



**BUSINESS
RENEWABLES
CENTRE
AUSTRALIA**

CORPORATE RENEWABLE POWER PURCHASE AGREEMENTS IN AUSTRALIA:

STATE OF THE MARKET 2019



About the Business Renewable Centre Australia

The Business Renewables Centre Australia (BRC-A) is a not-for-profit initiative that seeks to help accelerate the uptake of Renewable Energy Corporate Power Purchase Agreements (PPA) in Australia through facilitating industry networking and mitigating a range of knowledge gaps. The BRC-A is a joint collaboration between WWF-Australia, Climate-KIC Australia and the Institute for Sustainable Futures, University of Technology.

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- the New South Wales Department of Planning Industry and Environment

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The BRC-A would like to extend gratitude to its Technical Advisory Panel (TAP), a group of industry experts and experienced corporate buyers of offsite renewable energy, for their continuing input into the development of the BRC-A Resource Library.

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Authors: Chris Briggs (Institute for Sustainable Futures, University of Technology), Finnian Murphy (Climate-KIC Australia), Jonathan Prendergast (University of Technology).



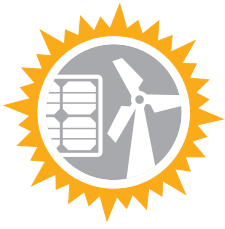
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FOREWORD

Over the last two years, the landscape of renewable energy in Australia has changed drastically. Renewables now make up more than one-fifth of Australia's total energy output and are now the cheapest form of new build electricity generation. Much of this change has taken place amidst a national policy environment of sustained uncertainty and has largely been led by state and territory governments as well as the private sector. Now that the Renewable Energy Target has been fully subscribed sustained corporate leadership is as important as ever.

Corporate Renewable Power Purchase Agreements (PPAs) have been crucial in driving the energy transition in Australia and helping to realise the nation's climate change targets. Since 2017, Corporate PPAs have contracted more than 2GW of renewable energy off-take from projects around the country. Increasingly, this rapidly expanding market has also witnessed growth in both the retail and wholesale sectors, as well as from mid-scale and aggregated buyer groups. These trends are a promising sign for the future of Australia's corporate power purchase market.

Corporate leaders are switching to PPAs to achieve a lower-cost, and more predictable, electricity supply solution for their businesses. The benefits

of Corporate PPAs, however, can go far beyond simply securing cheaper electricity prices. The potential of these off-take agreements to drive broader environmental, social and economic benefits, and help business meet their broader Corporate sustainability goals, is a testament to the power of PPAs to share the opportunities presented by the clean energy transformation.

The Business Renewables Centre Australia (BRC-A) has been pivotal in facilitating the growth in Corporate PPAs, helping to make a complex market environment easier to understand, and educating the private sector about the value which can be realised. BRC-A's dedicated team, with strong support from the private sector, has been central to its success to date, as it will also be to realising the full potential of Corporate PPAs to accelerate the transition to a clean energy future. There is no doubt the Corporate PPA market is now poised to evolve, mature and substantially influence Australia's energy and business sectors in the years ahead.

Simon Corbell
Chief Advisor – Energy Estate
Chair, BRC-A Technical Panel

INTRODUCTION

One of the striking trends in Australian energy markets in the past two years has been the emergence of Corporate Renewable Power Purchase Agreements (Corporate PPAs).

Under a Corporate PPA, electricity buyers agree to buy power and/or Large Generation Certificates from a renewable energy project (currently solar or wind farms) at a fixed price over a longer-term.

Since 2017, our estimate is there has been a total of 58 Corporate PPAs negotiated for 2.3 GW of capacity.¹ Over 60 per cent of Corporate PPAs have been made with new solar and wind farms.

The key drivers for buyers were:

- **sustainability targets** – PPAs are the quickest and often the only way to achieve ambitious targets,
- **improving budget certainty** in volatile markets,
- the potential for **cost savings** – high prices have often been the catalyst for more pro-active energy management, and
- improving their **brand or social licence** by supporting new renewable energy.

Corporate PPAs have now been signed in a wide range of sectors – led by manufacturing, local councils, universities, utilities and state governments for their own operations or infrastructure projects. Whereas large buyers led the way in the early deals, there has also been a series of deals with smaller or mid-sized buyers – like schools, vineyards and even the Sydney Opera House. There is a large pipeline of Corporate PPAs currently under development and negotiation.

The growth in Corporate PPAs has diversified the market for large-scale renewable energy. Not long ago, Utility PPAs with electricity retailers were effectively the only option for off-take agreements - but Corporate PPAs are now playing an important role in energy transition. As the Renewable Energy Target has now been achieved and Utility PPAs are slowing, the role Corporate PPAs role is set to increase in coming years.

ABOUT THE REPORT

The 2019 State of the Corporate PPA Market report provides an overview of the sector and its key trends. The original data in the report is drawn from two sources.

1. A database of Corporate PPAs maintained by the BRC-A, based on publicly available information, and
2. A survey of the buyers, project developers and service providers who are members of the BRC-A for their perspectives on Corporate PPAs.

As of late August 2019, BRC-A had 243 members.

Buyers	80
Developers	91
Service providers	56
Partners	16
Total	243

For a profile of the buyers, developers and service provider who are members of the BRC-A see p.20.

1. These figures are drawn from BRC-A's PPA database based on publicly available information. Industry participants inform us that there are some PPAs that are not public. In some cases, projects do not release all key details.



ABOUT THE BUSINESS RENEWABLES CENTRE AUSTRALIA

The Corporate PPA sector remains an early-stage market. For renewable energy developers, the search and transaction costs for finding and negotiating with buyers can be high. For many buyers, energy procurement is often not a core function and understanding and negotiating Corporate PPAs can be complex and time-consuming.

Consequently, the Business Renewables Centre-Australia (BRC-A) was launched in September 2018, to support and facilitate the growth of Corporate PPAs with funding from the Australian Renewable Energy Agency (ARENA) and the NSW and Victorian Governments.

The BRC-A is a member-based organisation which helps connect buyers and sellers (including through an on-line marketplace platform) and help buyers learn about Corporate PPAs through information resources, tools, training bootcamps and events.

The Business Renewables Centre is a collaboration between WWF-Australia (building on the Renewable Energy Buyers Forum), Climate-KIC Australia and the Institute for Sustainable Futures, University of Technology. For more information go to www.businessrenewables.org.au.

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LARGE-SCALE RENEWABLE ENERGY IN AUSTRALIA

Renewable Energy has grown strongly during the past two years in Australia. Records have been set during both 2017 and 2018 in large-scale renewable energy.

Figure 1 shows that during 2018, investment in large-scale renewable energy doubled to more than \$20 billion and 38 large-scale projects were built. Renewable energy accounted for just over one-fifth of electricity generation during 2018.

Over 6,000 MW of large-scale wind power has been installed relative to around 1800MW of large solar. However, growth in large-solar outstripped large-wind for the first time in 2018.

THERE IS A LARGE PIPELINE OF PROJECTS SEEKING OFF-TAKERS

The Australian Energy Market Operator’s (AEMO) project pipeline in Figure 2 illustrates there is an enormous volume of renewable energy projects under development.

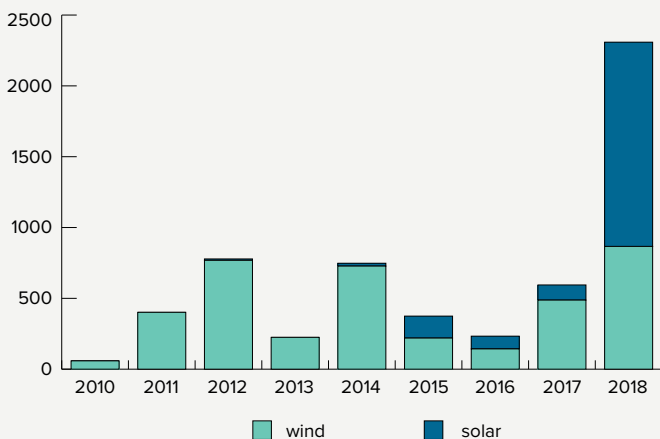
Based on AEMO’s generator information, there is around 40,000 MW of solar, wind and battery storage projects looking for a buyer (or off-taker).

The volume of projects reaching financial close has slowed during 2019. The Clean Energy Regulator declared the Renewable Energy Target had been met in September 2019. *Analysis by the CSIRO estimates large-solar and wind is now cheaper than new coal and gas generation – but not operating plants.*²

Consequently, the number of power purchase agreements being signed by electricity retailers is slowing. One of the key barriers or challenges for the growth of renewable energy is securing finance.

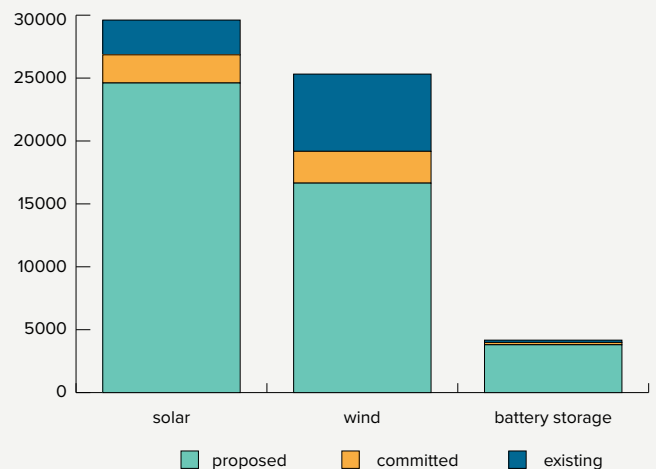
It is in this context that Corporate PPAs have become an important vehicle for financing new renewable energy projects.

Figure 1: Annual Growth of Large-Scale Solar and Wind Energy (MW)



Source: Clean Energy Australia Report 2019, Clean Energy Council

Figure 2: Large-Scale Renewable Energy – Project Pipeline (MW)



Source: Australian Energy Market Operator

2. [BloombergNEF](#) has suggested the cost of new build renewables is approaching a ‘tipping point’, when large solar and wind will achieve parity with existing coal-fired assets.



WHAT IS A CORPORATE PPA?

A Corporate PPA is an agreement between an entity that owns and operates a wind or solar farm and an organisation that purchases the power and/or green certificates generated by the wind or solar farm.

