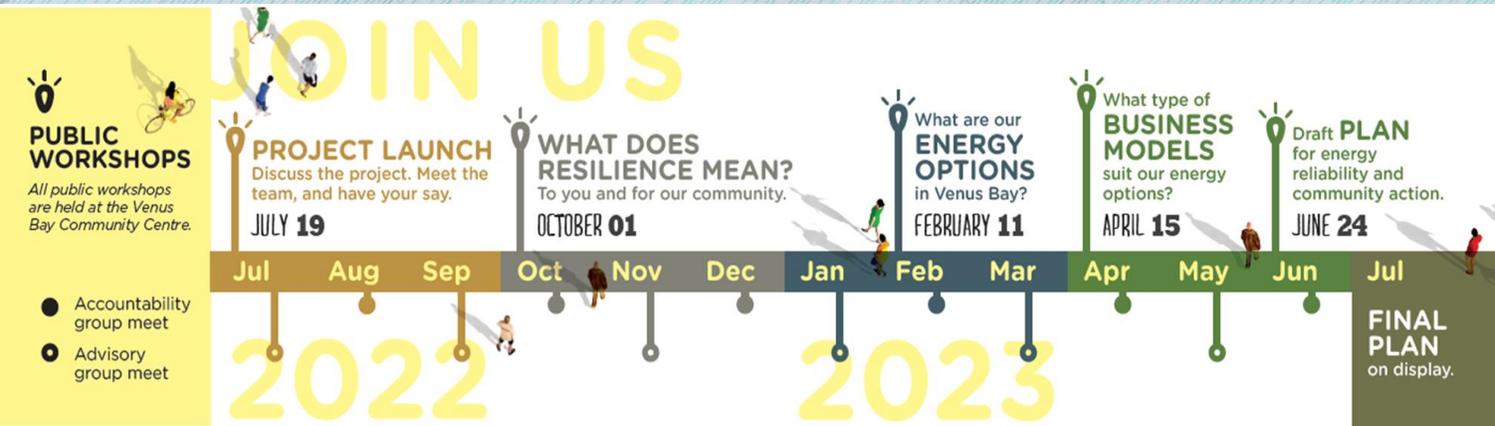


Venus Bay Community Energy Study

Community
Workshop #1
Harvest Report



We started by recapping on the Venus Bay Community Energy Study

This Study will:

- Define what resilience means for full-time and part-time residents, business owners, community organisations and holiday makers.
- Explore various energy options that could support our resilience
- Test which of these options might work in Venus Bay
- Assess what the best options might cost
- Put together a plan that outlines how we could fund and build the best energy options.

What we heard when we asked you about the biggest impact when the power goes out:

- No water or toilet flushing
- Loss of mobile reception after 4-6hrs
- Isolated in an emergency which feels unsafe
- No cooking or limited cooking
- Losing perishable food
- Super inconvenient
- Need to leave if the outage is more than 24hrs
- Checking in on family and neighbours
- Heating and cooling (especially for the dogs)
- Healthcare aids

US

WHAT DOES
RESILIENCE MEAN?
To you and for our community.

OCTOBER 01

Oct

Nov

Dec

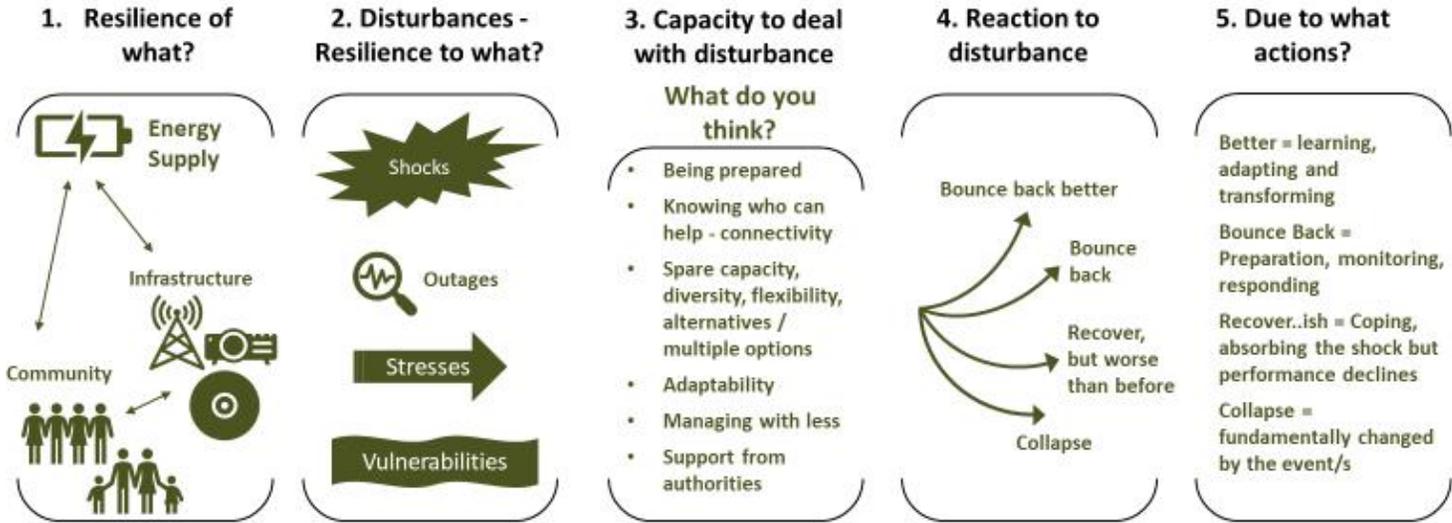
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Community Workshop #1 - October 1st, 2022

Summary

- 24 people participated in a 3 hour workshop
- Activity #1 - We mapped community networks and relationships with energy and infrastructure and identified clusters of buildings that provide important services and would be good to power independently, particularly during prolonged outages and emergencies
This information will inform where community energy infrastructure might be sighted.
- Activity #2 - We identified our household energy needs during short and longer outages and emergencies by ranking the importance of different energy uses, e.g., phone charging and water pumping.
This information will inform the total energy needs under different outage scenarios and help with sizing potential community energy systems.

Creating context for the workshop and Activity #1



Project Team member - Heather Smith from Changing Weather - presented this Resilience framework and outlined how would be drawing on this way of thinking as we went through the workshop activities:

- Resilience in our relationships with energy and infrastructure,
- How disturbances can come in the form of outages and emergencies, but also from vulnerabilities and stresses, such as impacts on the grid as we transition to renewable energy and;
- How we react or respond to disturbances has everything to do with how prepared and resilient we are as a community.

