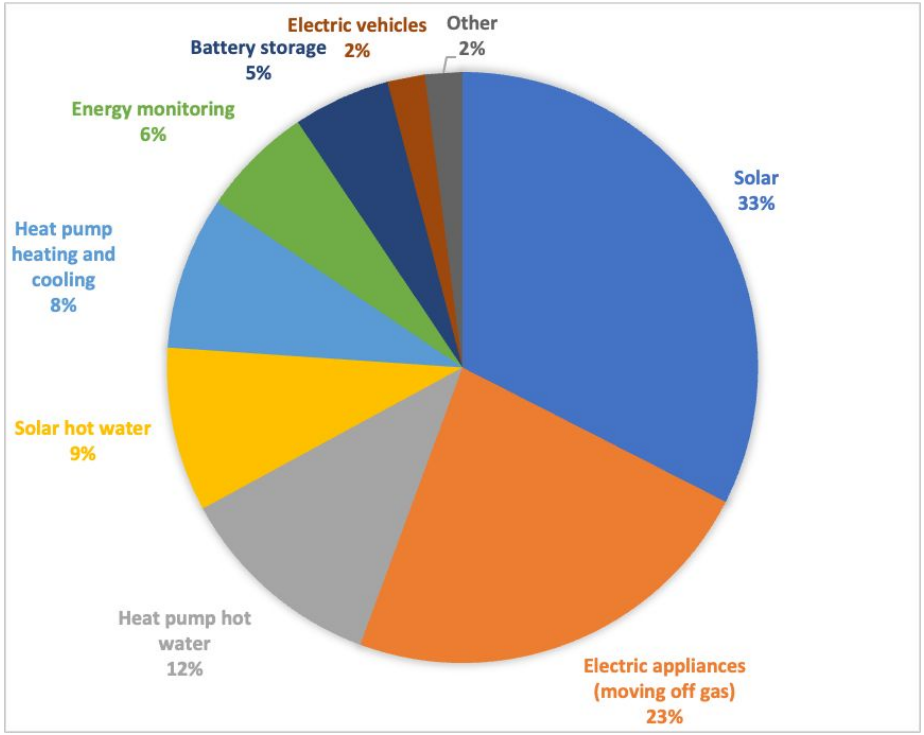
The ***'Other' category combines 23*** towns, with the largest of these being ***Lyonville*** (7) followed by ***Wheatsheaf*** (5), and Muskvale, followed by several small towns only drawing between 3 and 1 respondents.



Energy & energy efficiency: residents

Close to ***one third of respondents had solar*** (33%), followed by electric appliances to move off gas (23%), hot water solutions including both heat pumps (12%) and solar (9%), as well as heat pumps for heating and cooling (8%).

Some respondents also had energy monitoring devices (6%), battery storage (5%), electric vehicles (2%) and 'Other' energy and efficiency devices (2%).

