



Community Energy Collective Impact Baseline Assessment



Photo: Erland Howland

ABOUT THE AUTHORS

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Please cite as:

Kirsch, C., Jackson, M., Langham, E. & Ison, N. (2015) *Community Energy Collective Impact Assessment (An Appendix of the National Community Energy Strategy)*.

ACKNOWLEDGEMENTS

We would like to acknowledge the generous contributions of the following people, without whom this work would not have been possible: Erland Howden for being an excellent facilitator, Franziska Mey, Chris Cooper, Warren Yates, Margaret Page, Jarra Hicks, Tom Nockold, Craig Memery, Bruce Thompson, Adam Blakester, Taryn Lane for their generosity and openness. We also would like to thank all the community groups and their representatives that have taken the time to answer our surveys.



We would also like to thank ARENA for the funding provided for this report, which has been developed as part of the ARENA supported [National Community Energy Strategy](#) project.

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EXECUTIVE SUMMARY

Project Objectives

Community energy is an emerging sector that is growing in countries around the world, offering new opportunities for energy and wealth creation at the local community level. Since the first advent of community energy groups in Australia in 2006, the sector has been gaining momentum and interest is growing. Yet, community groups are still facing significant entry barriers to the market. In 2014, key stakeholder groups and the organisations that are spearheading community energy in Australia, founded the Coalition for Community Energy (C4CE), which aims to support the uptake and success of community energy projects in Australia.

This project was funded by ARENA as part of the National Community Energy Strategy project. It has provided the groundwork for future work to develop an online Shared Measurement Platform and the processes and structures required to manage the ongoing data collection and reporting on the collective impact of the Australian community energy sector.

The objectives for this work stream were:

- The development of a set of shared indicators for community energy in Australia
- Data collection and Baseline report on the impact of community energy projects in Australia
- Recommendations and system specifications for a Shared Measurement Platform.

The project included a preliminary survey of community energy organisations in Australia to determine the key objectives and success factors, current indicators and ongoing reporting needs of the various groups. This was followed up with a stakeholder workshop in which a set of shared indicators was developed. These indicators were used to collect baseline data and to develop recommendations and specifications for the development of an online Shared Measurement Platform (SMP) and measurement and reporting framework, including structures, processes and possible funding structures for the ongoing management and operation. Fifty three community energy groups were invited to participate in the baseline assessment, of these data was received from 27 groups., The baseline data provide interesting preliminary overview of the contributions that community energy is making and the challenges it is facing.

Key Findings

The baseline data shows the significant environmental, economic and social benefits of community energy in Australia. In this early stage the community energy sector has already:

- Contributed over AU \$23 million in community funding for energy infrastructure
- Installed over 9 MW of renewable energy systems
- Produced over 50,000 MWh of clean energy (as at the end of 2014)
- Avoided over 43,000 tonnes in carbon emissions
- Developed a membership and supporter base of over 21,000 people.



According to the survey results, members of community energy groups see the main obstacles to the uptake of community energy in Australia to be a lack of access to host sites, access to funding and finance, the demand on volunteer time and the unfavourable regulatory environment and lack of political support, especially at the Federal Government level.

Key enablers are support from local government and state MPs, sufficient people with the right skills, access to training and/or advice, effective decision making and administrative processes and support to access funding and potential host sites.

Indicators

The data-set provided relevant information on the current state of community energy projects in Australia, especially in regards to the installed kW, amount of energy produced, project costs and funding structures. Indicators that proved too onerous to report or that were not relevant to many of the survey participants have been eliminated from the set of key indicators (Table 1) that provide the basis for the shared measurement system, but can be included as optional indicators.

Table 1: Key and Optional Community Energy Impact Indicators

 Community Energy Group		 Community Energy Project	
Key Indicators	Optional Indicators	Key Indicators	Optional Indicators
Date of inception,	# social media supporters	Technology	# of site visits/ visitors
# of active members and supporters,	# articles or reports/ media coverage (radio, TV, press)	Business model / Project type	# of objections/ complaints
# of active decision makers	# people participating in political advocacy	# kW installed, in planning	\$ supporting primary producer land use
# of events organised (distinguish small scale (<20), medium scale (20-100), large scale (>100 participants))	# Political appearances at events	\$ project cost	# of installations
Resources scale		Years contract duration,	#. kW projects 'inspired'
Obstacles scale		\$ total expected income	\$ flow-on outputs
Changes in Key Drivers scale		# of investors,	RoI
		\$ funding by funding source	Costs versus Savings
		# kWh generated/ saved	Payback period
		# volunteer hours	\$ savings (energy)
		# jobs created by project stage	
		Tonnes CO2e avoided	

These indicators will be reviewed regularly by a data committee comprising representatives of key stakeholders in the community energy sector.

Next Steps

The next steps in the development of the Collective Impact Assessment framework are to:

1. Develop a web-based Shared Measurement Platform, that links to or is integrated with an international community energy database and map, for example the Energy Archipelago¹ currently under development.
2. Adopt the set of core indicators outlined in Table 1, as the basis of future impact assessments
3. Institute an annual data collection process, including continuation of the C4CE data committee to review and update the process, funding for the C4CE backbone manage the process, an annual reminder and survey to collect qualitative data and remind groups to update their data in the Shared Measurement Platform.

¹ <http://beta.energyarchipelago.com>

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1 BACKGROUND

Community energy is an emerging sector that is growing in countries around the world, offering new opportunities for energy and wealth creation at the local community level. Since the first advent of community energy groups in Australia in 2006, the sector has been gaining momentum and interest is growing. Yet, community groups are still facing significant entry barriers to the market.

Community Energy refers to a wide range of ways that communities can develop, deliver and benefit from sustainable energy. It can involve supply-based projects such as renewable energy installations, storage, and demand side projects such as energy efficiency and demand management. Community energy can even include community-based approaches to selling or distributing energy.

Community energy projects encompass a variety of technologies and activities across a range of scales, determined by community needs, availability of local natural resources, technologies and funding, and community support.

Community energy projects can create positive outcomes across several impact areas. A common framework for the identification of cross-impacts has been suggested by Ison and Hicks (2012) (Figure 1). It includes the following five categories:

Environmental



Increase in clean energy production, avoided greenhouse gas (GHG) emissions compared with fossil-fuel based electricity generation

Economic



Localised, equitable wealth creation (O'Neill et al, 2010); fossil fuel divestment opportunity; transition from carbon-based to post-carbon economic models (Wiseman et al, 2013); community assets and increased resilience; local job creation

Social



Local ownership, participation and engagement; increased skills and competencies; attitudinal and behavioural changes

Political



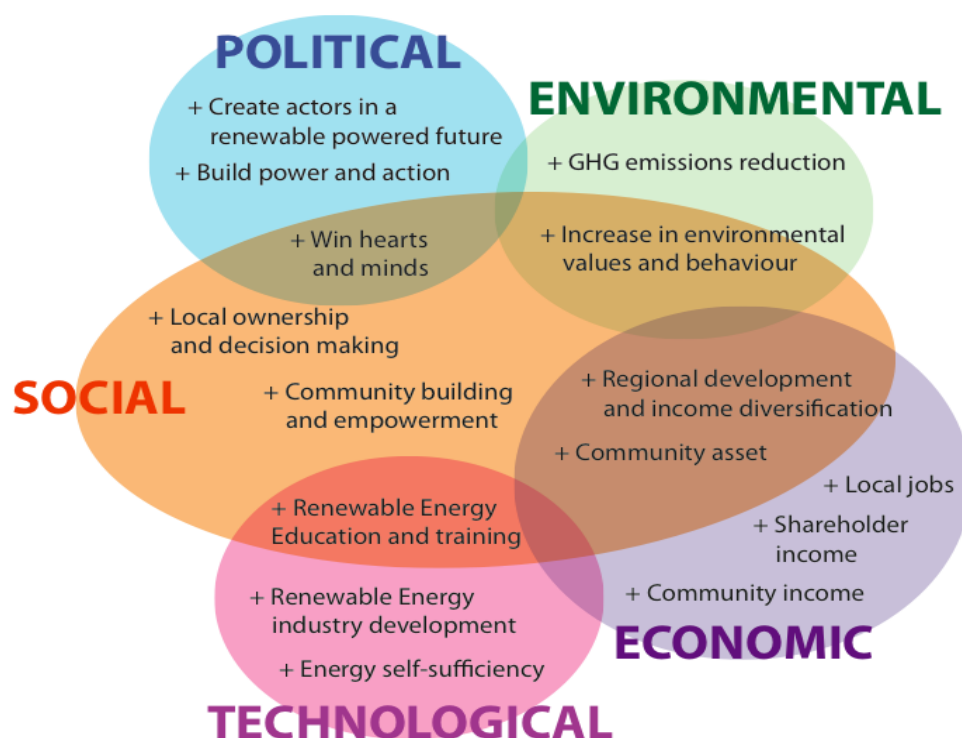
Community engagement and empowerment; 'winning hearts and minds' – developing the 'what's in it for me' that will support the transition into a decarbonised economy; development of a broad community support base for political strategic leadership and regulatory changes

Technological



Increased uptake of innovative technologies; development of a sustainable renewable energy industry; energy self-sufficiency; supportive environment for innovation in renewable energy technologies

Figure 1: Benefits of community renewable energy projects (Ison and Hicks, 2012)



The community energy sector in Australia has grown from little more than an abstract concept in 2006, to a point where as at the end of 2014 there are 11 community energy groups operating that have multiple projects established with over 9 MW of installed capacity and at least 52 more projects in development. While this is still very small compared to the existing generation capacity of the Australian National Energy Market (NEM) of 45,000 MW, the rate of growth particularly in recent years has been accelerating.

In addition, there are a range of organisations providing services to and supporting community energy at a state and national scale. In 2014, key stakeholder groups and the organisations that are spearheading community energy in Australia, founded the Coalition for Community Energy (C4CE), – a collaborative governance system to enable greater collective impact across the growing community energy sector through joint priority initiatives.

The core objectives of C4CE are to²:

- Guide and support development of the community energy sector
- Create a coordinated voice to better advocate for the needs of the sector
- Grow the sector's profile, influence and membership
- Facilitate the alignment of efforts by Members with support, systems, tools and training which enable collaboration for collective impact
- Identify and create strategic opportunities and attract investment for the sector
- Coordinate strategic initiatives which build the knowledge, know-how and capacity of Members and the sector.

C4CE anticipates that with policy support the Australian community energy sector could follow in the footsteps of the Scottish community energy sector, which grew to over 300 operating community renewable energy projects in a decade.

