

Net Zero For Communities

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Final Report Lachlan Maclean, Sewah Helen Mok and
Angus Kennedy



MONASH
NET ZERO
INITIATIVE



This report was prepared for Healesville Community Renewable Energy Inc and Monash University Buildings and Property Division by Angus Kennedy, Helen Mok and Lachlan Maclean, the Net Zero For Communities Team from Monash University's 2018 Green Steps program. Their work was undertaken as part of the Green Steps sustainability leadership program that facilitated this Consultancy Project with the Monash University Buildings and Property Division.

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1. INTRODUCTION

1.1 PURPOSE

The key objectives of the project were to:

- Gather stakeholder views to gauge levels of current awareness and concern about solar energy through a community survey
- Facilitate and promote community input into the renewable energy projects through flyers and brochure information
- Provide information to Healesville CoRE about recommended practices for community engagement
- Present findings to both Healesville CoRE and the Buildings and Property Division

Ultimately, these key outcomes were completed with the goal of both helping Healesville CoRE with their first project towards achieving a net zero town, and informing future net zero projects in Australian communities. The consultancy project provided an invaluable experience for the authors during their undergraduate studies, learning a great deal about Healesville CoRE, the Buildings and Property Division, community energy projects and sustainability more broadly.

1.2 EXECUTIVE SUMMARY

Healesville Community Renewable Energy Inc (Healesville CoRE), founded in 2017, aims for Healesville to become a net zero carbon emissions town by 2027. To achieve this goal, Healesville CoRE, led by passionate president Jeff Barlow, work to identify renewable energy initiatives for the community and promote the concept of ‘community energy’, reducing power bills for individual households, businesses and not-for-profit organisations.

This report builds off a previous net zero town options’ study that was prepared by Monash University students Luke Barry and Nicholas Seymour for their final year project in June 2018. Their report identified a number of renewable energy options and energy efficiency options for the Healesville community. A solar bulk-buy for the community was recommended as the most feasible first step on a journey towards a net zero future, and this has in turn been adopted by Healesville CoRE. This document gathers further information regarding the best practice principles of engagement with the local community, and perhaps provides reference for other projects in the context of community renewable energy projects.

Local renewable energy projects require a high level of transparency and information sharing between organisers and community members. Community engagement is therefore crucial to from the onset of any large-scale project. To accurately define the best engagement approaches for Healesville CoRE, data from a community survey combined with research into other similar projects has informed the contents of this report. The results of the survey indicate strongly that Healesville hosts a very motivated local community that is highly interested in participating in a solar bulk-buy. Community members displayed a high level of support for solar generally;

indicating cost saving, energy self sufficiency and reducing household carbon footprint as being the primary factors in driving decisions to purchase and install solar panels.

A solar energy information brochure was designed to communicate the basic components of solar systems and why a bulk-buy may be a suitable option for the community. This was considered an essential part of the work, as research indicated that the perception of understanding how energy systems operate was an important factor in convincing homeowners or landlords to install solar panels on their roofs. Additionally, an energy saving ‘tips sheet’ was developed to help the community with practical advice to save energy and further promote the work of Healesville CoRE. Both handouts were designed to match the colours of the Healesville CoRE logo and website, and they may be used electronically as attachments to emails or newsletters, which were indicated by the survey to be the preferred methods of communication.

Research into the methodology for engaging with community stakeholders included contacting the organisers of similar bulk-buy projects. They emphasised that trust and simplicity of options were two of the essential factors in garnering community support and participation. Overall, the work we have completed indicates that the implementation of a solar bulk-buy would strongly benefit from sustained efforts to educate the community in a simple yet effective way on the relevant information for community energy, as well as attempts to maintain trust through means such as endorsement from the local council. It was also strongly advised to avoid providing too many options for residents in Healesville as this may undermine efforts in educating the community and sparking added confusion. This may have significant effects on the success of the solar bulk-buy scheme.

2. SOLAR EXPERIENCE COMMUNITY SURVEY

2.1 ABOUT THE SURVEY

The survey was conducted through Qualtrics, an online surveying website. It opened on Friday 20 August 2018 and closed at 5pm on Monday 3 December 2018. During this time it received 148 responses. The survey was available solely online, which may have prevented some of the target group participating, however the response rate was still highly encouraging.