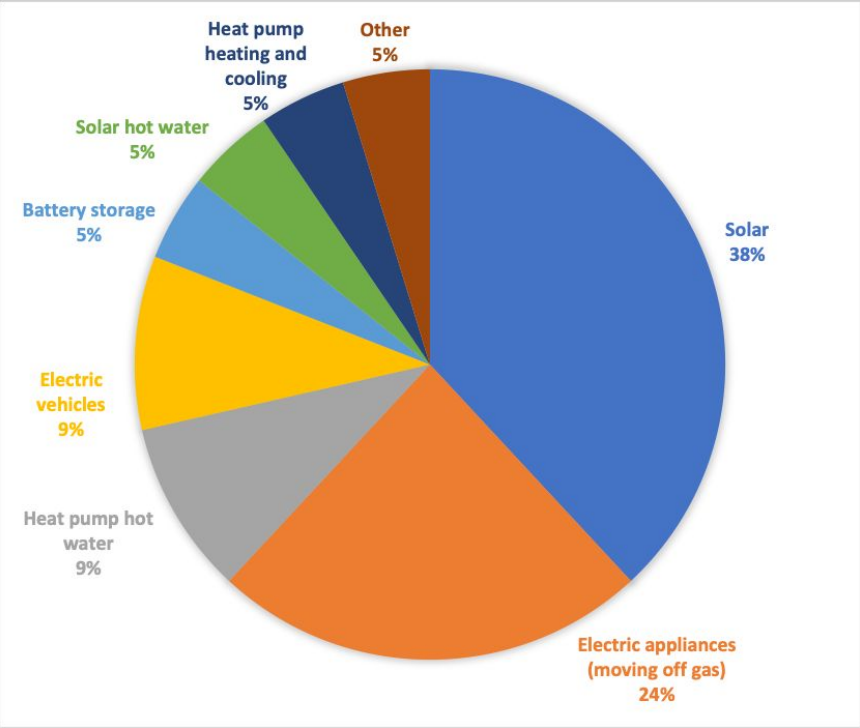


Energy & energy efficiency: businesses

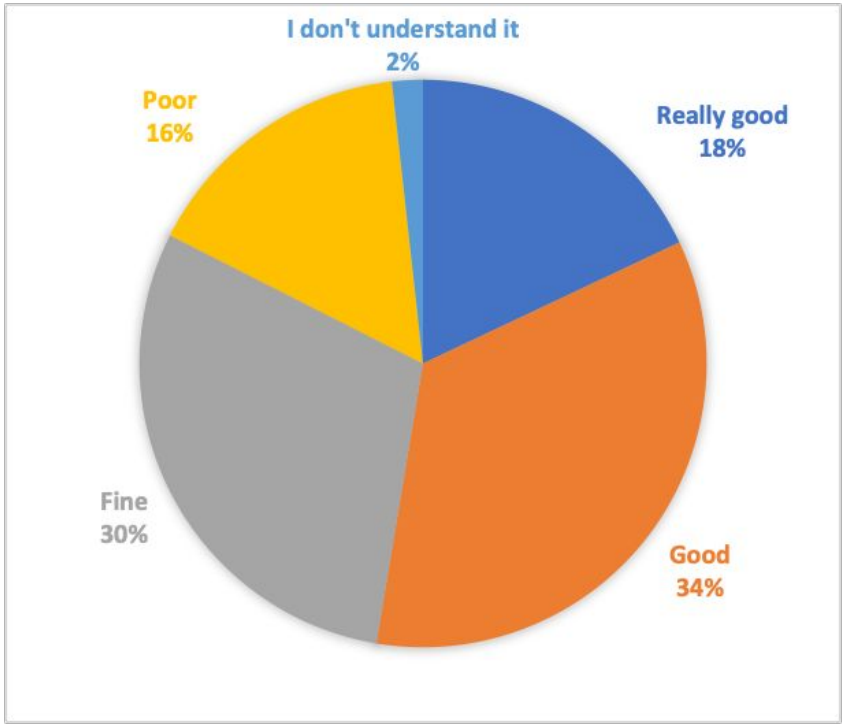
Hepburn Shire business respondents had a ***strong uptake of solar*** (38%) and ***electric appliances*** (24%).

The next most reported energy and efficiency applications were heat pump hot water systems and electric vehicles, both at 9%.

And 5% of respondents had battery storage, heat pump heating and cooling or 'Other' energy appliances.



Energy system understanding



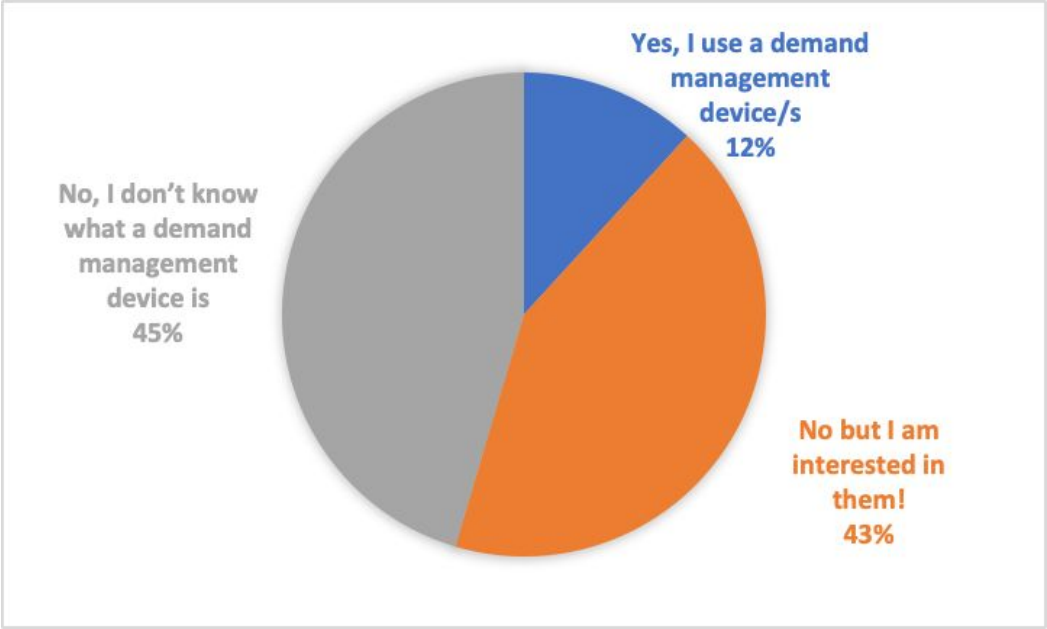
Roughly ***one third of respondents*** said they ***had a good understanding*** of the energy system, with slightly fewer people saying their understanding was ‘fine’.

18% believed they had a really good understanding, and another 18% selected their understanding as poor or that they didn’t understand it.

Demand management: awareness/use

Almost half of our survey respondents ***were unaware of demand management device's***.