Activity #1 – We mapped our relationships under four scenarios

Relationship mapping under four scenarios - Venus Bay and Tarwin Lower

Instructions - Mapping the relationships between people, devices, organisations, infrastructure, businesses, sources of energy and the main electricity system

- **Social networks** - Focussing on the social / community / people connections - What connects people? What infrastructure is critical? Are there gaps or vulnerabilities?
- **Normal Outages** – Focussing on short and long-term disruptions – what changes in your life during an outage? Do you relate to energy differently? How seasonally or time of day dependent are your needs and responses?
- **Emergencies and shocks** – Focus on the possible disaster and crisis situations. What extra energy needs do you or your community have in these circumstances? How are these seasonally influenced? Think through emergency management plans.
- **Hubs and Clusters** – Focus on the services and people we rely every day. What buildings would you connect through a community energy system, to provide services for the community? Does this look different in an emergency?



Social Networks

Instructions

1. Begin by writing individually, your thoughts on the following on sticky notes.
2. Then place on the map and share thoughts.
3. Then answer the questions below, draw connections on the map and make notes about the relationships.

Mapping the relationships and connections between

- people,
- organisations - local and immediate & further afield
- infrastructure,
- businesses,

Focusing on the social / community / people connections

What relationships exist?

What connects people?

What infrastructure is critical?

Are there gaps or vulnerabilities?

What relationships would benefit from strengthening?

Hubs and Clusters

Instructions

1. Begin by writing individually, your thoughts on the following on sticky notes.
2. Then place on the map and share thoughts.
3. Then answer the questions below, draw connections on the map and make notes about the relationships.

Mapping the relationships and connections between:

- people,
- services,
- organisations
- energy-dependent infrastructure,
- businesses,
- sources of energy and the
- main electricity system

Focus on the services and people we rely on every day.

What buildings or other services would you like to see powered independently?

Are there groups of buildings that could be connected in a cluster, to provide services for the community?

Does this look different in an emergency?

If we could do clusters of houses, where could you see them operating?

Normal Outages

Instructions

1. Begin by writing individually, your thoughts on the following on sticky notes.
2. Then place on the map and share thoughts.
3. Then answer the questions below, draw connections on the map and make notes about the relationships.

Mapping the relationships and connections between:

- people,
- devices,
- energy-dependent infrastructure,
- businesses,
- sources of energy and the
- main electricity system

Focusing on short and long-term disruptions

What do you do to prepare for an outage?

What changes in your life during an outage?

How do you use energy differently?

How seasonally or time of day dependent are your needs and responses?

Has anything unforeseen happened to you during an outage?

Emergencies and shocks

Instructions

1. Begin by writing individually, your thoughts on the following on sticky notes.
2. Then place on the map and share thoughts.
3. Then answer the questions below, draw connections on the map and make notes about the relationships.

Mapping the relationships and connections between:

- people,
- devices,
- energy-dependent infrastructure,
- emergency management organisations, advice and plans
- businesses,
- sources of energy and the
- main electricity system

Focus on the possible disaster and crisis situations.

What extra energy needs do you or your community have in these circumstances?

What infrastructure have you made use of during emergencies?

What organisations have you called on?

How are these seasonally influenced?

Think through emergency management plans.

What hasn't worked well in emergencies that you would like to see addressed?

How we are connected

This map was produced from the ideas discussed at two workshop tables - Social networks and Hubs & Clusters. The map illustrates the social networks, connections and relationships that exist between people, groups, organisations and infrastructure. Overlaid on this map are the ideas people had for powering particular buildings or clusters of buildings in local hubs to meet the communities needs during power outages. Further work is needed to discuss this more widely, to test the ideas and explore which sites we might power first if we need to prioritise some before others.



Social network top vulnerabilities

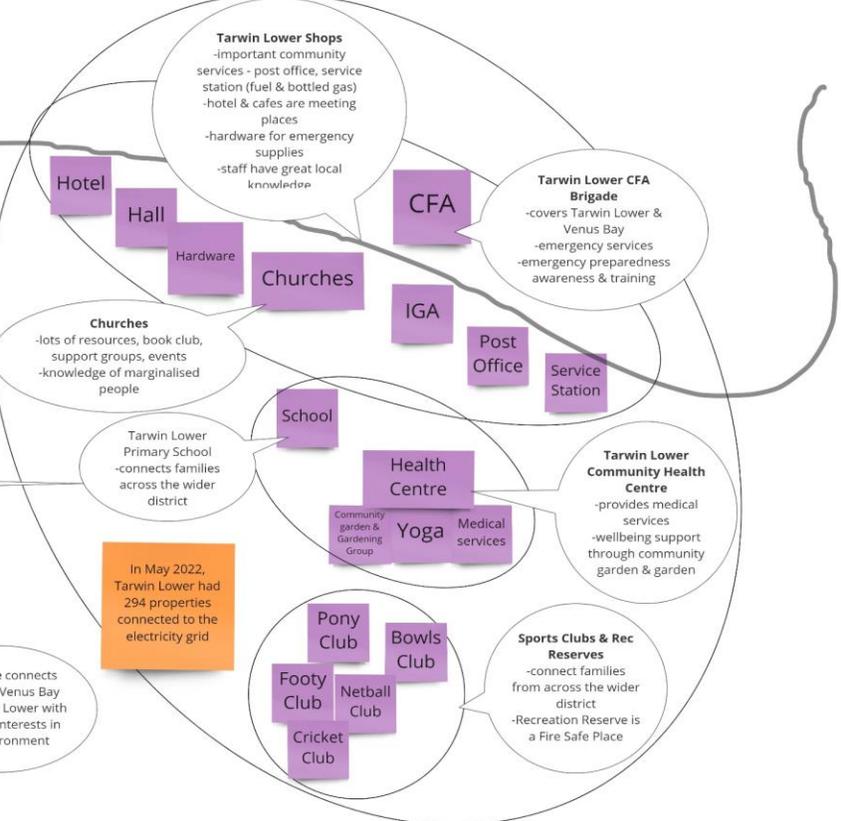
1. Communications - power out means no phone or internet
2. Transport - we have no public or community transport
3. Medical services are limited and it is unclear which organisation is responsible for the vulnerable persons register

One road in and out of Venus Bay makes this community particularly vulnerable during emergencies