The survey was promoted via:

- Healesville CoRE’s social media (Facebook)
- Email database of Healesville CoRE
- Healesville community newspaper notice
- Media release, resulting in a printed article

Respondents were asked a series of questions about:

- Their level of concern about energy prices
- Their attitudes towards solar energy and batteries

- Their interest in installing solar technology
- Understanding of electricity charges and awareness of energy reduction measures
- Actions to change energy retailers or reduce energy costs
- Views about the importance of pursuing renewable energy for the region and priorities for the future

Full responses and data from the survey can be found in the *Net Zero for Communities Healesville CoRE Solar Bulk-Buy Survey Report*.

2.2 KEY SURVEY FINDINGS

Overall, the survey indicated a great deal of support for Healesville CoRE's project and its aim for a net zero town by 2027. 148 people viewed the survey, while it appears there were 144 actual respondents to the questions.

There were some recurring themes in the responses, particularly in the questions relating to important considerations to households for installing solar in their homes. Cost savings, energy self-sufficiency and reducing the household carbon footprint were frequently listed as 'extremely important' or 'very important' considerations for respondents that had installed solar. In particular, reducing the household carbon footprint received a high amount of responses in the 'extremely important category', with 54%. This should be highlighted from Healesville CoRE's perspective, and possibly also for other community energy projects, as a potentially significant focus of the engagement.

However, while factors preventing the installation of solar panels varied slightly more, cost was clearly the main concern with over 79% of responses listed cost as 'very' or 'extremely' important considerations. This may indicate that for those who can afford solar, reducing their carbon footprint may well be a key consideration, but for those still considering installing solar, costs may need to be reduced before they feel comfortable committing.

Of all the respondents, approximately half (49%) already had solar panels installed. Of this group, there was a majority that had some form of interest in increasing or upgrading their solar panels on their roofs (see Figure 1 below). Furthermore, 44% were 'extremely interested' – a response rate that was highly encouraging; suggesting that it could be important to the feasibility of the bulk-buy scheme if owners of pre-existing solar panel systems were considered.

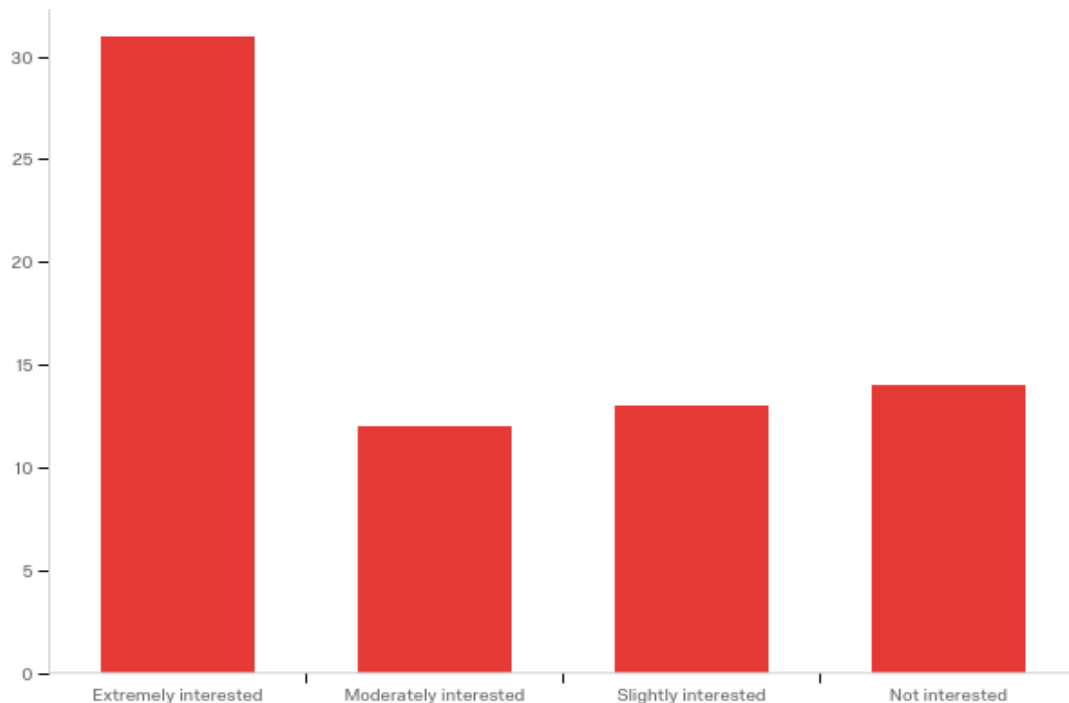


Figure 1: Q18 - Number of respondents not interested, slightly interested, moderately interested or extremely interested in increasing or upgrading the number of solar panels on their roofs.