² <http://c4ce.net.au>

C4CE is based on a Collective Impact approach, a framework developed to address complex social problems. It is a structured approach to collaborative work across government, business, philanthropy, non-profit organisations and communities aimed at significant and sustainable social change. It is based on the notion that no single entity can achieve the paradigm shift necessary to facilitate the social and cultural change necessary to address the issue at the core of the initiative.

One of the key elements of a Collective Impact approach is the development of a sound measurement and evaluation framework and the ongoing and consistent collection of data and measurement of outcomes and impacts across all the participants to ensure alignment and accountability (Kania & Kramer, 2011).

In order to track the progress of the community energy sector in Australia, in this report the C4CE, supported by the Australian Renewable Energy Agency (ARENA), has developed a monitoring and evaluation framework to provide valid and reliable metrics on sector progress. It is anticipated that this framework will then be integrated into a 'shared measurement platform' to communicate this data to stakeholders and decision makers. Shared measurement has been defined as the *"use of a common set of measures to monitor performance, track progress towards outcomes and learn what is and is not working in the group's collective approach"* (John Kania, FSG). The ongoing assessment of the performance and impact of the community energy sector will provide actionable data and recommendations for the implementation of the National Community Energy Strategy (NCES)³.

The shared measurement of key indicators across the sector will allow C4CE to:

- Continuously improve data quality
- Track progress towards the intended outcomes and impact
- Enable coordination and collaboration across all stakeholders
- Learn and correct the strategic direction, actions and interventions
- Catalyse collective action amongst all key players.

The objective of the 'Community Energy in Australia – Collective Impact Assessment' (CEA-CIA) project is the development of a measurement and evaluation framework and core indicators for the ongoing strategic monitoring of the community energy sector. The benefits of community energy extend beyond the economic impact of localised wealth creation. Community energy projects can empower local communities to produce clean energy and reduce their environmental impacts, including those without access to adequate roof-space to do so individually, create local jobs, localise energy production and therefore increase the resilience of the local community, increase awareness for the benefits of clean energy, provide learning experiences and add to the skill base and capabilities of the local communities (Hicks et al, 2014).

Community energy can also provide an avenue for action on clean energy where government and institutional action is limited and galvanise collective action around a common social purpose, thereby fostering a sense of community.

Yet, despite the potential benefits and many projects in development, relatively few community energy projects are operating, due in large part to numerous obstacles and impediments.



Photo: NSW Office of Environment and Heritage

³ The Draft National Community Energy Strategy is available at <http://c4ce.net.au/nces/>

This includes regulatory barriers, a volatile or unpredictable policy environment, inadequate processes, lack of skills and capabilities with community groups to implement projects, and accessibility of finance. Empirical data is needed to establish a baseline of the Australian community energy sector and identify drivers that facilitate and obstacles that undermine the development of a vibrant and viable sector.

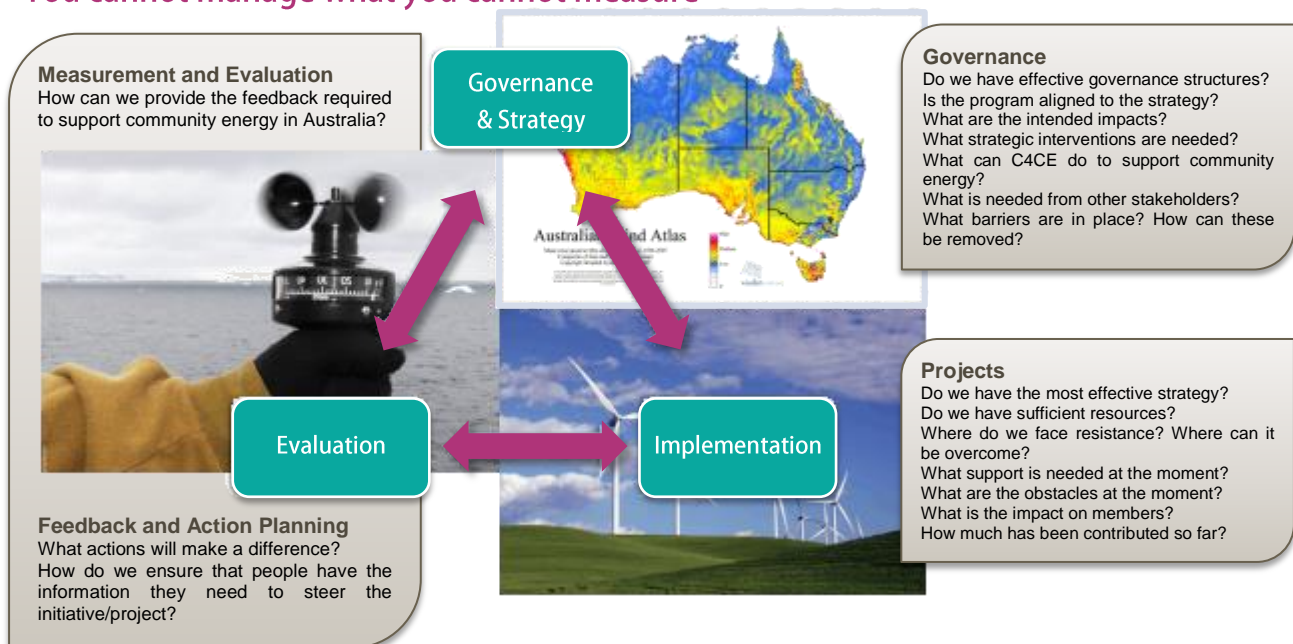
The aim of this project is to provide that baseline through a measurement and evaluation framework that will be used collectively to record key performance indicators of community energy projects and to track their impact and that of the sector as a whole. The database will be used to provide regular reports to all interested stakeholders on the environmental, economic, technological, social and political outcomes and impact of community energy projects in Australia and on changes in key drivers and obstacles. Measurement and evaluation are the key to ongoing program optimisation. As the old adage goes 'You cannot manage what you do not measure'.

Comprehensive measurement that includes results-based performance indicators and lead indicators that capture the drivers of program success can be used to identify the obstacles that prevent the establishment of community energy projects, track the ongoing performance of the community energy sector, and continuously fine-tune the strategies, programs and activities of C4CE as well as inform government and industry support to the sector. This allows C4CE to develop targeted initiatives and interventions to remove obstacles and support the community energy sector and adjust the strategic initiatives if and as required, as outlined in Figure 2.

Figure 2: Collective Impact Assessment as key component of Program Implementation

Collective Impact Assessment

"You cannot manage what you cannot measure"



Ultimately, the collective impact assessment will provide empirical evidence regarding the impact of community energy while acting as a tool to support individual groups and the C4CE in their endeavours to bring the community energy sector to maturity through activities such as community and stakeholder engagement, negotiating with host sites, investors or networks and to advocate for political and regulatory support.

The collective impact assessment covers key indicators along the results chain (Figure 3) from inputs (e.g. grant funding, volunteer efforts etc.) to activities (e.g. funded CE projects, workshops, community events), to outputs (e.g. number of community energy pilot projects established), outcomes (e.g. successful business models established and replicated), and impact (MW installed, kWh/ MWh of energy produced; CO2e emissions avoided, financial returns to community investors, local jobs created).

Figure 3: Results Chain



In summary, the objective in this work stream were:

1. Development of a set of shared indicators for community energy in Australia to track the outcomes and impact of funding inputs and activities in the community energy sector
2. Data collection and Baseline report on the impact of community energy projects in Australia
3. Recommendations and system specifications for a Shared Measurement Platform.



Photo: Jarra Hicks

2 METHODOLOGY

The project involved the following three steps:

1. Preliminary Survey



A preliminary survey of key stakeholders and community energy groups registered with C4CE was conducted in November 2014 in order to develop a clear overview of the definition of success and relevant performance indicators for community energy projects and gain an understanding of the feedback and reports that stakeholders and the broader community would like to receive on community energy.

2. Community Stakeholder Workshop



The survey results provided the input for the Collective Impact Assessment Workshop, which engaged key stakeholders and community representatives in the development of the set of key indicators that provided the basis for measurement and evaluation (Appendix A).

The objectives of the Community Stakeholder Workshop were to:

- Develop a set of shared key indicators for recording the environmental, economic, social, political and technological benefits of community energy in Australia
- Clarify needs and specifications for reports that will be provided to community groups involved in the shared measurement system: frequency, format, indicators; and
- Establish processes and structures for the ongoing assessment of the collective impact of the community energy sector in Australia.

3. Baseline Data Collection



The Indicators developed in the workshop provided the basis of an online survey (Appendix B) that was used to collect a first set of baseline data on community energy and its impact in Australia. The subsequent data collection was used to identify the requirement specifications for a Shared Measurement System for the community energy sector and C4CE.

Due to the limitations in scope, the project used an 'off the shelf' platform to collect the baseline data from community energy groups. The survey items were derived from the Stakeholder Workshop and collected from community energy groups in the period between 18th December 2014 and 15th February 2015.

Note: All results presented in this document are derived from data input directly by the community energy group respondents to the survey. No verification of the data has taken place and it is assumed that data provided is correct as at time of writing.

2.1 COLLECTIVE IMPACT ASSESSMENT – BASELINE INDICATORS

The set of key indicators that were developed in the community workshop were incorporated in an online survey to community groups. The indicators covered items relating to the principal community group that initiated the community energy project(s) and to the community energy projects established by those groups. The full list of indicators, by the STEEP categories and aligned to the elements of the results chain (Figure 3) is provided in Appendix A.

Principal Community Group Indicators

The survey used quantitative measures to cover the following indicators in regards to the principal community group:

- Community efforts in terms of volunteer hours and number of active members and decision makers
- Political engagement of community members in terms of the number of attendance at community events, and the number of politically engaged community members and political engagement efforts
- Political support from political representatives across all there levels of government – local, state and federal - in terms of attendance of representatives from local, state and federal government at community events
- Amount and channels of communication to members.

The survey also included three subjective rating scales that captured the following aspects:

- Perceived obstacles and hindrances that undermine the establishment of community energy projects (e.g. lack of time, lack of finance/ funding, lack of technology, availability of host sites, lack of replicable business model, political and/ or regulatory environment, lack of skills & capabilities, reluctance to take on project risk)
- Availability of resources (skills and knowledge, access to training/advice, support from other CE groups, access to replicable models for CE, sufficient people, effective decision making processes, effective administration processes, tools and technology, sufficient time , sufficient funding, ability to borrow money)
- Perceived changes over the last 6 months in members' skills and capabilities, access to host sites, access to funding, regulatory environment, support from your local council, support from state MPs, support from Federal Government, satisfaction of your members, environmentally sustainable behaviour, the community's attitude towards renewable energy.