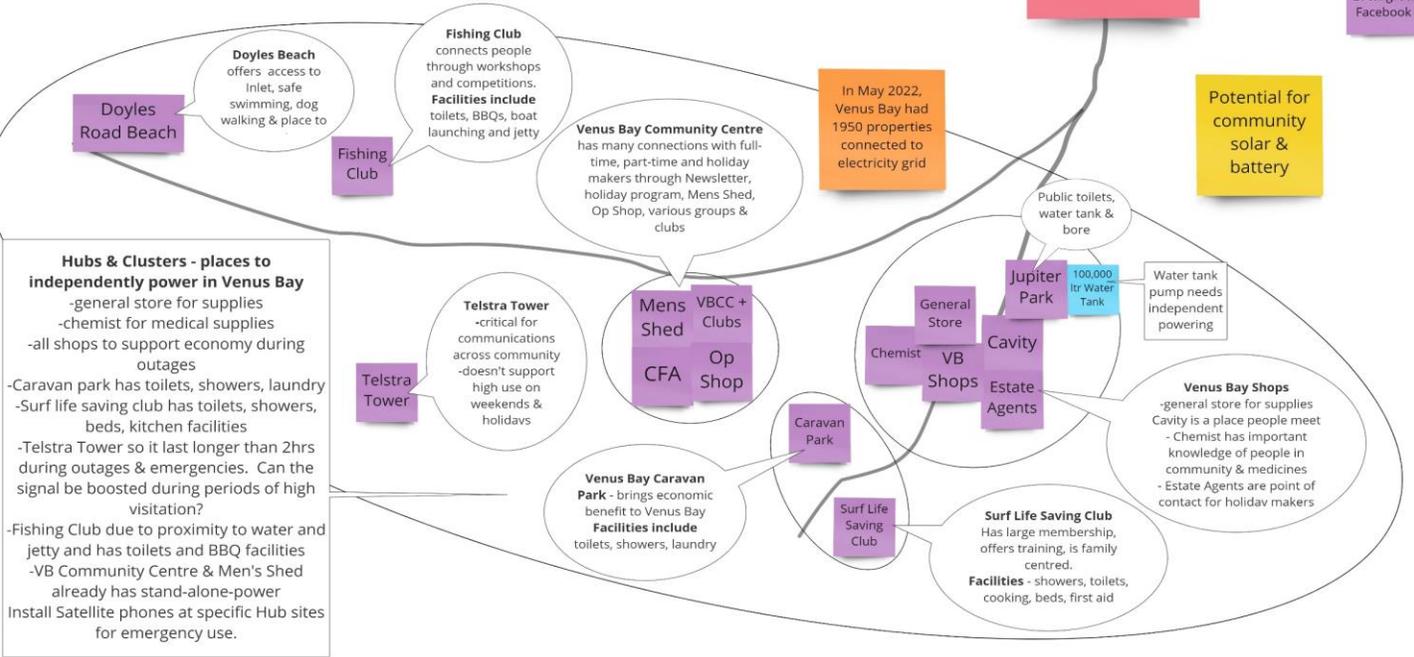
Hubs and Clusters - places to independently power in Tarwin Lower

- CFA particularly during emergencies
- Hall during outages or recovery
- Service station to get fuel and gas
- IGA & Mitre 10 so we can get supplies
- School has lots of facilities
- Medical Centre so can offer services all the time
- Rec Reserve as is Fire Safe Place

Install Satellite phones at specific Hub sites for emergency use.

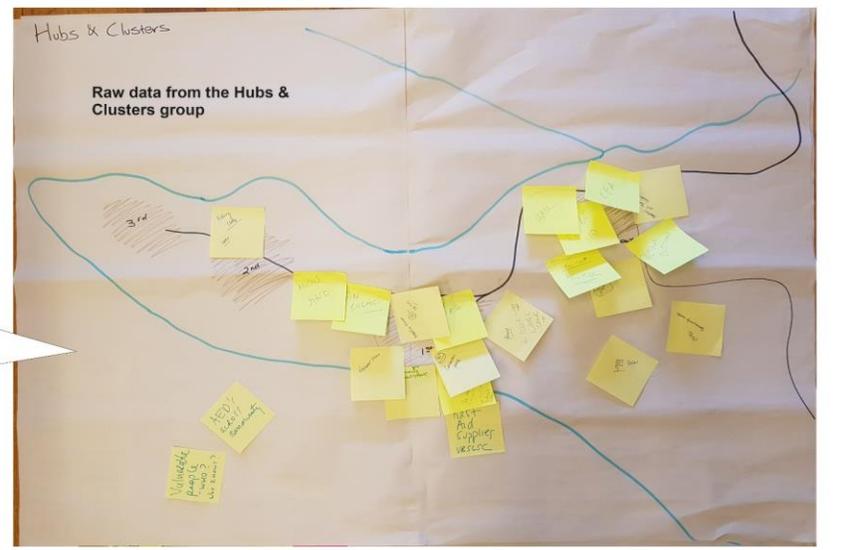


Potential for community solar & battery



Hubs & Clusters - places to independently power in Venus Bay

- general store for supplies
- chemist for medical supplies
- all shops to support economy during outages
- Caravan park has toilets, showers, laundry
- Surf life saving club has toilets, showers, beds, kitchen facilities
- Telstra Tower so it last longer than 2hrs during outages & emergencies. Can the signal be boosted during periods of high visitation?
- Fishing Club due to proximity to water and jetty and has toilets and BBQ facilities
- VB Community Centre & Men's Shed already has stand-alone-power
- Install Satellite phones at specific Hub sites for emergency use.



How we need to prepare and risks we need to assess

These ideas and opportunities were identified by the groups focussing on what we do and need during normal outages and additional risks and needs that arise during emergencies and shocks. Many of these needs and risks relate to energy but are also relevant to emergency management processes. The normal outages group created the content for a 'How to guide' when preparing for normal (planned or short) outages. This will be re-produced in a form that can be shared around the community.

