Opportunities for Community Energy in the Nambucca Valley

Authored by Community Power Agency

About the authors

Community Power Agency (CPA) is one of Australia's leading organisations supporting the development of community and local energy initiatives. CPA's mission is to grow a vibrant community energy sector in Australia. We do this through supporting community energy groups, policy and advocacy work to remove the barriers facing all community energy projects. We are recognised across the sector for our community energy knowledge, networks and policy impact.

For further information visit: www.cpagency.org.au

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Executive Summary

Community Power Agency was engaged to provide an overview of potential community energy options for the Not-For-Profit (NFP) sector in the Nambucca Valley. This report summarises the findings and recommended options of initiatives that are feasible and desirable in this context. Community Power Agency has analysed 10 community energy models and programs assessing their appropriateness for NFPs in the Nambucca region. Consideration was particularly given to the reduction of energy bills and carbon emissions. From this list, we identified three recommended options:

- Small-scale solar PV donation projects
- Community energy revolving fund
- Bulk buys and community supported RE education

This report does not constitute legal, financial or technical advice. Further advice from specialists will be required to develop the detail and determine the feasibility of any of the ideas suggested herein.

1. Introduction

Nambucca Heads Mens Shed (NHMS) is seeking to engage local Not-For-Profit organisations (NFPs) and establish a local community energy project that strengthens the capabilities and efficiencies of community groups and meets their needs. This initiative involves developing an understanding of the local context and the various community services and organisations, which support the townships across the Nambucca Valley. It also requires an assessment of the existing resources and infrastructure such NFPs have available to them, as well their suitability and desire to participate in a renewable energy project in their community. Community Power Agency (CPA) has been commissioned to develop this report to support the beginning of this process. This report will help to inform NHMS of the possible community energy options that will strengthen the valley's NFPs and ensure their sustainability into the future. This short study is intended to inform further planning and to direct future projects. It constitutes an initial high-level analysis of the appetite for renewables amongst NFPs, their local building assets, as well as the available resources and possible partnerships required to realise a community renewable energy project. With a growing interest in community energy and climate action across Australian communities, this project highlights the desire amongst a broad range of community groups to be engaged in and driving the transition to a clean energy future at a local level.

Background

The Nambucca Heads Mens Shed provides a place for men to come together, to capture and share their skills and experiences and work together on community projects. Mens Sheds are part of a charitable association that form a large network across the country. In 2018, Nambucca Valley was chosen as one of three New South Wales communities to participate in the Investing in Rural Community Futures program (IRCF), which was set up through a partnership between the Foundation for Rural and Regional Renewal (FRRR) and the Vincent Fairfax Family Foundation (VFFF). IRCF is a grassroots program aimed at building and supporting the capacity of NFPs by working locally over five years. It aims to strengthen local organisations and ultimately enable them to thrive, which in turn will have a positive impact on community well-being. To date, the Nambucca Valley community has put

forward ideas about how to strengthen local NFPs which have been fed into a roadmap process and local community groups were invited to apply for grants for projects that are reflected in this community roadmap. The roadmap identified sustainability as a key theme and the NHMS have been able to secure grant funds to support local NFPs to transition to renewable energy and reduce their energy costs. The group have focused these funds on exploring the possible options for supporting community energy uptake within the local NFP sector with the support of CPA.

Community Energy in Australia[1]

Community-owned renewable energy or community energy (CE) refers to projects where a community group initiates, develops, benefits from and/or operates a renewable energy resource or energy efficiency initiative. Community groups are formed based on a common interest or geographical region (e.g. a town or suburb). CE projects may be developed to meet the motivations and aspirations of the community to:

- maximise local ownership and decision-making;
- share financial benefits widely;
- generate jobs;
- use resources efficiently, appropriately and sustainably;
- match energy production to local energy needs and circumstances; and,
- help address the global challenge of climate change.

One of the strengths of CE is that every project is slightly different, being tailored to each community's needs and context. CE projects provide a tangible way for urban, regional or remote communities to transform their energy supply to be cleaner, safer and more sustainable. The projects enable communities to develop and own renewable infrastructure and become consciously involved energy citizens. The potential for CE to contribute to the transition to clean energy in Australia is significant, given the abundant renewable energy resources available. CE is already a mainstream model of renewable energy development internationally, especially in countries like Denmark, USA, Germany and Scotland. There are a range of social, environmental, technological, economic and political motivators that drive CE projects in Australia and around the world. Key motivators are shown in Figure 1.