The typical Corporate PPA was initially a **'Wholesale'** PPA – a financial Contract-for-Difference entirely separate from the retail electricity bill. The buyer pays a fixed price per megawatt-hour (MWh) to the solar or wind farm (usually with an annual escalation factor). In exchange, they receive the revenue from the production sold in the wholesale electricity market and usually the green certificates [Large Generation Certificates (LGCs)]. Typically, these are long-term deals lasting 10 years or longer.

However, the market has quickly diversified. Although they are commonly referred to as 'Corporate' PPAs, there is growing demand from public-sector organisations (councils, universities, governments) and buyers outside the big energy users. In response, there is a growing variety of deal structures and offerings from retailers.

Under a **Retail PPA**, the buyer pays for electricity and/or LGCs from a solar or wind farm – but the retailer holds a contract with their project. The buyer is not

a direct party to the PPA between the project and retailer. There is one price for the output from the solar and wind farm and another price schedule for the electricity supplied by the retailer when the solar or wind farm is not generating.

There are hybrid PPA's whereby a retailer 'sleeves' the Wholesale PPA inside a retailer agreement.

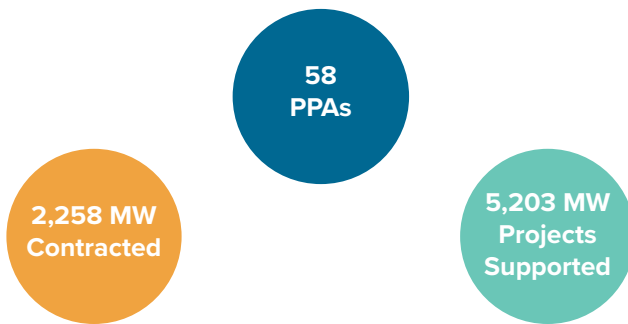
Other types of Corporate PPAs and products are also now available:

- **LGC-only PPA:** some customers such as government infrastructure and off-grid resource projects sign long-term agreement for just the LGCs;
- **Self-owned:** on-site projects;
- **Third-party:** there are other PPAs which are on-sold by a third-party other than a retailer or developer and the emergence of secondary trading platforms.

For more information, see the BRC-A's Guide to Corporate PPA Deal Structures.

THE GROWTH OF CORPORATE PPAS IN AUSTRALIA

Corporate Renewable PPAs have emerged as an important segment of Australia's large-scale renewable energy market in a short time.



In total, there have been 58 publicly confirmed Renewable PPAs since 2016, which have contracted nearly 2.3 GW of renewable electricity and supported 5.2 GW of project capacity.

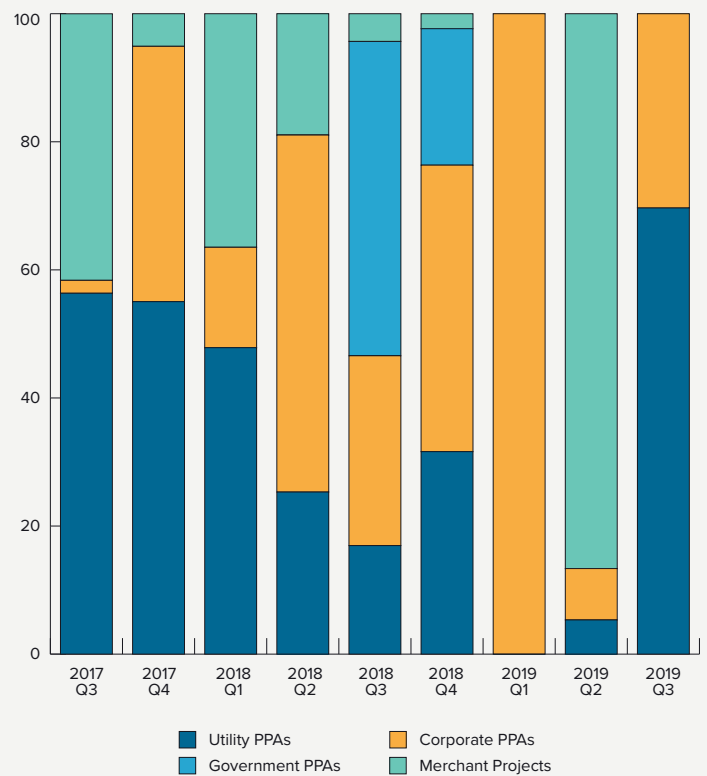
THE ROLE OF CORPORATE PPAs IN ENERGY TRANSITION

There are now four market segments in Australia's large-scale renewable energy sector:

- **Utility PPAs:** deals between electricity retailers and renewable energy projects
- **Merchant projects:** solar and wind farms that sell into the wholesale market without a PPA
- **Government PPAs:** auctions by government for renewable energy using general revenue (i.e. not for their own operations)
- **Corporate PPAs:** deals with renewable energy projects by public and private sector buyers

Until recently, a utility PPA was really the only option for project developers – but as can be seen in Figure 3, the market has diversified.

Figure 3: Market Share of Finance Types for Large-Scale Renewable Energy (%)



The market share of Corporate PPAs fluctuates from quarter to quarter – but they are clearly now an established and important sector.

Using a rolling average of capacity contracted, Figure 4 indicates that PPAs from outside the electricity market (corporate & Government) have outweighed conventional utility and merchant projects over the past year.

Corporate PPAs are now an established feature of the Australian market – and increasingly important as utility PPAs now the Renewable Energy Target has been achieved (with no replacement in sight).

MOST CORPORATE PPAs ARE SUPPORTING NEW PROJECTS

Figures 5 and 6 show that new projects account for 74% of capacity contracted through Corporate PPAs and nearly 60% of deals by number.

The proportion of PPAs with new projects has fallen in recent months as there is an increasing number of retail PPAs being made with operating projects. In some cases, retailers have negotiated PPAs with new projects and on-sold capacity in stages before and after project commencement. Sometimes, solar or wind farms have commenced with some or all capacity being sold into the wholesale market without a PPA and then sold capacity through a PPA.

Corporate PPAs are consequently playing an important role in supporting new investment in solar and wind farms.

Figure 4: Utility vs Non-Utility PPAs (MW)

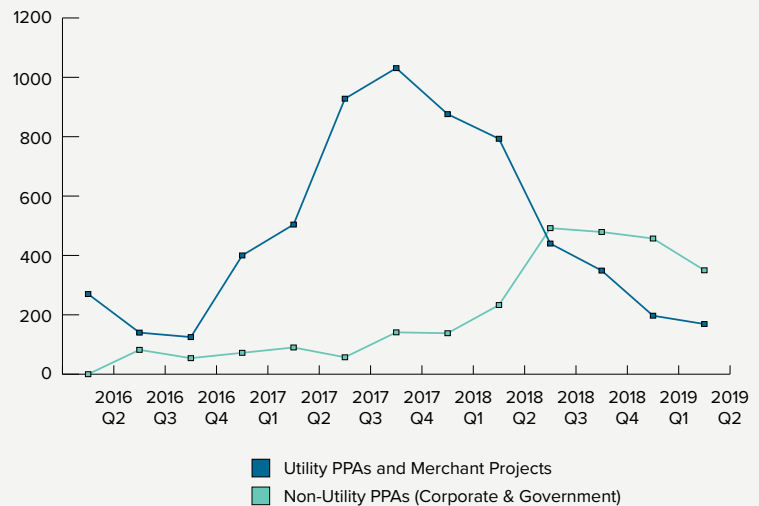


Figure 5: Are Corporate PPAs supporting new renewable energy (% by capacity)?

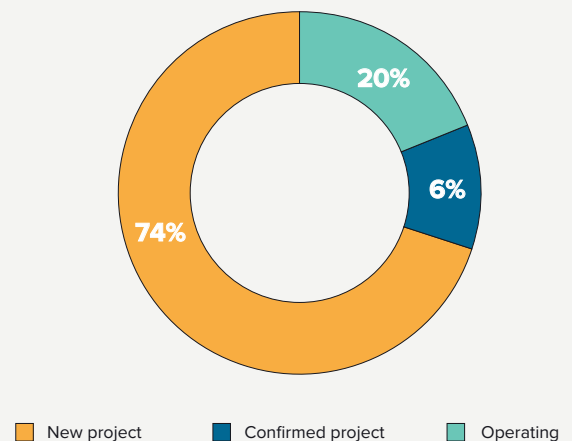


Figure 6: Are Corporate PPAs supporting new renewable energy (% by number)?

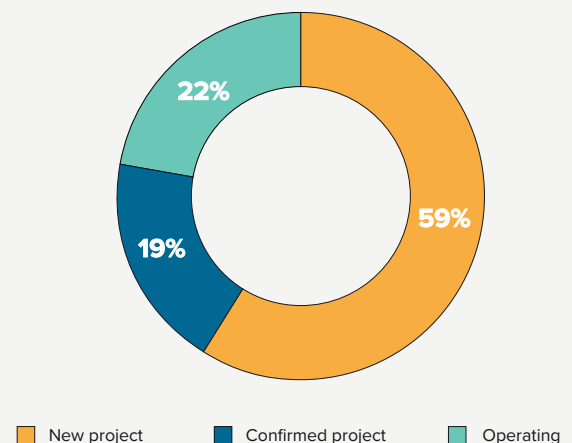


Figure 7: Corporate PPAs, by Size (MW)

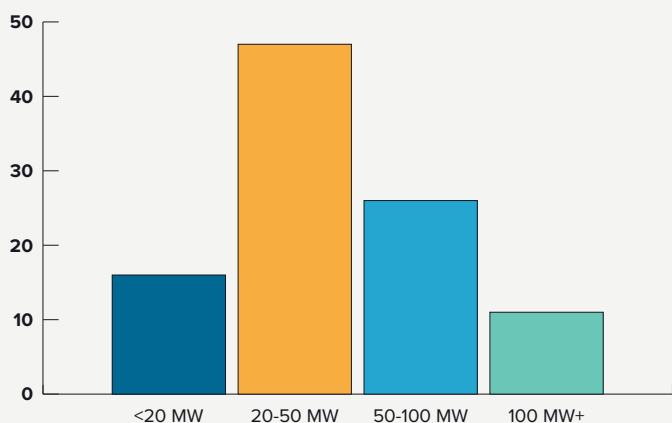


Figure 8: Corporate PPAs, by State (MW)