Energy supplies in emergencies and shocks

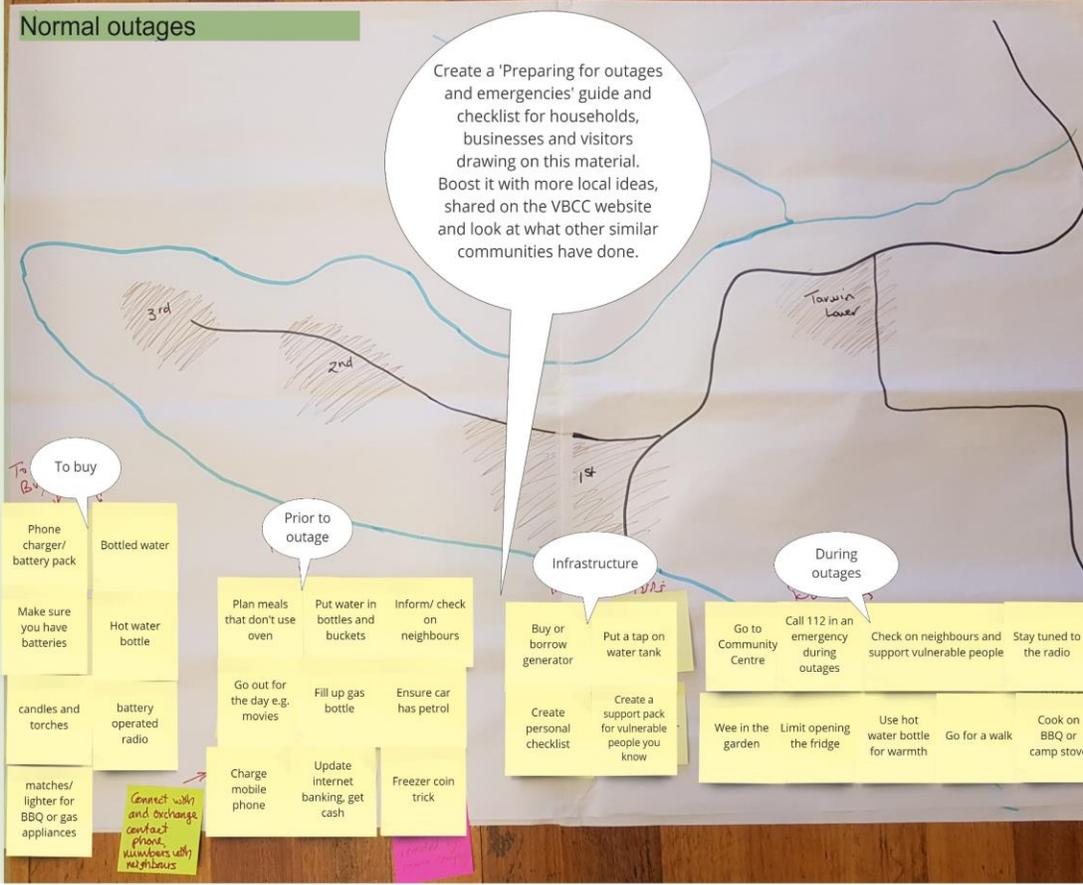
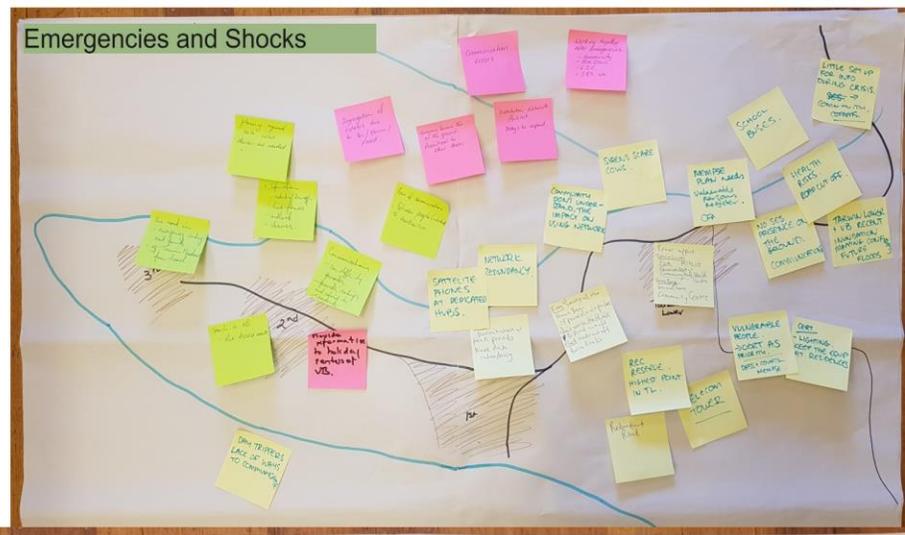
- CFA and CERT
- Venus Bay Community Centre
- Tarwin Lower Community Health Centre
- Chemist
- Tarwin Lower Recreation Reserve
- VB General Store and Tarwin Lower IGA
- Telstra Tower
- Service Station

Vulnerabilities in emergencies and shocks

- Communications
 - Communications network down - battery doesn't last long during outages, let alone during emergencies
 - Overloaded communications network - Holiday makers and some part-timers don't necessarily understand the impact of over using the communications network, esp. during emergencies
 - Lack of communication - Visitors and some part-timers may not connect to local news or communications for important information
- Lay of the land - geographical vulnerabilities
 - One road in and out to Venus Bay makes whole community vulnerable
 - Fires, floods or storms can break connections between 1st, 2nd and 3rd estates in Venus Bay
 - Recent inundation mapping confirms risk from floods and storm surges has increased for Tarwin Lower and parts of Venus Bay
 - No public or community transport
- Health & wellbeing
 - Various medical, emergency and Council services aren't clear on joint management of Vulnerable Persons register
 - Emergency services might not get to people when they are in need. Volunteers are a bit thin on the ground and therefore impact is amplified when road access is blocked.
 - If power is down, air purifiers don't work which increases health risks during fire
 - Water pumps don't work when the power is out - for fire fighting, toilet flushing, water for drinking
 - Livestock vulnerabilities during fire and flood. Sirens scare cows.

Some suggested responses and improvements

- Include islandable energy supplies for sites listed above in our Community Energy Plan as a priority
- Create a preparing for and enduring outages and emergencies checklist for households and businesses (make from Outages group work)
- Establish a way of sharing information centrally that is not dependent on electricity, at key locations across the community:
 - about outage and emergency duration
 - extent of damage and outlook, road closures, electricity supply, communications
 - needs co-ordination with emergency services, energy companies and communications companies
- Ensure emergency services are powered independently
- Explore use of school buses for transport in emergencies
- Create a support network for farmers that need help moving stock
- Work with Telstra and NBN to improve strength and longevity of communications
- Undertake risk assessments and investigate an emergency exit road across farmland for Venus Bay access in and out

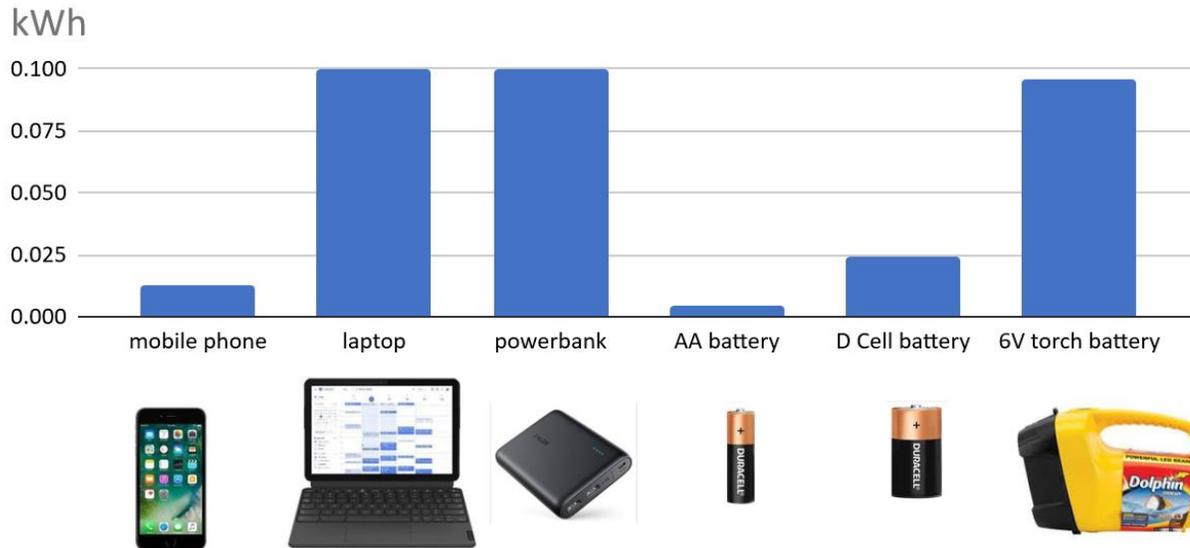


Activity #2 – Understanding energy criticality

The second activity we did was to assess how important energy supplies were, based on the criticality of the device we wanted to use. Before undertaking this exercise Heather Smith illustrated the energy use of different types of electrical appliances and devices.