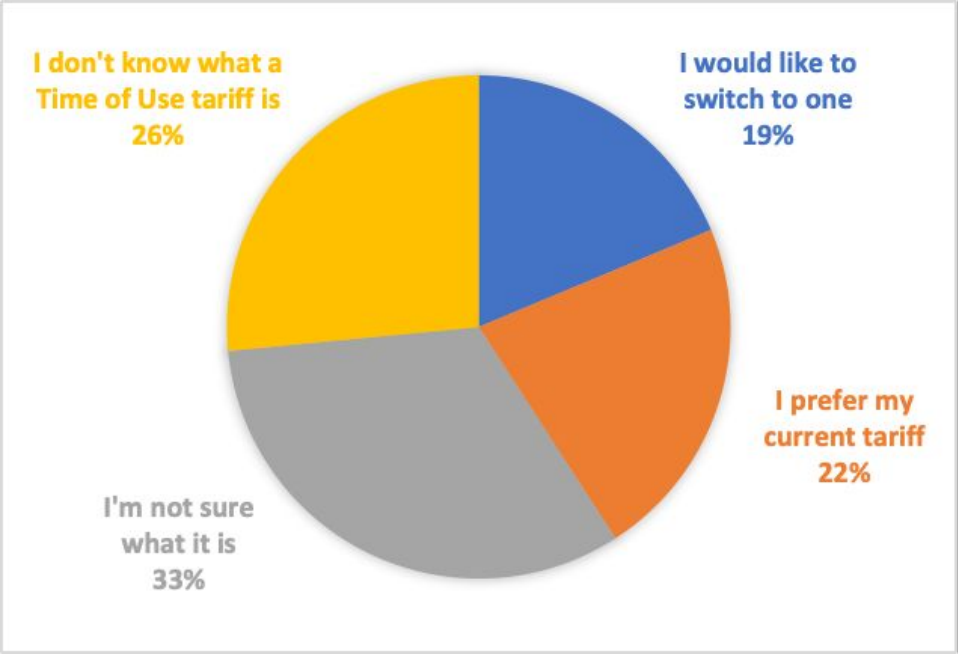
12% were already using them and 43% were interested in them.



Time of Use Tariffs: awareness/use

Half of our survey respondents did not know what a Time of Use Tariff was.

22% said they preferred their current tariff and 19% would like to switch.



The climate context and resilience

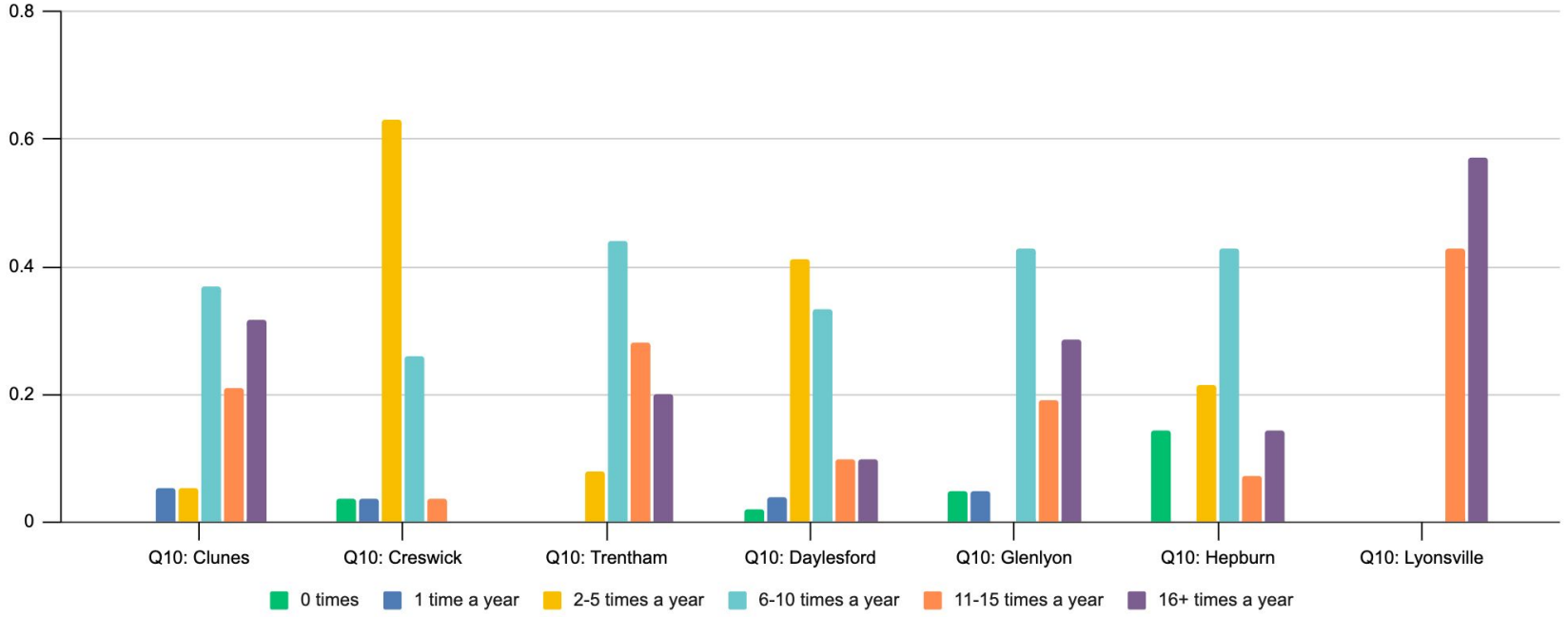
- 142 respondents were in a ***fire-prone area***
- 91 respondents had been affected by ***severe storms***
- 16 by severe ***flooding***

Respondents were hopeful about the impact of community batteries:

- 92% thought they could ***help our Shire reach zero-net by 2030***
- 81% of respondents thought they could ***improve climate resilience***

Blackouts and brownouts

Blackouts were reportedly highest in Lyonville, Clunes and Glenlyon.