Community Energy Projects Indicators

For community energy projects the survey covered key indicators in regards to the environmental, economic and social performance of the projects:

- Economic performance indicators: expected return over the lifetime of the project, internal rate of return (IRR), expected payback period, income generated to date, project costs, funding sources, government grant funding compared to community funding
- Environmental performance indicators: amount of clean energy produced in kWh, greenhouse gas emissions avoided in tonnes of CO₂-e
- Technological performance indicators: amount of kW installed, cost of the energy project, technology used, expected contract duration
- Social performance indicators: amount of volunteer hours, job creation, locally sourced services.

2.2 GROUPS SURVEYED

The survey was sent to community energy groups that have registered with the C4CE. The surveyed groups have a variety of different types of projects aimed at increasing the uptake of renewable energy in local communities.

These include:

1. Donation/ philanthropic models



These models of community energy involve a community raising funds through donations - either using a crowd funding platform or more traditional fundraising - to install renewable energy systems or undertake energy efficiency measures. Typically, the host site and beneficiary of this model is a community organisation such as a school, surf-lifesaving club, fire station etc. Examples of groups who are using community energy donation/philanthropic models include CORENA, the People's Solar and Clean Energy for Eternity.

2. Community investment models

These models involve cases where community organisations develop a sustainable energy project and raise funds through opening up the project to community investors, on the expectation that these investors will receive a certain return on their investment. The legal structures for these models include cooperatives (Hepburn Wind), trust-based models (ClearSky Solar Investments), and share-based models (e.g. Solarshare, Denmark Wind).

Community Investment Models are further differentiated by the integration or outsourcing of the design, installation and maintenance/ operation of the energy system itself and can be distinguished into:

2.1. Community investment (incorporate installation/operation)



The community group takes responsibility for the energy project delivery, including system design, installation, maintenance and ongoing management. Examples of the community solar investment model include BMRenew and Repower Shoalhaven.

2.2. Community-Developer Partnerships (outsource installation/operation)



The community develops project, leads, negotiates host sites, raise funds through opening up the project to community investors. But in these cases the design, installation and ongoing maintenance and management of the energy system itself is outsourced to a commercial energy installation company, whereas the community group retains the management and administration of the investor side. Examples for these models are those developed by Clearsky Solar Investments⁴ and Solarshare.

⁴ www.clearskysolar.com.au/

3. Multi-household models of community energy



These models are about aggregating households to deliver sustainable energy solutions. Examples of such models include solar bulk-buys which were popular around 2009, the Moreland Energy Foundation's⁵ rates backed solar model for low income households (Darebin Solar Savers), and Bendigo Sustainability Group with a government grant funded community education and support program for small scale household solar PV that resulted in over AU\$5 Million of community investment and achieved a 21% solar penetration in the local community, twice the state average. It should be noted that not all groups who conducted solar bulk-buy programs were invited to participate in this survey, as only groups that have registered with C4CE have been included in the survey. Solar bulk-buy initiatives are often overlooked in terms of community energy, but provide an effective means to increase the uptake of renewable energy systems in local communities.

In the analysis we therefore distinguish between (a) small scale solar/ bulk-buy programs, (b) donation models, and (c) community investment models comprising share based companies, cooperatives, and trust-based models.

The invitation to participate in the Baseline survey was sent to 53 community energy groups and followed up with two reminders. A total of 27 responses were received in time for analysis.



Photo: Thomas Yoo

⁵ www.mefl.com.au/activity-areas/sustainable-energy-supply/item/535-energy-services-company-business-plan.html

3 RESULTS AND DISCUSSION

Of the 27 survey responses, 13 were from Not-for-profit organisations (Company limited by Guarantee (Ltd.)), 6 were from Cooperatives, 4 were Incorporated Associations with charitable status, 3 were informal community groups without a separate legal entity, and one was a Company limited by Shares.

These groups cover a membership base of over 21,000 people of which approximately 20% are active members and 8% are involved in decision-making and political advocacy. Victoria is leading the way with 65%, followed by NSW with 28% of people that are involved in community energy groups in this sample.

Table 2: Survey respondent summary - project and member numbers by state

	Overall members/ supporters	Active members	Members involved in decisions	Members participating in political advocacy
ACT	444	20	10	1
NSW	5,949	1,625	1,362	33
SA	900	50	20	-
VIC	13,666	2,339	216	1,564
WA	130	130	4	4
Total	21,089	4,164	1,612	1,602

From the 27 responses, the survey found that 11 groups, or 21% of respondents, have projects that are fully financed, installed and operating. These community groups have managed to install over 9 MW of community energy over the last 10 years.

The largest proportion of installed capacity is coming from small-scale solar installation and bulk-buy projects (33%) and the large wind and solar energy cooperatives (45%). This is followed by 18% of installed capacity within share-based structures, mainly due to the 1.6 MW Denmark wind farm, and 2% of capacity installed by philanthropic projects and community trust investment respectively (Table 1).

Table 3: kW installed by Project Type in each state

	NSW	SA	VIC	WA	ACT	Total
Small scale solar/Bulk buy			3,100			3,100
Donation	127	10	40			177
Community Investment						
Company limited by shares	100			1,600		1,700
Cooperative	30		4,100			4,130
Trust with trustee company	150					150
Total	406	10	7,240	1,600		9,256

The majority of installed capacity (78% of installed kW) is in Victoria, spanning small-scale solar projects like the Moreland Energy Foundation and the Bendigo Sustainability Group's Goldfields SolarHub project, the Hepburn Wind cooperative and various philanthropic projects. A follow-up interview with the Bendigo Sustainability Group revealed that the small-scale solar model in Victoria has been facilitated by grant funding from Sustainability Victoria, which has achieved significant community investment in small-scale solar PV systems.

WA has the Denmark Community Windfarm, a large-scale community investment project accounting for the bulk of community energy in WA. NSW is showing a significant diversity in philanthropic and investment-based models, many of which have been launched recently, facilitated by the recent increase in support for community energy from the NSW government. SA has only one philanthropic community energy project, established by CORENA and the ACT needs to play 'catch up', with the large-scale Solarshare community energy project in the pipeline, facilitated by the existence of a community feed-in-tariff in the ACT. There are at least 52 further projects in planning.

Table 4: kW installed and kWh produced by state/ community energy group

	kW installed	kWh produced (to date)	Projects in Planning
NSW	406	830,775	40
Clean Energy for Eternity	66	243,560	2
ClearSky Solar Investments	150	224,268	4
CORENA	7	14,947	3
Embark			10
Manilla Community Solar Co.			1
Narara Ecovillage Co-operative Ltd	30	20,000	1
NEEN			10
NRE			1
Pingala			3
Repower Shoalhaven	109	84,000	3
Nimbin Solar Farm	45	244,000	1
CCCE Inc.			1
SA	10	15,330	1
CORENA	10	15,330	-
PV Community			1
VIC	7,240	49,419,796	8
Bendigo Sustainability Group	2,530	12,000,000	3
CORENA	10	13,140	-
Hepburn Wind	4,100	37,190,656	-
LIVE Community Power			1
MNCEH			1
Moreland Energy Foundation Ltd	600	216,000	-
Ranges Energy Cooperative Limited			1
Yarra Community Solar Coop Ltd			1
MRSG - Community Renewables			1
WA	1,600	84,600	-
Denmark Community Windfarm Inc.	1,600	84,600	-
ACT			3
SolarShare Canberra			3
Total	9,256	50,350,501	52

3.1 ENVIRONMENTAL IMPACT

One of the main objectives of community energy projects is to empower local action to combat climate change and avoid production of greenhouse gas emissions and reduce the ecological footprint of local communities. The key indicators are the amount of greenhouse gases (in CO₂-e) that have been avoided. The amount of CO₂-e avoided is dependent on the number of kilowatt hours (kWh) produced to date, which in turn is dependent on project start date, the system capacity and location. Some of the community energy projects have been operating for almost 10 years, as for example the early small-scale community philanthropic projects pursued by Clean Energy for Eternity in Tathra and Bega. These projects, despite their smaller size, have already contributed significant amounts of clean energy to their local communities and prevented large amounts of CO₂-e entering the atmosphere.

Overall, according to the data provided by community energy groups, to date community energy has produced over 50,350 MWh of clean energy in Australia. This equates to over 9,000 cars taken off the road and compares to the annual greenhouse gas emissions from the energy use of over 6,150 Australian households.⁶

Figure 4: CO₂-e emissions avoided due to community renewable energy projects by State

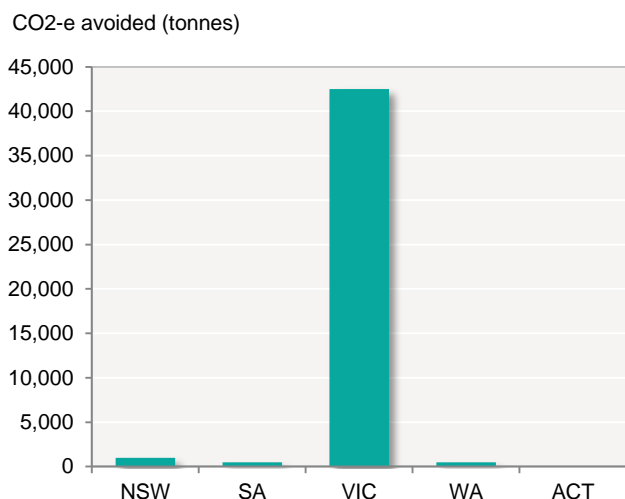
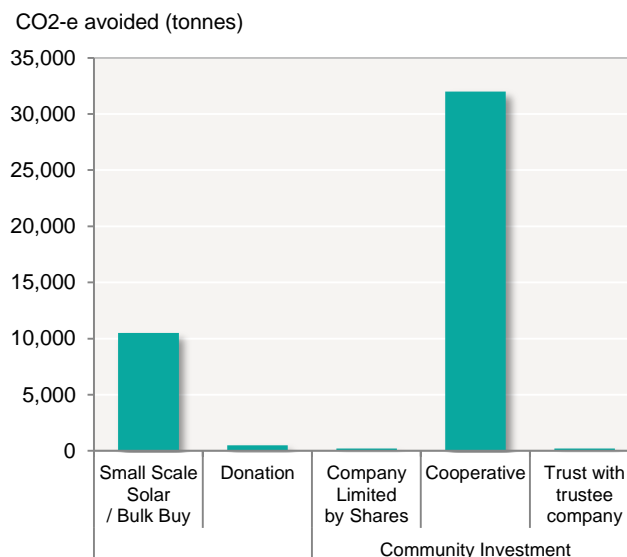


Figure 5: CO₂-e emissions avoided by different types of community energy projects



Even though the community energy sector in Australia is still in its early stages the data show the significant environmental, economic and social benefits of community energy in Australia. It has already contributed over AU\$23 Million in community funding for energy infrastructure, installed over 9MWs of renewable energy systems, produced over 50,000 MWh of clean energy by the end of 2014 and avoided over 43,000 tonnes in carbon emissions (Figure 4 and Figure 5).