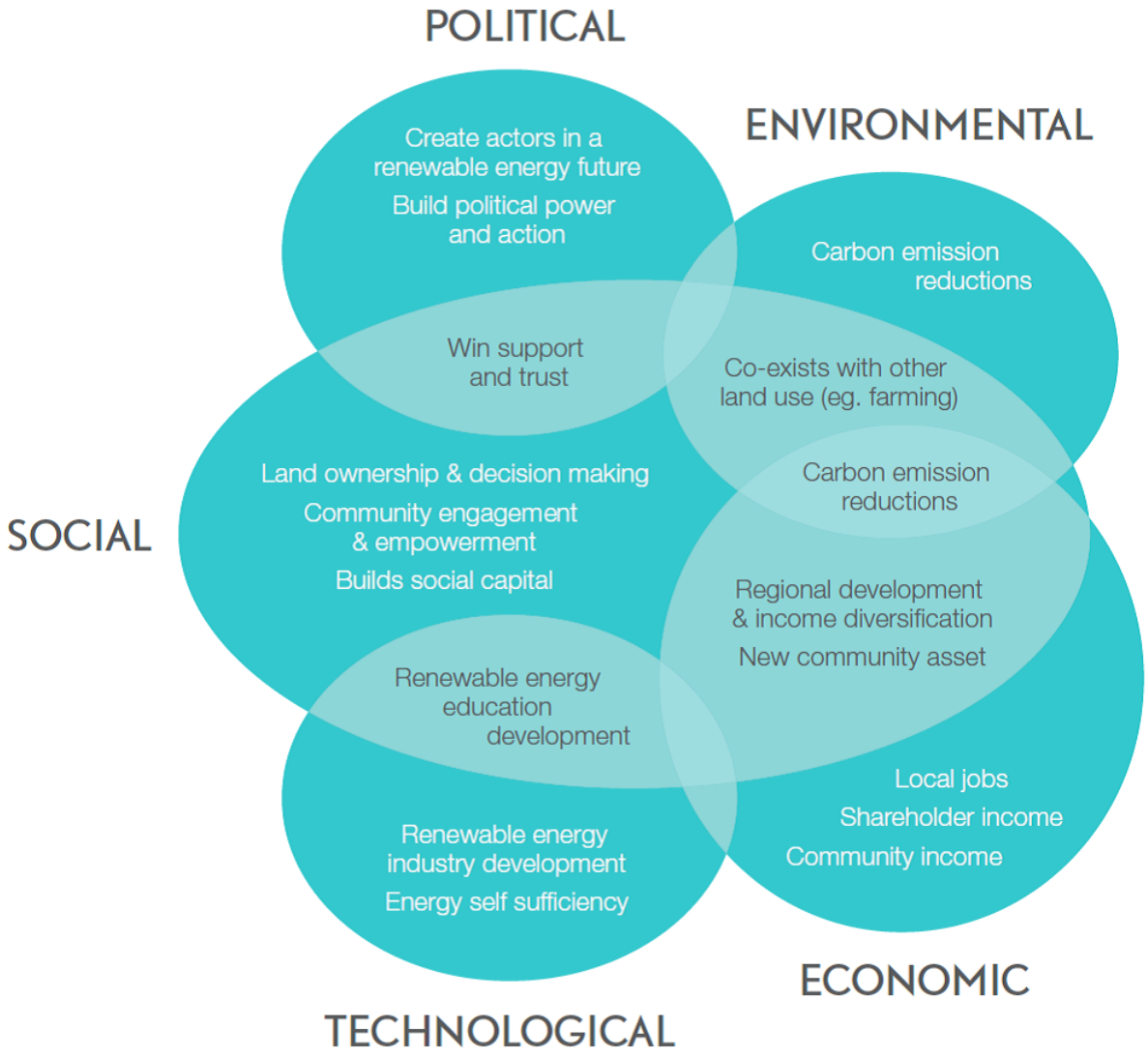
Methodology

This report draws on Community Power Agency's knowledge of existing community energy models and projects currently under development and operating in Australia. The report has been developed by employing a three-stage methodology. Firstly, we seek to understand the local context including social and demographic information, the general landscape of the NFP sector, and the renewable energy context as it relates to NFPs. Secondly, we explore the key motivations for NFPs around renewable energy identified through the project meetings with NHMS, a targeted NFP survey and informal interviews with NFPs.
Based on this information we then develop a set of criteria to guide a high-level analysis of community energy options, from which we will narrow down to three recommended options. We then provide more detailed information on the three options with suggestions for NHMS involvement and next steps.

[1] This section draws on the C4CE Community Energy Strategy

The report is structured as follows:
Section 2 provides the local context of the Nambucca Valley
Section 3 reports on key motivations for NFPs in relation to renewable energy
Section 4 analyses community energy options
Section 5 presents recommendations for NFPs and NHMS

Figure 1: Motivators and benefits of community energy



Source: Adapted from Hicks, J. & Ison, N., 2012. Community Energy. Home Energy Handbook.

2. Local context

Geographic, social & demographic context

A popular holiday and retirement destination, Nambucca Valley sees living at its best as valuing and protecting its natural environment, maintaining its assets and infrastructure and developing opportunities for its people[2]. The Valley is situated in the mid north coast region of New South Wales and is governed by the Nambucca Valley Council (NVC). The area includes the townships of Macksville, Nambucca Heads and Bowraville, as well as many other heritage and rural villages. Nambucca Shire services an area of 1,491 square kilometres and is located adjacent to the Pacific Highway and the North Coast railway line, approximately 50kms south of Coffs Harbour. The Shire sits at the foothills of the Great Dividing Range and includes productive farmland, patches of rainforest, as well unspoilt beaches. The area is rich in natural beauty, history and culture.

The Gumbaynggirr peoples are the Traditional Owners of the lands now governed by Nambucca Shire. The name Nambucca is derived from a Gumbaynggirr word Ngambagabaga and is roughly translated as a 'bend in the river'. The region has a diverse population, including a large Aboriginal community that maintain strong cultural ties to the traditional country of the Gumbaynggirr people. According to ABS data from 2016, the Nambucca Valley has a population of close to 20,000, of which 7.6% identify as Aboriginal or Torres Strait Islander. This figure is almost treble the state and national averages. Since 2016, the local population is considered to have increased, attracting retirees and families ('sea and tree changers') looking to escape the cities and ongoing lockdowns experienced due to the Covid19 pandemic. Given escalating housing prices in major centres, this is likely to continue.

Further information relating to the local demographics, employment and housing can be found in Figure 2.

Shelley Beach, Nambucca Heads

Credit: Nambucca Valley Council

Bowraville

Credit: @nambuccavalley

[2] Nambucca Valley Vision from Nambucca Valley: Living at its best 2027 Community Strategic Plan

Figure 2: Summary of Nambucca Demographics

Nambucca Valley Snapshot

- Nambucca LGA has a population of close to 20,000 people and has been in the top 10 fastest population growth areas in NSW. In comparison to the state and national averages there are significantly less people between the ages of 20-30 and a higher proportion of people between the ages of 50-60.
- There is a high proportion of Aboriginal and Torres Strait Islander people residing within its boundaries; being 7.6% of the population.
- Within the Shire's boundaries is Bowraville, one of the most socially disadvantaged areas in Australia.
- The median weekly income is $467, which is significantly less than state and national averages. For families and households this is amplified with weekly incomes being approximately $600-$750 less than the average.
- Volunteer work is higher than state and national average by around 20%.
- The level of home ownership owned outright is 45.6% and with a mortgage is 23.9%, whilst 26.2% of the population rent.
- The median rent is $250, which is $130-$85 less than the state and national averages.
- The median monthly mortage repayments are $1300, which are $686-$455 less than the state and national average.
- Households where rent/mortgage repayments are less than 30% of household income is 88.6%/94.9%, which is reflective of state and national averages.
- The labour force consists of approx. 6,500 people. Of these, just under half are employed full time, 38.8% are employed part-time and 9.4% are unemployed. Of these, most are employed in the following industries: Health care and social services (1,043 people), Construction (794 people), Retail trade (670 people), Education and training (582 people), Accommodation and food services (571 people).
- There are 22 local not-for-profit organisations/clubs/services listed in the Nambucca Shire Community Directory. However, research by FRRR indicates there may be in excess of 200 such organisations in operation.

Source: ABS, 2016; Nambucca Valley Community Directory, 2019; IRCF Roadmap 2020.

Local Not-For-Profit sector

The Nambucca Valley boasts a strong and active community with Macksville, Bowraville, Valla Beach and Scotts Head being identified as community hubs[3]. There is a vast and diverse network of more than 200 locally governed NFP community organisations operating across these hubs and other townships throughout the Valley[4]. These include a variety of sporting organisations, community services, faith groups, creative and performing arts, museums and recreational groups. There are also many Indigenous traditional owner

[3] This occurred through a community road mapping process led by FRRR in 2020.
[4] IRCF Roadmap 2020.

organisations and land councils which bring cultural meaning, understanding and healing to the region. The communities of Nambucca and Bowraville have strong Social Enterprise groups as well. These various services range in size and capacity. Community infrastructure such as a suite of halls, community gardens and meeting rooms are managed by different community groups. There are also three distinct and very active Chambers of Commerce in the Valley, along with the Nambucca Valley Women's Business Network.

During the initial phase of this study, CPA made contact with local NFPs by email and began developing working relationships with them. We also supported NHMS to undertake stakeholder mapping to identify some of the key NFP stakeholders in the region and begin liaising with their representatives. During this process, close to 300 community organisations were identified, although not all were registered NFPs. This again highlights the considerable size of the community sector in the Nambucca region. Through conducting this work, two recurring themes emerged. Firstly, conversations/correspondance with stakeholders showed that NFPs are generally interested in renewable energy and there is an apetite to take up renewable energy initiatives. The other clear concern was cost of operating and some groups indicated they were struggling to maintain financial viability.

Previous consultations with NFPs in the Valley through the IRFC program also show recurring themes that local NFPs are responding to. NFPs indicated that poor access to transport which adversely impacts access to services, opportunities for youth and pathways to employment, and a united voice for tourism and economic growth were their key priorities.

Renewable energy context

Wider community

In the Nambucca Shire there is strong evidence to suggest there is growing support within local communities for renewable energy. Nambucca residents have embraced the opportunities available in recent years to make solar part of their energy supply. Nambucca Shire is leading the way and lies in the top quarter of NSW council areas in terms of the uptake of solar by its residents. In recent years, this uptake has escalated with more than 10% of residents installing solar since 2018 and the Shire having 12.5% higher solar penetration than the state average (Figure 3). By global standards, Nambucca Shire has excellent solar resources. The region has an annual average solar exposure of between 15-18MJ/m2. Areas in NSW range between 15 and 21 MJ/m2. According to the Global Solar Atlas, the Shire has a solar photovoltaic output of 4.4kWh/kWp per day compared with Germany which receives only 2.8 to 3.2kWh/kWp but has 53.8 GW of installed solar.