Results from the survey showed a positive outcome, with 68% of respondents willing to self-finance a new solar system or upgrade; which indicated a strong willingness to financially commit to a solar bulk-buy scheme. In addition, 62% of respondents already owning solar panels, indicated that they would have still installed their solar systems without a financial rebate. Overall, this suggests that whilst a large portion of individuals appreciated some form of financial support, there may not be a strict requirement for such incentives.

As shown in Figure 2 (below), this is supported by the responses regarding the performance and installation of solar systems; where most respondents indicated a high satisfaction level. Additionally, it may be useful for Healesville CoRE to contact individuals that indicated a low satisfaction regarding their experience with solar panels. This may provide valuable information that can assist Mondo Power, and give the community reassurance that the same issues will not arise again.

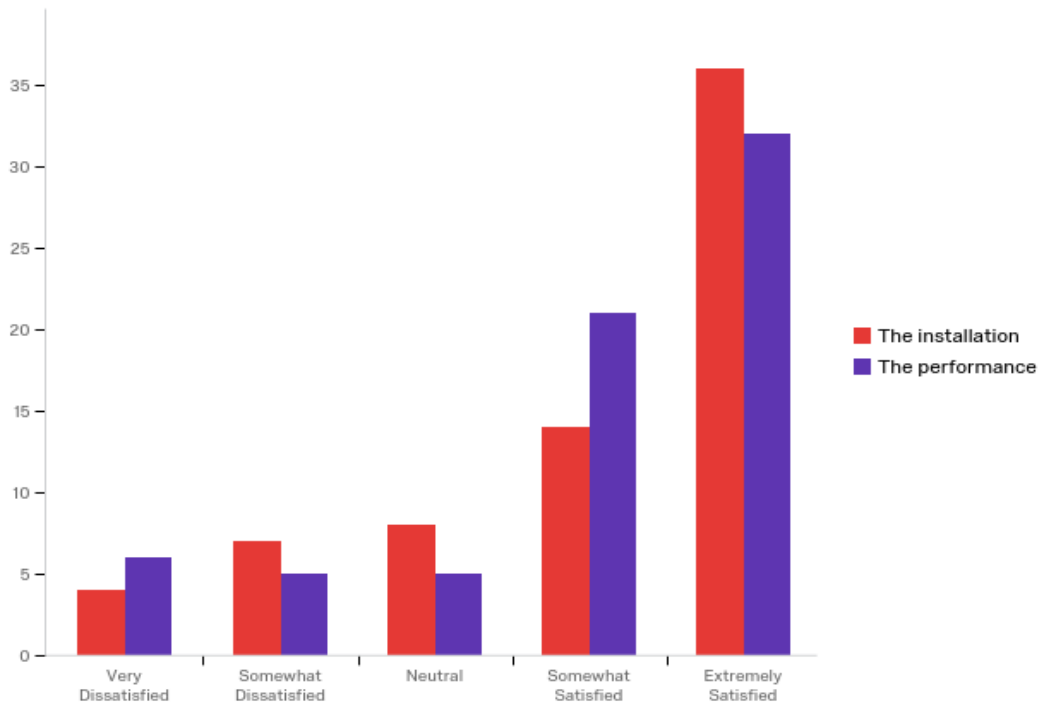


Figure 2: Q16 - Respondents' satisfaction with installation and performance of solar panels.

Healesville CoRE should be optimistic; with results verifying that of the respondents that currently do not have any solar panels installed, a vast majority (79%) were interested in purchasing panels (see Figure 3 below). However, it should be noted that 13% of respondents were still unsure in their response. Furthermore, given that the respondents have taken the time to complete the survey, it could be argued that there may be a pre-existing interest in renewable energy. The community engagement aspect of this report (Section 4) should be viewed with these people in mind.