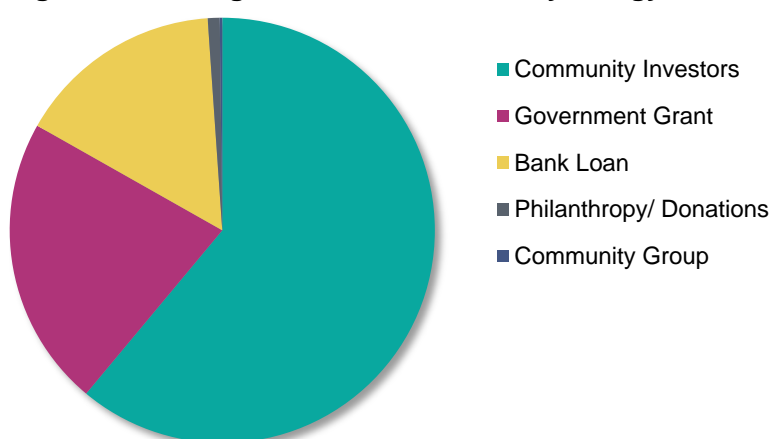
⁶ Based on 7 tonnes CO₂-e emissions per year; www.yourhome.gov.au/energy

3.2 ECONOMIC IMPACT

With an overall installed capacity of more than 9 MW, community energy has increased significantly over the past 10 years and has become a contributor to the Australian energy mix with AU\$26 Million invested in renewable energy infrastructure. Of this AU\$26 million only 22% or approximately AU\$5.77 million has been covered by government grants. Figure 6 shows the majority of project funding, with over AU\$20 million in investments, was provided by community investors (61%). A further 16% in bank loans and 1% in philanthropic donations has been provided by community energy projects. Overall community investment, donations and guaranteed loans have covered 88% of the cost of community renewable energy projects.

Government investment in community energy has in turn attracted significant community investment, which has provided overall quadruple the amount of government grant funding. We predict this ratio will improve as the sector matures, modelling undertaken by Marsden Jacobs and Associates suggests that with significant funding support and scale-up of the sector, this ratio could improve to 17:1 (\$17 dollars leveraged for every \$1 of government funding).⁷

Figure 6: Funding sources for community energy in Australia



Overall in Australia, community investors have contributed more than three times as much - in philanthropic donations, direct investment and bank loans guaranteed by the community - as government grants towards funding community energy projects (

⁷ <http://cpagency.org.au/wp-content/uploads/2014/03/MJA-Report-to-CCE-Final-14Jun13.pdf>

Figure 7).

Victoria has seen the highest level of economic impact with significant community investment in the Hepburn Wind Farm and the small-scale solar PV systems of the Bendigo Sustainability Group's Goldfield SolarHubs project. Community energy has attracted AU\$ 7.1 million community funding in WA and AU\$ 0.5 million community funding in NSW (Appendix E).

Figure 7: Government grant funding versus Community funding of community energy projects by State



To date community energy projects have earned over AU\$3.5 million for community investors, localising not only energy, but also wealth creation. Several of the clean energy projects surveyed are philanthropic projects without any returns to investors, instead they will deliver savings of over half a million dollars (AU\$) in energy costs over the project lifetime and avoid Greenhouse gas emissions in local communities (Table 5).

Table 5: Economic indicators for community energy projects

Economic Indicator	Sum	Average
Expected Income - all	\$39,231,770	\$3,566,525
Expected Payback Period	-	5.6 Years
Expected Internal Rate of Return (IRR)	-	8%
Income generated to date	\$3,550,852	\$394,539
Expected energy cost savings over project lifetime	\$586,253	\$24,427
Energy cost savings to date	\$59,000	\$3,105
Amount invested in community benefit schemes	\$159,000	\$19,875

3.3 SOCIAL IMPACT

A further objective of many community energy projects is to create or safeguard local jobs in the renewable energy sector. The data showed that although only 12% of *products* (e.g. renewable energy technology components) were sourced locally, with major parts of the energy system coming from overseas, the majority of *services* (e.g. installers, construction workers, electricians, administration etc.) with 92% were sourced locally.

Table 6: Job Creation in Community Energy Projects in workweeks (40 hours) by Project Phase

Project phase	Sum	Average	Min	Max
Development	79	16	0.50	75
Planning	86	4	0.40	75
Installation	664	25	-	365
Operation (ongoing)	372	37	0.01	209

The key indicators are the amount of jobs (in employee hours) created during the development, planning, installation and ongoing operation of community energy projects. The data shows that on average community energy projects create 4 months of work during development, 1 month during planning, approximately half a year in installation and 37 weeks on an ongoing basis (Table 6). Large scale projects like community wind farms, even at this comparably small scale, created up to four ongoing positions and seven full time jobs for a year during construction and installation. Community energy projects therefore have contributed to local job creation.

Table 7: Volunteer Hours in Community Energy Projects in workweeks by Project Phase

Project phase	Sum	Average	Min	Max
Development	339	31	0.13	300
Planning	8	1	0.25	3
Installation	1	0.13	-	0.25
Operation (ongoing p/a)	21	3	0.05	13

What tends to be overlooked is the significant amount of volunteer effort that is spent on the development of community energy projects. Table 7 shows that community groups spend on average 31 volunteer weeks on the development of community energy projects with some groups having spent up to 6 years on this first phase. Planning took on average 1 week, with a maximum of 3 weeks in volunteer hours and ongoing operation requires between 0 and 13 weeks per year in volunteer efforts with an average of 3 weeks per project in volunteer hours.

The total volunteer investment across the project cycled shows that without the passion and commitment and significant sacrifice in time and energy during the development phase these kinds of projects would not be possible.



3.4 OBSTACLES AND KEY SUCCESS FACTORS

Obstacles

The survey asked for an assessment of the various obstacles that prevent community groups from achieving the successful development of a community energy project. The list of obstacles had been developed at the workshop and refined in interviews. Based on the list of obstacles provided, the results show that the ‘political and/or regulatory environment’, ‘lack of time’, ‘availability of host sites’ and ‘lack of access to finance or funding’ were rated as the strongest obstacles (Figure 8).

A comparison of the perceived obstacles between those community groups that have managed to successfully establish community energy projects and those that have planned to do so but not yet achieved their objective shows that the main difference was the ‘availability of host sites’, followed by ‘lack of a replicable business model’ and the ‘political or regulatory environment’ (Figure 9).

Figure 8: Average level of obstacles faced by community energy groups⁸

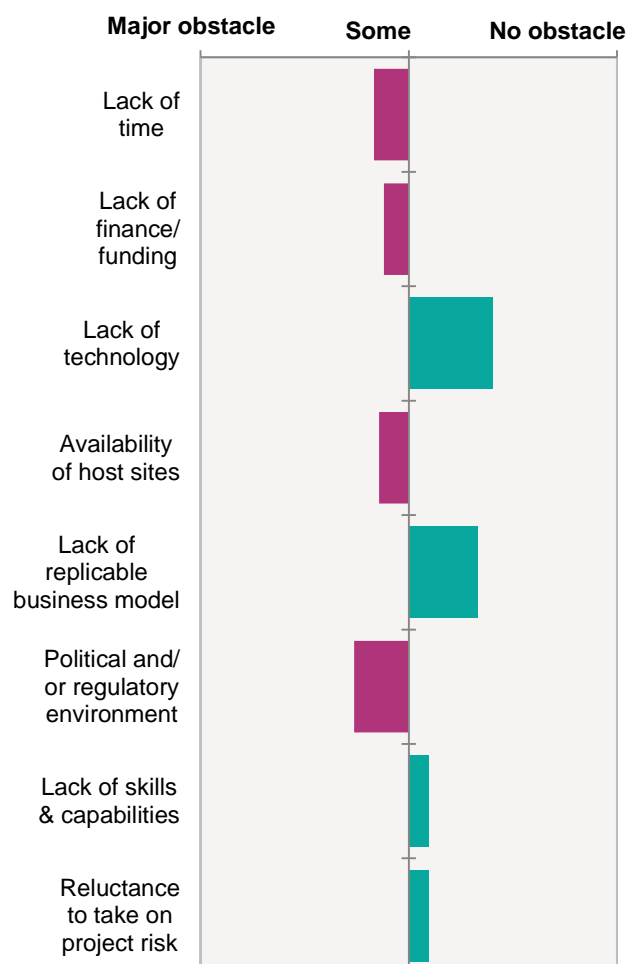
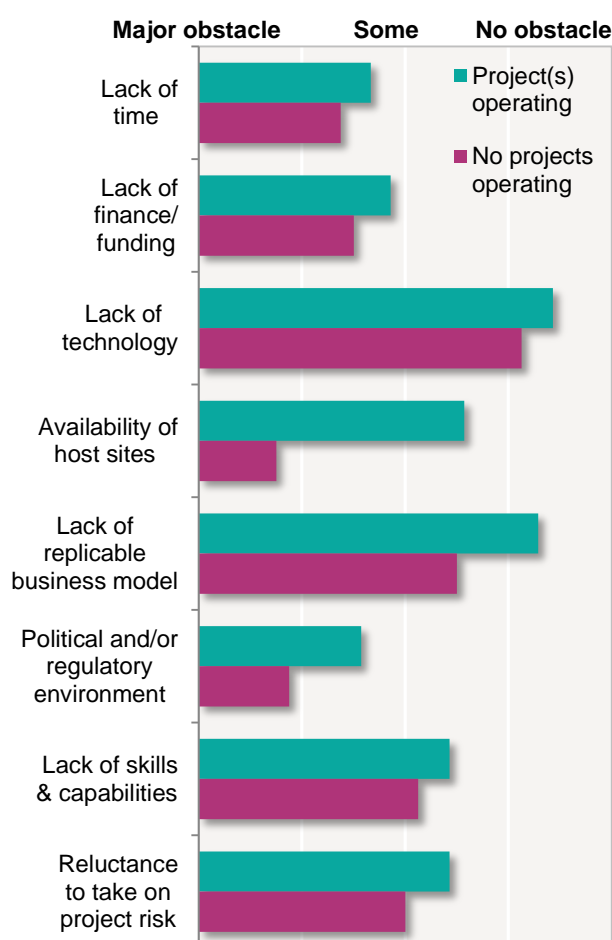


Figure 9: Difference between community groups with ‘projects’ and with ‘no projects’ operating on obstacles faced



⁸ In response the question “To what extent do the following issues/ obstacles prevent you from achieving your goals?”