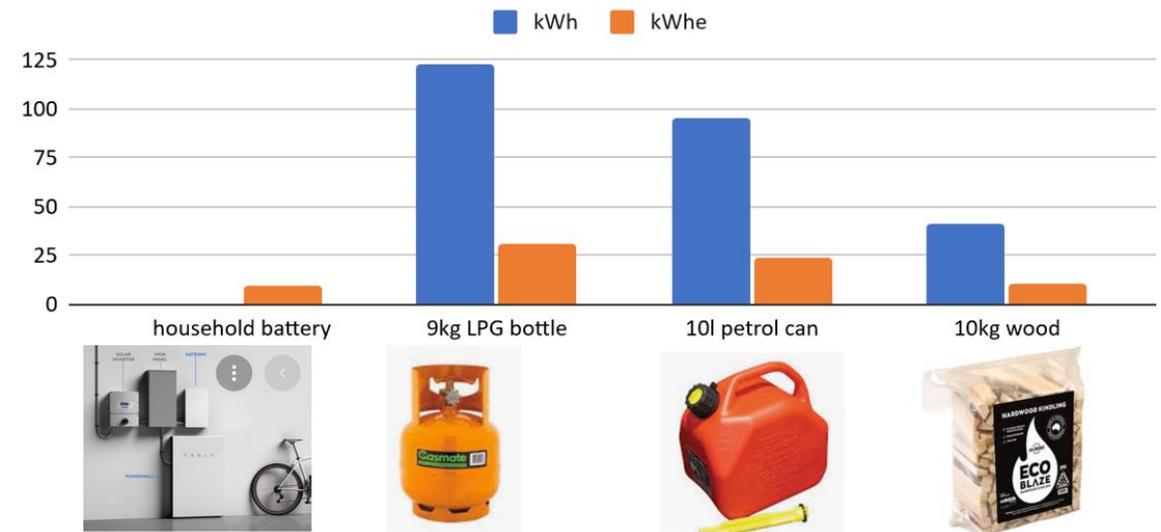


Understanding Size – small, useful batteries



Understanding Size – other energy storage

kWh and kWhe (kWhe = equivalent electrical kWh)



Activity #2 – Key concepts when thinking about energy criticality and the assessment criteria used

Workshop participants ranked the importance of different devices under three different lengths of outage, and during emergencies, where this gave rise to different needs.



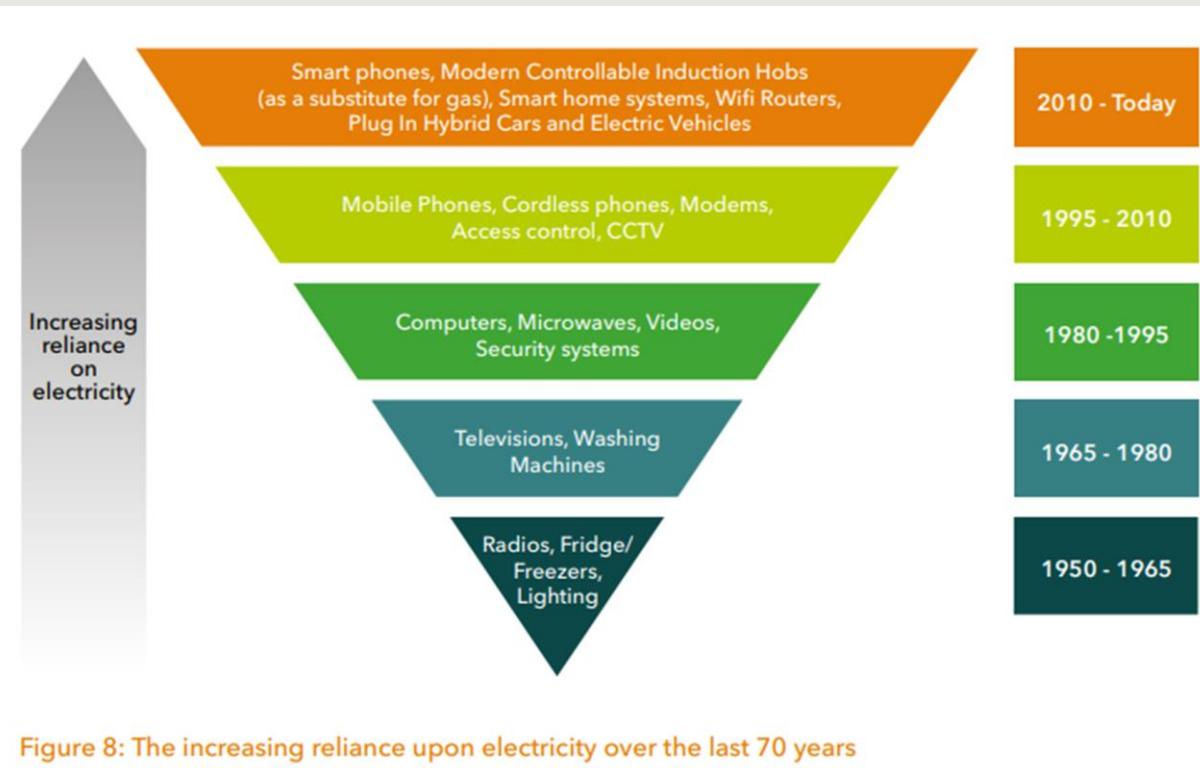
Understanding energy criticality

| Level | Category | Consequence |
|-------|------------|--|
| 0 | Everything | Future proof, enhancing community well-being |
| 1 | Everything | No impact to minor annoyance |
| 2 | Enough | Annoyance but alternatives exist |
| 3 | Enough | Annoyance but no alternatives exist |
| 4 | Essential | Major annoyance or monetary loss |
| 5 | Essential | Health / Safety risk, Major loss |

Instructions

Think through your needs for electricity and please indicate how important different appliances and uses are under the four different scenarios – outages less than 8 hours, outages 1 - 2 days, outages of greater than 3 days and emergencies (where these cause you to act differently). Rank each energy use according to the guide above – is it essential? (4 or 5), better to have than go without? (2 or 3) or discretionary? (0 or 1). Use your instincts to make a quick judgement and make notes in the last column to help us understand the situation and alternatives you were thinking about.

| Energy uses | Outages <8hrs | Outages 1-2days | Outages >3 days | Emergencies | Alternative strategies and comments |
|----------------------------------|---------------|-----------------|-----------------|-------------|--|
| Example Mobile phone charging | 2 | 2 | 3 | 5 | I can charge in my car for short outages. In an emergency if I had no phone, I would leave Venus Bay |
| Light | | | | | |
| Torch | | | | | |
| 1-2 lights | | | | | |
| 2-3 rooms | | | | | |



Activity #2 – key takeaways



Communications and information were ranked as the highest need for energy



Light was ranked lower because most people have torches or candles on hand



People rely on stored energy in many ways - car batteries for charging our phones, gas and wood for cooking.