Nambucca Valley has also had a long history of environmental conservation and community activism, however, activities have been largely focused on biodiversity and environmental management. Recently within the Valley a community energy cooperative, PPCORE (People Power Community Owned Renewable Energy Co-operative Energy) has been established. The entity is in its infancy, however there are other community energy groups nearby that have been operating for some time. Energy Forever in Port Macquarie is one example, along with Bellingen Shire Electricity Alliance and Repower Coffs. These engaged communities are vital to enable the development of renewable energy locally and highlight the growing interest in community-owned renewables. In NSW, there are close to 50 community energy groups and a similar number of projects of varying scales and technologies across the state[5].

[5] Community Power Agency, 2021. Community energy map and database

Figure 3: Comparison of Solar PV Capacity in Nambucca LGA in 2018 and 2022

Solar PV Capacity in Nambucca LGA in 2018

- Est. dwellings: **9,011**
- Installations: **2,623** (approx. 28.4% of dwellings)
- Est. installed capacity: **8,817kW**
- Under 10kW: **7,605 kW** (installations: 2,558)
- 10-100kW: **1,212 kW** (installations: 63)
- Over 100kW: **0 kW** (installations: 0)

Solar PV Capacity in Nambucca LGA in 2022

- Est. dwellings: **9,214**
- Installations: **3832** (approx. 39.7% of dwellings)
- Est. installed capacity: **17,330kW**
- Under 10kW: **14,335 kW** (installations: 3,661)
- 10-100kW: **2,995 kW** (installations: 171)
- Over 100kW: **0 kW** (installations: 0)

Source: Australian PV Institute, 2018, 2022

NSW also has some exceptional wind resources particularly in the nearby New England region, however the capacity and quality of this report to focus on small-scale technologies that are within reach for NFPs. Likewise hydro power, bio-energy and potential network constraint/opportunities are not included.

Local Government action

Councils across Australia are also increasingly taking an enabling approach to clean energy and playing a leadership role supporting the uptake of community renewable energy. Nambucca Valley Council has developed a number of plans and strategies to improve their operational energy efficiency and build commitment to greenhouse gas emissions reduction and climate change mitigation. In 2010, NVC adopted a Climate Change Risk Assessment and Climate Change Adaptation Strategy for Nambucca, Bellingen and Kempsey (Climate Risk Pty Ltd). To accompany these reports Council resolved to prepare a Climate Change Policy. This policy was developed and was adopted in January 2019. Council also developed the 2027 Community Strategic Plan “Our Community will be a safe healthy place to live where everyone is valued”, in 2017. A key part of the strategy addresses “Sustainable Energy Use” and commits to “Nambucca Valley Council providing community leadership in sustainable energy use”.

In August 2017, Nambucca Valley Council also established a Clean Energy Committee. The following year the Committee recommended that Council formulate a Renewable Energy Action Plan, including a renewable energy target and an emissions reduction target, a recommendation which Council adopted. In 2018, NVC also joined the Cities Power Partnership and committed to initiatives including investigating using council managed land for renewable energy and implementing an educational program to encourage local residents and businesses to shift to renewable energy.

Whilst the Clean Energy Committee involves community members and reflects the local desire to reduce high energy costs and carbon emissions for residents, NVC's renewable energy efforts to date have been focused on Council facilities/priorities such as energy efficiency and lighting, water/waste water pumping, solar hot water and small scale solar PV installations. This highlights that there remains an untapped opportunity for Council to achieve community sustainability and climate goals by supporting initiatives such as community energy. However, doing so will require a willingness to consider more than the bottom line and an internal champion with enough resources and support to drive initiatives forward. Regional councils such as NVC often have a limited number of resources and capacity and success requires a strong commitment from senior management to engage and ultimately draw community benefit from renewable energy.

3. Key motivations for community renewable energy amongst NFPs

To better understand the attitudes and needs of the local NFP sector in relation to community renewable energy, NHMS conducted a community survey in collaboration with CPA. This process served to both gauge the interest of NFPs in renewables and understand their priorities, as well as to inform the development of locally relevant projects. The survey was distributed electronically via email through a local community database developed by NHMS, on the NHMS website, social media pages, the local newspaper 'News of the Area', community newsletters and through paper surveys held at local libraries. In total, 34 people responded to the survey from January 18 to March 8 2022. More than 30% of NFPs that completed the survey were located in Nambucca Heads, whilst more than 20% were located in the township of Bowraville (Figure 4). The remaining respondents were based in Macksville and Valla Beach (33%), and Eungai Creek, Kempsey, Utungun and Taylor's Arm (4 responses). The types of organisations that completed the survey represent the diverse nature of the NFP sector in the Valley. Community and social service organisations represent more than a third of respondents with community halls/centres representing a further fifth of survey responses. Submissions were also received from several sporting organisations, churches, museums, indigenous organisations and education providers.

Figure 4: Townships where NFP respondents are located

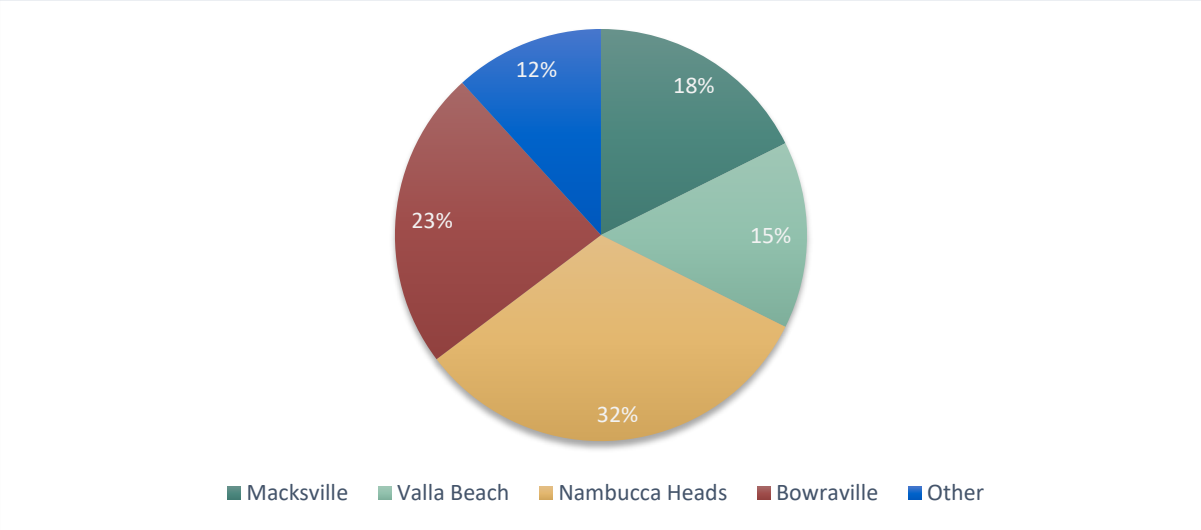
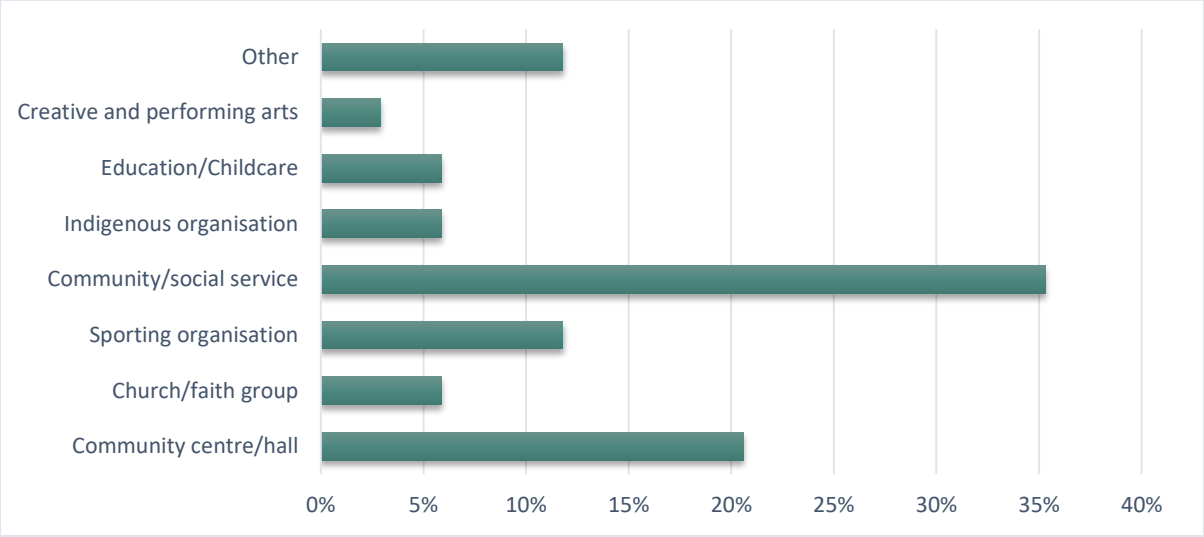