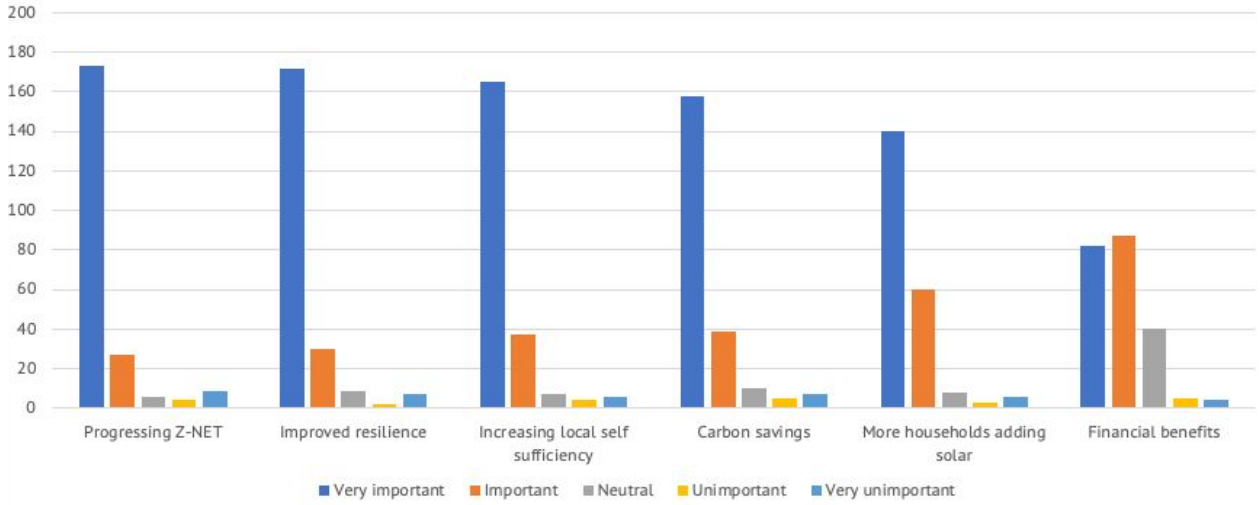


Learning about benefits and responsibility

This next section presents results on what ***benefits*** respondents thought were important and ***how benefits should be distributed.*** We also see who respondents thought should ***own or be responsible for community batteries and why***.

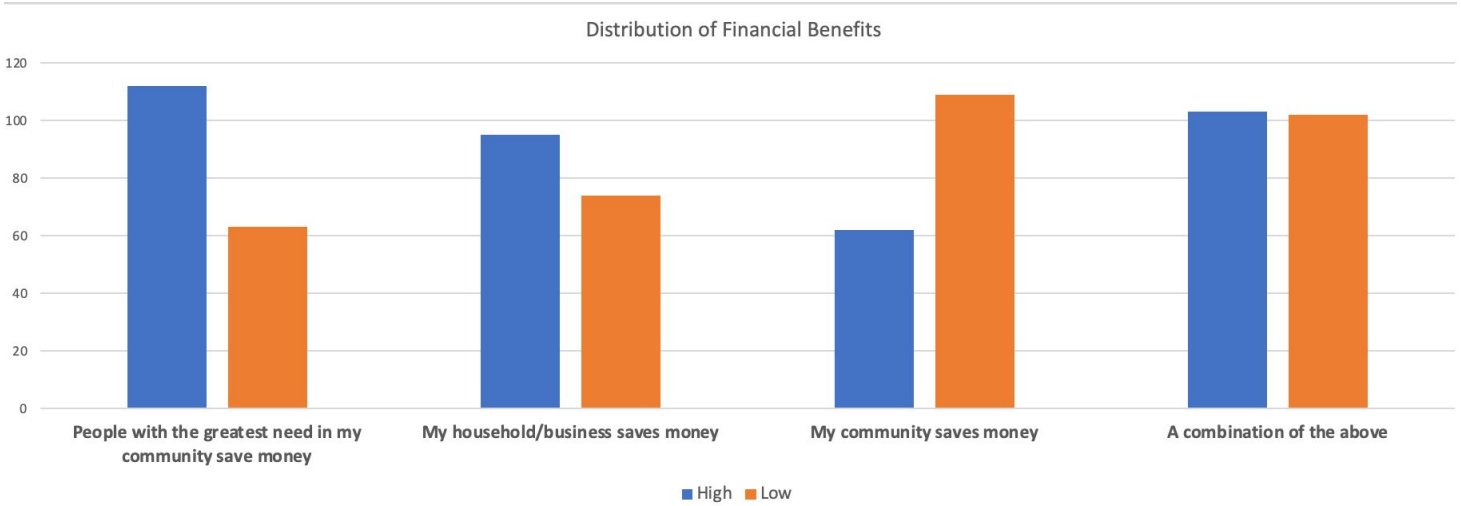
Important benefits

Benefits like progressing Hepburn Z-NET, improving resilience, increasing self-sufficiency and carbon savings were 'Very important' to respondents. Enabling more households to add solar and financial benefits were more frequently just 'important'.