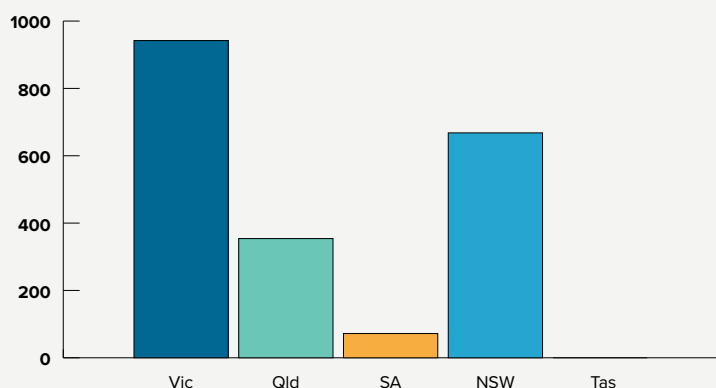
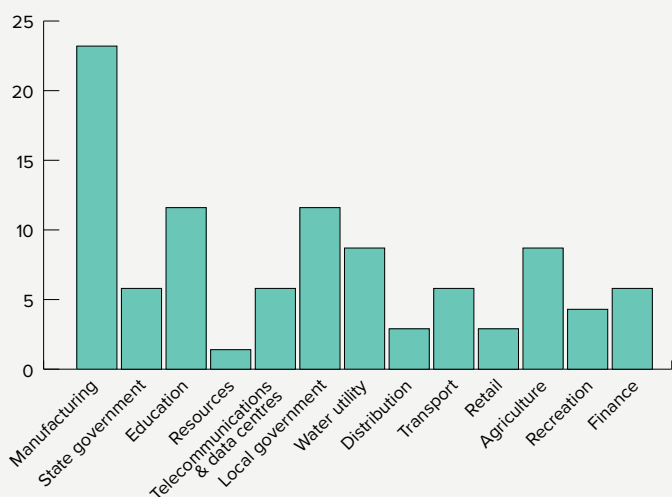


Figure 9: Corporate PPAs, by Sector (% of agreements)



HOW BIG ARE THE DEALS?

The average size of a Corporate PPA is just under 44 MW, which has fallen from around 65 MW over the past 12 months as the market has diversified beyond big corporates.

Figure 7 reveals that around one-third of deals are greater than 50 MW, almost half are 20-50 MW and around 10 per cent are smaller than 10 MW.

THE LEADING STATES ARE VICTORIA AND NSW

Figure 8 shows that Victoria is the leading state for Corporate PPAs with the highest number of deals and installed capacity. During 2018-19, PPAs accelerated in NSW. Only a handful of PPAs have been signed in South Australia and Queensland (notwithstanding the large volumes of utility-scale solar under development).

CORPORATE PPAs ARE NOW FOUND IN A WIDE RANGE OF SECTORS

Figure 9 identifies that the leading sectors for Corporate PPAs are manufacturing, education, utilities and governments.

However, strikingly, there is a wide diversity of sectors now with a PPA – encompassing most sectors of the Australian economy. Corporate PPAs have been made by:

- Manufacturers such as Kellogg's, CUB and Blue-Scope
- Most leading banks such as Westpac, Commonwealth Bank and ANZ
- Agri-businesses such as Pernod Ricard Winemakers and Aussie Grower Fruits
- Recreation and exhibition venues such as the Sydney Opera House, Zoos Victoria and Melbourne Convention and Exhibition Centre
- Transport infrastructure projects such as Sydney Metro and Yarra Trams
- Most of the major universities and a growing number of local governments.

For a list of PPAs see Energetics Deal Tracker in Appendix 1.

SOLAR OR WIND?

Initially, there was no clear technology preference between solar and wind – but Figure 10 shows that over the past year there have been more Corporate PPAs contracted with solar farms.

POTENTIAL FOR GROWTH IN THE CORPORATE PPA MARKET

After a rush of Corporate PPAs in 2018, there was a slowdown in the number of finalised agreements during the first half of 2019. Almost 25 agreements were announced in 2018, but there was just five new PPAs in the first half of 2019 - which were mostly small retail PPAs. Activity has picked up again recently with five PPAs announced in the third quarter.³

The market interest and activity in Corporate PPAs remains very strong. The BRC-A member survey found high levels of interest and activity amongst buyers and developers (Figure 11).

The survey of BRC-A developer members found a similar level of activity. Half of the developer members had completed a Corporate PPA whilst the other half were currently pursuing or implementing an opportunity for a Corporate PPA.

Figure 10: Corporate PPAs, Solar and Wind Farms (MW)

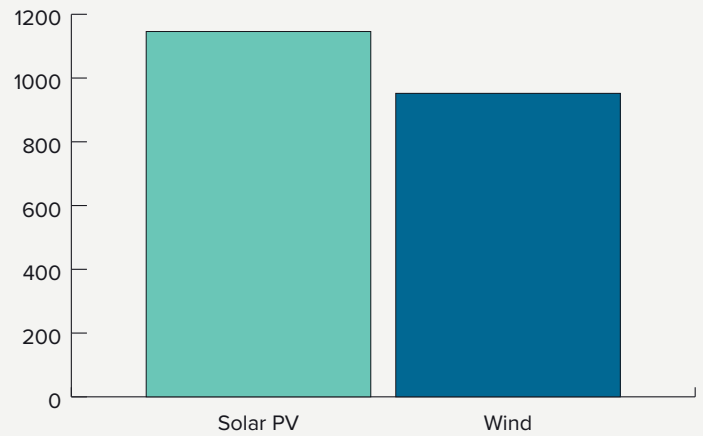
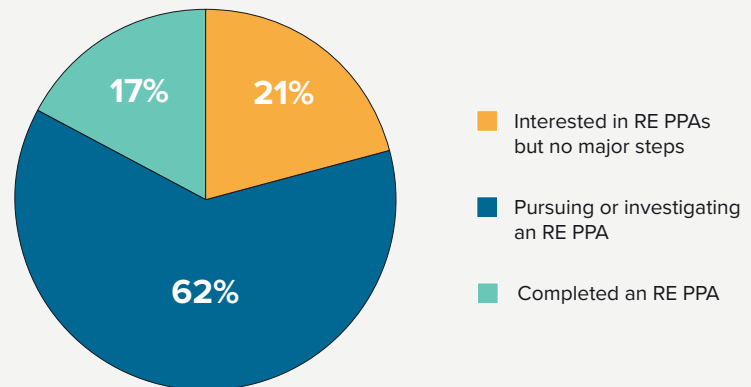


Figure 11: BRC-A Buyer Members Experience with RE PPAs



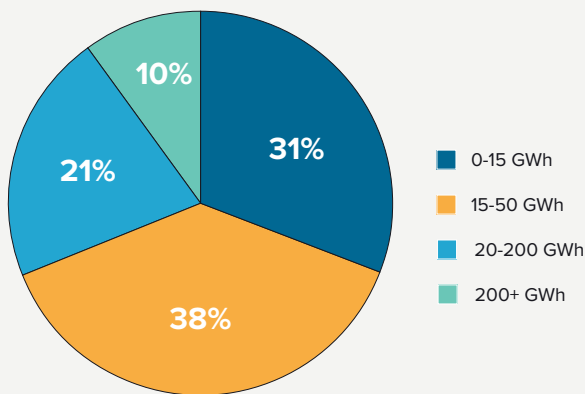
3. These included two large PPAs signed by Molycop (100 gigawatt-hours p.a.), Coles (155 gigawatt-hours p.a.), City of Sydney (28 gigawatt-hours p.a.), City of Newcastle (10 gigawatt-hours p.a.) and Australian Hotels Association (unknown volume).

Of the 60 per cent of buyer respondents who were pursuing or investigating an Renewable PPA, they were evenly spread across different stages of the process:

- Investigating the feasibility of a PPA
- Issuing a Request-for-Proposal
- Assessing the business case
- Negotiating with a developer

One-third of BRC-A buyer members have an annual load greater than 200 gigawatt-hours per annum and over half have a load of greater than 50 GWh (Figure 12).

Figure 12: BRC-A Buyer Member, Electricity Loads



Almost half currently purchase 0 - 10 per cent of their consumption from renewable energy and a further quarter purchase 10 - 20 per cent.

Based on our analysis, we estimate the potential for Corporate PPAs amongst BRC-A members for 2020 is 300 - 480 MW (Table 1).

Table 1: BRC-A Buyer Members, Corporate PPA Market Potential

	Low	Medium	High
Total Potential	1250	4300	5200
2020	300	385	480
2021	240	310	385

The estimate of market potential in 2020 and 2021 is based on:

- An estimate of the load of buyers using a low, medium and high scenario;⁴
- an estimate of the percentage of buyers contracting for different sizes of their loads, depending if they are driven by cost (20%), hedging (50%) or sustainability (100%);
- an assumption on how many PPAs will be completed based on the stage of negotiations as reported by members in the survey.

It is important to understand that the BRC-A membership is one portion of the PPA market – there are many other organisations negotiating Corporate PPAs that are not currently BRC-A members.

Forecasting the growth of Corporate PPAs is very challenging. Data on the breakdown of commercial and industrial sector electricity consumption by size of user is not available to understand the size of the market potential.

It is a new market and much of the activity is not public – procurement processes and negotiations are undertaken privately through advisers/brokers or between buyers and developers. In August 2019, Energetics estimated there was around 500 MW of Corporate PPA deals in the pipeline.

Consequently, there is a wider market not captured in the estimate of market potential amongst BRC-A members and of course many factors that could influence the actual level in a highly uncertain market.

4. The survey asked buyers to answer questions with ranges on their loads (0-15 GWh, 15-50 GWh) etc. The load potential is estimated using the percentage of buyers that answered for each range and multiplied by an average under a high scenario (assumes the average is 80 per cent of the range), a medium scenario (assumes the average is 50 per cent) and a low scenario (that the average is 40 per cent).

One way of understanding the potential role of Corporate PPAs is to compare the volumes of renewable energy contracted with the recent history of the Renewable Energy Target. The volume of renewable energy contracted through Corporate PPAs contracted in the past few years has ranged from 350 MW to 1150 MW, shown in Figure 13.