Figure 5: Type of organisations responding to the survey



The information collected through the survey indicates that NFP respondents have a high degree of interest in participating in energy efficiency or renewable energy programs in the Nambucca Valley. Figure 6 shows that close to three quarters of respondents indicated they were either *extremely* or *very* interested in taking part in a renewable energy initiative. When asked to consider what type of energy efficiency or renewable energy programs organisations would be most interested in participating in, responses were varied. However, the installation of rooftop solar PV on their own premises was selected as the highest priority for over 40% of respondents (Figure 7). Participating in energy/thermal efficiency programs and purchasing energy efficient appliances through bulk buys ranked as the next two most popular options for participants. The options of investing in local renewable energy facilities/projects, as well as participating in a local micro-grid were least popular, with only 3% and 7% of respondents (respectively) selecting these initiatives as their highest choice. These results suggest that NFPs are most interested in initiatives that present a clear return on investment and that will lower their energy bills and hence their operating costs.

This sentiment was echoed when participants were asked to rank which outcomes from energy efficiency or renewable energy programs would be of most importance to their organisation. Figure 8 shows that more affordable electricity is the most important driver for NFP participation in energy efficiency or renewable energy initiatives, with 59% of organisations ranking lower power bills as their highest priority. Reductions in pollution and helping to address climate change was also a key motivator for NFPs, with 31% of respondents selecting climate action as the most important reason to take up renewable energy initiatives. Other outcomes, including greater organisational sustainability, local investment and employment opportunities, as well as training and energy education all ranked well, however were seen as far less important than the business case and the need to reduce carbon emissions.

Figure 6: Interest in energy efficiency or renewable energy

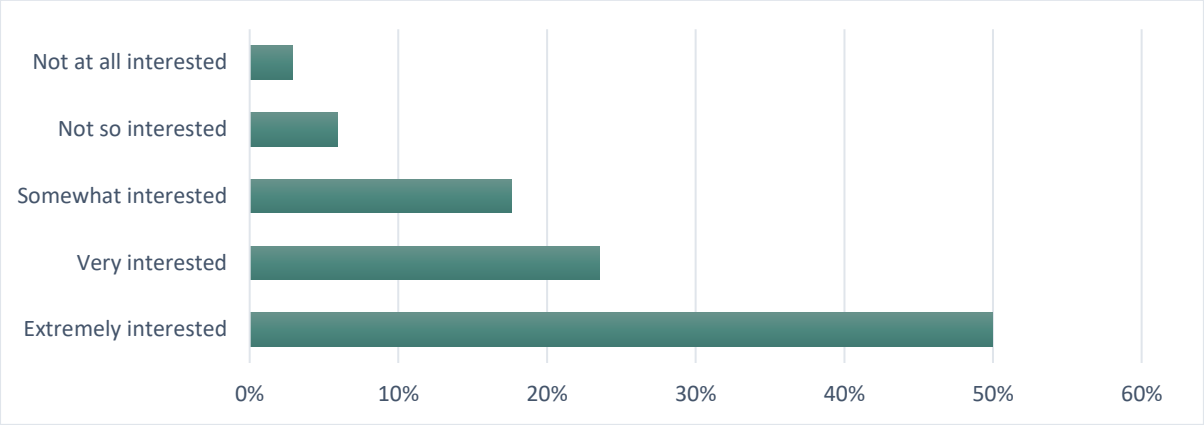


Figure 7: Most popular energy efficiency or renewable energy initiatives

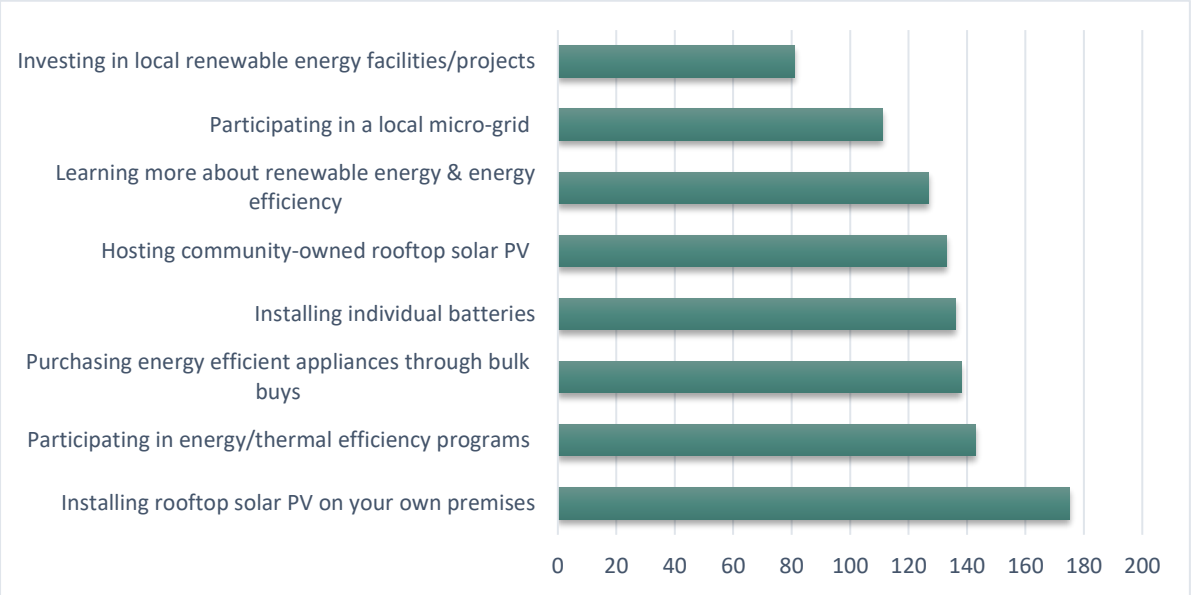
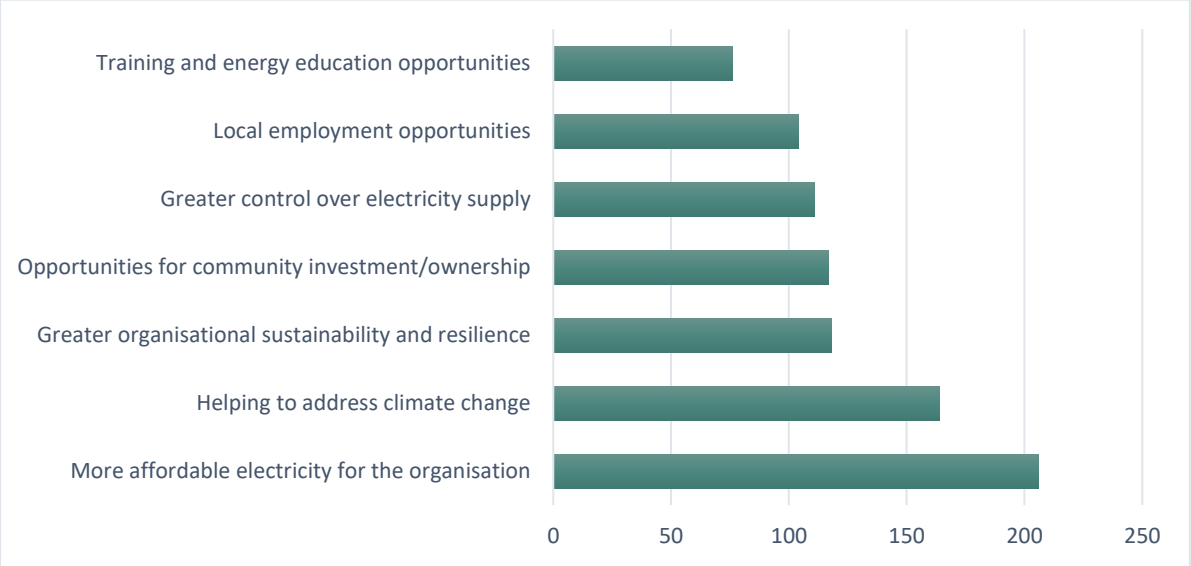