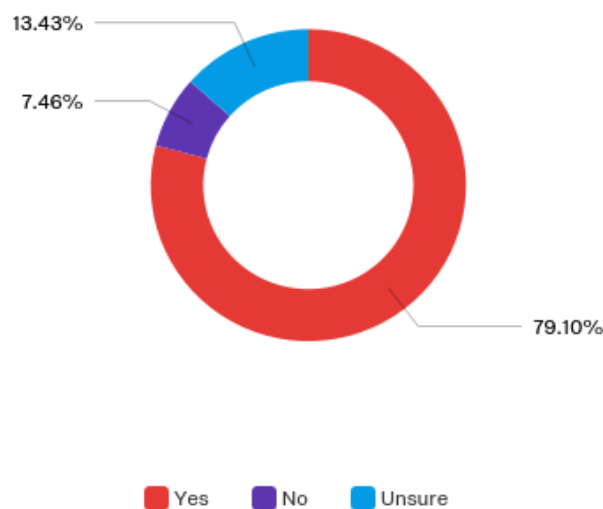


Figure 3: Q23 - Percentage of respondents (without solar) interested in installing solar panels.

From figure 4 (below), it was strongly indicated that emails and electronic newsletters were the most preferred forms of communication. This contrasted with more time-consuming or ‘tech-savvy’ options of communication, such as the use of social media. However, community information sessions were also favored by 10% of respondents. This suggests that it may be valuable to provide face-to-face interactions as a community engagement approach with respondents who were undecided. Regular communication via email in conjunction with community information sessions throughout the year would be the most beneficial based on these responses.

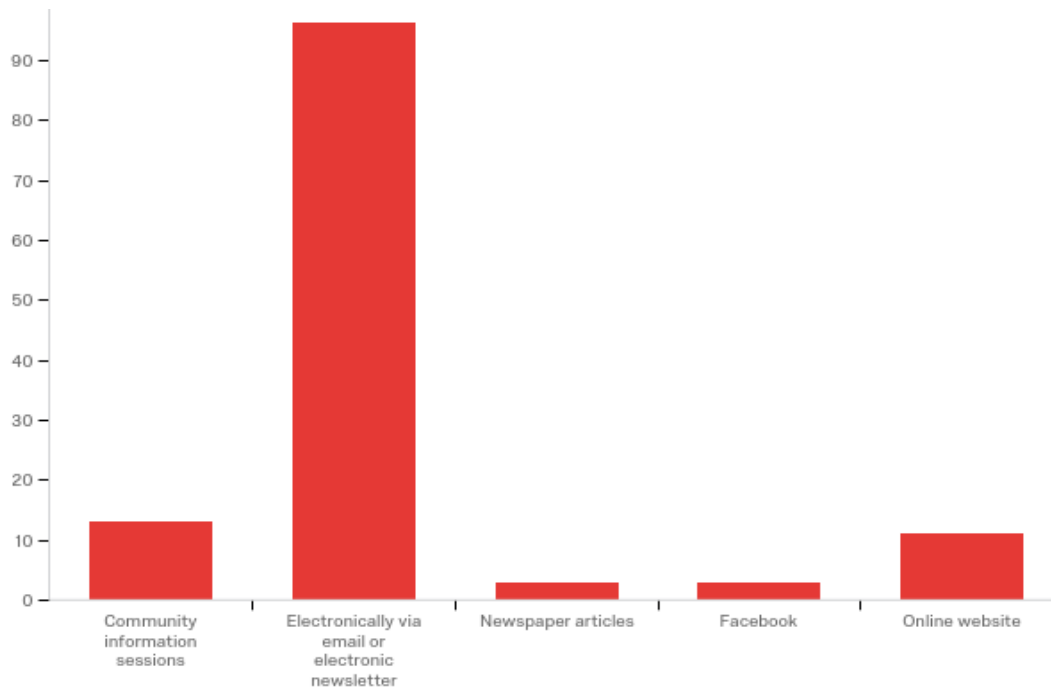


Figure 4: Q31 - Preferred communication method for respondents receiving renewable energy information.

Additional survey findings verify that the overwhelming majority (93%) of respondents would consider changing to a community electricity retailer that would invest in the Healesville community. The strong amount of interest toward renewables can further be gauged with survey findings indicating that 70% of respondents were interested in connecting to a microgrid in the future (see Figure 5 below), in addition with 64% of respondents being at least ‘moderately interested’ in installing an electronic monitoring device.