Figure 13: Corporate PPA Volume Contracted (MW)

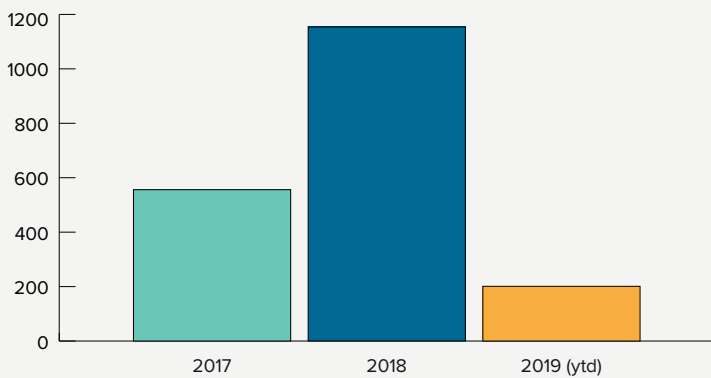
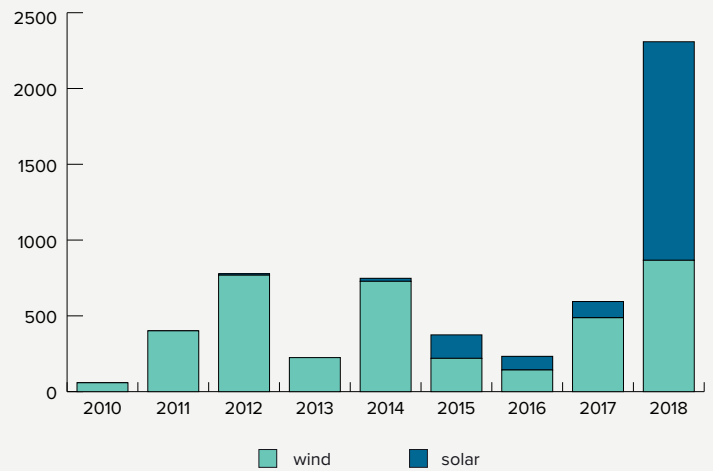


Figure 14 highlights that under the RET, the 2018 boom was quite exceptional with over 2000 MW of installed capacity. In the low years of the RET, there was less than 100 MW contracted and in the good years there was 500-750 MW contracted.

Figure 14: Large Solar and Wind, Installed Capacity (MW), 2010 - 2018



From this perspective, Corporate PPAs put a floor under demand for large-scale renewable energy that can avoid the severe slumps – and demand from Corporate PPAs can be comparable to the better years of the RET.

CORPORATE PPAs: THREE BIG TRENDS

What are the major trends in Corporate PPAs? There are three big trends within the market we want to highlight:

- Market Consolidation: the maturing of the Corporate PPA Market
- Diversification of the market into Retail PPAs
- The Big Deals are still generally Wholesale PPAs

MARKET CONSOLIDATION: THE MATURING OF THE CORPORATE PPA MARKET

There was a slowdown in the number of PPAs in the first half of 2019. Notwithstanding the high level of activity, why have there been so few agreements? There are factors general to the renewable energy sector but also factors specific to Corporate PPAs.

The factors general to the renewable energy sector include:

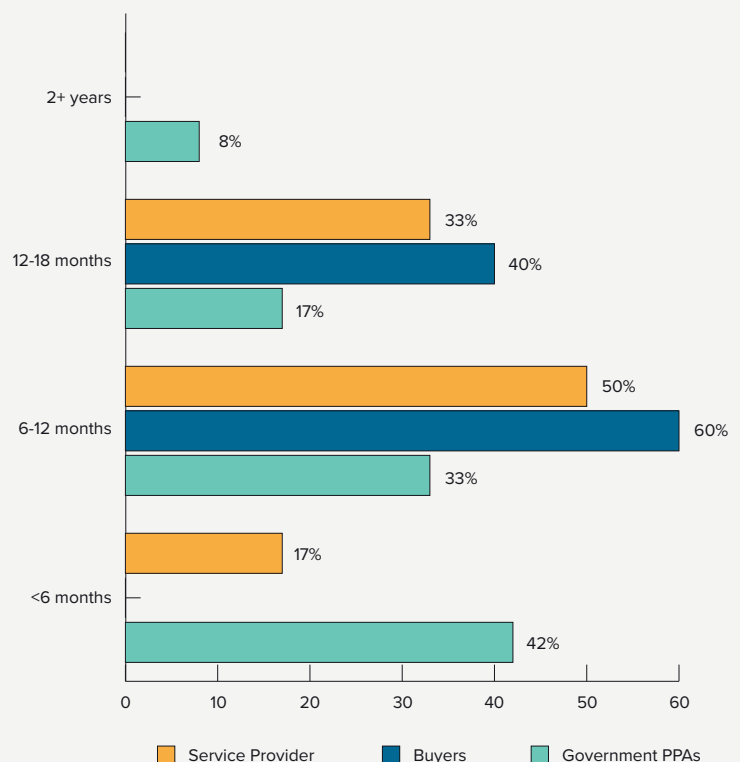
- The **2019 Federal Election** slowed deal-making as parties awaited the outcome and its implications;
- **Project delays**, due to factors such as grid connection issues and company bankruptcies;
- **Policy and regulatory uncertainty**, such as the impact of changing marginal loss factors on project revenues⁵ and the absence of national energy and climate policy as the RET ends;
- **Growing uncertainty about future wholesale electricity prices and project revenues**, especially for solar farms.

There have been some high-profile ‘negative price events’ in the middle of the day when low demand and high solar output have pushed the wholesale electricity price to near or even below zero. Average revenues over the past year remain very high but

there are concerns about whether a ‘saturation’ of solar power in the middle of the day could lead to lower revenues for solar projects.

These factors have slowed the large-scale renewable energy sector and negotiations on Corporate PPAs within this context. As reflected in Figure 15, drawing from the BRC-A member survey, Corporate PPAs usually take significant time to negotiate.

Figure 15: BRC-A Buyer Member, Electricity Loads



5. The Australian Energy Market Operator applies a marginal loss factor to the output of wind and solar farms to reflect power losses from the project site to the node where the power is delivered. If a generator has an MLF of 0.8, it is paid for 80 per cent of its output. Factors which can impact on marginal loss factors are the distance the electricity is being transported, a surplus of generators supplying electricity in an area or high supply when demand is low. AEMO sets marginal factors annually. Some projects found their MLF's were dramatically reduced this year. For example, in Broken Hill, the building of a large generator has caused the MLF to fall to 0.79.



Corporate PPAs most commonly took 6-12 months but often 12-18 months.

What are the key barriers identified by the participants for negotiating Corporate PPAs?

Developers identify buyer understanding of the energy market and PPAs as the main issue followed by accounting or legal issues and market uncertainty (Figure 16).

For buyers, it is a similar story with two-thirds nominating finding the right model for the organisation or market and policy uncertainty (Figure 17).

In part, these barriers reflect the stage of development of Corporate PPAs in Australia. Less experienced buyers have entered the market with lower understanding of the energy market and risk appetites.

Buyers are taking some time to reach a position across their organisations – especially in the context of high uncertainty. For their part, developers and retailers are also reconsidering pricing in response to developments such as changes to marginal loss factors and the allocation of risks within PPAs in the current environment. Retailers in particular are also developing and evolving products to try and better meet the needs of these new buyers.

On the role of government in addressing market barriers, respondents highlighted the importance of policy certainty and indicated that a mechanism to replace or extend the RET would be beneficial, though no major issues relating to PPAs were specifically identified; buyer expertise and general development of the market appeared to be higher priorities.

Figure 16: Key Barriers to Corporate PPAs, Project Developers

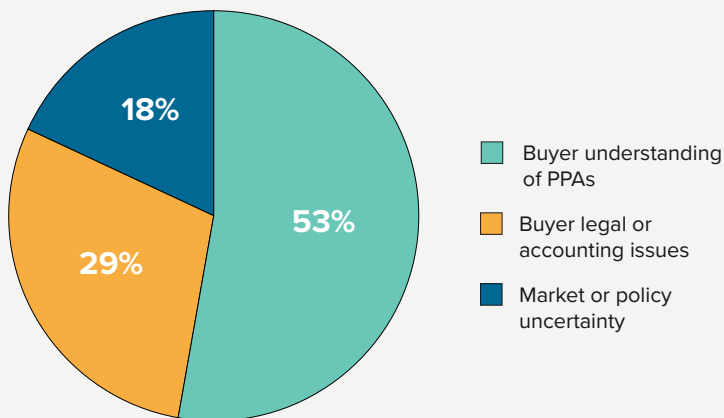
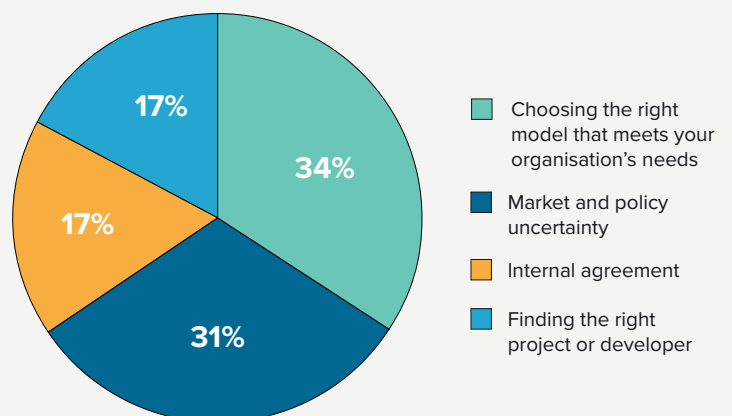


Figure 17: Key Barriers to Corporate PPAs, Buyers



THE AUSTRALIAN MARKET IS DIVERSIFYING INTO RETAIL PPAs AND MID-SCALE BUYERS

The major innovation in the Corporate PPA market has been the development of Retail PPAs and offerings. Whereas Retail PPAs and products are rare in the US, the Australian market has quickly diversified as retailers respond to the growth in demand amongst mid-scale buyers.

There are not as many large buyers with multiple sites in Australia. Many of the buyers interested in PPAs are ‘mid-scale’ buyers – ranging from 100 MWh p.a. to 50 GWh p.a.

Wholesale PPAs are sometimes negotiated with buyers in this range – especially with operating projects – but in general they often lack the scale to be attractive to a project developer for new projects. The buyers tend to be less familiar with the wholesale market and project development. They can have lower risk appetites, be less willing or able to enter into long term contracts and prefer a retail product or a retailer that will negotiate and manage the relationship with the project. Derivative accounting treatment of Wholesale PPAs is also a major issue.

When BRC-A developer members were asked what is the minimum term they were seeking, the majority answered at least 10 years (Figure 18).

For buyers used to three-year retail agreements, taking such a long-term position is a big change.

Consequently, for all these reasons, there has been a growth in Retail PPAs which are now the primary type of agreement (Figure 19).