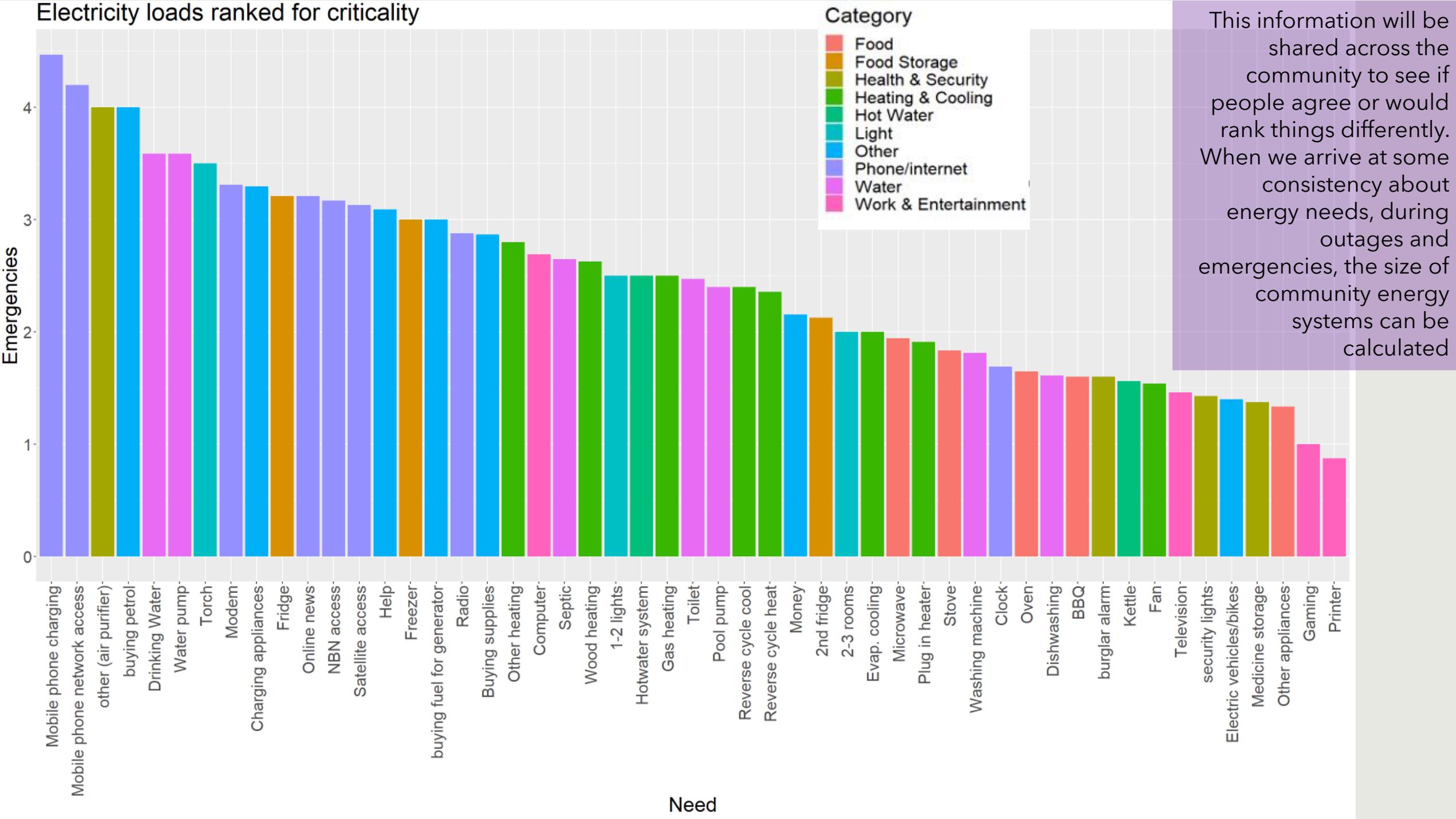
Everyone was concerned about the contents of fridges and freezers during long outages



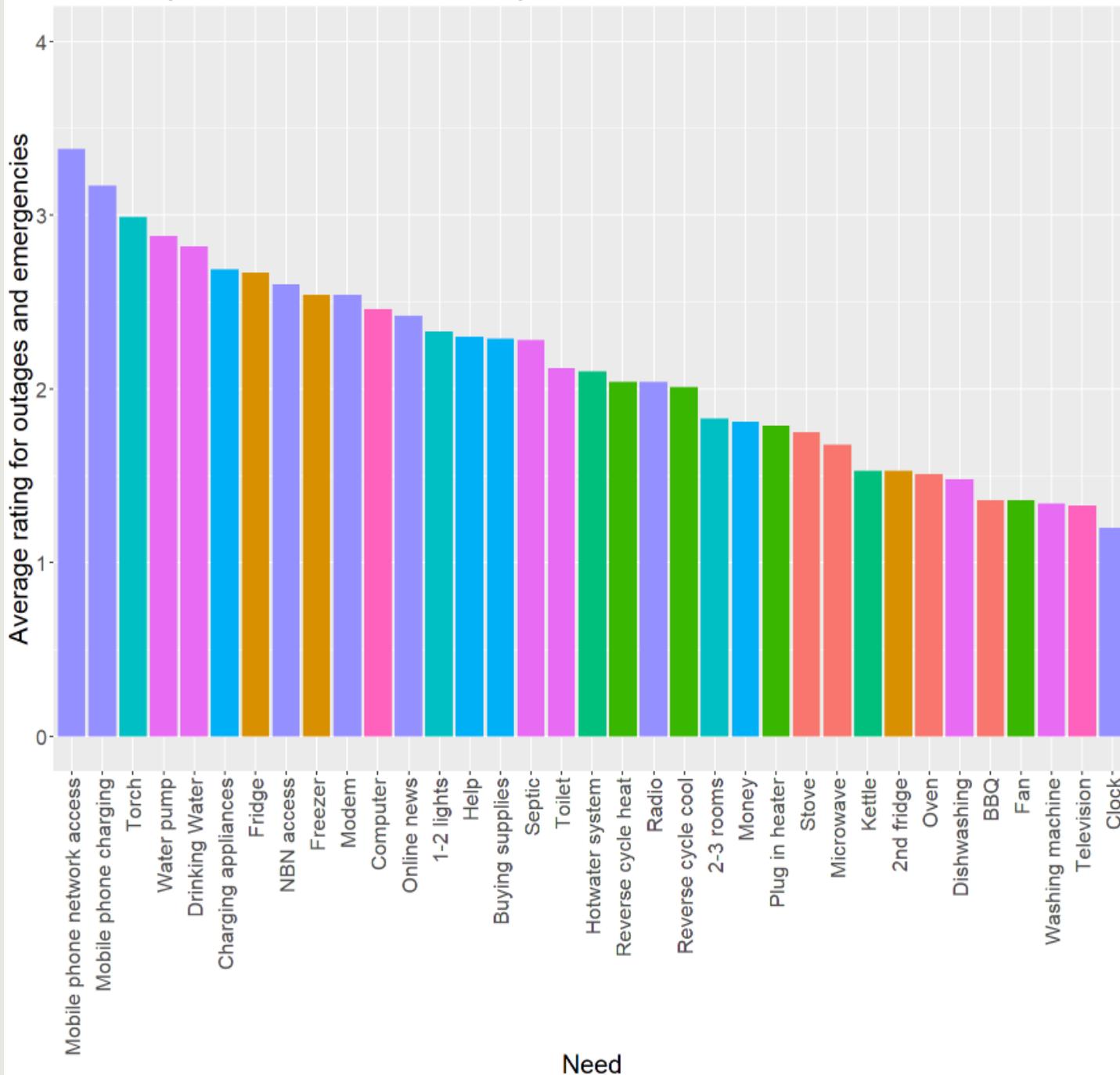
Being able to buy petrol in an emergency and drinking water and water pumping were next most important.