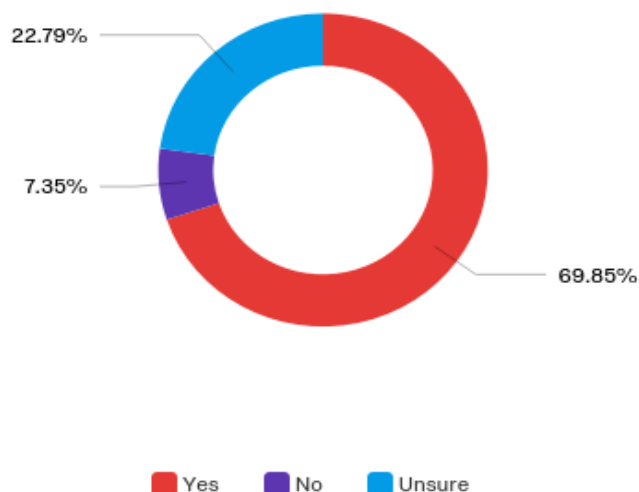


Figure 5: Percentage of respondents interested in connecting to a microgrid in future.

However, 23% (see above) remained unsure about connecting to a microgrid. This could indicate that the allocation of resources towards community education regarding a future microgrid may be valuable. If Healesville CoRE continues to engage with those unsure about installing solar panels in the short-term, they may find it useful to combine those efforts and address both renewable solutions at one time. This may prove to be a beneficial long-term strategy as they work towards the Net-Zero future.

2.3 FEEDBACK FROM SURVEY RESPONDENTS

Healesville CoRE received some valuable responses in the comment section of the survey that should be responded to, in order to address concerns. Healesville CoRE should take comfort in the level of community support for their organisation with a high number of positive comments. Several comments portrayed positive attitudes toward a microgrid or a more renewable future. There was also a desire for more information about renewables and the possibility of a property feasibility assessment for solar and battery storage.

The responses to the survey indicate that there is a large portion of the community interested in participating in the solar bulk-buy with Mondo Power. However, it should be strongly noted that the attitudes of the remainder of the Healesville community is unknown, as many respondents may have been discounted by the solely online survey, that was only available for a limited time. Also, the sample of those willing to complete the survey may have been strongly biased by those that are already very interested in purchasing solar. In any case, the wide range of responses should prove useful to Healesville CoRE; providing insight into the community experiences and motivations regarding solar systems.

3. SOLAR BULK-BUY COMMUNITY BROCHURE AND ENERGY SAVING ‘TIPS SHEET’

3.1 INITIAL OBJECTIVE AND ADDITIONAL SCOPE

The initial task listed in the Project Brief called for a solar bulk-buy community brochure to include a promotional aspect for Healesville CoRE as an organisation. However, after consultation with the President of what the organization would benefit most strongly from, it was decided that our time would be best utilized to structure an ‘easy to understand’ flyer about solar energy - as a base for interested members in the community to increase their knowledge of solar power.

As part of the optional scope for the project, we decided that an ‘Energy Saving Tips’ brochure would be useful for community members as an immediate way to begin reducing energy costs and reduce their carbon footprint.

The options we put forward in this report have been reviewed by Healesville CoRE and will be modified, however the initial samples have been included in this report to display the general guideline and format we have proposed to Healesville CoRE, should they choose to distribute or further edit these pamphlets.

3.2 RECOMMENDED PAMPHLET/BROCHURE DESIGN AND CONTENT

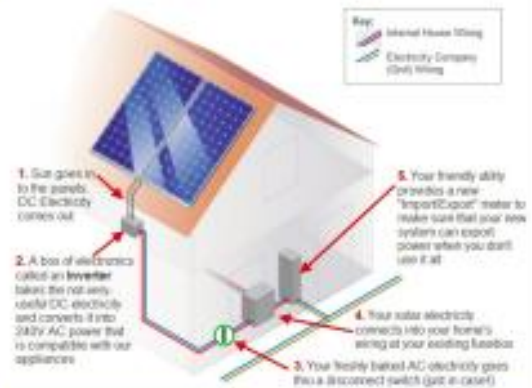
The design for the two handouts were made with the Healesville CoRE logo and website colours in mind, so they may be used for distribution in hard copy at community events, as well as used online as a download or attachment that would “look the part” and match other previous outputs from Healesville CoRE. These samples include some design errors, however the general format is what we propose Healesville CoRE to incorporate for their flyers.