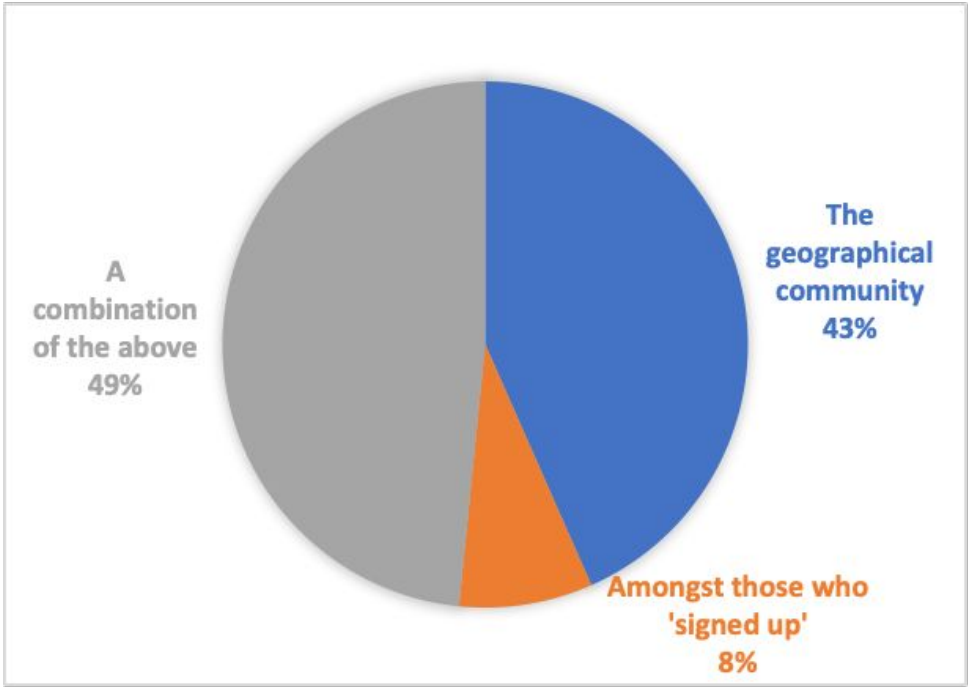


Important benefits

More respondents prioritised ***financial savings for people in need***. This was followed by a desire to see a combination of need based, individual and community financial benefits. But the least priority was given to community saving money.



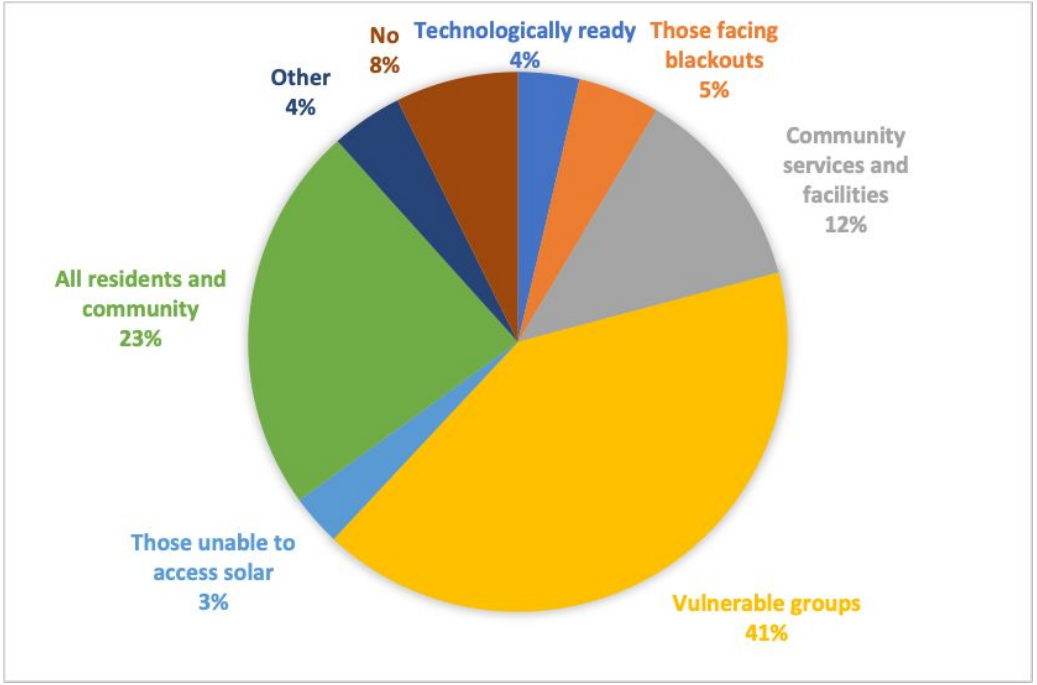
Important benefits



Almost half of our respondents wanted to see benefits both to the geographical community and those who 'signed up'.

This was followed by only wanting the geographical community to benefit (43%) and then finally just those who signed up (8%).