Resources

We asked the various community groups ‘to what degree does your group have access to’ various critical resources, as for example ‘skills and knowledge’, ‘sufficient funding’, ‘sufficient people’, ‘access to replicable models for CE’. In regards to the availability of resources, ‘lack of time’ and ‘sufficient funding’, ‘access to replicable models for CE’ and ‘support from other community energy groups’ were lacking the most. On the other hand, ‘access to adequate skills and capabilities’ was not identified as a significant issue for community groups (Figure 10).

A comparison of resource availability between those community groups that have managed to successfully establish community energy projects and those that have planned to do so but not yet achieved their objective shows that the main differences are in regards to having ‘sufficient people’, ‘effective decision making processes’ and ‘effective administrative processes’ (Figure 11).

Figure 10: Average resource availability for community energy groups

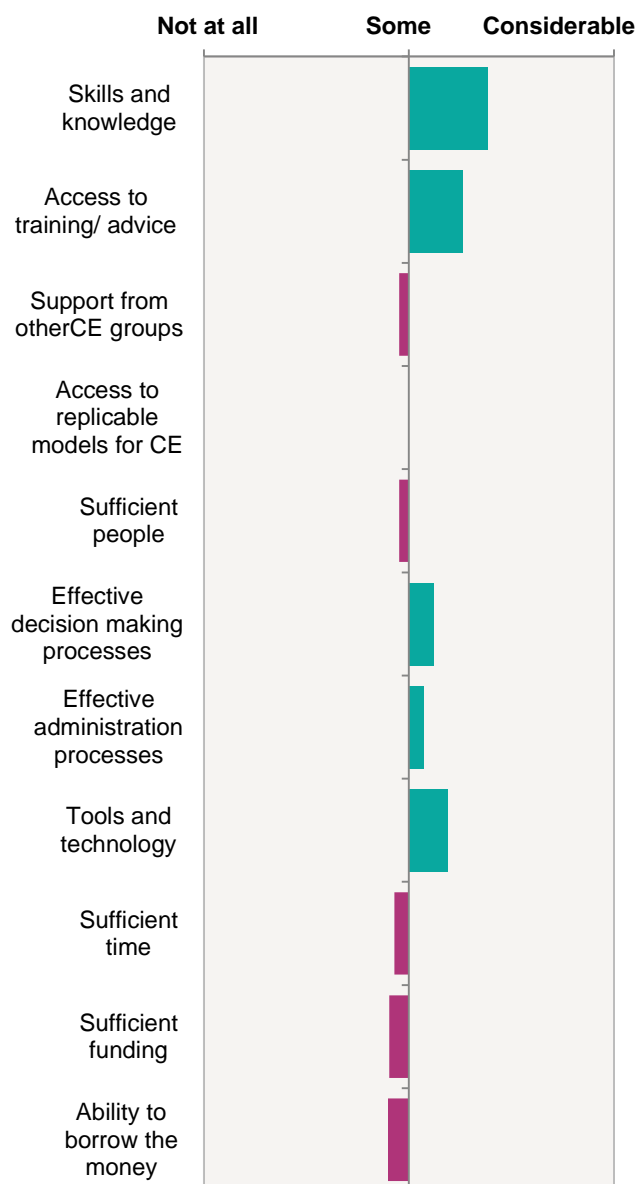
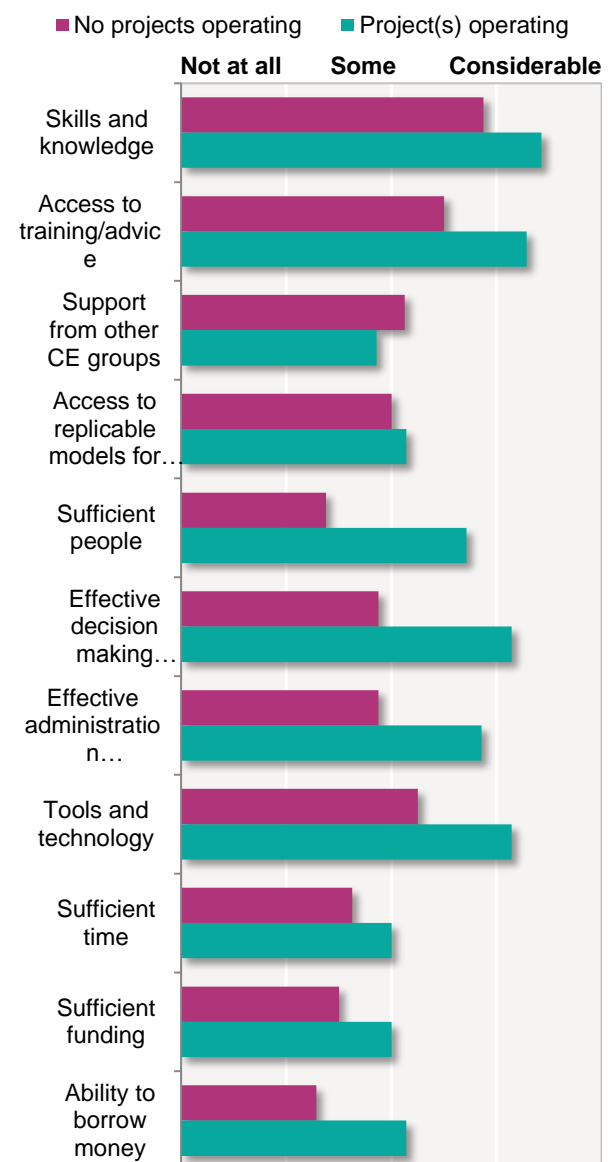


Figure 11: Difference between community groups with ‘projects’ and with ‘no projects’ operating in resource availability

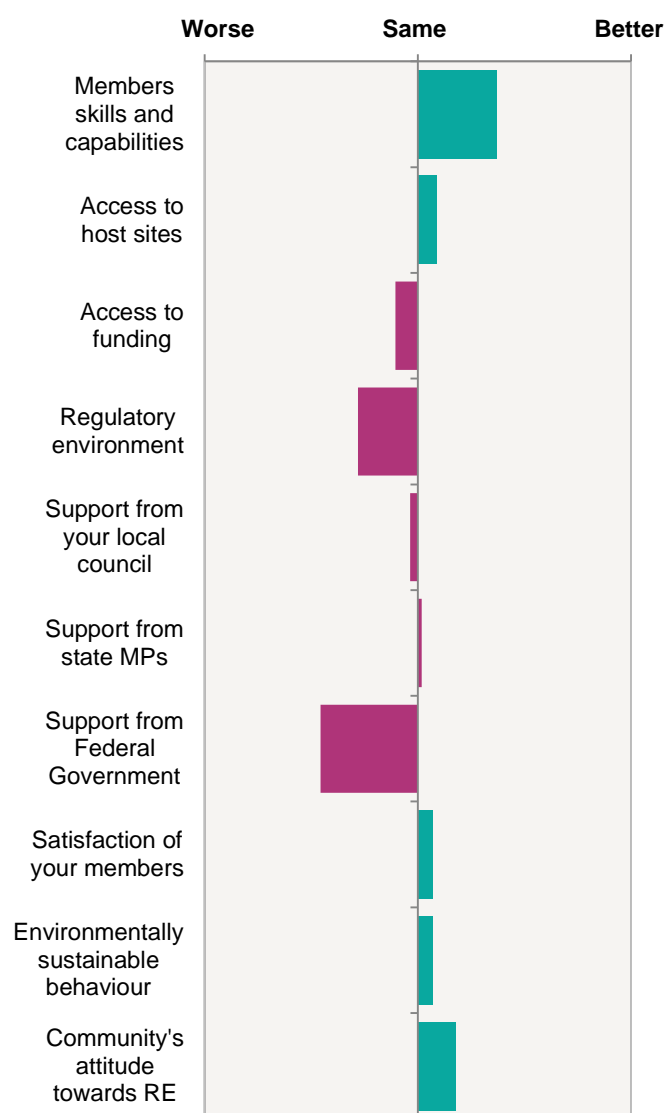


Changes over the last year

In order to track perceived changes in key success factors over the last year we have included a question that asks the respondent “how has the following changed over the last year ..?”

The results show that there has been an increase in ‘members skills and capabilities’, the ‘community’s attitude towards renewable energy’, ‘environmentally sustainable behaviour’ of members. Whereas ‘support from Federal Government’ and the ‘regulatory environment’ conducive to community energy are perceived to have declined (Figure 12).