The key components we recommend include:

- The green layout and contrasting background to maintain a sense of continuity with other Healesville CoRE designs
- Simple language and design
- Easily seen contact information (not displayed on our samples)
- Enough information to allow readers to feel genuinely better educated on the topic without overwhelming them
- Easily downloaded as PDF to be distributed and read online

What is solar energy and how does it benefit us?

- Solar panels transform energy from the sun into useful electricity that can power buildings and appliances, or be exported back into the grid.
- Your investment will pay for itself in 5-7 years and you will then be saving significantly on energy bills and reducing their carbon footprint.
- Solar panels provide the most benefit to households that consume substantial amounts of their energy during the day, i.e. for washing machines, pool systems, air conditioning etc.
- Several factors may affect the performance of a PV system. North-facing roofs are optimal for electricity generation. Rooftops that are shaded for any significant portion of the day may not be suitable for PV installation.



ENERGY SAVING

Healesville
CORE

What is an Inverter?

- An inverter converts the direct current (DC) output of a photovoltaic solar panel to alternating current (AC), allowing useable energy to power your buildings and appliances.
- It is one of the most important components of your solar system and also allows unused electricity to feed into battery storage or the electricity grid.

What happens to energy we don't use?

- During the day, excess energy produced by your solar system may be fed back into the grid or used to charge batteries.
- If batteries are installed, they may be able to provide electricity even at night or when the sun is not shining on overcast days, to maximise electricity usage generated from your roof.

Figure 6: First page of the Solar Information Flyer



Figure 7: First page of Energy Saving Tips brochure.

ENERGY SAVING TIPS



FOR WINTER,

ENERGY SAVING TIPS

1. LIGHTS

(ACCOUNTS FOR **6%** OF ENERGY USE BY AUSTRALIA HH&S)

- SWITCH ENERGY EFFICIENT LED AND FLUORESCENT LIGHTS AND **SAVE UP TO \$220 A YEAR.**
- BY SWAPPING OUT EXISTING INCANDESCENT'S GLOBES.
- SWITCH ON FEW LAMPS AND TURN OFF DOWNLIGHTS AND SAVE UP TO **\$140 A YEAR**

3. HOT WATER

- FOUR MINUTE SHOWERS COULD **SAVE YOU APPROXIMATELY \$60.**
- IS YOUR SHOWERHEAD A 3- STAR RATED? IF NOT WHY NOT?
- COULD SAVE AROUND **\$190 YOU PER YEAR!**

TIPS

2. INSULATION

HEATING AND COOLING ACCOUNTS FOR **40%** OF HOUSEHOLDS ENERGY USE.

- IMPROVE THE THERMAL COMFORT OF YOUR HOME
- **45%-75%** OF HEAT LOSSES FLOWS THROUGH WALLS, FLOORS AND CEILINGS

GET PAID BACK **REDUCTIONS TO YOUR ENERGY BILLS** BY UP TO **40%** BY ADDING CORRECT INSULATION.

4. APPLIANCES

- SET YOUR FRIDGE JUST RIGHT.
- EVERY **DEGREE LOWER USES 5% MORE ENERGY.**
- IDEAL IS TO GET FRIDGE BETWEEN 3-4C AND FREEZER BETWEEN -15 TO -18C
- TURN OFF YOUR HOT WATER SYSTEM WHEN YOU'RE ON HOLIDAY, GREAT WAY TO REDUCE ENERGY COSTS
- WASH YOUR CLOTHES IN COLD WATER AND **SAVE BETWEEN \$85 TO \$145 YEARLY**

FOR WINTER,

5. COOKING

- GAS IS THE MOST EFFECTIVE WAY, HOWEVER THERE ARE OTHER WAYS TO SAVE.
- REMEMBER TO COVER ALL THE POTS AND PANS WITH A LID **REDUCE 70% OF ENERGY**
- YOUR MICROWAVE USES **80% LESS ENERGY** THAN YOUR ELECTRIC STOVE

HEATING

- ENSURE YOU SET YOUR HEATER TO 16-20 C. EACH DEGREE OVER 20C USED AROUND 10% MORE ENERGY
- WHY NOT TRY ELECTRIC THROW AND TURN OFF YOUR PORTABLE HEATER? SEE A DIFFERENCE OF UP TO **\$200 ON YOUR ENERGY BILLS A YEAR.**

TIPS

Figure 8: Second page of energy saving tips brochure

4. COMMUNITY ENGAGEMENT STRATEGY FOR A COMMUNITY RENEWABLE ENERGY PROJECT

“Imagine an entire town running on renewable energy. Then imagine that town being ours”

- Renewable Newstead 2011

"Getting community engagement right and sharing the benefits equitably must be a key part of any renewable energy project. This guide highlights best practice examples and key lessons learnt from others. It can help you chart your way to engaging effectively, and delivering benefit sharing which makes your renewable energy project a valued part of the community."