Figure 18: Minimum Term Length, BRC-A Renewable Energy Project Developers (%)

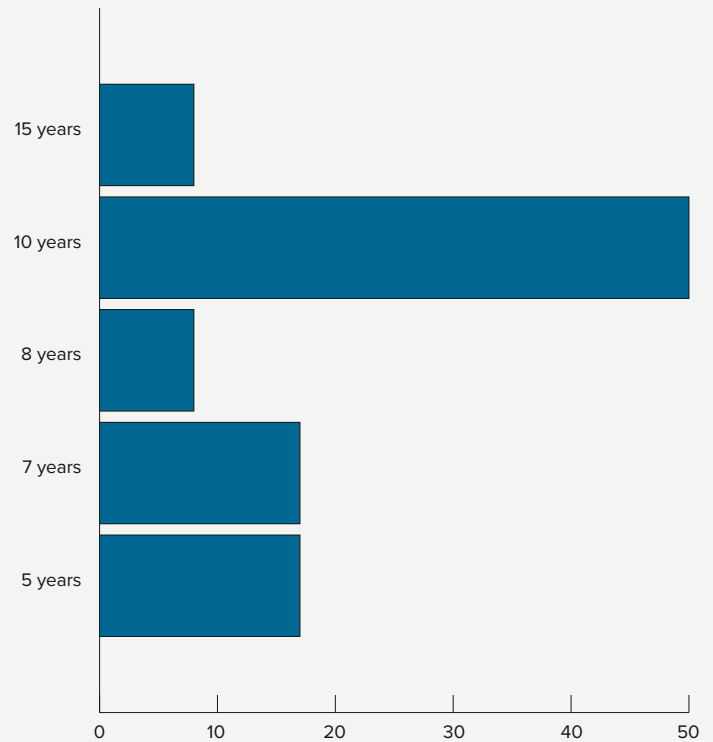
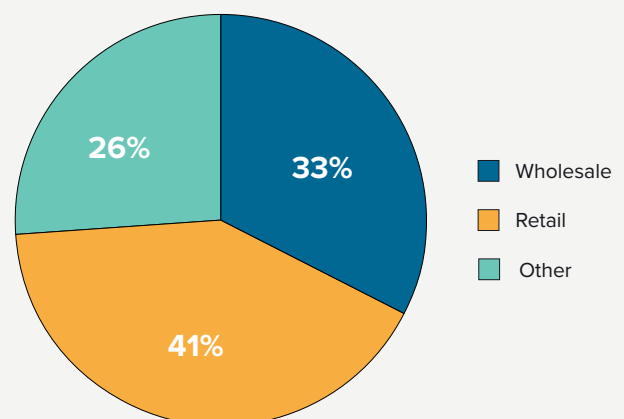


Figure 19: Wholesale, Retail and Other PPAs, Market Share (%)



To the best of our knowledge, there are eight retailers who are active in Corporate PPAs and the interest and product development in the last 12 months has increased dramatically.

The range of offerings by retailers is broadly:

- Retail PPAs: an agreement to buy electricity and/or LGCs from a solar or wind farm where the retailer holds the contract with the project
- Fixed price renewable energy supply agreements: retail contracts with a fixed price backed by renewable energy without a link to a specific project
- Retailer services to support PPAs
 - Wholesale Spot Exposure: pass-through of wholesale prices in combination with a PPA
 - Sleeving: integrating a Wholesale PPA negotiated directly with a project into a retail agreement
 - Firming: supplying electricity outside of the contracted PPA generation. There are different 'partial' and 'full' firming models available
- Demand management: support for the buyer to match their load to the solar and wind farm output and limit exposure to the wholesale market.

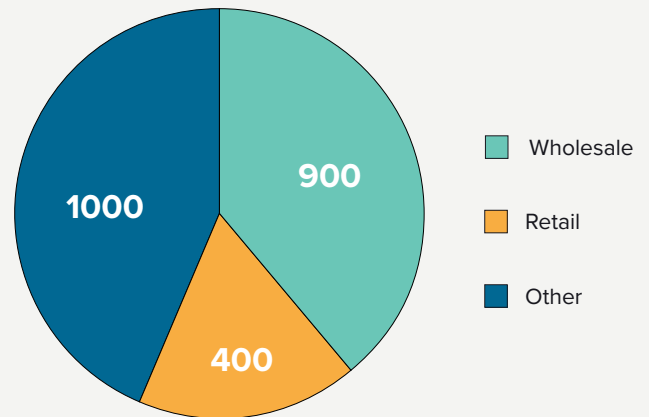
Most retail PPAs occur through tenders supported by advisors (sometimes known as market brokers).

Innovation and product development in Retail PPAs and products is occurring rapidly.⁶ For more information on Retail PPAs and Products, see the BRC-A guide.

THE BIG DEALS ARE USUALLY WHOLESALE PPAs

In Australia, as in the US, the early deals were mostly long-term wholesale PPAs signed directly between big energy users and renewable energy developers.

Figure 20: Wholesale, Retail and Other PPAs, Market Share (MW)



While there are more Retail PPAs, more than twice as much capacity has been contracted through Wholesale PPAs than Retail PPAs (Figure 20).

Big energy users are likely to continue to prefer Wholesale PPAs for a number of reasons:

- greater transparency on pricing,
- more competition - ability to negotiate better prices directly with many projects,
- simplicity – especially if combining retail agreements across sites is required,
- flexibility – not directly linked to demand or retail contracting, and
- greater in-house energy market expertise.

Interestingly, other deal types are the leader in terms of capacity contracted. This reflects some large LGC-only PPAs negotiated by government infrastructure projects and a consortium led by Telstra that negotiated a large contract-for-difference PPA.

6. For more information, the BRC-A is currently developing a guide on retail PPAs and products.

CASE STUDIES

Organisations are signing Renewable PPAs for a range of reasons across different contexts. Here we highlight some of the PPAs that have been negotiated to illustrate the diversity in deals and circumstances under which PPAs can make sense for private and public sector organisations.

COMMONWEALTH BANK OF AUSTRALIA & CWP RENEWABLES

Organisation	Developer	Project	Volume
Commonwealth Bank of Australia	CWP Renewables	270MW Sapphire Wind Farm	96GWh p.a. (65% of load)

The Commonwealth Bank of Australia's innovative PPA supported the construction of the 270MW Sapphire Wind Farm in New England, NSW.

The majority of the electricity comes from the wind farm but the PPA allows for future expansion to include the 200MW Sapphire Solar Farm (scheduled for completion in 2020) and battery storage located on-site to meet a 'baseload' requirement for a fixed volume of 96 GWh each year.

The Commonwealth Bank has also signed the global RE100 initiative which commits them to 100 per cent renewable electricity by 2030.

FLOW POWER AND SCHOOLS

Organisation	Developer	Project	Volume
Ascham School	Flow Power	Wind and Solar	90% of load
Presbyterian Ladies College	Flow Power	Wind and Solar	100% of load

One of the features of the Australian market is that smaller and less traditional buyers are undertaking Renewable PPAs.

Two examples are Renewable PPAs between Flow Power and [Ascham School](#) (April 2019) and [Presbyterian Ladies College](#) (June 2019).

Ascham School's Business Manager Mrs Candice Heapes explained that in:

"late [2017] we felt pressured by another provider into accepting significantly higher energy retail prices... this, along with our growing focus on sustainability as part of our strategic plan, spurred us on to look at alternative options and sources of energy. At Ascham, the whole school is committed to sustainable actions, so drawing energy from wind and solar farms is a terrific step in greening our future".

Flow Power Managing Director, Matthew van der Linden, commented that:

"Schools are in a great position to take advantage of renewable power from both economic and teaching perspectives".

VIVA ENERGY

Organisation	Developer	Project	Volume
Viva Energy	Acciona	Mt Gellibrand Wind Farm, 132MW	~100GWh p.a.

Excerpts taken from [Viva Energy's online Media Centre](#) on 19 Feb 2019:

“Viva Energy Group Limited (“Viva Energy”) announced today that it has entered into a long term Power Purchase Agreement (PPA) with Acciona who own and run Mt Gellibrand, one of Victoria’s newest and largest wind farms near Colac, 65km west of Geelong.

“The agreement, which is a financial contract, secures pricing for Viva Energy on approximately 100GWh per annum of electricity, which represents around a third of Viva Energy’s Geelong Refinery’s annual electricity needs.”

Viva CEO Scott Wyatt said:

“This agreement with Acciona is a win-win outcome for us both as it helps lock in a stable electricity price over the long term, while supporting a local renewable energy source not far from the refinery.”

VICTORIAN LOCAL GOVERNMENT PPA

Organisation	Developer	Project	Volume
48 Local Government Administrations	RFP to be issued shortly	RFP to be issued shortly	246 GWh p.a.

The [Victorian Greenhouse Alliances](#) have established a local government buyers group. The buyers group comprises 48 local councils which have each agreed to sign a group PPA, subject to the terms falling within an agreed price range. The buyers group is preparing to issue a Request For Proposal for retailers to provide offers for a PPA to supply 246 GWh p.a. and the LGCs which will be retired. This would be equivalent to 44 per cent of its constituents’ electricity requirements.

Individually, the electricity consumption of each of these councils is too small to have much bargaining power. Joining together also enables the group to share the costs and access higher quality expertise.

Aggregating 48 different organisations into a buyers group is an extraordinary undertaking. Scott McKenry, Executive Officer at the Eastern Alliance for Greenhouse Action, cites a number of key conditions for a successful aggregation:

- a clear governance model on how the group will make decisions
- allocating sufficient resources for a project facilitator or lead
- scoping a model that can be used to recruit buyers to opt-in
- accessing independent and objective advice.

INTERNATIONAL DEVELOPMENTS IN CORPORATE PPAs

The Business Renewable Centre Australia is one of a number of similar organisations or affiliates of the US Business Renewables Centre in China, Canada and Europe. Corporate PPA markets have now emerged in a range of different contexts across international jurisdictions. How does the Australian market compare internationally? Broadly, the Australian market can be classified as an expanding market – not yet at the stage of the US market but more advanced than markets in China and Canada.