Benefit distribution

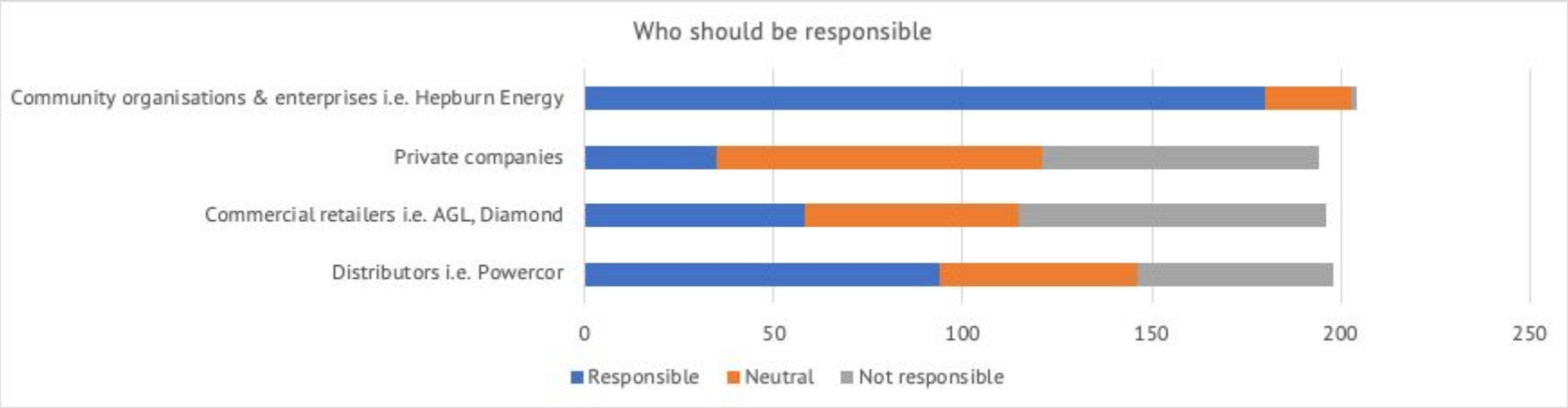


41% of respondents prioritised vulnerable groups including people on low incomes, older people and people with disabilities.

23% wanted residents or everyone in the community to benefit. 12% wanted community services, facilities and NGOs to benefit.

Responsibility and ownership

Respondents prioritised community organisations and enterprises both for owning and being responsible for community batteries, followed by distributors.

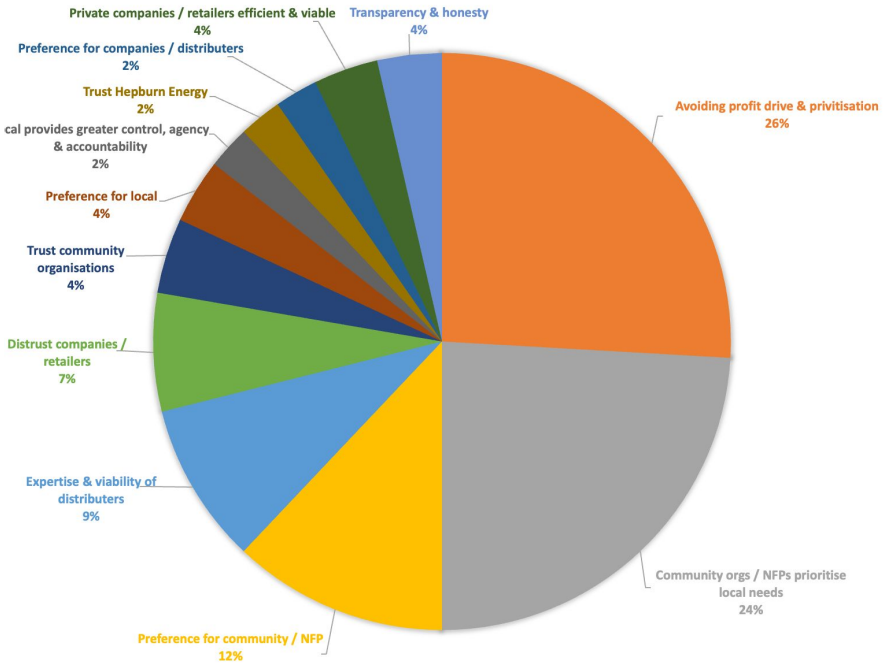


Reasons for responses

26% of respondents wanted to avoid retailers and companies based on their drive for profit and further privatisation of the energy market. 24% believed that community organisations better prioritised local needs.

Respondents also listed a general preference for community or NFP management (12%) and several believed distributors had better expertise and were more viable (9%).

Other key themes include trust, localness, control, agency and accountability.



Ownership and democracy

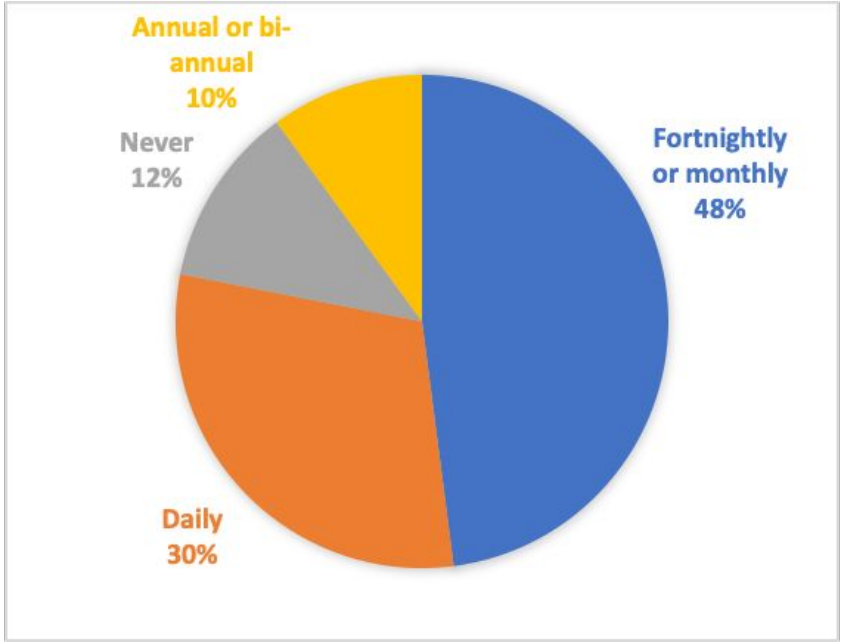
- 74% of respondents believed there was appetite for ***community ownership***, 22% were unsure
- 65% of respondents were in favour of ***democratic processes*** to decide who financial benefits were distributed