Figure 8: Most important outcomes from energy efficiency or renewable energy initiatives



Of those organisations that responded to the survey, almost three quarters do not currently have solar PV installed on their premises. The remaining portion that do have rooftop solar, do not have batteries installed (Figure 9). This highlights a potential opportunity for solar and battery installations, which there is a clear appetite for within the sector. Figure 8 shows the operating times of NFPs, with between 50% - 70% of respondents reporting that they are operational during daylight hours each weekday. This drops down to approximately 40% of participants during the weekends and an average of 7 organisations operate each evening throughout the entire week. Whilst these figures are only a first glance at the potential time-of-day energy use of NFP respondents, the results are encouraging and suggest that there may be some NFP premises that are mostly consuming energy during the day and could be good rooftop solar candidates. When asked about the tenure of their properties, two-thirds of participants stated that they own, manage and maintain their own buildings, which also provides an enabling context for NFPs to make changes to their premises such as energy efficiency retrofits or the installation of solar PV, heat pumps etc.

Figure 9: NFPs with rooftop solar PV

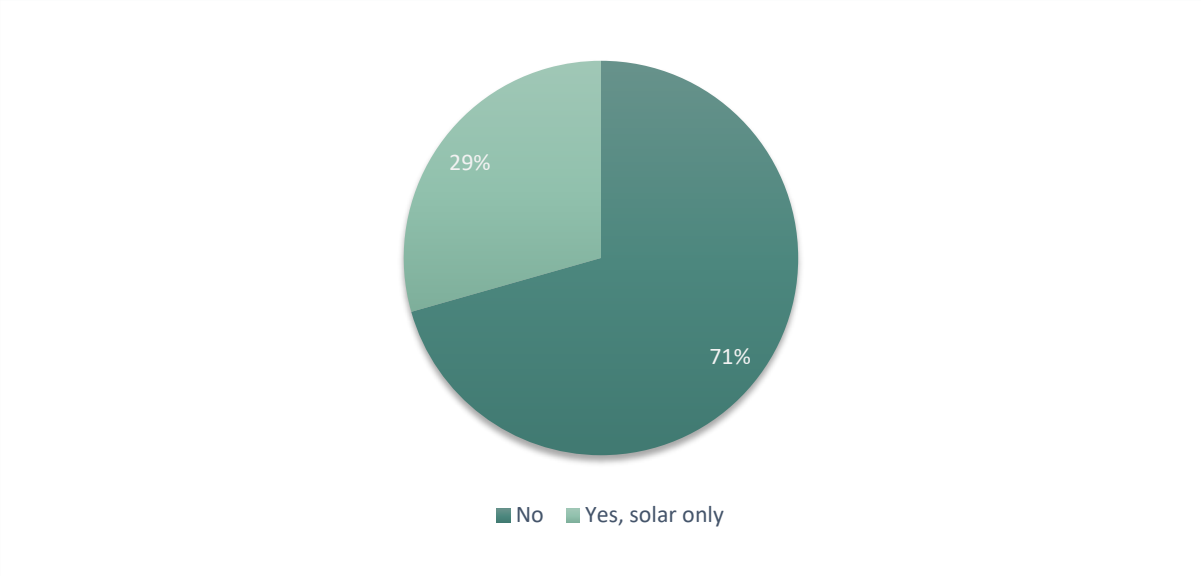
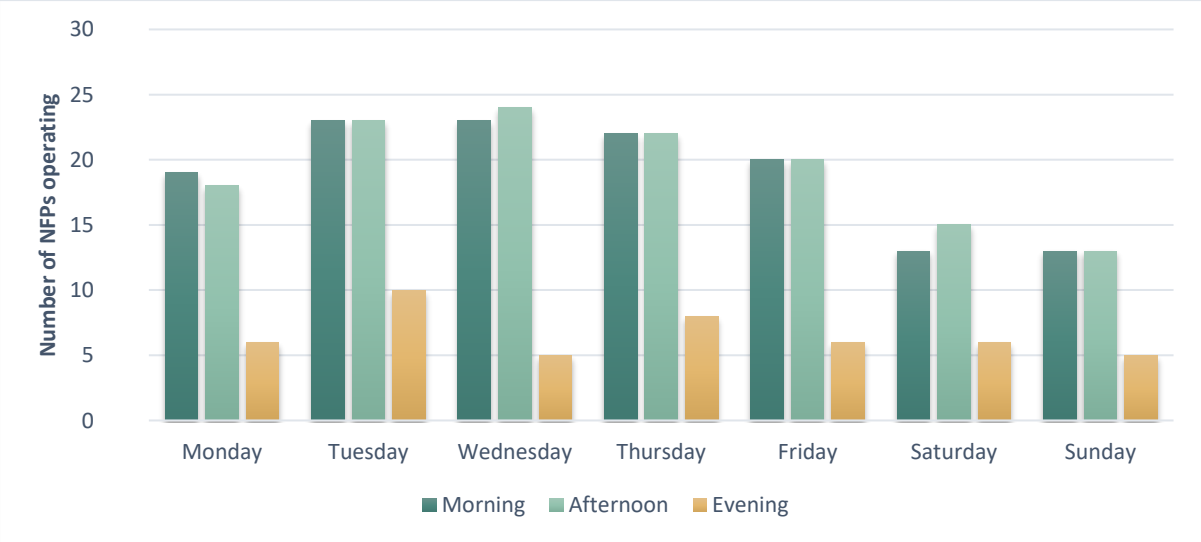