Developing Markets	<p>China The Corporate PPA market is at an early stage but the Renewable Portfolio Standard and multi-national company supply-chain policies are key drivers.</p>
Developed Markets	<p>Canada A series of Corporate PPAs have been negotiated but primarily in one province (Alberta) at present</p>
Expanding Markets	<p>Australia Around 2 GW of capacity has been contracted through Corporate PPAs with a large pipeline of agreements under development and negotiation.</p>
	<p>Europe 7.4 GW of capacity has been contracted through Corporate PPAs. 2.5 GW was contracted in 2018 alone.</p>
Mature Markets	<p>United States The US was the first major market for Corporate PPAs. 21.5 GW has been contracted.</p>

CHINA

While corporate procurement of renewable energy remains challenging due to few procurement options, recent policy developments provide optimism for new mechanisms and the market to unlock. Specifically, China's Renewable Portfolio Standard could create procurement options in each province that mandated and non-mandated corporates could utilise, depending on the implementation legislation being developed by the provinces. Concurrently, the first list of subsidy-free projects has been announced

and is progressing, fulfilling the promise of clean and economic electricity in China.

Multinational company pressure on their supply chain adds a third dimension to change where China-domiciled companies are entering this space and bringing substantial economic and political influence to raise the profile of corporate action in the renewable energy sector.

Overview provided by BRC-China

CANADA

Corporate procurement of renewable energy has now been tried, tested, and has delivered - recently completed transactions proving the concept. While corporate PPA prices remain confidential recent government-led price discoveries in the province of Alberta revealed the Canadian market can produce renewable energy economically, adjusting the common misconception that price is a barrier.

Buyer interest continues to build as domestic and international-leading brands seek to meet their Canadian load in-country. Carbon pricing in Canada and Alberta creates the potential for a second market type for corporate procurement to develop. A challenge remains that Alberta is the only province truly open to procurement, creating a basis risk concern, and ongoing work is required to open other provinces and/or build green tariffs across the country.

Overview provided by BRC-Canada

EUROPE

The Corporate PPA market in Europe has taken off over the last few years. Since 2014, the corporate renewable PPA market in Europe has grown to a cumulative capacity of over 7 GW (mainly wind). The activity was led by a few countries (Nordics, UK, Netherlands). However, in 2018 Corporate PPA deals were signed in many more countries showing the increased interest and opportunity.

The future potential for the Renewable PPA market in Europe is significant. Renewable energy is now cost competitive with conventional power in all markets across Europe and the appetite from corporates is large and growing fast.

The challenge is to remove the various barriers to corporate PPAs in each EU Member State. As part of the Clean Energy for All Europeans Package, Member States are required to identify and remove the barriers but actual progress remains to be seen. More information on the policies in place and the ability to do deals in the various Member States can be found here: <http://resource-platform.eu/>

Overview from RE-Source Europe.

UNITED STATES

The US market continues to move forward and demonstrates long-term growth and lasting sustainability. Even with small loads, companies continue to use the US market's extensive list of precedent transactions.

Transaction innovation continues with a growing plethora of green tariff options being provided by utilities, new aggregation models, contracting evolutions such as zero-price floors within the PPA, and growing third party (non-buyer or seller) solutions to also manage risk.

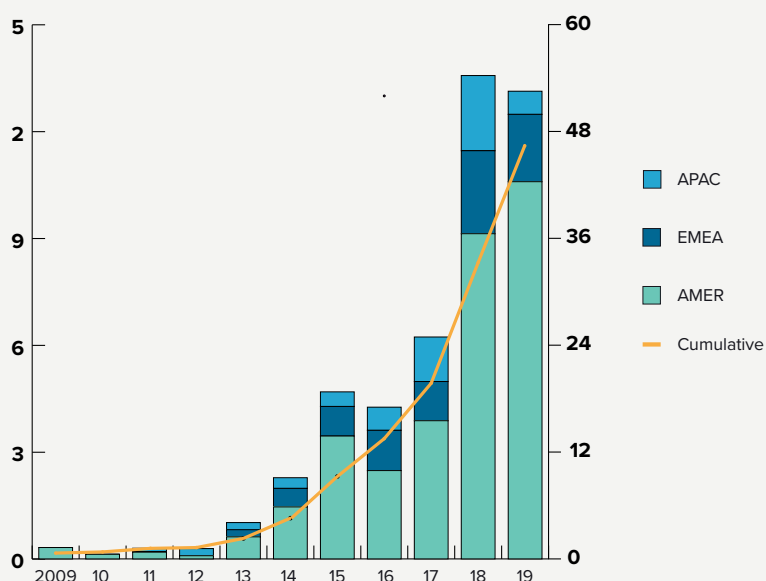
Happily, contract innovations developed in the US-market are moving beyond the borders to enhance corporate risk management in other jurisdictions and support worldwide development.

Overview from BRC/Renewable Energy Buyers Forum

GLOBAL UPTAKE OF OFF-SITE RENEWABLE PPAs

BloombergNEF monitors the global development of off-site Renewable PPAs. In total, BNEF estimate almost 46.4 GW of capacity has been contracted through off-site Renewable PPAs, shown in Figure 21. Globally, BNEF estimate capacity contracted through Renewable PPAs has almost doubled in just the past two years, highlighting the significance of the sector.

Figure 21: Global Uptake of Corporate PPAs



Source: BloombergNEF

THE BUSINESS RENEWABLES CENTRE AUSTRALIA – ACTIVITIES IN 2018-19

The BRC-A was established to support the development of the Corporate PPA sector. Based on and licenced from the Rocky Mountain Institute Business Renewables Centre in the United States, the BRC-A is a member-based organisation that undertakes buyer and developer education and training, develops information resources (guides, primers, tools, templates), and connects buyers and developers through an online marketplace platform and networking events. The core purpose of the BRC-A is to reduce the transaction costs of Corporate PPAs and build capacity to expand Corporate PPAs. The BRC-A undertook a survey of its membership during 2019. 71 members out of 211 BRC-A members at the time completed a survey on their experiences with Corporate PPAs, with the distribution by type shown in Table 2.

Table 2: BRC-A Survey Respondent Count

Buyers	Developers	Service Providers
29	25	17

In this section we profile the BRC-A membership and their perspectives on Corporate PPAs and report on activities of the BRC-A in 2018-19. The key findings include:

- **there is significant demand for PPAs amongst BRC-A members:** most of the members are large organisations with sizable electricity loads that currently purchase low levels of renewable energy
- **there is a high level of activity on PPAs:** most of the buyers and developers are currently actively involved in Corporate PPAs
- **high transaction costs remain a barrier to PPAs:** buyers and developers report there are significant transaction costs and negotiation challenges at present.

In short, there is a substantial opportunity to grow renewable energy investment through Corporate PPAs but buyers and project owners are for the most part still working out how to negotiate them.

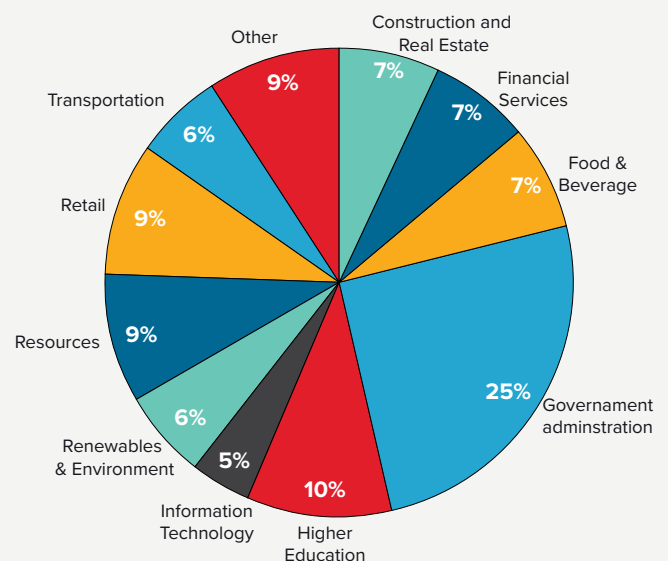
BRC-A MEMBERSHIP PROFILE

The BRC-A has members that encompass the different PPA sector participants – buyers, developers and service providers.

Buyer Members

Figure 22 shows BRC-A buyer members are drawn from a diverse range of economic sectors. There is strong representation from the public sector (government, higher education) and private sector including resources, food and beverage, retail and construction.

Figure 22: Economic Sector, Distribution of Buyer Members (%)



Two-thirds of the buyer members are from businesses employing over 500 people but there are also small- and medium-sized businesses (Figure 23).

Figure 24 indicates that most of the buyer members have large electricity loads – almost 40 per cent are over 200 GWh p.a. and 60 per cent are over 50 GWh p.a.

40 per cent are mid-sized buyers, with one-third at the smaller end of that category with loads between 1 – 15 GWh p.a.

According to Figure 25, most BRC-A members currently purchase no or very little renewable energy.

Over half source less than 10 per cent and a further quarter source just 10-20 per cent of their electricity from renewable sources.

For only 6 per cent of buyer members was more than half of their electricity sourced from renewable energy.

Figure 23: Buyer Members, by Employees (%)

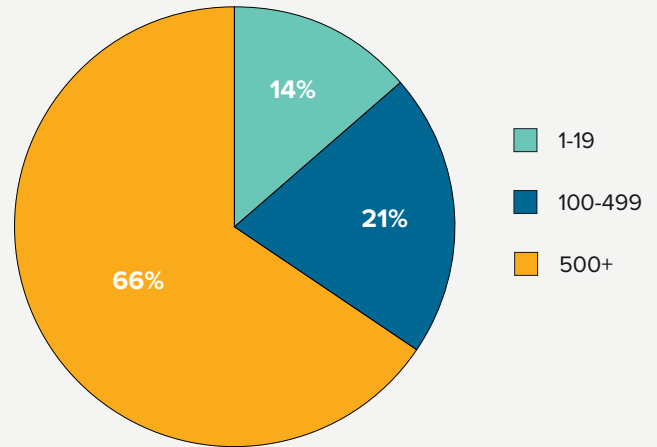


Figure 24: Buyer Member Electricity Loads

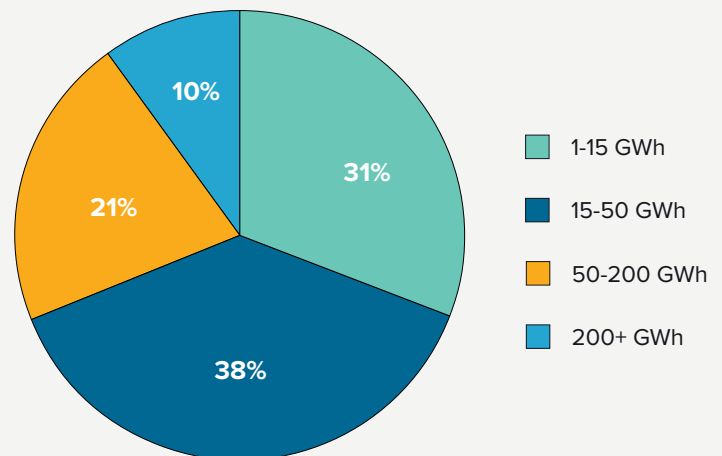
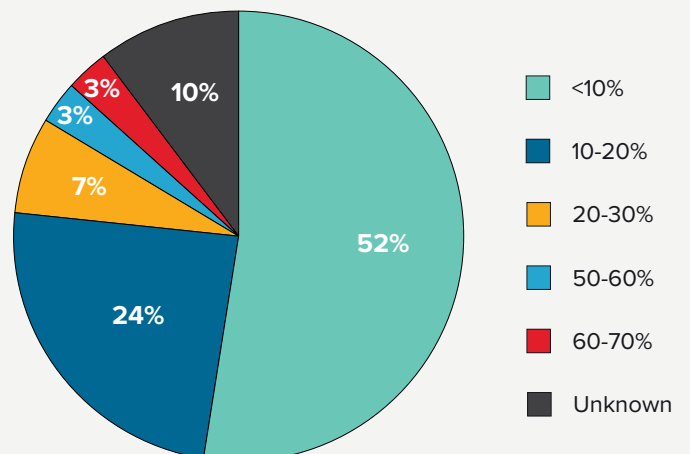