Learning about communications & concerns

This next section presents results on how respondents would ***prefer to be communicated with*** in a community battery as well as their ***concerns regarding this technology***.

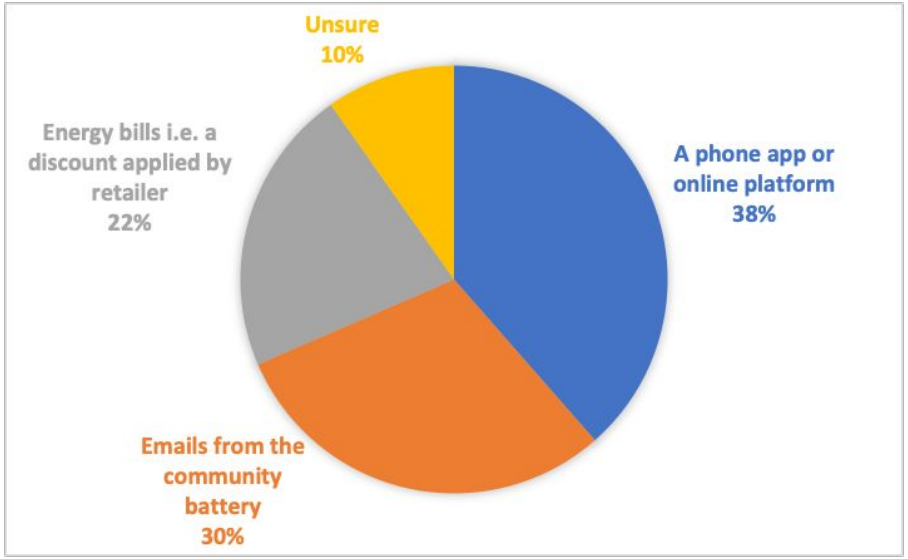
Communications frequency

Close to 50% of respondents preferred fortnightly or monthly communications, followed by daily (when supported by an app/online platform), 12% just wanted it to work without requiring communications and 10% preferred annual or biannual timeframes.



Communication platforms

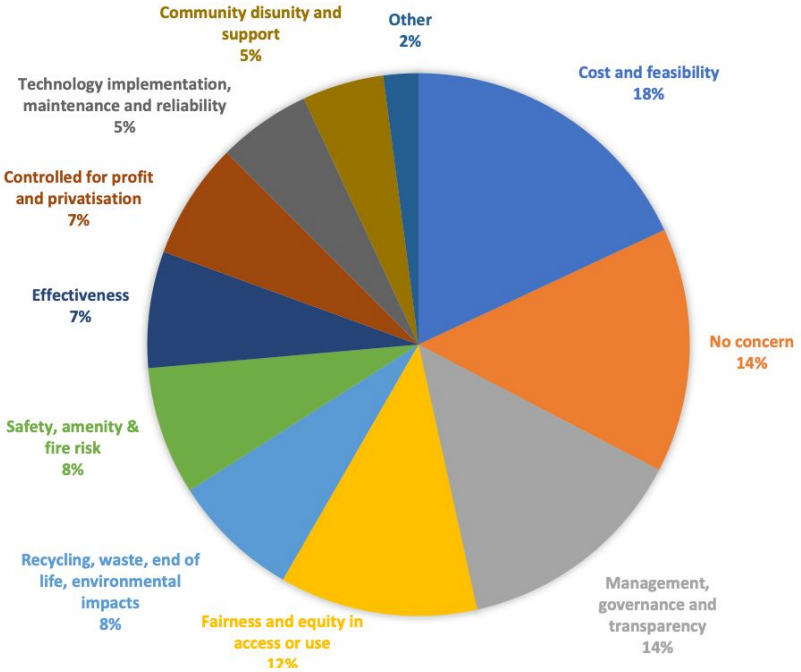
To communicate with the battery 34% preferred apps or online followed by emails (30%). 22% would like discounts to be applied to their bills and 10% were unsure.



Main concern areas

18% of respondents were concerned about cost and feasibility while 14% said they didn't hold any concerns. Some were concerned that management and governance may be complex (14%). While 12% were concerned about equity in both access and use.

Other themes included sustainability concerns (8%), amenity and safety issues (8%), effectiveness (7%) and more.



The Focus Group

This next section presents thematic results from the focus group meeting. This meeting was composed of 15 community members and delved deeper into primary findings from the survey.