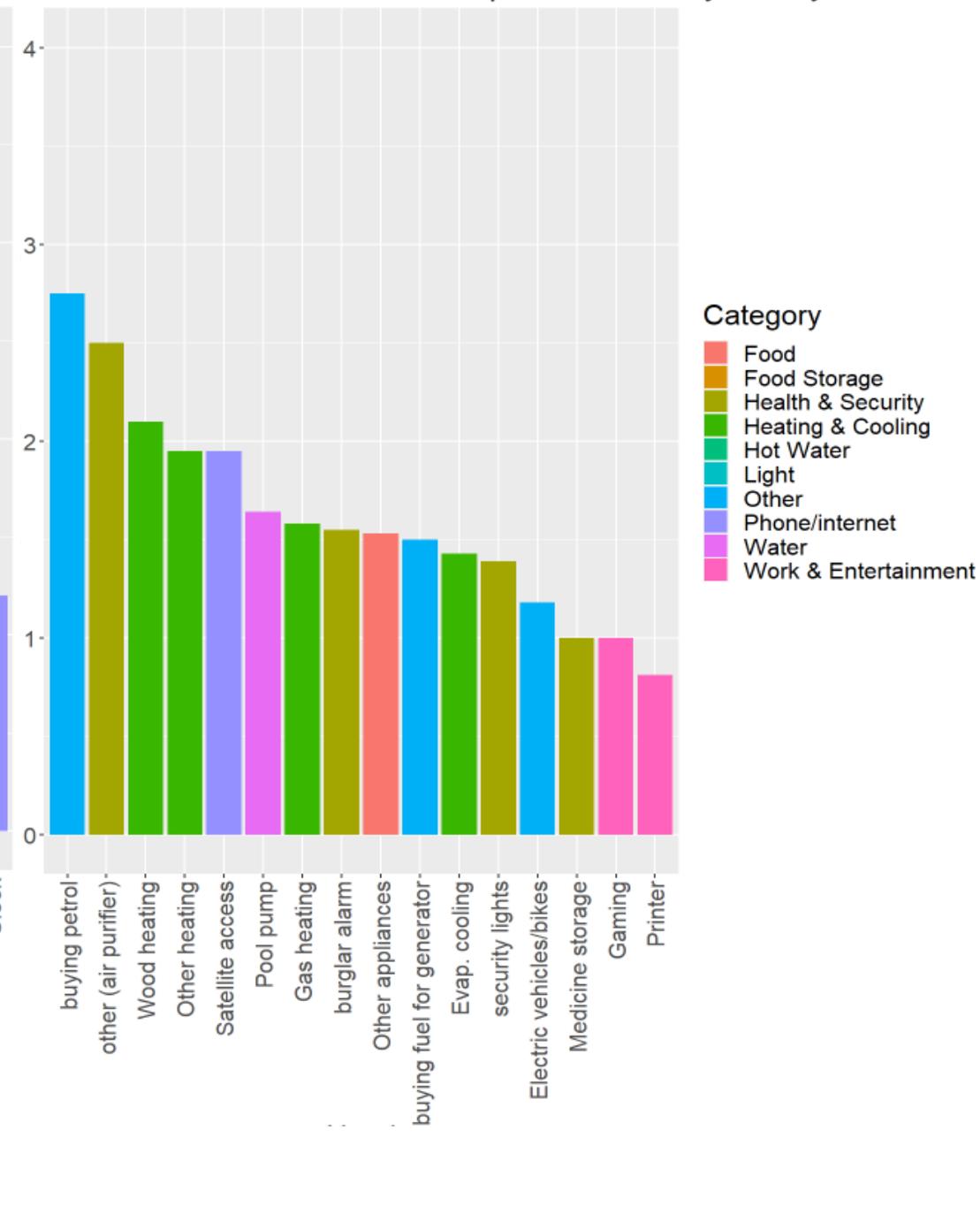
Electricity loads ranked for criticality



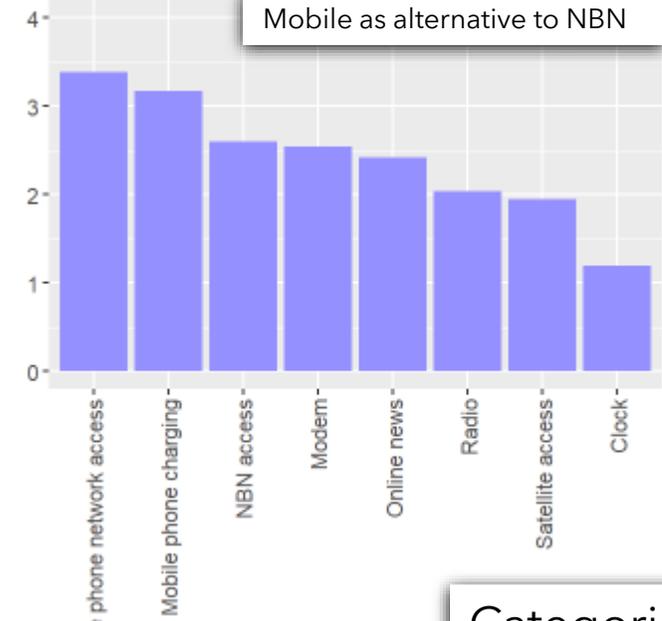
Electricity loads ranked for criticality



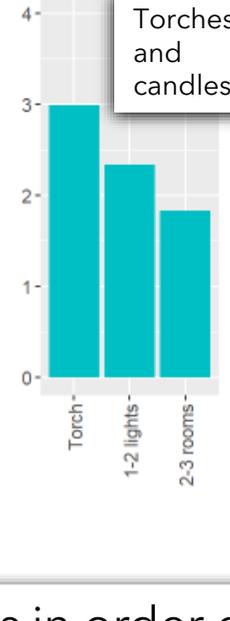
Less common needs, but important when you rely on them