- Simon Corbell, Victorian Renewable Energy Advocate

4.1 PURPOSE OF COMMUNITY ENGAGEMENT REPORT

This summary of key success factors sets a guide in assisting Healesville CoRE through best practice community engagement. It may be beneficial to regularly refer back to this document as it may be used across implementation of all renewable technology initiatives.

The practical information included in section of the report aims to build awareness and help deliver projects that are mutually beneficial for their hosts, neighbours and communities. Projects that promote and seek to foster shared benefit outcomes for the local community and that reflect values such as collaboration, trust, mutual respect and transparency in ongoing relationships will overall drive the success of the 2027 net zero target.

4.2 SOURCE LIST

In preparation for developing this component of the report, online sources were used. This consisted of readily available community engagement reports from other communities and academic journal articles, with engagement plans specific to renewable technology. Additional advice and best practice strategies were obtained through consultation with Totally Renewable Yackandandah and More Australian Solar Homes (MASH); organisations that have conducted similar community bulk-buys in Victoria.

4.3 IMPORTANCE OF EFFECTIVE COMMUNITY ENGAGEMENT

Community engagement refers to the processes through which a developer interacts with the community to guide the development of an energy project. It is a general term used to refer to many activities including communication, consultation, participation and co-development.

Community engagement and benefit sharing are fundamental to generating community support and delivering positive and effective outcomes for renewable energy projects. However, valuing community engagement and benefit-sharing as a pathway of social acceptance in

communities and setting it as a priority within the development process, has historically been challenging in Australia.

Projects such as the establishment of the Healesville Hollywood sign and the Healesville Community Labyrinth etc have shown the community's successful history identifying positive solutions to the challenges and changes facing Healesville. The earlier work of Totally Renewable Yackandandah together with Mondo Power also demonstrated that a local engagement model can be applied to the community of Healesville, whilst applying an extremely cost-effective integration, that also encourages participation and support for renewable energy projects.

4.4 PRINCIPLES FOR HEALESVILLE CORE TO CONSIDER

The principles of the Community Engagement strategy are:

- Actively involve the Healesville community and other stakeholders in project activities – for initiatives to be inclusive in encouraging ownership and active involvement
- Value local knowledge and skills at all levels and stages of the project
- Engage and communicate with honesty and integrity
- Be clear and transparent about purpose, roles, expectations and outcomes
- Communicate with key stakeholders about the vision, objectives and key project stages and provide regular updates on progress by providing clear, concise, timely and effective information
- Provide opportunities for the community and stakeholders to contribute information, ideas and input to the development of the initiative whilst enabling capacity building and learning at community and individual levels
- Foster ongoing relationships and networks for the long-term

In addition, the following advice may be useful:

- Go to where people already are; use existing networks and community connections
- Go beyond the 'usual suspects' and try to actively incorporate and include the widespread local demography
- Appreciate the complexity and diversity of the Healesville community, including all of its time/energy challenges, levels of education and socio-economic circumstances
- Value and respect all inputs, including differing views
- Provide clear and detailed information, including pros and cons, using clear language and concepts
- Include opportunities to create new–relationships as well as building on existing relationships, connections and learning within the community
- Use a range of communication and engagement methods and approaches, e.g. face to face, surveys, online, in-print, formal and informal
- Review what works and what doesn't and incorporate changes

4.5 ELEMENTS OF SUCCESSFUL COMMUNITY ENGAGEMENT

Following research into the literature and meetings with other community bulk-buy projects, we have ascertained there are four key elements that are crucial for successful adoption of renewable technology. If these factors are considered and addressed accordingly, it will significantly increase the chances of a successful bulk-buy project.