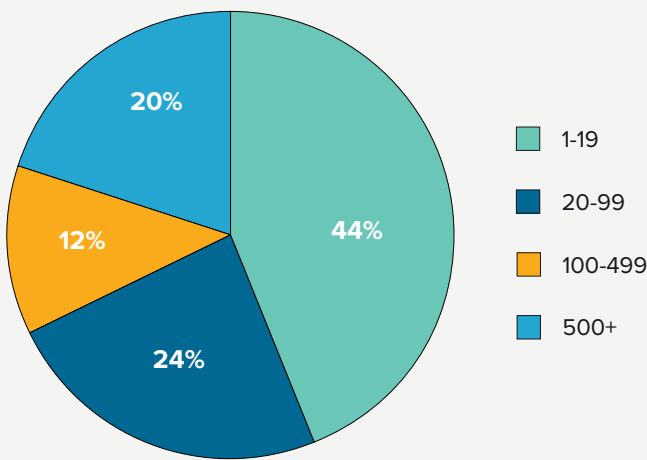
Figure 25: Buyer Member, Current Level of Renewable Energy



Developer Members

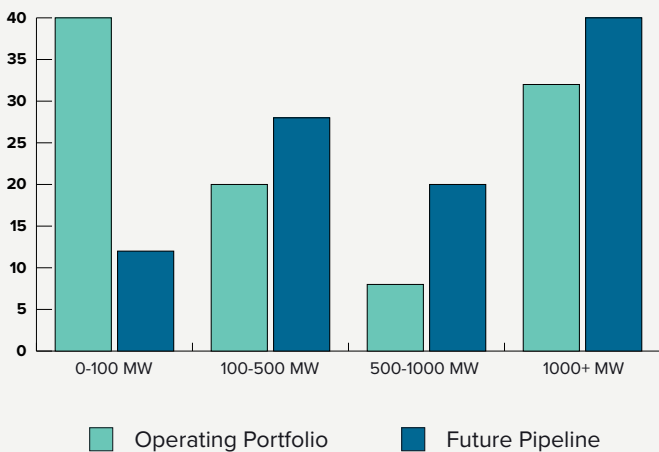
Most of the BRC-A's members have small numbers of employees but large and growing project portfolios. Almost half of the developer members are small businesses with less than 20 employees (Figure 26).

Figure 26: Developer Member Employee Number



The size of operating portfolios amongst developer members is mixed: one-third have an operating portfolio greater than 1000 MW but at the other end of the scale 40 per cent have less than 100 MW (Figure 27).

Figure 27: Developer Member Portfolio and Pipeline



However, the future project pipeline of BRC-A members is growing strongly with just 10 per cent working on less than 100 MW.

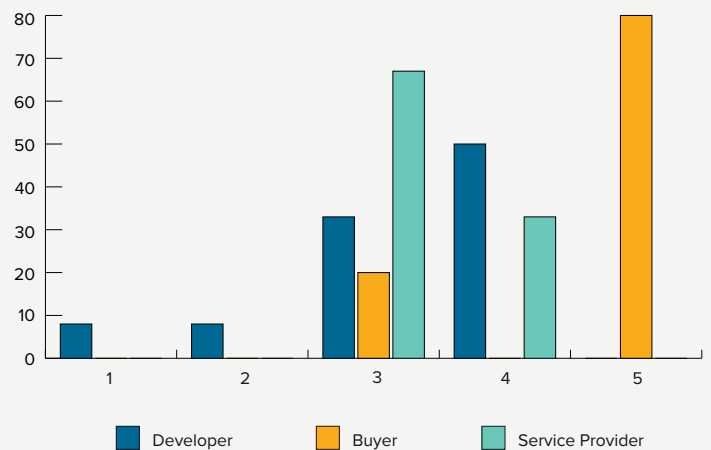
KEY BARRIERS TO CORPORATE PPAs

The BRC-A was established to help grow the Corporate PPA market by supporting buyers, developers and service providers. We asked our members to identify the key barriers to Corporate PPAs and to rate the difficulty and transaction costs involved in Corporate PPAs.

There is a healthy level of supply and demand for Corporate PPAs - but the results of the first survey indicate there are significant transaction costs and all parties are finding them difficult to negotiate at present.

When asked to rate the difficulty of negotiating a Corporate PPA from 1–5, most respondents answered 3–5 (Figure 28).

Figure 28: Perceived Difficulty of Process for Corporate PPAs



Service providers were also likely to rate Corporate PPAs as difficult to negotiate. Some developers have found Corporate PPAs easy to negotiate but the majority rated them moderately to very difficult.

When asked to rate the level of transaction costs from 1 (low) to 5 (very high), the answers were dispersed and overall lower than the general difficulty ratings (Figure 29).

Figure 29: Rated Scale of Transaction Costs for Corporate PPAs

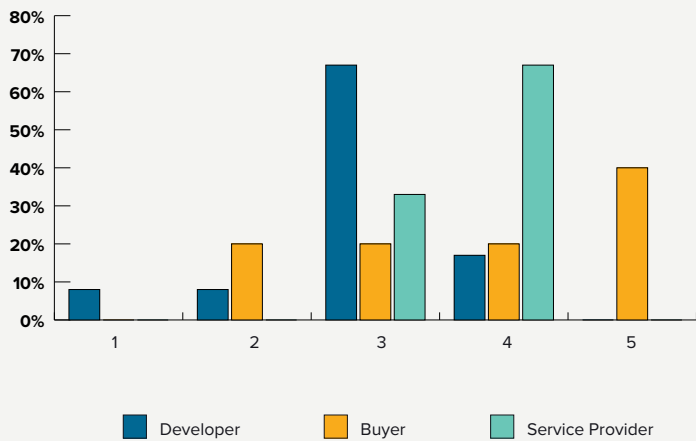
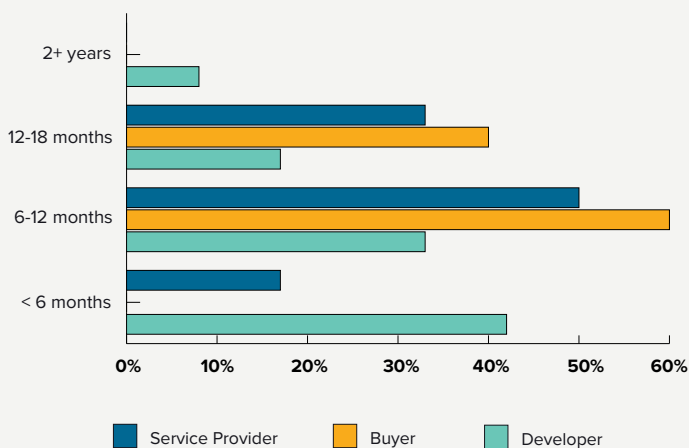


Figure 30 reveals there have been some PPAs done in less than six months (anecdotally these were earlier deals between large companies and developers) but most PPAs take 6–12 months or 12-18 months to negotiate.

Figure 30: Corporate PPAs, Process Duration



Beyond providing greater policy certainty for renewable energy, the surveys indicated that there are no major regulatory or government barriers. Instead, the more common issues identified included education and upskilling, streamlining and standardising processes, developing tested and accepted business models and facilitation.

BRC-A EVENTS

The BRC-A hosts and participates in a range of events to build the knowledge of developers and buyers on Corporate PPAs.

Buyers' Bootcamps

Buyers' Bootcamps are based on the peer-learning model developed by the US BRC. Staff from approximately 20 prospective buyers are connected with experienced buyers and particular service providers who have already implemented PPAs. The bootcamps cover a range of topics such as choosing a deal structure, building internal support, conducting an RFP and evaluating PPA bids, accounting treatment and the use of consultants.

The format allows for new buyers to get answers to their questions and problems through, for example, paired walks with experienced buyers. In 2019, the BRC-A ran two Buyers' Bootcamps in Sydney (14-15 May) and Melbourne (4-5 September). In 2020, BRC-A is looking to expand its bootcamp program following very positive feedback.

Developer Bootcamps

Developer Bootcamps were hosted this year at Clean Energy Council events in Brisbane and Sydney to enable project developers to learn more about Corporate PPAs, especially perspectives from buyers participating in tenders and RFPs.

Industry Events

The BRC-A also participates in industry events to build awareness and understanding of Corporate PPAs through presentations on market trends, deal structures, case studies and by participants themselves. Since the launch in November-December 2018, BRC-A has participated in a range of events including the Energy Users Association of Australia National Conference (20 May), Renewable Cities Australia (14 June) and the CEC Australian Clean Energy Summit (30-31 July).

Webinars

Educational webinars for BRC-A members are hosted as a quick, easily accessible way for members to get information on PPAs. A developer webinar for buyers to hear their perspectives was held as was a webinar on the Cities Power Partnership for councils.