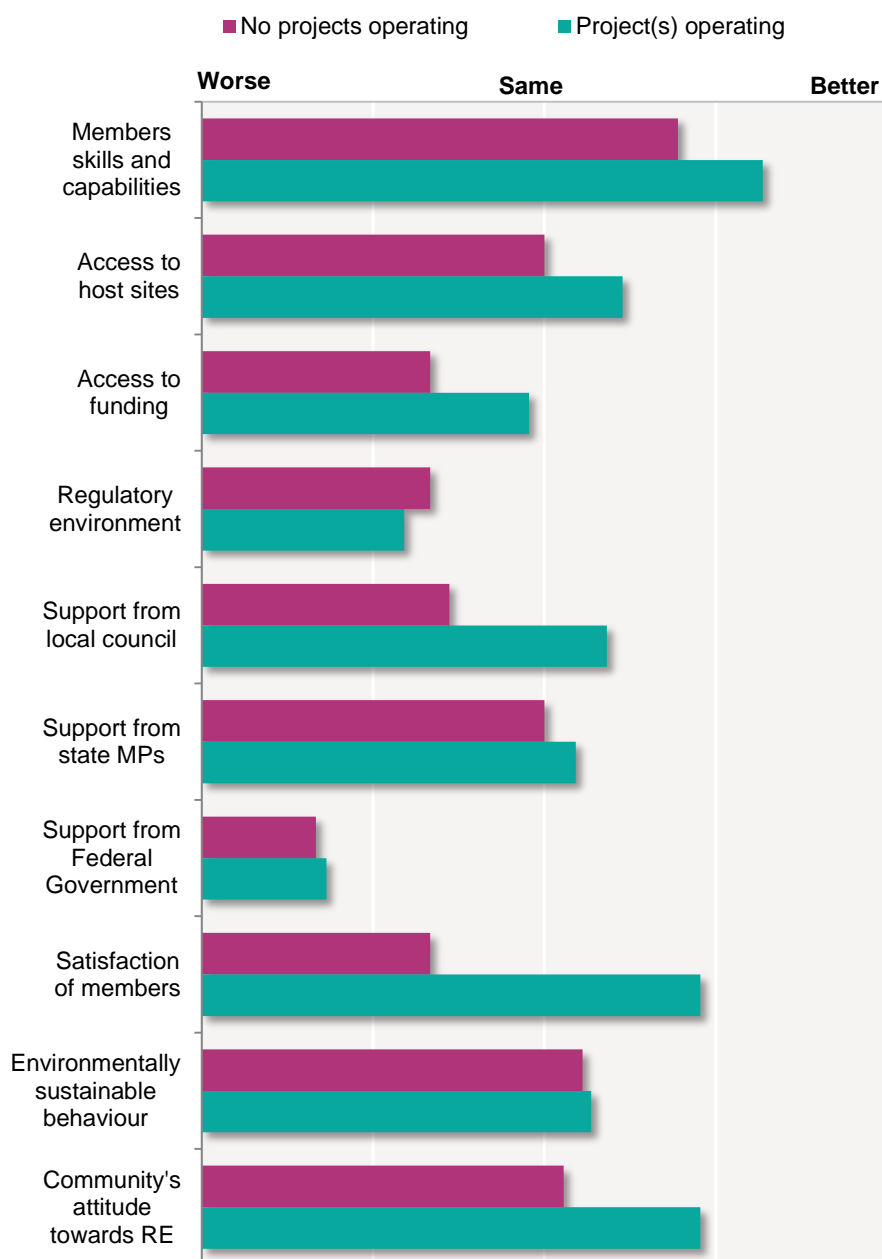
Figure 12: Changes over the last year in key indicators



A comparison of perceived changes over the last year between those community groups that have managed to successfully establish community energy projects and those that have planned to do so but not yet achieved their objective shows that the main differences are in regards to ‘satisfaction of members’, ‘support from local council’, and the ‘community’s attitude to renewable energy’ (Figure 13). Community groups that have operating projects have a significantly increase in member satisfaction, whereas groups without projects have seen a decline in members’ satisfaction. ‘Support from Federal Government’ and ‘regulatory environment’ is perceived to have declined by both groups, but those that have projects operating report an increase in ‘support from State MPs’.

The difference in changes in the ‘environmentally sustainable behaviour’ of members is negligible, but the change in ‘attitude towards renewable energy’ is markedly higher for groups that have operating projects. ‘Support from local council’ is seen as having increased by groups with operating projects and declined by those without projects. ‘Access to host sites’ – unsurprisingly – is seen as ‘better now’ by groups with projects, but ‘same’ by those without projects. ‘Access to funding’ is seen as having declined, but significantly less by groups that have projects operating.

Figure 13: Changes over the last year for community groups that have ‘projects’ and those that have ‘no projects’ operating



4 RECOMMENDED NEXT STEPS

Drawing on the lessons learnt in this project, the following steps are recommended to advance the understanding of the collective impact of the Australian Community Energy Sector:

1. Develop a Shared Measurement Platform
2. Adopt a set of core indicators as the basis of future impact assessments
3. Institute an annual data collection process.

1. Develop a Shared Measurement Platform

Online survey platforms are not well suited to the registration of key indicators for projects and community groups, as the financial and technical data required are complex and time-consuming to determine in the first place. However, there are elements of the data collected in the baseline assessment (e.g. the scales on 'Resources', 'Obstacles' and 'Changes in Key Drivers') that are well suited to online surveys. Therefore we suggest the development of a multi-platform measurement and evaluation system, the core component of which would be the development of a Shared Measurement Platform.

The Shared Management Platform would consist of:

- A cloud-based information system and database
- A web-based user-friendly data entry interface
- Data display for example through interactive maps
- Data export into a pre-developed report template
- If sufficient funding is secured, a smart-phone/tablet interface (app).

The ideal functionality would allow community energy groups to register on the platform, update and simply analyse data on the core indicators when convenient. This would further help community energy groups to track and evaluate their individual progress, avoiding or at least reducing duplication of effort between evaluation at the project, group and sector levels.

Another issue found through this project is the complexity and diversity that can be found in the sector. Community energy projects can range from the traditional bulk-buy and small-scale solar projects to megawatt-scale wind farms. The differentiation between community group and community energy project is sometimes difficult in cases where the community group was set up as the community energy project.

As such it is further recommended that the Shared Measurement Platform be split into two sections - one for the primary community organisation data and another for the registration of community energy project data.

The objective of the Collective Impact Assessment for Community Energy in Australia is to provide a measurement framework and tools that will allow the tracking of key performance indicators and drivers that impact on the success of community energy in Australia. Therefore it has a comprehensive list of indicators that exceeds that used by other internationally focused projects that aim to capture information regarding community energy projects at a global level. Those are generally limited to small set of indicators to ensure comparability across countries (e.g. <http://beta.energyarchipelago.com>).

Ideally, the Shared Measurement Platform on community energy in Australia and the indicators used would be linked to and compatible with the respective international databases. That is, the Platform would automatically or facilitate regular manual update of an international community energy map/database for a selected set of key indicators on behalf of the Australian community energy projects. This will ensure international visibility and recognition of community energy projects in Australia and facilitate inter-community networking and knowledge exchange. In order to allow this the shared indicators – those that are used for reporting at the national as well as at the global level – need to be aligned to ensure compatibility.

2. Adopt a set of core indicators as the basis of future impact assessments

The response rate of 51% for the baseline assessment was lower than expected given volunteers in the community energy sector generally show a high level of engagement and commitment. However, feedback received in the follow-up calls suggested the majority of the groups that didn't respond were at a very early stage of developing a community renewable energy project and as such they found it difficult to answer even some of the basic questions.


Interviews in the follow-up calls also stressed the fact that volunteers are already over-committed and spending hours of personal time on these projects. The time needed to complete the survey and collect the data therefore needs to be minimised.

There was also a significant amount of data not provided on some of the variables. However, for easily accessible data, such as for the amount of kW installed or cost of the project, more responses were provided. The representatives of community energy groups were interested in contributing to the collective data collection effort, but most of them were volunteers and facing time constraints. Therefore, the future measurement and evaluation framework needs to provide a streamlined and efficient process for projects to input data with a focus on collecting highly relevant and easily accessible indicators that will tell the story of community energy in Australia. A balance between the effort required and therefore willingness to provide data and the rigour and complexity of data that will tell the story needs to be found.

The final data-set revealed that despite the significant amount of data not being provided, relevant information on the current state of community energy projects in Australia was provided, especially in regards to the installed kW, amount of energy produced, project costs and funding structures. Indicators that proved too onerous to report or that were not relevant to many of the survey participants can be eliminated from future iterations of the shared measurement platform.

It is therefore recommended that the indicators outlined in Table 8 become the core indicators for the basis of future collective impact assessments. As per the recommended structure of the Shared Measurement Platform and data collection process, there are two sets of indicators – for community energy groups and for community energy projects.

Table 8: Key Indicators

 Community Group				
Key Indicators	Metric	Who	When	How
Date of inception	Day/Month/Year	C4CE Secretariat	Once	Telephone Survey
Overall members	# members overall	C4CE Secretariat	Annually	Annual CIA Survey
Active members and supporters	# active members	C4CE Secretariat	Annually	Annual CIA Survey
Active decision makers	# people involved in decision making	C4CE Secretariat	Annually	Annual CIA Survey
Events organised. Distinguish: - small scale (<20), - medium scale (20-100), - large scale (>100 participants)	# events - events < 20 - events 20-100 - events >100	C4CE Secretariat	Annually	Annual CIA Survey
Resources scale	Rating scale (5 pt)	C4CE Secretariat	Annually	Annual CIA Survey
Obstacles scale	Rating scale (5 pt)	C4CE Secretariat	Annually	Annual CIA Survey
Changes in Key Drivers scale	Rating scale (5 pt)	C4CE Secretariat	Annually	Annual CIA Survey



Community Energy Project

Key Indicators	Metric	Who	When	How
Technology	Multiple choice	Community Group	Ongoing	CIA Platform
Business model / Project type	Multiple choice	Community Group	Ongoing	CIA Platform
Size of installed systems	# kW installed	Community Group	Ongoing	CIA Platform
Systems in planning	# kW in planning	Community Group	Ongoing	CIA Platform
Project cost	\$	Community Group	Ongoing	CIA Platform
Contract length (operation)	Years	Community Group	Ongoing	CIA Platform
Total expected income	\$	Community Group	Ongoing	CIA Platform
Number of investors/ project	# of investors	Community Group	Ongoing	CIA Platform
Amount of funding by source	\$ by funding source	Community Group	Ongoing	CIA Platform
Amount of renewable energy produced	# kWh generated	Community Group	Ongoing	CIA Platform
Volunteer hours	# hours/ project stage	Community Group	Ongoing	CIA Platform
Jobs created by project stage	# jobs (employee hours)	Community Group	Ongoing	CIA Platform
Tonnes CO2e avoided	tonnes CO2e	Calculated	Ongoing	Calculated (from kWh produced)

Additional optional indicators are outlined in Table 9 below. These could be provided if groups have easily accessible data and the time to provide them. In some cases, these indicators will not be applicable to all community groups.

Table 9: Optional Indicators

Community Groups		Community Energy Projects	
Optional Indicators	Metric	Optional Indicators	Metric
Social media supporters	# of 'friends' or 'likes' on FB	Public interest	# of visits/ visitors
Media coverage	# articles (radio, TV, press)	Resistance	# of objections/ complaints
Political advocacy	# people participating	Primary land-use support	\$ supporting primary producer land use
Political support	# Political appearances at events	Installations (dispersed)	# of installations
		Projects 'inspired'	#. kW of projects 'inspired'
		Flow-on outputs	\$ flow-on outputs
		RoI	% RoI
		Costs versus Savings	Cost-Benefit Analysis
		Payback period	Yearsr
		Energy savings	\$ savings (energy)

It is further recommended that a process be set up to review these indicators annually (as part of the data collection process proposed below), in collaboration with representatives of key stakeholders in the community energy sector to ensure that all indicators are relevant and that parsimony of the set of key indicators can be achieved. However, consistency of indicators year on year will allow for comparative analysis and building a picture of the community energy sector as it develops and should remain a core principle that underpins the indicator review process.

3. Institute an annual data collection process

Responsibility for reporting on the collective impact of the community energy sector is currently proposed to lie with the Coalition for Community Energy. Specifically, delivery of annual reporting is expected to be undertaken by the C4CE Backbone support organisation (Secretariat) and the C4CE Data Committee which was established through this project.

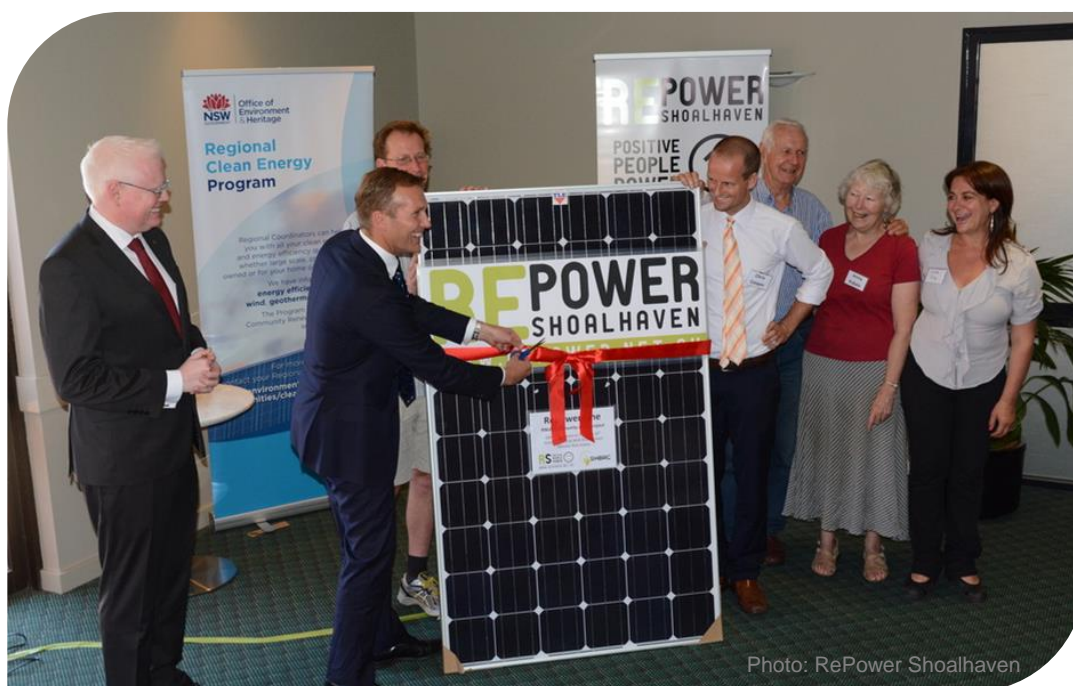
It is proposed that C4CE send out an annual reminder to community groups to ensure that the data for their community group in the Shared Measure Platform is current. Specifically, requesting groups to (a) update their group information, and to (b) add all their latest project data. In addition, a short survey with the scales used in this baseline assessment - 'Resources', 'Obstacles' and 'Changes in Key Drivers' would be circulated at the same time.

The information provided through these scales, albeit subjective judgments, provide valuable insights in regards to what community energy organisations perceive to be obstacles to them achieving their intended objectives. Other studies have shown that subjective assessments of items that are observable at the individual level correlate highly with more 'objective' data based on measurements (Parry, Kirsch, Carey & Shaw, 2014).

Additionally, community energy groups would be encouraged to integrate these rating scales into their efforts to survey their own membership base.

Finally, development of case studies to provide more depth to the collected data and to illustrate the projects' story from a more human perspective including the inspiration and passion of local community energy groups, the challenges and obstacles faced as well as the successes and how these were achieved. Many case studies have already been captured on the Embark Wiki, with more in development. However, a review of the results of the collective impact assessment should inform which community energy case studies to capture.

Like all of the initiatives outlined in the National Community Energy Strategy, funding will need to be sought for implementation of the collective impact assessment next steps. The Coalition for Community Energy, will work with its now 50 member groups, funders and other stakeholders to advance initiatives including this one where a) it is identified as a priority to progress the community energy sector in the immediate context, b) there are organisations interested in pursuing it and c) there is a funding avenue to be pursued. This prioritisation process will evolve over time and will be coordinated by the C4CE Secretariat and Steering Group.



5 REFERENCES

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- Wiseman, J., Edwards, T. & Luckins. K. (2013). Post Carbon Pathways: Towards a Just and Resilient Post Carbon Future; Learning from leading international post-carbon economy researchers and policy makers. [Melbourne Sustainable Society Institute, University of Melbourne](http://www.melbourne.sustainable.society.institute) and the [Centre for Policy Development](http://www.postcarbonpathways.net.au) (available at www.postcarbonpathways.net.au/wp-content/uploads/2013/05/Post-Carbon-Pathways-Report-2013_Final-V.pdf)

5.1 DATA FEEDS AND ONLINE RESOURCES

- www.mistervint.com
- www.observant.net
- <http://beta.energyarchipelago.com>

APPENDICES

A KEY INDICATORS

The table below outlines the indicators used in the baseline assessment, by STEEP category and where they fit into the results chain.

Indicator	Category	Scale	Data Collection	Key Indicators	Results Chain
# of people - ownership	Social	Investors	CRE Group Survey	Yes	Outcome
# of supporters on Facebook/ twitter/ mailchimp	Social	Social Media	CRE Group Survey	Yes	Outcome
# of articles in local/ state/ national (positive and negative)	Social	Media Coverage	CRE Group Survey	Yes	Outcome
# of people actively participating in decision making	Social	Participation	CRE Group Survey	Yes	Activities
Increase in skills and capabilities	Social	Skills/ Capabilities	CRE Group Survey	Yes	Impact
# of site visits/ visitors	Social	Engagement	CRE Group Survey	Yes	Activities
# Community events	Social	Engagement	CRE Group Survey	Yes	Activities
# / average people attending community events	Social	Engagement	CRE Group Survey	Yes	Output
# of people from CE participating in political advocacy	Political	Advocacy	CRE Group Survey	Yes	Impact
Regulatory environment (easier/ harder)	Political	Regulations	CRE Group Survey	Yes	Impact
# of objections to a project (DA) / complaints	Political	Community Support	CRE Group Survey	Yes	Outcome
# of political parties with CE Policies	Political	Political Support	CRE Group Survey	Yes	Impact
# of political appearances at CE events	Political	Political Support	CRE Group Survey	Yes	Outcome
Tonnes of CO2 emissions avoided/ reduced	Environment	Environmental Performance	CRE Group Survey	Yes	Impact
\$ supporting primary producer land use	Environment	Land Use Change	CRE Group Survey	Yes	Impact
kW installed / in planning (cut by technology, site etc.)	Technology	Energy Production	CRE Group Survey	Yes	Outcome
kWh saved / generated (by project, technology, site, state, l	Technology	Energy Production	CRE Group Survey	Yes	Outcome
# of installations	Technology	Energy Production	CRE Group Survey	Yes	Outcome
# and kW of projects 'inspired'	Technology	Energy Production	CRE Group Survey	Yes	Impact
# of jobs created (local/ remote; direct/ supply chain/ perm	Economic	Employment	CRE Group Survey	Yes	Impact
\$ in grants to the CE sector	Economic	Investment	CRE Group Survey	Yes	Input
# of investors	Economic	Investment	CRE Group Survey	Yes	Input
\$ invested	Economic	Investment	CRE Group Survey	Yes	Input
Value/ amount of volunteer labour in different stages of pro	Economic	Investment	CRE Group Survey	Yes	Input
\$ flow-on outputs	Economic	Flow-on Impact	CRE Group Survey	Yes	Impact
Rol	Economic	Returns	CRE Group Survey	Yes	Outcome
Cost versus Savings	Economic	Returns	CRE Group Survey	Yes	Outcome
Payback period	Economic	Returns	CRE Group Survey	Yes	Outcome
\$ savings (energy)	Economic	Savings	CRE Group Survey	Yes	Outcome
Satisfaction of members	Social	Satisfaction	Member Survey	Yes	Outcome
Behaviour scale	Environment	Behaviour Change	Member Survey	Yes	Impact

B BASELINE SURVEY

C4CE CIA Baseline Survey

Welcome to the C4CE Collective Impact Assessment Baseline Survey

The C4CE Collective Impact Assessment (CIA) Survey is designed to track the progress of the community energy sector in Australia.

While there have been a number of surveys of community energy groups in the past few years, with funding from ARENA we have been able to design a set of indicators that comprehensively map the impact of community energy projects and the community energy sector.

The purpose of this survey is to create a Baseline and to repeat the survey annually and continually update the information on the Community Energy sector in Australia. From this a summary report will be created; this report we believe will help all community energy groups prove the benefits of their projects.

This baseline data collection project is funded by ARENA and is being led by Christina Kirsch and managed by the Institute for Sustainable Future at UTS. As part of the ethics requirements of this project, the information you provide will be stored in a secure, password protected filing system held by ISF. Access to this data will be the project team only (which includes ISF project partners who have signed agreements and are bound by UTS' privacy policy). By filling in this survey you are agreeing to allow ISF to use the data provided for the purposes of developing a database for ongoing use and generate a summary report on behalf of the C4CE.

Most community energy groups have two legal structures - the organising structure, or Community Energy Group itself and the Community Energy Project(s), or investment vehicle(s) that the group has created. Therefore, the survey consists of two parts. The first part is capturing information regarding your Community Energy Group and the second part information in regards to the Community Energy Projects or investment vehicles that your group has created. The survey will take approximately 20 minutes to complete, depending on the number of energy projects or investment vehicles.

We will be asking for contact details so that we can follow up if we might have any additional questions in regards to your projects. Those contact details are confidential and will not be shared with anyone outside of the project team.

All participants will receive a copy of the summary report that will outline the achievements and benefits of community energy in Australia. The report will provide summary data in regards to the environmental and economic outcomes of community energy in Australia by energy source (wind, solar, etc.) and state. No personal information will be made public. The report can be shared with potential investors, owners of host sites, politicians and regulators, interested community groups and your friends and family.

Thank you for participating in this survey. Your input is important.

If you have any questions about this survey, how the data you provide will be stored or used, please contact: E2Q Principal Consultant, Dr. Christina Kirsch on 0411 699 266 or ckirsch@optusnet.com.au, or ISF Research Principal, Edward Langham on 02 9514 4971 or edward.langham@uts.edu.au.

C4CE CIA Baseline Survey

Registration and Contact Details for Community Energy Organisation

1. What is the name of your Community Energy Organisation?

2. When was your Community Energy Organisation created?

MM DD YYYY
 Year/ / /
 Month

3. What is the organisational structure of your Community Energy Organisation?

Other (please specify)

4. Contact Details for your Community Energy Organisation

Contact Name	<input type="text"/>
Community Energy Organisation	<input type="text"/>
Address	<input type="text"/>
Address 2	<input type="text"/>
City/Town	<input type="text"/>
State/Province	<input type="text"/>
ZIP/Postal Code	<input type="text"/>
Email Address	<input type="text"/>
Phone Number	<input type="text"/>

C4CE CIA Baseline Survey

Community Energy Organisation Details & Political Impact

This is a collection of Baseline data. Please answer for the whole life of your Community Energy Organisation. The survey will be repeated annually and in the coming years you will be asked to update for the past year. In this round we need the whole-of-life information to date.

1. How many active members do you have in your Community Energy Organisation?

2. How many overall members and supporters do you have?

3. How many of your members are actively participating in decision making?

4. How many of your members are participating in political advocacy?

5. How many community events have been organised by your group?

6. What is the average number of people attending your community events?

7. How many political appearances have you had at your events? (local, state, federal)

Local Politicians (e.g. councillors)

State MPs

Federal MPs

8. How often - since your inception - have you engaged with politicians?

9. What sort of engagement have you had with local, state or federal politicians?

Letters or emails

Phone calls

Meetings

Other (please specify)

C4CE CIA Baseline Survey

Community Energy Organisation - Outreach and Obstacles

1. How many Community Energy groups or projects have copied your model/ approach?

2. How many non-community projects have you 'inspired' - e.g. hosts/projects that you have negotiated with that then decided to install a renewable energy system (solar / wind) but not as a community energy project?

3. kW of 'inspired' projects

4. How often do you communicate with members in regards to ...

	daily	weekly	monthly	annually	rarely
Information on Community Energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Upcoming events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Current Projects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New Project opportunities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify)

5. By what means do you communicate with your members?

- Written information (newsletter, email, etc.)
- Phone calls
- Teleconferences
- Face-to-face meetings
- Workshops/ training
- Other (please specify)

6. How many articles about your Community Energy Organisation and your projects have been published (including local newspapers, TV etc.)?

Print

Radio

TV

C4CE CIA Baseline Survey

7. How has the following changed over the last year?

	Getting worse		Same		Getting better
... our members skills and capabilities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... access to host sites?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... access to funding?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... supportiveness of the regulatory environment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... support from your local council?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... support from state MPs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... support from federal government	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... satisfaction of your members?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... environmentally sustainable behaviour of your members?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... your community's attitude towards renewable energy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

8. How many projects do you have in development and planning?

9. How many projects do you have installed and operating?

C4CE CIA Baseline Survey

Project Information - Project 1

Please complete one "Project Information" Section for each of your projects and answer the following questions for the whole life of the project from its beginnings to date.

1. Project Start

Month/ Year MM DD YYYY
 / /

2. Technology (e.g. solar, wind, biogas, energy efficiency etc.)?

3. What is the organisational structure of the Community Energy Project?

Other (please specify)

4. Where did the Directors come from?

5. How many people are involved in making decisions in regards to the project?

6. Project stage

7. Project location (State, City, Area Code)

8. Project duration/ Contract term (in years/ months)

9. kW installed

10. kWh produced (to date)

11. kW saved (Energy efficiency component)

C4CE CIA Baseline Survey

Project Information - Project 1 - Economic Data

1. Project cost (in \$AU)

2. Amount of funding (in \$AU) provided to this project from ...

Grants	<input type="text"/>
Bank loans	<input type="text"/>
Investors	<input type="text"/>
Our CE Group members	<input type="text"/>
Other	<input type="text"/>

3. Number of investors

4. Average amount of investment (in \$AU)

5. What is the total expected income over the contract period of the project?

6. Expected Payback Period

7. Expected Internal Rate of Return (IRR)

8. Income generated to date (in \$AU)

9. Expected energy cost savings for energy clients over project lifetime (in \$AU)

10. Energy cost savings to date (in \$AU)

C4CE CIA Baseline Survey

Project Information - Project 1 - Continued

1. Amount of Volunteer Hours

Development	<input type="text"/>
Planning	<input type="text"/>
Installation	<input type="text"/>
Operation	<input type="text"/>

2. Jobs (in employee hours) created during ...

Development	<input type="text"/>
Planning	<input type="text"/>
Installation	<input type="text"/>
Operation	<input type="text"/>

3. Percentage of products that are sourced locally?

4. Percentage of services that are sourced locally?

5. Amount invested in community benefit schemes/ philanthropy (to date)

6. For this project, what is the number of ...

Site visits to the project site by other groups/ organisations/ individuals?	<input type="text"/>
Visitors that have come to visit the project site?	<input type="text"/>
Media articles on this project?	<input type="text"/>
Objections/ complaints received about the project?	<input type="text"/>

7. Did you encounter any major incidents? (Please specify)

8. If so, how did you resolve those? (Please specify)

9. Would you like to add another project?

Yes

No

C4CE CIA Baseline Survey

Resilience

1. To what extent do the following issues/ obstacles prevent you from achieving your goals?

	No obstacle		Some		Major obstacle
- Lack of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Lack of finance/ funding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Lack of technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Availability of host sites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Lack of replicable business model	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Political and/ or regulatory environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Lack of skills & capabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Reluctance to take on project risk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. To what extent do you have:

	Not at all		Some		Considerable
• the skills and knowledge needed to achieve your objectives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• access to training or advice on community energy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• support and advice from other Community Energy (CE) groups?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• access to replicable, trialed and tested models for community energy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• sufficient people to achieve your objectives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• effective decision making processes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• effective administration processes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• the tools and technology needed to achieve objectives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• sufficient time to achieve your objectives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• sufficient funding to achieve your objectives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• ability to borrow the money you need to achieve your objectives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

C BASELINE DATA FOR KEY INDICATORS

	SUM	AVERAGE	Min	Max	StdDev
Projects in Planning	52	2.36	0	10	2.70
Operating Projects	334	13	0	300	59.82
Decision Makers	165	5	2	10	2.20
Project duration/ Contract term (years)		9	0	25	7.68
kW installed	9,256	264	1.5	4,100	832.33
kWh produced (to date)	50,350,501	1,480,897	0	37,190,656	6,634,892.22
kW saved (Energy efficiency projects)	16,851	2,809	0	15,000	6,015.26
Project cost (\$AU)	\$21,190,386	\$605,440	\$0	\$13,100,000	2,414,165.51
Grant funding	\$5,773,000	\$641,444	\$0	\$3,000,000	1,046,073.03
Bank loans	\$4,100,000	\$1,366,667	\$0	\$3,100,000	1,582,192.57
Investor Funding	\$15,932,500	\$2,276,071	\$25,500	\$9,600,000	3,695,248.55
CE Group Funding	\$50,000	\$25,000	\$0	\$50,000	35,355.34
Philanthropy/ Donations	\$236,386	\$9,455	\$3,157	\$55,000	14,169.54
Number of investors	2067	188	0	1500	444.51
Average amount of investment (\$AU)	\$102,120	\$11,347	\$500	\$25,500	9,799.57
Expected Income - all	\$39,231,770	\$3,566,525	\$0	\$23,000,000	7,914,368.16
Expected Payback Period		5.6	5	7	0.95
Expected Internal Rate of Return (IRR)		8.4	0	12.65	5.79
Income generated to date (\$AU)	\$3,550,852	\$394,539	\$0	\$2,723,026	908,825.01
Expected energy cost savings over project lifetime (\$AU)	\$586,254	\$24,427	\$0	\$300,000	59,043.28
Energy cost savings to date (\$AU)	\$59,000	\$3,105	\$0	\$7,200	2,225.48
Amount invested in community benefit schemes	\$159,000	\$19,875	\$0	\$77,000	33,917.71
Volunteer Hours Development	13,565	1,233	5	12,000	3,582.44
Volunteer Hours Planning	330	37	10	100	27.84
Volunteer Hours Installation	20	5	0	10	5.77
Volunteer Hours Operation (ongoing p/a)	856	122	2	500	180.89
Job Creation Development (in employee hours)	3,160	632	20	3,000	1,323.83
Job Creation Planning (in employee hours)	3,448	150	16	3,000	621.40
Job Creation Installation (in employee hours)	26,570	984	0	14,609	3,110.48
Job Creation (Ongoing - Operation)	14,863	1,486	1	8,348	3,105.91
Products sourced locally (%)		12	0	50	13.22
Services sourced locally (%)		92	50	100	20.41
Site Visits	15	2.5	0	5	1.87
Visitors	10,112	1,445	0	10,000	3,772.77
Media Articles	125	4.2	0	50	9.84
Objections	18	0.72	0	18	3.60
CO2 Emissions Avoided to date (tonnes)	43,116	880	0	31,984	4,768.84

D ECONOMIC INDICATORS FOR COMMUNITY ENERGY

Figure 14: Economic indicators on costs and funding of community energy projects by State

	kW Installed	kWh produced (to date)	Projects in Planning	CO2 Emissions avoided (to date) (tonnes)
NSW	2,936	12,830,775	43	11,034
Bendigo Sustainability Group	2,530	12,000,000	3	10,320
Clean Energy for Eternity	66	243,560	2	209
ClearSky Solar Investments	150	224,268	4	193
CORENA	7	14,947	3	13
Embark			10	-
Manilla Community Solar Co.			1	-
Narara Ecovillage Co-operative Ltd	30	20,000	1	17
NEEN			10	-
NRE			1	-
Pingala			3	-
Repower Shoalhaven	109	84,000	3	72
Nimbin Solar Farm	45	244,000	1	210
CCCE Inc.			1	-
SA	10	15,330	1	13
CORENA	10	15,330	-	13
PV Community			1	-
VIC	4,710	37,419,796	5	31,995
CORENA	10	13,140	-	11
Hepburn Wind	4,100	37,190,656	-	31,984
LIVE Community Power			1	-
MNCEH			1	-
Moreland Energy Foundation Ltd	600	216,000	-	-
Ranges Energy Cooperative Limited			1	-
Yarra Community Solar Coop Ltd			1	-
MRSG - Community Renewables			1	-
WA	1,600	84,600	-	73
Denmark Community Windfarm Inc.	1,600	84,600	-	73
ACT			3	-
SolarShare Canberra			3	-
Total	9,256	50,350,501	52	43,116