Figure 10: NFP operating days/times



4. Analysis of community renewable energy options

In order to assess the applicability of different community renewable energy models for the NFP sector in the Nambucca Valley, it is critical to have key criteria to guide the process. CPA considers the viability and desirability of initiatives by taking into account more affordable electricity and carbon emission reductions (CO2 impact), both of which came out strongly from the NFP survey outlined in section 3. Thus, before going into detailed recommendations of community energy projects for Nambucca NFPs, the following criteria are used as the first layer of analysis of suitable options:

- *Reduction in the cost of electricity* – Lower power bills that reduce operating costs and increase financial viability and organisational sustainability. This can be an important criterion to maintain interest in renewables and enable further action.
    - Low (little to no bill reduction within 12 months)
    - Medium (some bill reduction within 12 months)
    - High (significant bill reduction within 12 months)
- *Direct kW/ CO2 impact* – Stands for the potential of the initiative/project to directly generate kW hours of renewable energy and/or energy savings and contribute to emissions reduction and address climate change.
    - Low (less than 10kW)
    - Medium (10kW – 50 kW)
    - High (greater than 50kW)

Table 1 summarises this analysis of existing community energy models with information on where the funding is sourced (model), what types of projects this generally enables, a short description of each and a brief assessment of each option. In section 5 we provide further detail on the recommended options. Ultimately, the potential of an initiative/project to address the above criteria depends on a range of things including design, implementation and current/future energy use. These criteria are a first overlay and should be considered in relation to the recommendations in section 5.

Table 1: Summary of community energy models

Models	Projects	Short Description	CPA Assessment
Donation model	Small-scale solar PV crowdfunded projects	Small-scale renewable energy projects e.g. rooftop solar PV enabled through community donations helping the host (e.g. The Phoenix, Bowls Club, churches, community centres, halls) to save on its electricity bill.	*Reduction in the cost of electricity:* Medium - high *Direct kW/ CO2 impact:* Low - medium
	Revolving fund	Provides low interest loans to non-profit organisations and/or businesses, then the loan repayments are used to cycle through to enable future projects.	*Reduction in the cost of electricity:* Medium – high (savings can take time to be realised) *Direct kW/ CO2 impact:* Medium (depending on the funding and lifetime, the ultimate sum of all projects could have high impact)

Aggregated household model	Bulk-buy projects Solar PV incl. batteries Energy efficiency	Aggregate power of community buyers to purchase product(s) at a discounted price. These products include solar panels, household batteries, heat pumps, and energy efficiency measures.	*Reduction in the cost of electricity:* Medium - high *Direct kW/ CO2 impact:* Medium
	Solar Gardens	A solar garden is a centralised solar array that offers consumers the opportunity to purchase or lease solar panels with the electricity generated credited to the customer's energy bill.	*Reduction in the cost of electricity:* Low *Direct kW/ CO2 impact:* High (however such projects are highly complex)
	Education and events	Info-sessions, individual consultations and home energy assessments for energy efficiency, RE installations as well as workshops on the latest clean technology updates.	*Reduction in the cost of electricity:* Low – medium (dependant on how advice/education is implemented and possible savings/retrofits/behaviour change) *Direct kW/ CO2 impact:* Low (could be medium depending on design)
	Precinct microgrid	A geographic area that has all its energy needs met from within the precinct and has ability to island from the national grid. Requires participation from network operator and ongoing load management.	*Reduction in the cost of electricity:* Low - medium (long implementation time and high complexity) *Direct kW/ CO2 impact:* Medium to high (depending on design)
Investment model	RE generation at medium scale or community batteries	Community initiated renewable energy projects that are funded or part funded by community investors, on the expectation that these investors will receive a certain return on their investment.	*Reduction in the cost of electricity:* Low – medium (return on investment but no direct bill savings) *Direct kW/ CO2 impact:* Medium to high (depending on design)
Partnership models	Council-community partnership	Community collaboration with council to initiate, invest and implement local renewable energy generation projects on council property.	*Reduction in the cost of electricity:* Low – medium (return on investment but no direct bill savings) *Direct kW/ CO2 impact:* Medium
	Developer/ distributor-community partnerships	Co-ownership / co-investment model with community investment and/ or benefit sharing programs.	*Reduction in the cost of electricity:* Low – medium (return on investment or grants but no direct bill savings) *Direct kW/ CO2 impact:* Medium

5. Recommendations[6]

The following three projects were selected based on CPA experience, applicability in the local context, stage of life of the NHMS in relation to energy projects, and NFP motivations of bill savings and carbon reductions. These projects explore the differing ways that NFPs could be involved in the project and are presented in detail outlining the potential for the impact/outcome, role for NHMS, challenges and next steps.

Community renewable energy projects are diverse and present different options for NFPs or wider community involvement, along with varying levels of participation within those options. Some projects may require different business model designs and present the opportunity for NFPs and the community to become project funders and have a stake in the ownership and decision-making of the project. Other options may have NFPs as customers of the project, whilst others may offer both.

Recommended Community Energy projects:

1. Small-scale solar PV donation projects
2. Community energy revolving fund
3. Bulk buys and community supported RE education

1. Small-scale solar PV donation projects

Reduction in the cost of electricity:	*Direct kW/ CO2 impact*
Medium - high	*Low - medium*

Description and requirements

Community energy donation projects are a common type of community energy project in Australia. The community organisation – in this case NHMS – initiates the project and funds the installation with community donations or philanthropic funding. Donation projects involve a community or specific group raising funds using a crowdfunding platform or more traditional fundraising programs. Typically, the host site and beneficiary of this model will be a NFP community organisation, such as a day-care, surf-lifesaving club or fire station, and the project scale will be small (5-50kW). While members of NHMS may donate to the project and will have a say over its direction, they are not investors and will not earn a dividend from the installation. This model is most fit for solar installations for 'deserving causes' that inspire donors. The essential requirement for this model is a project host with suitable roof space and regular daytime electricity use. NHMS would also need a mechanism for soliciting and receiving donations, and an account for depositing donations. It is important that there is transparency so that potential supporters can trust in the process. It would also require access to professional product and installation advice to ensure high project quality, as well as volunteer time to promote project fundraising, manage and report donations as well as liaise potential project hosts.

[6] This section draws on the C4CE Small-scale Community Solar Guide

Impact and outcome

The clean energy infrastructure is owned and maintained by the host NFP from the outset and they begin saving money on their bills immediately. The main strengths and benefits of this option are that NFPs who simply do not have the capital to install solar are supported to do so. In turn, project hosts are relatively easy to find because specific levels of return on investment (ROI) are not required and there is no cost of finance. There is generally no legal instrument required as the system is being gifted to the NFP, which streamlines the project.

Challenges

This model is most suitable for projects for NFPs that own their own building, which can exclude some organisations. Fundraising is also a challenging task in itself and without a profile around energy projects, NHMS may find it difficult initially to secure enough funds to get an installation off the ground. The size/cost of a project must also be in careful balance with the amount of money that can be raised quickly to maintain interest. Crowdfunding platforms also charge a fee to raise money which must be accounted for.

Recommended role of NHMS

NHMS role in a community energy donation project could include acting as the coordinating organisation that identifies hosts sites and accredited installers, seeks the donations from community and other donors and facilitates the installation. NHMS might also seek seed funding from Council or alternative grant sources, such as FRRR to begin the donation drive and inspire further contributions.