BRC-A MARKETPLACE PLATFORM

The BRC-A website hosts an on-line marketplace platform where developers can list projects seeking an off-taker. Project listings include a range of information such as project status (e.g. seeking planning approval), terms (e.g. minimum term and size of purchase), technology and location. The marketplace is designed to assist buyers understand the market and, importantly, help connect buyers and sellers.

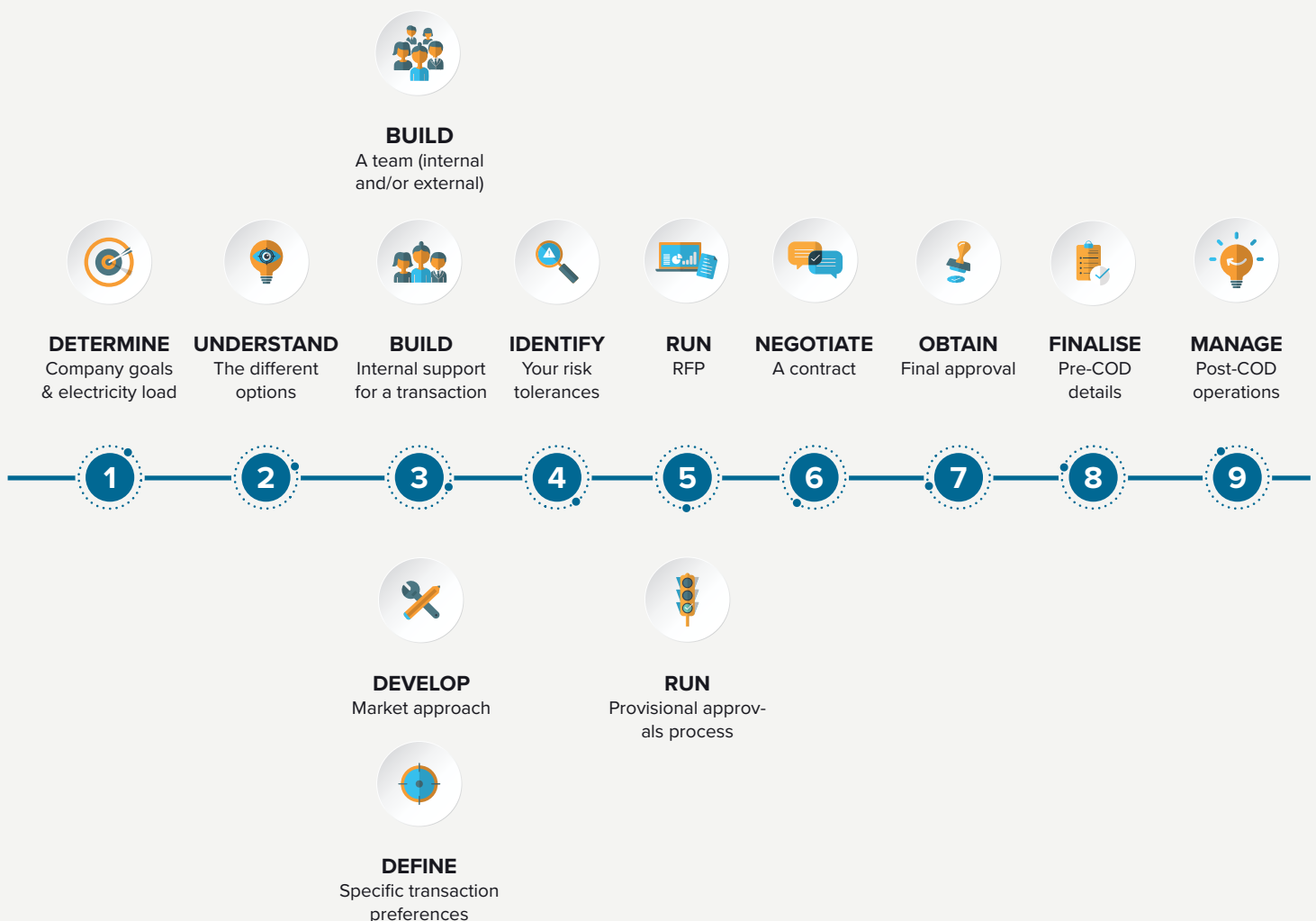
As at early November, the Marketplace Platform listed:

- 110 renewable energy projects from 44 developers, totalling
- 14,550 MW of projects.

BRC-A RESOURCES

The BRC-A is developing and adapting a range of primers, guides, tools and templates from the US for the Australian market. The centrepiece for BRC-A resources is a **Buyers Roadmap** (Figure 31), which includes a step-by-step guide through the procurement of a Corporate PPA with supporting resources for each step of the process.

Figure 31: Buyers Roadmap



Resource Library

The BRC-A has a licence from the Rocky Mountain Institute to adapt its primers, guides and tools to the Australian market. The BRC-A has to date adapted the following resources to the Australian market for its members:

- Energy Management Principles Primer
- Deal Team Guide
- Accounting Primer
- Deal Structure Primer
- Request for Proposals (RFP) Template
- Term Sheet Template
- Chief Financial Officer (CFO) Pitch Deck.

Other guides that will be developed in coming months include:

- Aggregation Primer
- Economic Analysis Primer & Tool
- Finance Primer
- A Guide to Retail PPAs and Products for Medium-Scale Buyers
- Risk Allocation Guide
- Social Licence and Impact for PPA Buyers: how to maximise the social benefits and value of a PPA
- Firming and PPAs: demand management and firming strategies for PPAs.

Technical Advisory Panel

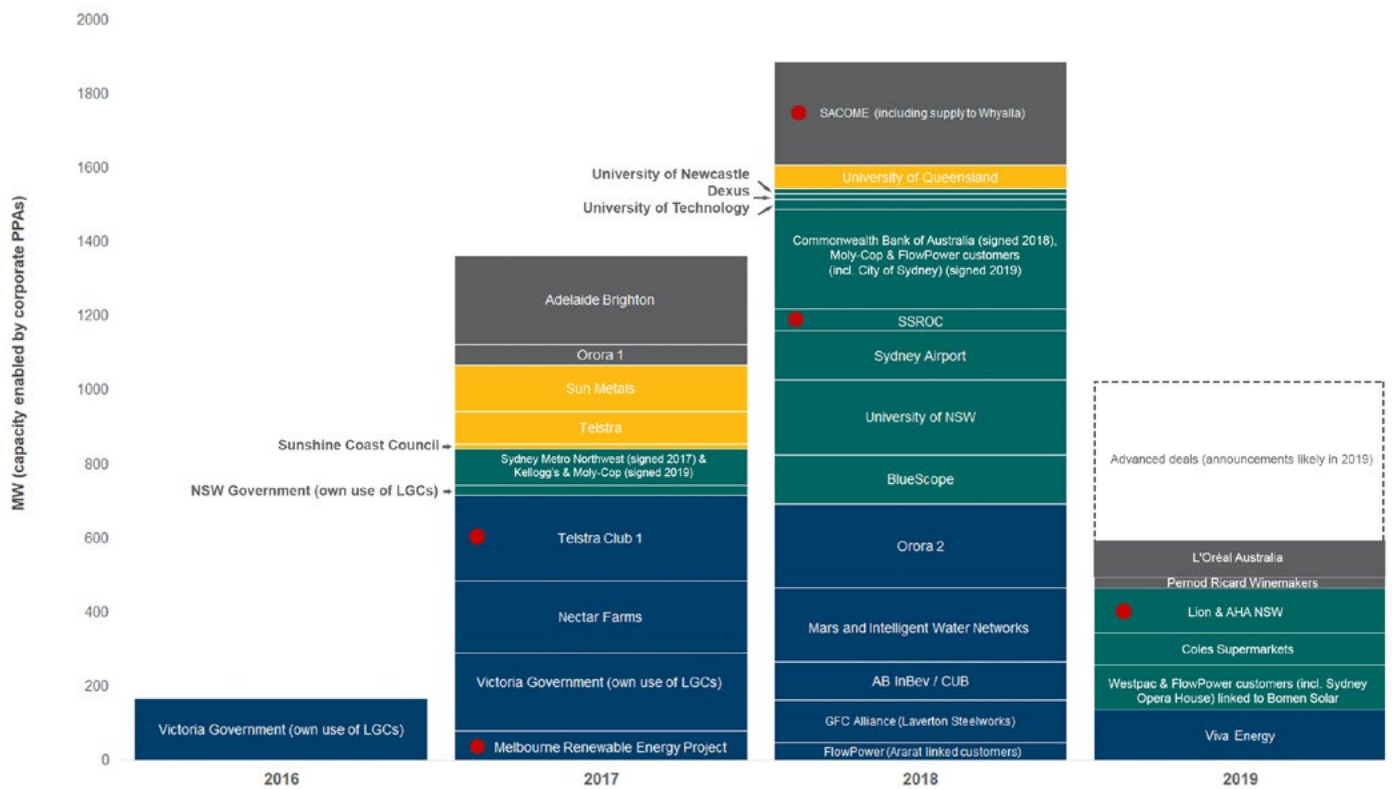
The BRC-A's Technical Advisory Panel (TAP) is a group of professionals from leading industry organisations (including government, finance, consulting, academia) that collaborate with the BRC-A on industry-relevant matters, including but not limited to the development of BRC-A resources.

The membership of the TAP is:

- Adam Clarke, City of Newcastle
- Adam Zaborszczyk, Consultant (formerly City of Melbourne)
- Anita Stadler, Energetics
- Aylin Cunsolo, Baker McKenzie
- Ben Waters, Presync
- Daniel Teng, Origin Energy
- Lachlan Creswell, Macquarie Capital
- Monique Miller, Clean Energy Finance Corporation
- Nick Jones, University of New South Wales
- Sanjeet Singh, Commonwealth Bank of Australia
- Simon Corbell, Energy Estate (Chair)
- Zach Mackey, Carlton & United Breweries

The BRC-A would like to express its gratitude for the ongoing contributions made by members of its TAP.

APPENDIX: ENERGETICS DEAL TRACKER



The MW capacity reflects the size of the project, not the capacity of the PPA offtake.

We do not have visibility of the ratio of electricity to LGCs contracted under the PPAs, nor do we track whether LGCs contracted through the PPAs will be sold or voluntarily surrendered.

Listing based on year of contract announcement/ signing



WHO IS BRC-A?

A not-for-profit initiative of [Climate-KIC Australia](#), [WWF-Australia's](#) and the [Institute for Sustainable Futures \(UTS\)](#).



BRC-A is supported by funding from:

