



# People power

## How Tasmania can fast-track community energy

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*42 million Americans are served by community-owned energy companies, but Australia lags behind. Co-ownership of wind and other large renewables would allow Tasmania to leap ahead.*

Dan Cass  
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# Summary

This report provides an introduction to community-owned renewable energy. It includes Australian and international examples to show that this is a growing and important sector.

The paper focuses on an exciting financial model called community co-ownership and shows how it could be promoted in Tasmania by three simple policy reforms.

Community co-ownership is a corporate structure in which a commercial developer of a large renewable energy project such as a wind farm sells a percentage share to a community-owned energy company. The model is being implemented at the largest wind-farm in NSW, the \$588 million Sapphire Wind Farm.

The benefit of the co-ownership model is that it makes it easy for community members to invest in Australia's clean energy transition. The developer takes on business challenges and financial risk on behalf of the community company, which is generally an operation staffed by volunteers and lacks the resources to manage and finance a complex infrastructure development.

Over the next decade, Tasmania could well see a few very large wind farms (100MW plus) built. Co-ownership provides the best opportunity for communities to become involved in this important sector. It could deliver financial value directly to the community and promote the social licence of wind energy and facilitate improved energy and climate policy.

The paper concludes with some policy ideas which could promote the community co-ownership model for wind farms in Tasmania and apply to other large-scale renewables projects.

**Front page image: Middelgrunden offshore wind farm near Copenhagen, Denmark, which is half owned by a cooperative and half by the Municipality of Copenhagen's energy utility (Wikimedia Commons CC 3.0)**

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## About the author

Dan Cass is strategist at The Australia Institute where he works on energy markets and climate policy. Dan was a board director of Hepburn Wind, Australia’s first community-owned wind farm. He is an associate at Sydney Business School and on the board of Solar Head of State.

# Introduction: the benefits of people power

Tasmania and other Australian states and territories could benefit greatly from the growth of community-owned renewable energy. Community ownership of projects can play a major role in sharing the economic benefits of clean energy around rural areas. They would also help build community consensus around our inevitable transition from an economy based on coal and gas-fired electricity generation, to a smart energy future based on renewables, energy conservation, battery storage and electric vehicles.

Few people outside the community energy fraternity realise that around 42 million people in America are already served by about 940 Rural Electric Cooperatives (REC).<sup>1</sup> They collectively own 42% of America's distribution network, covering 75% of the country.

America's REC movement arose in the 1930s when it became clear that for-profit utilities were not interested in investing in poor or remote rural communities. While 90% of city dwellers enjoyed the benefits of electrification, the grid did not even reach 90% of country households. The electric coop movement was boosted by President Roosevelt's New Deal, with the formation of the Rural Electrification Administration in 1935.<sup>2</sup>

Renewable energy is particularly well suited to community investment and control. Unlike coal and gas (or nuclear) power, which are generated at centralised power stations costing hundreds of millions or billions of dollars, renewable energy generation and storage is small-scale. It is distributed closer to where the electricity is consumed. This makes more sense environmentally, economically and also politically, because it helps give power to the people.

Community owned renewable energy brings together locals in a community around a common purpose. Worthy climate and energy policies have struggled to earn broad political consensus in Australia, but community renewables has the potential to cut through.

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<sup>1</sup> Annabel Yadoo and Heather Cruickshank, "The Value of Cooperatives in Rural Electrification," *Energy Policy* 38, no. 6 (2010): 2943.

<sup>2</sup> "History - America's Electric Cooperatives," accessed January 18, 2018, <https://www.electric.coop/our-organization/history/>.

Sir Edward Davey, who was the UK's Secretary of State for Energy and Climate Change from 2012 to 2015, recognised this when he said that community ownership of renewables will “revolutionise” Britain's transition out of fossil fuels.<sup>3</sup>

Davey's assessment was backed by the global REN21 Network, when it pointed out that community renewables can deliver multiple benefits to the community:

- generate financial returns to the local community
- help achieve zero greenhouse emissions
- develop renewable energy
- strengthen grid reliability
- promote tourism
- improve the social licence of the wind industry
- build consensus on energy and climate policy<sup>4</sup>

The author believes that this analysis applies well to Tasmania and Australia generally. Community ownership of new renewable energy generation can be powerful, because it maximises social benefit. It can be a catalyst for a stronger community consensus in favour of renewable energy and climate action.

## BUILDING CONSENSUS THROUGH COMMUNITY LEADERSHIP

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It is vital that Australia builds a consensus around energy and climate policy. Unconstructive political conflict is pushing up prices, degrading security and making our greenhouse gas emissions higher than they should be.

For example, when he was Prime Minister, Tony Abbott put Australia in the record books as the only country to dismantle a national carbon price, on 1 July 2014.<sup>5</sup> His government campaigned against renewable energy and conservatives from the

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<sup>3</sup> Lizzie Dearden, “Local Communities to Be Offered Stakes in Wind Farms and Renewable,” *The Independent*, November 3, 2014, <http://www.independent.co.uk/environment/local-communities-to-be-offered-stakes-in-wind-farms-and-renewable-energy-stations-9836134.html>.

<sup>4</sup> “Feature: Community Renewable Energy,” REN21, 21, accessed January 11, 2018, <http://www.ren21.net/gsr-2016/chapter07.php>.

<sup>5</sup> “Australia Votes to Repeal Carbon Tax,” BBC News, July 17, 2014, <http://www.bbc.com/news/world-asia-28339663>.

Coalition participated in five separate federal and state enquiries into scientifically unsubstantiated wind ‘sickness’.<sup>6</sup>

These attacks on clean energy and climate action have caused investors to back away from investing in electricity generation in Australia. According to the Australian Energy Council, the policy uncertainty this brought about is ‘effectively equivalent to a carbon price in excess of \$50 a tonne’.<sup>7</sup> Bizarrely, Mr Abbott abolished a rationally-designed carbon tax that ranged from \$23 to \$24.15 per tonne of carbon and replaced it with a rather random, uncertainty-based tax of over \$50 per tonne.

However, even when the national debate is derailed by political bad faith, communities can show leadership. For example, a community in central Victoria took power into its own hands and built a wind farm, to offset its electricity demand. Hepburn Wind is a 4.1 MW wind farm next to Daylesford, entirely owned by a cooperative. Most of its almost 2000 shareholders are locals. It has a neighbourhood benefits scheme plus the most generous community fund of any infrastructure project in the country, as a proportion of revenue. It has won numerous awards, generates local jobs and has become something of a tourist attraction, even being the venue for a wedding!

Unfortunately, it is hard for a community to build a wind farm. As the Clean Energy Council has noted, even a small community wind project must contend with ‘similar development challenges and costs to large-scale projects, as well as unique barriers’ that arise when a group of volunteers tries to become energy infrastructure developers.<sup>8</sup>

## CO-OWNERSHIP FAST-TRACK

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Luckily there are other models. The fastest way for an Australian community to get a stake in wind or other large-scale clean energy is to co-own a commercial project. Denmark has a policy that makes this model mandatory for new wind farms. It will be

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<sup>6</sup> Jill Margo, “Blowing Away Fears That Wind Turbines Cause Disease,” *Australian Financial Review*, November 28, 2018, <http://www.afr.com/lifestyle/health/mens-health/blowing-away-fears-that-wind-turbines-cause-disease-20171127-gztyaw>.

<sup>7</sup> “Rising Electricity Prices Reveal True Cost of National Policy Inaction,” Australian Energy Council, March 9, 2017, <https://www.energycouncil.com.au/news/rising-electricity-prices-reveal-true-cost-of-national-policy-inaction/>.

<sup>8</sup> Alicia Webb, “Sharing the Benefits of Wind Projects: Discussion Paper” (Clean Energy Council, 2015), [https://www.parliament.vic.gov.au/images/stories/committees/eejsc/Submission\\_5\\_-\\_Attachment\\_1\\_05092016.pdf](https://www.parliament.vic.gov.au/images/stories/committees/eejsc/Submission_5_-_Attachment_1_05092016.pdf), p.5.

implemented for the first time at a significant scale in Australia at the largest wind-farm in NSW, the \$588 million Sapphire Wind Farm.<sup>9</sup>

The essence of the concept is that the developer does all the technical and risky work of prospecting for wind, planning, building, testing and managing the project and raises most of the funds. The community raises a relatively small parcel of funds and effectively becomes the beneficial owner of part of the windfarm, but without any of the hurdles that face an infrastructure developer.

The Australian Wind Alliance strongly supports this model. Its national coordinator, Andrew Bray, says that the co-ownership element of the Sapphire Wind Farm ‘is a landmark development for Australia’s wind industry’.<sup>10</sup>

Even if our National Electricity Market is held back by an anti-renewables lobby, the clean energy transition will continue and at a vast scale. According to Bloomberg New Energy Finance, renewable energy technologies are becoming cost-competitive so rapidly that the global solar and wind sectors will grow into a \$9.5 trillion dollar market by 2040, without subsidies.<sup>11</sup>

This clean energy transition offers considerable economic and social benefits. The International Renewable Energy Agency reports that renewable energy already accounts for around 9.8 million direct and indirect jobs internationally in 2016, with around 1.2 million in wind energy.<sup>12</sup>

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<sup>9</sup> Simon Holmes à Court, “NSW’s Largest Windfarm Highlights Power of Community Investment | Simon Holmes à Court | Opinion | The Guardian,” *The Guardian Australia*, January 20, 2018, [https://www.theguardian.com/commentisfree/2018/jan/20/nsws-largest-windfarm-highlights-power-of-community-investment?lipi=urn%3Ali%3Apage%3Ad\\_flagship3\\_feed%3BqYkdKHheQ9uQ1w1OIPhJHw%3D%3D](https://www.theguardian.com/commentisfree/2018/jan/20/nsws-largest-windfarm-highlights-power-of-community-investment?lipi=urn%3Ali%3Apage%3Ad_flagship3_feed%3BqYkdKHheQ9uQ1w1OIPhJHw%3D%3D).

<sup>10</sup> Andrew Bray, “Community to Invest Directly in Wind Power in New England,” *RenewEconomy* (blog), January 19, 2018, <http://reneweconomy.com.au/community-to-invest-directly-in-wind-power-in-new-england-57593/>.

<sup>11</sup> Seb Henbest, “Bloomberg New Energy Finance New Energy Outlook 2017” (Centre for Strategic and International Studies, June 21, 2017), [https://data.bloomberglp.com/bnef/sites/14/2017/06/NEO-2017\\_CSIS\\_2017-06-20.pdf](https://data.bloomberglp.com/bnef/sites/14/2017/06/NEO-2017_CSIS_2017-06-20.pdf), p.10.

<sup>12</sup> “Renewable Energy and Jobs : Annual Review 2017” (Abu Dhabi: International Renewable Energy Agency, 2017), [https://www.irena.org/DocumentDownloads/Publications/IRENA\\_RE\\_Jobs\\_Annual\\_Review\\_2017.pdf](https://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Jobs_Annual_Review_2017.pdf), p.9, 21.

# TASMANIA'S NATURAL ADVANTAGE

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Tasmania has a natural advantage in the clean energy transition. It has built itself a large hydro-electric power scheme, which provides zero-emissions electricity. This system has a very large capacity to cope with the variability of wind and solar generators. Tasmania has abundant wind, solar and wave resources.

The same winds that make Tasmania bracing, make it a great place to build wind farms. According to an upcoming report<sup>13</sup> by Dr Hugh Saddler, the best performing wind farm in Australia is Tasmania's Woolnorth, with a capacity factor of almost 40%, compared with the Australian average for 2007-2017 of 33%.

Current wind farm proposals for Tasmania include some very large proposals, the largest being UPC's \$1.6 billion proposal for wind farms at Robbins Island and nearby Jims Plain, in the north-west corner of the state, totalling 600-1000MW.<sup>14</sup>

According to REN21, the community ownership of energy projects delivers multiple benefits, including increased control over investment and energy, financial revenue, consumer protection from energy price rises, local pride, ecological sustainability and, importantly, 'sending a political message.'<sup>15</sup>

Community co-ownership of wind farms and other large-scale renewables can bring benefits to local neighbourhoods and the overall state of Tasmania and the nation. The 2018 Tasmanian election is a perfect time to seize this opportunity and build people power into Tasmania's clean energy future.

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<sup>13</sup> Hugh Saddler, National Energy Emissions Audit – Electricity Update, January 2018, The Australia Institute

<sup>14</sup> "UPC Announces Plan for 1,000MW Wind Farms in Tasmania," *RenewEconomy* (blog), June 9, 2017, <http://reneweconomy.com.au/upc-announces-plan-for-1000mw-wind-farms-in-tasmania-69662/>.

<sup>15</sup> "Feature: Community Renewable Energy."

# The rise of community-owned renewables

## INTERNATIONAL GROWTH

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The first big wave of community energy started in America during the Great Depression. Rural Electric Cooperatives were supported by President Roosevelt's New Deal and made a major and lasting impact that is often ignored in discussions about energy options in Australia.

Drs Annabel Yadoo and Heather Cruickshank from the Engineering Department at the University of Cambridge explain the impressive scale of the REC movement;

Today, 930 rural electric cooperatives (864 distribution and 66 generation and transmission cooperatives) serve 42 million people in 47 states (12% of the USA's population) and own assets worth US\$ 112 billion. Employing 70,000 people, they own and maintain four million kilometres (42%) of the nation's electric distribution lines covering 75% of the nation's landmass, deliver 10% of the total kilowatt hours sold and generate nearly 5% of the total electricity produced in the USA each year<sup>16</sup>

The second era of community energy was started as a response to the 1973 OPEC Oil Crisis and it focused squarely on relatively small-scale solar PV and small wind farms. It began as a European phenomenon and has spread across the developed and developing world. In Denmark this movement saw the formation of small windmill cooperatives. These would raise funds to build one turbine of around 200kW capacity. This is only about one-tenth the size of the turbines used in Australia's Hepburn Wind coop, which was constructed in 2011.

The early Danish wind cooperatives were run by ecological idealists who, for example, restricted ownership to families living within 5km of the turbine.<sup>17</sup> But out of these modest and idealistic beginnings grew a major energy sector. The Danish Wind Turbine Owners' Association, which formed in 1978, represents over 2000 projects which in

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<sup>16</sup> Yadoo and Cruickshank, "The Value of Cooperatives in Rural Electrification, p.2943"

<sup>17</sup> Jane Kruse and Preben Maegaard, "Danish Wind Turbine History," Nordic Folkecenter for Renewable Energy, August 2002, <http://www.folkecenter.net/gb/rd/wind-energy/48007/history>.

2012 represented around 80% of Danish wind generating capacity.<sup>18</sup> Denmark plans to generate 50% of its energy from wind by 2020.<sup>19</sup> Community co-ownership is mandatory for new wind farms.

During the 1990s community energy grew significantly in Sweden, Germany, the UK and since then in the US, Canada, Japan and elsewhere.<sup>20</sup> Growth accelerated after 2008, particularly in Europe, where there were over 2,800 community energy coops by 2015.<sup>21</sup> In 2016 Canada's first community wind farm began operation and the government of Chile awarded funds to kick-start 12 community renewable energy companies.<sup>22</sup>

Electric vehicles, batteries<sup>23</sup>, demand response<sup>24</sup> and other technologies are evolving rapidly and this can only help the community energy sector grow and diversify. For example, in 2016 Australia's first community-owned energy retailer, Enova, started business.<sup>25</sup> According to the *Renewables 2017 Global Status Report*, 'Although community energy projects have focused historically on the production of power, they have begun to expand into energy retailing...storage and demand-side management.'<sup>26</sup> This will allow the system wide security, reliability and cost benefits of storage to be shared by communities.<sup>27</sup>

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<sup>18</sup> Paul Gipe, "Danish Wind Turbine Owners Association 2012 Update," Wind-Works.org, December 12, 2012, [http://www.wind-works.org/cms/index.php?id=61&tx\\_ttnews%5Btt\\_news%5D=2081&cHash=c29a97d98488c2444b6617e91b534d41](http://www.wind-works.org/cms/index.php?id=61&tx_ttnews%5Btt_news%5D=2081&cHash=c29a97d98488c2444b6617e91b534d41).

<sup>19</sup> "A World-Leader in Wind Energy," Denmark, November 2015, <http://denmark.dk/en/green-living/wind-energy/>.

<sup>20</sup> Nicky Ison and Jarra Hicks, "History of Community Energy," Embark, accessed January 11, 2018, <http://www.embark.com.au/display/public/content/History+of+community+energy;jsessionid=AF5B3E62AD2E69238A98505281590156#Historyofcommunityenergy-WindpowerinDenmark>.

<sup>21</sup> "Feature: Community Renewable Energy."

<sup>22</sup> "Renewables 2017 Global Status Report" (Paris: REN21 Secretariat, 2017), [http://www.ren21.net/wp-content/uploads/2017/06/17-8399\\_GSR\\_2017\\_Full\\_Report\\_0621\\_Opt.pdf](http://www.ren21.net/wp-content/uploads/2017/06/17-8399_GSR_2017_Full_Report_0621_Opt.pdf), p.35.

<sup>23</sup> Dan Cass, "Securing Renewables: How Batteries Solve the Problem of Clean Electricity," Text (Canberra: The Australia Institute, May 31, 2016), <http://apo.org.au/node/64251>.

<sup>24</sup> Dan Cass, "How 'aggregated Demand Response' Could Reduce Cost Impact of Electricity Price Spikes," Crikey, July 14, 2017, <https://www.crikey.com.au/2017/07/14/how-aggregated-demand-response-could-reduce-cost-impact-of-electricity-price-spikes/>.

<sup>25</sup> Alison Paterson, "Stone and Wood, Enova Scoop Top Gongs at Green Globe Awards," *Northern Star*, October 21, 2017, <https://www.northernstar.com.au/news/stone-and-wood-enova-scoop-top-gongs-at-green-glob/3243930/>.

<sup>26</sup> "Renewables 2017 Global Status Report." p.36"

<sup>27</sup> "2016 NRECA Annual Report," accessed January 18, 2018, [http://www.electric.coop/wp-content/uploads/2017/04/2016\\_NRECA\\_Annual\\_Report.pdf](http://www.electric.coop/wp-content/uploads/2017/04/2016_NRECA_Annual_Report.pdf).

## AUSTRALIA: COMMUNITY WIND GROWING

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Australia has a thriving community renewable energy sector. The peak body, the Coalition for Community Energy, held its first national congress in 2014. The fastest growing sub-sector is solar, because it is easier, faster and cheaper to build than wind or emerging technologies such as wave power. There are around 50 community solar projects in Australia, drawing on \$24 million of members shares.<sup>28</sup>

Despite the obstacles that communities face when investing in their own wind farms, there are already five projects with partial or total community ownership.

### *Sapphire Wind Farm*

Sapphire Wind Farm will be the largest wind farm in Australia with community co-ownership. The project is located between Inverell and Glen Innes in northern NSW. It will be the largest wind farm in NSW when it is built, with a capacity of 270 MW. It will use 75 Vestas V126 3.6MW turbines, the largest in Australia. The developer is CWP Renewables.

A community roadshow in New England to promote the co-op scheme led to 337 pledges of \$5.4 million, far more than the \$3 million threshold required.<sup>29</sup> 95% of the pledges were below \$50,000 and 80% were from the local area. The community investment will be as a percentage of the wind farm and not tied to individual turbines. The legal and financial details of the community investment fund are not finalised, but these parameters are considered likely<sup>30</sup>:

- the minimum investment \$5,000, and for a fixed period of up to 10 years
- capital and dividend returns with fixed floor of 5-6% plus variable cap
- shares administered by a third-party registry
- governance and management of the fund will be voluntary

### *Hepburn Wind*

Hepburn Wind is Australia's first sizeable energy company wholly owned by the community. It began generating in 2011. It is a \$13.1 million project, located at

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<sup>28</sup> Amy Bainbridge, "Investors Snapping up Community Energy Projects, with Some Selling out in Minutes," Australian Broadcasting Corporation, April 30, 2017, <http://www.abc.net.au/news/2017-04-30/community-energy-projects-selling-out-within-minutes/8476794>.

<sup>29</sup> "Frequently Asked Questions for the Community Co-Investment Initiative" (Sapphire Wind Farm), accessed January 24, 2018, <http://www.sapphirewindfarm.com.au/wp-content/uploads/2018/01/2018-CCI-FAQs-Final.pdf>.

<sup>30</sup> Taryn Lane, "Community Investment Testing Report : Sapphire Wind Farm" (Akin Consulting / Starfish Initiatives / CWP Renewables, December 2017), <http://www.sapphirewindfarm.com.au/wp-content/uploads/2018/01/Sapphire-Wind-Farm-CIT-Report-2017.pdf>.

picturesque Leonards Hill, 10 km south of Daylesford, in Victoria's spa country about 100km from Melbourne. There are two 2.05 MW REpower MM82 (now Senvion) turbines. Almost 2000 co-operative members have contributed around \$9.8 million and each get an equal vote in the business.<sup>31</sup>

The project delivers specifically local benefits in two ways. Firstly, the Community Fund provided \$102,730 to 52 projects in the first 6 years of the project. Secondly, approximately 65 households closest to the wind farm were offered a gift of equity in the project, an electricity affordability payment which offsets some of their electricity bills and free tree planting and other amenities around their homes.

#### *Denmark Community Windfarm*

The Denmark Community Windfarm in Western Australia began generating in 2013. It is located on the dramatic coast at the far south-western tip of Australia, about 10km south west of township of Denmark 423km from Perth. It consists of two 800kW Enercon E48 turbines.<sup>32</sup>

#### *Coonooer Bridge Wind Farm*

Coonooer Bridge Wind Farm was the first wind farm using the community co-ownership model in Australia. It was developed by Australian company Windlab. It is a 19.8 MW wind energy project located 90 km north-west of Bendigo, Victoria and uses 6 Vestas V117 turbines. It is believed that the community owns around 4% of the project through free equity offer to neighbours and some wider public subscription.

#### *Kiata Wind Farm*

Kiata Wind Farm was also developed by Windlab and has a local community co-ownership model like Coonooer. It is located 50km north west of Horsham, Victoria and has a capacity of 30MW and project cost of around \$75 million.<sup>33</sup>

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<sup>31</sup> "About Hepburn Wind," Hepburn Wind, accessed January 11, 2018, <https://www.hepburnwind.com.au/wind-farm/>.

<sup>32</sup> "The Project," Denmark Community Windfarm Ltd, accessed January 12, 2018, <http://dcw.net.au/project.html>.

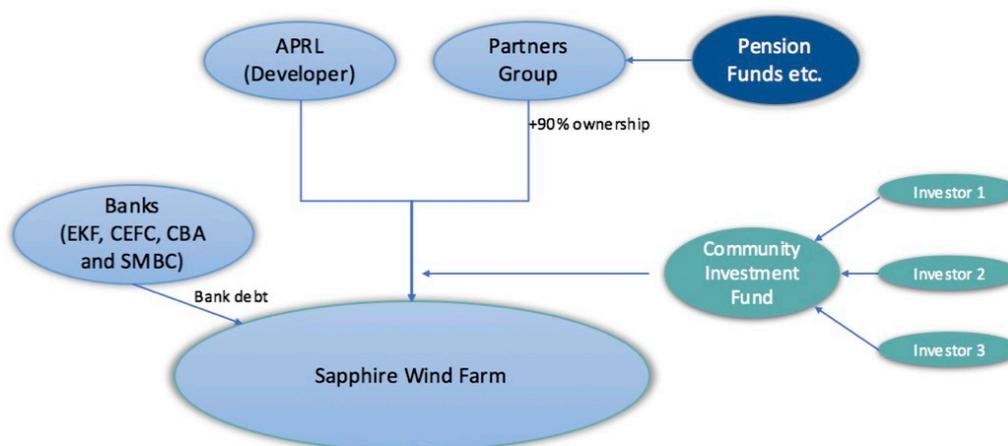
<sup>33</sup> "Kiata Wind Farm Begins Construction," Kiata Wind Farm, accessed January 12, 2018, <http://www.kiatawindfarm.com.au/news/kiata-wind-farm-begins-construction>.

# Co-ownership explained

The way that co-ownership works is that the project developer passes on the effective cost and benefit of part of the wind farm to a community-owned company. A wind farm worth hundreds of millions of dollars can become an investment opportunity for local retail investors, through a jointly-owned company. The co-ownership model means that the community company is merely a passive holder of equity in the project, not responsible for developing or managing the asset.

This chart below from the Sapphire Wind Farm shows the community company is simply one of several investors and not a developer or operator.<sup>34</sup>

**Figure 1 : Sapphire Wind Farm Ownership Structure**



Ownership structure for the Sapphire Wind Farm in NSW, showing the role of the community-owned company. Source: "Frequently Asked Questions for the Community Co-investment Initiative", Sapphire Wind Farm

This is a beneficial transaction for all parties. Developers get to increase the 'social licence' of their project and local communities get a wind farm built for them.

One of the reasons that community co-ownership is so suitable for developers and communities is the nature of the planning and development process. As the Clean Energy Council notes, a small project has much of the same complexity as a big project. The development overhead of a wind farm is like a 'fixed' cost.

<sup>34</sup> "Frequently Asked Questions for the Community Co-Investment Initiative."

For example, in order to work out where to build a wind farm, developers have to 'prospect' for the wind, just as mineral prospectors drill holes to work out where to build a mine. Wind prospecting often starts with the purchase of data about wind conditions and an assessment of whether the local electricity distribution network would be able to carry the electricity generated by a new wind farm.

Once a suitable area is identified, the prospector would then research land ownership to see if there are properties which might be open to hosting turbines, for a fee. If there are suitable properties, the prospector will then negotiate with landowners to install tall masts with wind meters on the top, which measure wind velocity and log the data onto a computer. These masts have to be in place for some years in order to get reliable data.

After a suitable data set is acquired, the prospector will then work with engineers to do a preliminary design of the wind farm. This phase involves modelling the wind velocity at various heights and specific locations across a large area. This will help determine where to put the turbines, how tall the towers should be, which turbines to use and even whether to include storage batteries.

The design also has to include grid connection equipment, which can be expensive. For example, the Hepburn Wind community project is worth about \$13 million and the grid connection cost about \$1 million.

The total cost of this planning phase will obviously increase with the addition of each turbine, but the overall cost and time duration of this phase is partly 'fixed' by the very nature of prospecting for wind, researching leases and grid connection and then designing the wind farm.

Co-ownership is the easiest way for a community to share these 'fixed' costs with sophisticated institutional investors and the project developer, rather than carrying them all on its own.

## TERMS

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There are many and evolving ways to structure a community co-ownership structure, so this section will stick to defining the most important terms and concepts.

The **community-owned energy company** can be either a formal cooperative under state cooperatives law or it could be a more conventional corporate entity that has a constitution that creates the democratic benefits and incentives of a cooperative, without the regulatory burdens.

**Community ownership** in this context does not mean literal ownership of the wind turbine, associated equipment and land but rather the beneficial ownership. The community-owned company will pay the wind farm owner for a percentage of the asset and its ongoing costs in return for some share of generation revenue, which includes both electricity sales, Renewable Energy Target large-scale generation certificates (LGCs) and 'reliability' services such as frequency control.

The **operator** company will in some cases be the developer that built the project. In most cases, the developer will on-sell the whole project to an operator. The community co-ownership would be negotiated with the developer and this structure would be passed to the project's ongoing owner.

**National Electricity Market and general regulatory participation and financial** arrangements will generally all be managed by the operator on behalf of the co-owner. For example, the owner may sell the energy generated into the spot market as a 'merchant' generator and pass on the appropriate share of revenue to the community co-owner. Likewise, the operator will generate revenue from the Renewable Energy Target certificates produced by the wind-farm and share this with the community co-owner as appropriate.

**Ongoing operations and maintenance** will all be managed by the operator. This is generally sub-contracted, for example to the manufacturers of the turbines and the grid connection or battery storage systems but again in this case, the community co-owner does not have to manage any of this work or take on any of this risk.

**Access and branding agreements** can give the community co-owner clear rights and responsibilities for using the wind farm, such as running tours and or promoting the live generation data online. Hepburn Wind had a competition to name the turbines ('Gusto' and 'Gale') and then organised for an artist to paint a mural on the lower section of the towers, which formed the backdrop for a festival day at the venue and led to publicity for the project. A community co-owner might negotiate to similarly enrich its ownership and brand identity with naming and a mural or other works that enhance the site.

# Policies to encourage co-ownership and other models

The primary obstacle to investment in new generation in the National Electricity Market is market risk and this is largely due to policy. Developers of new generation projects need to be able to predict the income they will receive and that no big policy shifts will be implemented that harm the profitability of their assets.

Renewable energy faces additional hurdles because it is a new and rapidly changing sector. There is only one long-term policy in support of renewable energy which has a relative degree of bipartisan support, the Renewable Energy Target (RET). Unfortunately, this scheme will close to new projects in 2020 and the federal Coalition government has failed to legislate for its replacement.

Community renewable energy has even more policy problems to contend with, ranging from the regulatory complexity around cooperatives law to the difficulty of negotiating grid connection agreements and a lack of business support for this model of enterprise.<sup>35</sup>

Whilst the Commonwealth does not currently support community renewable energy, the Labor opposition has a policy to drive the growth of community renewables. If Labor wins the next Federal election it has committed \$98.7 million to establish a Community Power Network and Regional Hubs, which will use staff support, policy reform and some form of grants to accelerate the growth of community owned renewable energy.<sup>36</sup>

The first government to support community energy in a systematic way was the Liberal-National Coalition in NSW. This policy was driven by the Parliamentary Secretary for Renewable Energy Rob Stokes and launched in 2012.<sup>37</sup> Other states have followed the lead. Victoria, for example, has a support program focused around \$900,000 to establish three Community Power Hubs in Bendigo, Ballarat and the

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<sup>35</sup> "National Community Energy Strategy" (Coalition for Community Energy, 2015), [http://c4ce.net.au/nces/wp-content/uploads/2015/04/NCES\\_2015\\_Final01.pdf](http://c4ce.net.au/nces/wp-content/uploads/2015/04/NCES_2015_Final01.pdf), pp.37-40.

<sup>36</sup> "Australian Labor Party Climate Change Action Plan : Renewable Energy Economy," Labor's Climate Change Action Plan, accessed January 31, 2018, [http://www.laborsclimatechangeactionplan.org.au/renewable\\_energy\\_economy](http://www.laborsclimatechangeactionplan.org.au/renewable_energy_economy).

<sup>37</sup> Giles Parkinson, "NSW Unveils Renewable Energy Action Plan," *RenewEconomy* (blog), September 7, 2012, <http://reneweconomy.com.au/nsw-unveils-renewable-energy-action-plan-59623/>.

Latrobe Valley for an initial pilot phase of two years.<sup>38</sup> The ACT is offering a special feed in tariff to support community solar, of \$0.20 / kWh for 20 years, capped at 1 MW.<sup>39</sup>

Tasmania is supporting two large wind farms, through power purchase agreements with state owned utilities. Aurora Energy has an in-principle agreement to buy the large-scale generation certificates under the RET scheme, from the 144 MW Wild Cattle Hill wind farm in the Central Highlands.<sup>40</sup> Hydro Tasmania has an in-principle agreement to buy the electricity and large-scale generation certificates from the 112 MW Granville Harbour wind farm.<sup>41</sup>

This section below proposes a new policy idea that Tasmania could implement (Community Power Agreements) and two proven policies to increase the development of community co-ownership.

## COMMUNITY POWER AGREEMENTS

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The 'Community Power Agreement' is a new policy concept and draws on established practice here and around the world. It addresses the fact that the community co-owner of a wind farm has two very different sets of costs; the costs of building and operating the wind farm itself plus the unique cost burden of running a community enterprise.

We can assume that if the wind farm is built, then its costs should be covered by the income from generating electricity over the life of the turbines and selling large-scale generation certificates (until the Renewable Energy Target scheme closes in 2030). The energy price of new wind farm contracts negotiated in Australia between 2015-2017

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<sup>38</sup> Energy, "Community Energy," State Government of Victoria Department of Environment, Water and Planning, accessed January 31, 2018, <https://www.energy.vic.gov.au/renewable-energy/community-energy>.

<sup>39</sup> "Community Solar," ACT Government, Environment, Planning and Sustainable Development Directorate - Environment, July 11, 2016, [https://www.environment.act.gov.au/energy/cleaner-energy/community\\_solar](https://www.environment.act.gov.au/energy/cleaner-energy/community_solar).

<sup>40</sup> "Aurora Energy and Goldwind Announces Agreement for Wild Cattle Hill Wind Farm" (Goldwind, June 6, 2017), <http://www.goldwindaustralia.com/wp-content/uploads/Agreement-reached-for-Wild-Cattle-Hill-Wind-Farm-002.pdf>.

<sup>41</sup> "Progress on Granville Harbour Wind Farm Proposal," Hydro Tasmania, June 26, 2017, <https://www.hydro.com.au/news/media-releases/2017/09/14/progress-on-granville-harbour-wind-farm-proposal>.

ranged from a low of \$50 / MWh to \$81.50 / MWh, which gives an indication of the costs to be borne by a new Tasmanian wind farm.<sup>42</sup>

The other set of 'community' costs cover the salary of a part-time executive officer to run the community company and the costs of administration: running a share registry, accounting and legal advice, website and so on. If we assume a co-ownership agreement that covers the equivalent of about one turbine, then the generation might be in the range of 10 GWh per year. The community company's costs might be around \$80,000 per year. This translates into a community 'overhead' of \$8/MWh.

The policy proposal is that the government of Tasmania would enter into Community Power Agreements with up to six co-ownership companies over a decade and pay them \$8/MWh. This contract would provide a balance between financial certainty and market exposure. In a good year, if the wind blows well and the turbines are well maintained, then the output would be high and they would earn more revenue. Conversely, in a bad year, with lower generation output, the community company would receive a lower payment.

The general framework of this policy is based on established practice. State and territory governments in Queensland<sup>43</sup>, NSW<sup>44</sup>, South Australia<sup>45</sup>, ACT<sup>46</sup> and Victoria<sup>47</sup> use reverse-auction or other procurement programs to buy renewable energy from new projects. This creates demand and partly fills the policy vacuum left with the end of the federal RET. (Western Australia, Tasmania and the Northern Territory have renewable energy and climate policy goals but no renewables policy mechanism in place.)

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<sup>42</sup> Ken Baldwin, "Renewables Will Be Cheaper than Coal in the Future. Here Are the Numbers," The Conversation, accessed February 2, 2018, <http://theconversation.com/renewables-will-be-cheaper-than-coal-in-the-future-here-are-the-numbers-84433>.

<sup>43</sup> "Renewables 400," Text, Business Queensland, October 31, 2017, <https://www.business.qld.gov.au/industries/mining-energy-water/energy/renewable/renewables-400>.

<sup>44</sup> Peter Hannam, "NSW Government Makes First Foray into Large-Scale Renewable Power Purchasing," *The Sydney Morning Herald*, December 8, 2017, <http://www.smh.com.au/environment/climate-change/nsw-government-makes-first-foray-into-largescale-renewable-power-purchasing-20171206-h00ahw.html>.

<sup>45</sup> Government of South Australia, "Our Energy Plan" (Government of South Australia, March 2017), p.6.

<sup>46</sup> "How Do the ACT's Renewable Energy Reverse Auctions Work?," ACT Environment, Planning and Sustainable Development Directorate, accessed January 22, 2018, <https://www.environment.act.gov.au/energy/cleaner-energy/how-do-the-acts-renewable-energy-reverse-auctions-work>.

<sup>47</sup> "Victorian Renewable Energy Auction Scheme" (State Government of Victoria Department of Environment, Water and Planning), accessed February 1, 2018, [https://www.energy.vic.gov.au/\\_\\_data/assets/pdf\\_file/0014/80510/VRET-fact-sheet-Auction.pdf](https://www.energy.vic.gov.au/__data/assets/pdf_file/0014/80510/VRET-fact-sheet-Auction.pdf).

Tasmania could use government procurement to specifically support community renewable energy. It could offer long term purchase contracts for community renewable energy. The price could be set so as to provide long-term financial certainty required to underwrite new projects, while not adding unreasonably to the state government's energy bill.

## CO-OWNERSHIP BUSINESS SUPPORT

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Tasmania could go down two possible routes to support the establishment costs of community co-ownership. It could either support a state-wide community energy company that would then have project or funds for separate wind or other large projects. Alternatively, it could emulate the Sapphire Wind Farm model and support one community energy company for each project.

There are grant programs in place in Victoria and NSW to support community energy. A renewable energy co-ownership business grant program for Tasmania would underwrite the establishment of six cooperatives over a decade for a cost of \$1.92 million. Based on Hepburn Wind which has almost 2000 members, this could mean around 10,000 Tasmanians would be co-owners of a wind farm or other large-scale renewables project.

(A 2009 study indicated that Tasmania has a capacity for around 1200MW of wind, given appropriate grid development and curtailment processes. There is currently 308MW of wind generation connected to the network.)

One alternative model worth exploring is to establish one community energy co-operative for Tasmania, which could operate several projects.

**Figure 2 : Co-ownership business support costs for Tasmania over 10 years**

Item	Cost	Details
Incorporation legals	\$30,000	Legal advice to structure and establish the coop
Co-ownership negotiation legals	\$50,000	Legal advice for negotiation with the wind farm developer of co-ownership
Establishment phase coordination	\$150,000	Salary for part time coordinator to run the coop for three year establishment phase from conception to operation of wind farm, at which time income will commence
Establishment phase administration costs	\$90,000	Administration costs such as office, website, accountant, postage, travel and membership of Coalition for Community Energy for three years establishment phase
<b>Total</b>	<b>\$320,000</b>	

## COMMUNITY BENEFIT ADDED TO PROJECT ASSESSMENT CRITERIA

The ACT is using an auction process to reach its target of 650MW of renewable energy generation. When the government department chooses projects to fund, one of the four assessment criteria it uses is community benefit.<sup>48</sup> This is the driver behind the community co-ownership scheme attached to the biggest wind project in NSW, the Sapphire Wind Farm, located between Inverell and Glen Innes in northern NSW.<sup>49</sup>

Tasmania should consider adding a community benefit criterion to any general renewable targets and could also add it to planning law for all large (> \$20 million) renewable energy projects built without any state support. That would encourage developers to establish more meaningful and long-term relationships with local communities and allow local ‘retail’ investors to own part of the projects.

<sup>48</sup> “How Do the ACT’s Renewable Energy Reverse Auctions Work?”

<sup>49</sup> Holmes à Court, “NSW’s Largest Windfarm Highlights Power of Community Investment | Simon Holmes à Court | Opinion | The Guardian.”

# Conclusion

Renewable energy delivers significant economic and social benefits and these are maximised through community ownership. Community-owned renewable energy is a significant and growing sector globally, but Australia lags behind.

Community-owned renewable energy could bring a range of financial and other benefits to Tasmania. However, wind farms and other large renewable energy projects are complex and costly. The best way for communities to become directly involved in them is as co-owners.

If Tasmanians wish to encourage the co-ownership model and other forms of community renewable energy it could consider three key policies.

The first is a new policy concept called a Community Power Agreement, which would see the government of Tasmania support the long-term costs inherent in the community-owned energy company structure, worth about \$8 / MWh.

The other two policies are proven designs used in other jurisdictions:

- business support grants for community co-ownership companies to establish
- community benefit weighting in project assessment criteria for renewable energy projects

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