2. Community energy revolving fund

Reduction in the cost of electricity:	***Direct kW/ CO2 impact***
Medium – high (savings can take time to be realised)	*Medium (depending on the funding and lifetime, the ultimate sum of all projects could have high impact)*

Description

The revolving no-interest loan fund concept was pioneered by CORENA, starting with the first project at Tulgeen Disability Services cheese packing workspace in Bega, NSW in 2013. Since then, this model has proven itself as one of the most successful models for community energy, with CORENA having completed 43 projects and multiple other communities having directly adopted their model (e.g. Energy Innovation Co-op's Southern CORE fund in Southern Gippsland and COREM in Mullumbimby). In this model, funds are raised through donations to provide zero interest loans to non-profit organisations. This structure results in a revolving fund, with donated funds being reused for multiple projects. The revolving fund loans can be offered to NFPs, public buildings, businesses and local households. Over time, as funds are re-paid with through energy savings, they can be loaned out to new applicants. The loan amount is decided once a host organisation has been identified and their RE installation or upgrade cost calculated. A simple loan agreement is used and once the repayments start coming in, there is a base to continue further projects. This base is generally bolstered by ongoing donations as well. This model has also been adapted by groups such as the Macedon Ranges Sustainability Group that began their fund through an inception project funded by a

government grant. The revolving fund option can be established relatively quickly with existing legal agreements available and has the potential to have good kW/CO2 impact over time as projects accumulate. The fundraising component of this option would help to raise the profile and awareness of the NHMS and as multiple NFPs would act as host sites over time; this option has greater potential to increase resilience across the NFP sector. This option has similar requirements to the donation model – suitable host site, donation mechanism, transparency, high quality product – however; the group must also be prepared to run the administration for the duration of the project or beyond as the ongoing revolving fund will need to be actively managed over this timeline.

Impact/ outcome

A revolving fund leverages similar outcomes to a donation project, however it enables greater levels of participation and hence produces wider community benefit by including more host sites. Whilst it also lowers electricity bills and reduces carbon emissions for host sites, the savings provided to participating organisations are realised over time. Despite this, the model still ensures access to finance is not a barrier as projects self-fund through savings on energy bills. Donors are inspired by two aspects of the model: those who wish to support the community organisation and those motivated by reducing greenhouse emissions and advancing community renewable energy.

Challenges

Again, this model is most suitable for NFPs that own their own building, although those with secure long-term leases are possible with permission of the owner (generally council- or state-owned premises). Whilst there are tested examples of these projects to draw from, such funds can present a significant administrative burden for small volunteer groups. Finding host sites that are able to install solar can be more time consuming with a loan system, and co-ordinating the program is often in stops and starts because without a large seed fund it can take time for the funding pool to replenish. Often the first project is most difficult to fund as it requires donations or a grant, which can be hard to secure.

Recommended role of NHMS

NHMS role in a community energy revolving fund could include acting as the administrators of the fund, seeking donations or a grant to kick the project off and working to identify hosts sites, installers, setting up loan agreements with NFPs. NHMS might also seek seed funding/donations from various sources to kick-start the first project, as well as promote the program.

3. Bulk buys and RE education

Reduction in the cost of electricity:	***Direct kW/ CO2 impact***
Medium - high	*Medium*

Description

With 71% of NFP survey respondents indicating that they do not currently have solar PV, and 100% indicating that they do not have batteries, this presents an obvious opportunity to investigate a bulk purchase of such systems. Additionally, respondents selected bulk buys and the purchasing of energy efficient appliances, such as heat pump hot water, as the third most popular renewable energy initiative. A bulk buy of solar/ batteries and/or heat pumps involves aggregating the power of multiple buyers to purchase products at a

discounted price. This option is recommended primarily due to its relative swiftness for implementation and a reduction in energy costs, the potential to have cumulative kW/CO2 impacts and the fact that bulk buys have been delivered successfully by many community energy groups across the country. Whilst bulk buys may exclude some NFPs who are unable to pay the upfront capital costs for the selected product, there are other creative ways to enhance participation by combining energy efficiency and education into the design and delivery. It is suggested that the bulk buy project incorporate information sessions explaining the benefits of solar, the process for assessing suitability of rooftops and have installers available for answering questions. These events could be purely informational, or the group could set up a referral fee with solar installers or co-ordinate a bulk buy. Several other groups use a referral/commission model alongside information sessions including Inner West Community Energy (it is understood that they have a 4% commission rate) and South coast Health and Sustainability Alliance (SHASA) that also offers home energy audits.

A successful bulk buy requires marketing skills and the leading organisation to have a trusted profile within the community. Often bulk buys are delivered in partnership with Councils and with great support from local media. It would also require a significant number of NFPs with appropriate roofs etc. to sign up, which may present the opportunity to extend this offering to the wider community to ensure its viability.

Impact/ outcome

Implementing a bulk buy makes for many quick wins while also potentially providing a commission/income for the leading organisation. This can be important as the organisation may decide to invest those funds into building up the organisation or they could form a fund to donate a solar installation to a NFP. This can be decided up front or at a later point. The community engagement element can also create a stronger sense of community and connectedness in the area whilst building reputation and trust in the leading group.

Challenges

One of the biggest challenges presented by this option is preparing the contracts with the suppliers/installers, in particular penalties for non-performance. This option also comes with an administration burden and cost which needs to be funded. It also requires event management skills to ensure any promotional/educational events are engaging and well-managed. At least one group representative or partner must be knowledgeable on the renewable energy technology being employed and able to answer NFP/community questions. It is suggested that organisations build relationships with trustworthy solar installers and invite them to be present for Q&A sessions, whilst Council could play a role to vet installers and promote the offering.

Recommended role of NHMS

The role of NHMS could include leading the bulk buy process and education sessions – or partnering with Nambucca Valley Council to deliver this project. NHMS could act as the organisation that vets the solar installers, brokering the purchase of solar/batteries etc. and then providing ongoing support to the participating NFPs (and households). However, this project may be more successful if Council were to play the vetting role, as they already play a representative role for community, and instead NHMS could focus on promotion, education, administration and support.

Next steps

The CORE group

In the early stages of a community renewable energy project, success depends on a small group of people who are able to commit to volunteering their time over a sustained period. NHMS is an established and active Mens Shed that focuses on providing a supportive outlet where men can connect and work together. Community energy is not a primary objective of the Shed and could be seen to be beyond its remit. However, a team of passionate people have formed an offshoot of this existing organisation and it is suggested that this new group work to establish its independence so that it can more truly reflect its purpose and activities. There might be an opportunity to join forces with the existing People Power Community Owned Renewable Energy Co-operative, also located in the region. However, whilst cooperatives are a solid legal form for setting up an energy project, which enables greater independence from individuals and more accountability, they are not the only solution and other options such as a club or a trust are also possible and may be an easier first step. By formalising the group and developing a simple mission statement or constitution, the goals and objectives of the group will become clearer and support future actions and decisions. Having a separate entity that manages energy projects will also provide the group with a more appropriate and recognisable profile and present more opportunity to recruit volunteer members. This will be crucial to sustaining any project over time. When recruiting members, it is important to ensure that key skills are sought, such as community engagement, an interest in technical detail and some expertise in project management. Financial, legal and fund-raising skills are also important.

Research and connect with other established CORE groups

Regardless of which of the three recommended renewable energy initiatives NHMS might preference, an important first step will be researching the details of each and connecting with established CORE groups who have successfully delivered similar projects. The community energy sector in Australia has undergone a period of significant growth in the last decade and we are now lucky to have many examples of all three of the recommended project options in operation. Most groups are collaborative and open to sharing information about their processes and arrangements with newly formed groups. There are also many informative guides, webinars and case studies that can provide excellent details on where to begin and practical steps forward. Below Table 2 shows some suggested groups NHMS could connect with or research.