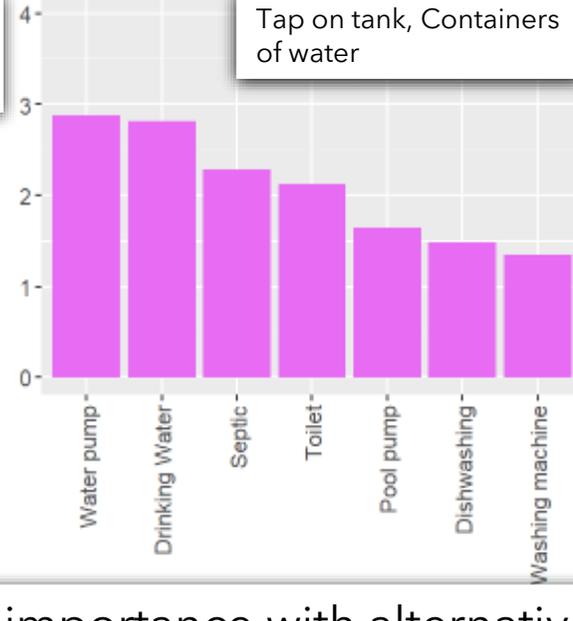
Phone/internet



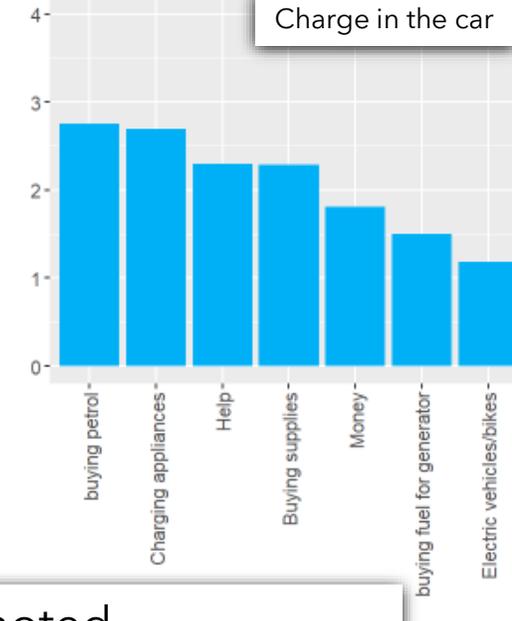
Light



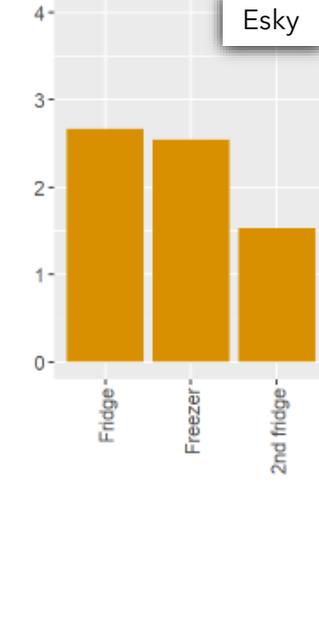
Water



Other

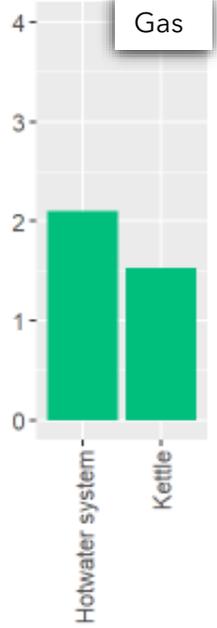


Food Storage



Categories in order of importance with alternatives noted

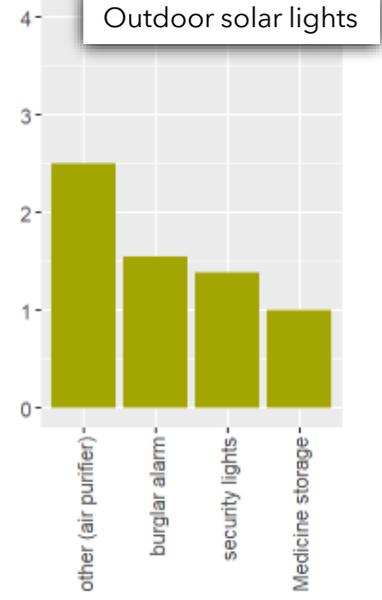
Hot Water



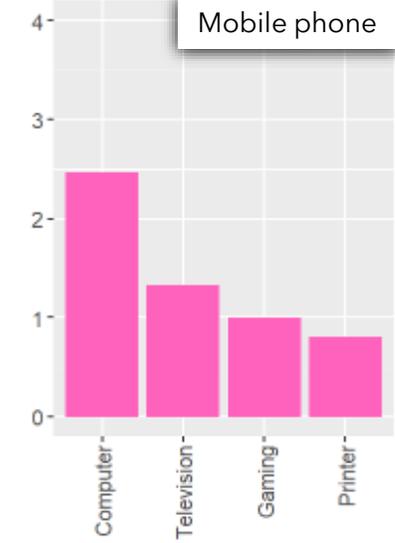
Heating & Cooling



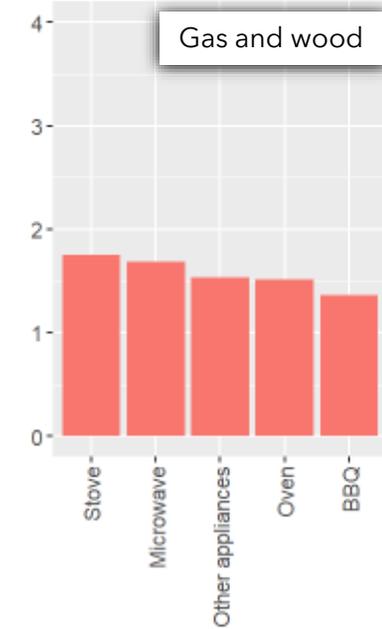
Health & Security



Work & Entertainment



Food



Next steps towards a Community Energy solution for Venus Bay and Tarwin Lower



1. This Harvest Report will be shared across the community and people invited to comment on and contribute information about any aspect
2. Please fill in the Community survey, which provides an opportunity for people to add to the energy criticality ranking:
<https://www.vbcc.org.au/communitysurvey>
3. Project Team members and volunteers will be attending local markets and street stalls to engage people in the Community Energy Study – look out for us at the Tarwin Lower Market on October 31st and around town over the summer
4. Remember to look out for project information and updates in the Monthly Community Energy Bulletins by visiting
www.vbcc.org.au/communityenergy
5. Workshop #2 is on Saturday February 11th, 2023 – this will be a great session on working through how different types of community energy options in different locations around the community might best meet community needs