Individual vs universal benefits

While the survey highlighted a strong preference for more universal benefits, in focus groups there was a clear ***divide between those who wanted a clear financial reward, vs those who were satisfied with non-financial or distributed financial benefits***.

For example, one participant discussed ***their personal investment in solar*** and energy efficiency and was worried that others may unfairly draw from the battery, taking more than their fair share. ***Would they have to subsidise other residents*** who had not taken such action?

Where as a proponent of more public benefits emphasised that they was ***willing to forgo some financial reward*** if it meant that ***those worst off in the community were paying less***. Others articulated that distributed benefits such as, greater reliability of supply, were valued to a similar or greater extent than financial rewards.

Topics needing clarity

Confusion about the energy system

While survey respondents predominantly believed they had a ‘good’ level of understanding (34%), focus group participants were unfamiliar with some pertinent concepts such the difference between front-of-meter and behind-the-meter, and the composition of the grid. This observation will be critical for the development of community education materials in the next phase.

Confusion on different models

As there are so many potential models for community batteries, ***participants were eager to learn more about what specific approaches*** might be deployed. Some participants were fairly aware of subscription models while others suggested rate payment options. There was general interest in getting more detailed information on these different models.

Concerns with community batteries

Concern around volunteer community management

As found in the survey, there was ***high support for community ownership and involvement*** but participants did not want to see management with insufficient technical or organisational capacity. They ***raised issues such as capacity to deliver risk management, insurance and maintaining income streams***, particularly in the face of crises. Several participants proposed Hepburn Energy as a suitable candidate for management.

Could other solutions deliver better outcomes

Another discussion was around the potential for ***other solutions to provide a cheaper or more practical solution***. For instance, one participant asked if individual household batteries would potentially be more affordable in some locations or townships. Briefly comparing these options in the community education resources may be useful.

Local interests

The focus group was held in Glenlyon with most participants coming from this township. In the survey, ***Glenlyon respondents highlighted some of the highest blackout rates*** across the shire. They held clear concerns around their energy supply and many were fundamentally ***interested in community batteries providing greater reliability***.

Other participants from different townships were more vocal on different topics, such as securing a better price for their solar systems, or other more public benefits.

While only a small group, it is likely that ***different towns will have specific priorities better addressed by some models over others***. Community education materials may be able to highlight an outcome (i.e reliability, income for solar owners, generalised savings) so community members can easily find models that resonate with their interests.

Community education

There was a ***desire for community education resources to be accessible***, put simply and avoiding jargon, using multiple communication channels including newsletters, bulletin boards, local news and presentations alongside digital platforms such as animations and graphics for online. Below are some questions participants would like covered by education resources:

- What is the rough cost of the battery for our community? How realistic is it?
- How long would it take to get a grid connection?
- What would be the amenity impact? How will it look? Is it messy to install?
- Can you increase number of households serviced if demand grows? No. of people involved?
- What is happening already? Mapping tech, specs and potential impacts/benefits?
- Can we have an islandable microgrid?
- What are the different models, and some examples of these?
- Could Hepburn Energy manage it?
- What are the risks to those involved in managing or participating in a community battery?
- What other options are there? Could the same outcome be achieved differently?

Context

- Lots of community members are ***vulnerable to the impacts of climate change***
- Many are ***experiencing blackouts and brownouts,*** demonstrating local grid reliability issues
- ***Different issues for different townships may affect their preferences*** for how and what a community battery addresses

Important Benefits

- The most important benefit for most respondents was ***addressing climate change***, followed by ***building resilience***, then ***self-sufficiency***, carbon saving, solar benefits and lastly financial rewards
- Out of all benefits, ***personal financial rewards were not as important*** as others
- Many respondents wanted to see f***inancial benefits targeted to those with the greatest need***, i.e people who are socially or economically marginalised
- In focus groups ***some participants felt projects needed to benefit them financially*** and others were happy with non-financial benefits, such as improved resilience or less blackouts

Ownership and Responsibility

- ***Community ownership was the most popular*** ownership arrangement, with distributors coming second, followed by retailers and then corporations
- Typically, most respondents wanted to see ***little involvement from private companies or commercial retailers***
- 75% of question respondents believed there was an ***appetite for community ownership***
- 65% were in ***favour of democratic processes*** to decide on how financial benefits should be distributed

Concerns

- 18% of respondents were ***concerned about cost and feasibility***
- 14% ***didn't have any*** particular concerns
- Other concerns included ***management and governance*** complexity, furthering ***equity issues*** and ***sustainability***
- In focus groups concerns were raised about ***community management and risks posed*** to those involved

Community Education Resources

1. ***Assume limited knowledge***, avoid jargon and break down concepts
2. ***Provide case studies*** of other models that exemplify different concepts
3. ***Break up several models*** based on outcomes i.e reliability, savings etc
4. ***Describe possible relationships*** for management/ownership
5. ***Use graphics and diagrams*** to simply illustrate information

Community Education Resources

Based on the recommendations above, ***we recommend a booklet on community batteries and the energy system***, ***alongside graphics and an animation.***

The booklet would be comprised of stand alone explainers (i.e page one on the energy grid, page two on behind/in-front of the meter) that put together would provide a holistic overview of our energy system and community battery opportunities.

This could be released with public events to help familiarise community members with these concepts and models, providing an opportunity for engagement and further learning.

Hepburn Energy

Thank you!