Table 2: Community energy groups to connect with

Small-scale solar PV donation projects	Community energy revolving fund	Bulk buys and RE education
• SHASA • CLEANaS • CEFE • Bendigo Sustainability Group	• CORENA • COREM • Geelong Sustainability • Energy Forever Inc.	• MASH • Inner West Community Energy • Sunny Shire • Farming the Sun

Investigate potential rooftop solar host sites

A key next step for the NHMS for both a donation project and a revolving fund will also be to investigate potential NFP solar host sites. Initial review of the survey results shows that there are several possible sites that might present easy wins for solar installations (Figure 11). This is based on the following four factors:

1. Operation most days during daylight hours
2. NFP owns the building
3. Does not currently have solar
4. Extremely/very interested in installing a solar system

Figure 11: Possible solar host sites: a first look

- Bowraville Community Development Association Incorporated
- Nambucca Heads Bowling and Recreation Club Ltd
- Nambucca Valley Catholic Parish
- Nambucca Senior Citizens club
- YPSpace MNC

Further review of the NFP survey results and direct consultation with respondents will also be necessary to confirm information, interest and ensure that participants have ample opportunity to be involved in the chosen project. Direct discussions around energy usage and the business case for solar installations for possible host sites will also need to be made. This process could be supported by reviewing roof space using online tools such as APVI's SunSpot tool[7], solarquotes.com.au and local knowledge, as well as through analysing billing information. Other community energy groups such as COREM, have developed an online process for host site nomination which enables potential sites to propose a project for their own rooftop[8]. It also provides a platform where energy usage and billing information can be uploaded.

Build partnerships and alliances

One of the most important next steps is for NHMS to continue liaising with key stakeholders and building relationships with renewable energy champions within NFPs, Nambucca Valley Council and in the wider community. Intensive community engagement with education measures and local events will help to make NHMS known and create visibility about goals and ideas. By building on stakeholder mapping already completed and initiating one on one meetings with significant stakeholders in the NFP sector and particularly within Council, other local champions can be identified and alliances struck across the region.

Final remarks

There are several community energy project options that could strengthen the local NFP sector by delivering relatively quick bill reductions, along with comparative carbon emissions savings. However, each of these options require a significant investment of time, skills and energy from the coordinating organisation. The way to ultimately achieve greater strength and resilience within the NFP sector though such projects is to have thriving community

[7] APVI, 2022. SunSpot.
[8] COREM, 2018. Propose a project.

energy groups throughout the region that are collaborating hand in hand with NFP partners and Council, building trust and raising awareness in the community over the long term. Any community energy project will invariably evolve and change as further information is uncovered. NHMS is encouraged to have patience in the process, to work towards building a profile and presence, and to continue to build relationships with key stakeholders in the region. CPA commends the excellent progress that the NHMS and its supporters have made to date. With further collaboration with both NFPs and the local community, the Nambucca Shire could position itself as one of the burgeoning communities in NSW delivering the benefits of community energy.

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Appendix A - NFP Survey

Nambucca Power Project - NFP Survey

The Nambucca Heads Mens Shed (NHMS) is working with the Community Power Agency and the Foundation for Rural and Regional Renewal to investigate options for renewable energy that will help strengthen local Not-For-Profit (NFPs) organisations, lower their electricity bills and make them more sustainable into the future.

In order to do this, NHMS would like to know more about the priorities of our local NFPs and understand their ideas around renewable energy as well as what sorts of skills and assets they now have access to.

If you are part of a NFP organisation or similar that is based in the Nambucca Valley, please take a few minutes to complete this short survey. The results will be the basis for the next steps of the project and help us to scope out possible options for the future, such as energy efficiency programs, roof-top solar installations or batteries.

The results will be available on our website and emailed to participants after the survey closes the end of February.

Please leave the survey here or post to
P.O.Box 424 Nambucca Heads 2448

For more information about NHMS or to **complete the survey online** visit https://nhms.org.au/. If you have questions about the project please contact Elizabeth Noble - elizabeth@cpagency.org.au, 0426887415.

Nambucca Heads Men's Shed ——————— Energy Survey

1→ What is the name of your organisation, group or service? *

2→ Your name * ----------

3→ Your role * ----------

4→ Email address * ----------

5→ Phone number * ----------

Please place a TICK or CROSS in the appropriate box

6→ Is your organisation, group or service

- A Registered Charity/Not-For-Profit
- B Government department
- C Incorporated association/Cooperative
- D Private enterprise/Company/Sole trader
- E Unincorporated community group
- F Other

Please fill in this box with your other information

7→ What is the nature of your organisation, group or service?

- A Community/social service
- B Indigenous organisation
- C Sporting organisation
- D Community centre/hall
- E Church/faith group
- F Education/Childcare
- G Environmental
- H Creative and performing arts
- I Social/leisure clubs
- J Other

Please fill in this box with your other information

Nambucca Heads Men's Shed ——————— Energy Survey

8 → In which township are you located?

- A Bowraville
- B Macksville
- C Valla Beach
- D Scotts Head
- E Nambucca Heads
- F Other

Please fill in this box with your other information

9 → What are your approximate days/times of operation?

	Mornings	Afternoons	Evenings
Monday	☐	☐	☐
Tuesday	☐	☐	☐
Wednesday	☐	☐	☐
Thursday	☐	☐	☐
Friday	☐	☐	☐
Saturday	☐	☐	☐
Sunday	☐	☐	☐

10 → What is the tenure arrangement of the premises that you operate from? *

- A We own, manage and maintain the building.
- B We lease the building privately and ARE NOT responsible for management and maintenance.
- C We lease the building privately and ARE responsible for management and maintenance.
- D We lease the building from the local council and ARE NOT responsible for management and maintenance.
- E We lease the building from the local council and ARE responsible for management and maintenance.
- F Other

11 → Do you currently have rooftop solar and/or batteries on your premises? *

- A Yes, solar and batteries
- B Yes, solar only
- C No
- D Other

Please fill in this box with your other information

Nambucca Heads Men's Shed ——————— Energy Survey

12 → How interested is your organisation in participating in energy efficiency or renewable energy programs?

- A Extremely interested
- B Very interested
- C Somewhat interested
- D Not so interested
- E Not at all interested

13 → Which of the following energy efficiency or renewable energy programs would your organisation be most interested in participating in?

Numbering 1—8 1 being the most interested

- - Installing rooftop solar PV on your own premises
- - Hosting rooftop solar PV on your premises that is community owned
- - Purchasing energy efficient appliances through bulk buys – e.g. heat pumps, lighting
- - Investing in local renewable energy facilities/projects such as a solar farm
- - Installing individual batteries
- - Participating in energy/thermal efficiency programs to lower your energy bills
- - Participating in a local micro-grid – where energy is locally generated, shared/ consumed and stored in community batteries
- - Learning more about renewable energy & energy efficiency

14 → If you participated in energy efficiency or renewable energy programs what outcomes would be of most importance to your organisation?

Numbering 1—7 1 being the most interested

- - Reductions in pollution, helping to address climate change
- - More affordable electricity for the organisation
- - Opportunities for the community to have input/invest in and/or own the project
- - Local employment opportunities
- - Training and energy education opportunities
- - Greater control over electricity supply
- - Greater organisational sustainability and resilience

15 → Please add any further comments or questions here.

Thank You