The four elements are:

1. Increasing the tangibility of solar energy for the public
2. Increasing the public's perception of their knowledge
3. Increasing trust in Healesville CoRE
4. Increasing access to Healesville CoRE

Energy systems have historically been perceived as highly complex technical systems. The idea of energy production and consumption at a community level, let alone an individual level is a vastly radical shift from what the public is used to. . To ensure the community is ready to transition towards sustainable systems, this will involve reducing the misconceptions that individuals may have about renewable technology. Community engagement strategies must focus on the benefits of having sovereignty over one's individual energy, something that is unique to renewable systems.

Increasing the tangibility of solar energy is an important step towards the overall success of community adoption. This known link regarding having visual exposure to solar technology, increases the likelihood of adopting such renewable technology. Having visual exposure can also be seen to be quite similar to the 'neighbourhood' effect. This works by reconnecting individuals to the sensory environment in order to enhance environmental responsibilities by enabling them to 'see' and 'experience' renewable infrastructure. Having a sense of something tangible enables individuals to see their results from adopting renewable technology in reducing their carbon footprint, whilst improving their understanding of the energy system itself. As a strategy, having readily available products for consumers to see and understand is crucial for this step. It may be quite promising if a sample product and the range of options can be available for display either at a town meeting or a community stall.

In addition, increasing the community's perception of renewable technology knowledge is essential for community engagement. Research completed by Parkins & Anders found that whilst factual knowledge of energy systems is not a predictor of adoption intention, perceived knowledge is (i.e. perceived knowledge refers to the individual's confidence in understanding what the system is and what it represents to them rather than the science behind it). Information sharing is an important strategy in order to increase one's perception of knowledge, through public awareness campaigns either online or face to face. However, it is also advised to keep any information spread simple and demographically suited -included in this category is the solar products being offered and the price. Too many options for the community may in turn cause doubt or confusion in how they should proceed, leading to more questions and inquiries that could drain time and resources from Healesville CoRE. As an example specific to a solar bulk-buy initiative, having a low-end and high-end product with limited options and a cheap inverter appeared to have the most success for other communities that have operated a solar bulk-buy, and anything more than this may create confusion.

The third element trust, is essential to a community operated project and the level of community engagement behind it. Regardless of whether it is a council scheme, having council

endorsement for the community project is fundamental to the adoption success. It can be understood that through council endorsement, it can raise Healesville CoRE's credentials and lower the community's perceived risk in engaging in the project. Strategies that increase the credibility and the organisation's exposure include having official photos with the mayor on Healesville CoRE's website, an article about Healesville CoRE in the local newspaper, holding meetings at the town hall.

The final element for successful community support for benefit-sharing technology is increasing the access for those in the community through effective stakeholder engagement. It was advised communities much preferred having real people interactions, in comparison to dealing with big companies or through the internet. This enables people to ask questions in real time, without the complications of the internet. MASH operated a hotline where individuals could call up. However, given that Healesville is a volunteer group, there is a constraint in labour resources and this strategy is not feasible. Instead, having a combination of semi-regular town meetings with weekly column articles may prove to be quite a success in building community engagement and expanding the reach of renewable energy technology.

5.KEY RECOMMENDATIONS AND CONCLUSION

We believe that the content of this report will be useful to Healesville CoRE in practice, as they implement their solar bulk-buy and transition to a net zero future; as well as also establishing a foundation for the Monash University Buildings and Property Division regarding similar community projects around Victoria. The town of Healesville appears perfectly suited for a community energy project, with the number of people willing to engage in the survey on such short notice highly commendable.

Three key pieces of advice to take away from our work are:

1. Sustained efforts to educate the community in a simple yet effective way on the relevant information for community energy is invaluable, and all options for making information easily accessible need to be considered by Healesville CoRE. In the long term, making information available about a microgrid seems wise, given the survey's indication of a high number of people still unsure about what this entails and why it might benefit them.
2. Attempts to maintain trust in the organization, Healesville CoRE, through means such as endorsement from the local council is also going to be valuable in gaining trust and reassurance for community members, particular those that are currently unsure about their decision to install solar. It seems Healesville CoRE is already on the right track with this recommendation and should be commended for maintaining a relationship with the council.
3. Providing too many options for residents in Healesville may potentially be a drawback – and would be counter-intuitive as this will serve to undermine any efforts in educating the community. Any confusing options or technical information sparking further questions and enquiries may drain the limited resources of Healesville CoRE, and as this is a volunteer organization this may be especially concerning.

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