



Melbourne  
Renewable  
Energy  
Project

# Renewable Energy Procurement

A guide to buying off-site  
renewable electricity



CNCA



CITY OF MELBOURNE



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# About this guide



Companies and institutions are recognising the value of renewable energy purchasing through large-scale, long-term contracts. They have been adopted by many major international brands over the last decade. A number of recent announcements in Australia – including from Telstra, Sunshine Coast Regional Council, and Sun Metals – suggest that we will be seeing more of them here.

Through their purchasing decisions, large organisations such as councils, universities, corporations and infrastructure authorities have the power to drive investment in new renewable energy projects such as wind farms and solar parks.

These models have the potential to drive new investment in renewable energy and accelerate Australia's transition to a cleaner energy supply. They also deliver a host of benefits to the purchasers, including stable electricity prices and lower costs, as well as a reputation for leadership and innovation and investment in community programs.

This guide is all about how to procure electricity this way. It will help you:

- understand the opportunities
- understand what you need to know and how to get started
- make the business case
- plan the procurement process.

It doesn't deal with other ways to purchase renewable energy, such as installing small-scale rooftop solar, or entering into short-term electricity contracts. The guide is written from the perspective of Australia's east coast 'National Electricity Market'. Electricity markets operate differently in various parts of the world. Many of the observations and lessons may be applicable in other markets, but some of the specifics may differ. If you are located outside Australia, you may need to undertake your own local research.

Throughout the document, you'll find case studies and tips drawn from our experience establishing the Melbourne Renewable Energy Project, and from other similar projects.



# Corporate power purchasing agreements





**“We’re actually already energy independent in the Nordic area, producing more energy than we consume, the same will be true in the US shortly. Worldwide we’ve deployed about €1.5 billion into renewable generation projects – we have committed to own and operate 327 wind turbines and have installed almost 700,000 solar panels on our stores and distribution centers.”<sup>2</sup>**

Steve Howard,  
Chief Sustainability Officer,  
IKEA Group



Internationally, more and more organisations are procuring electricity from off-site renewable power plants. Tech giants Google, Amazon, Facebook, Apple and Microsoft have become some of the world’s biggest backers of large-scale solar and wind energy development through corporate power purchasing agreements. Those first mover companies are now being joined by manufacturing and retail businesses including Ikea, Volkswagen, General Motors and Dow Chemical.

RE100 is a global initiative uniting more than 100 influential businesses who are committed to 100 per cent renewable electricity. Those companies disclose their electricity data annually, and RE100 reports on their progress.<sup>1</sup>

In 2016, Mars, Incorporated partnered with Eneco UK on a new 20-turbine wind farm in the Scottish Highlands. It committed to buying electricity for the next decade via a Power Purchase Agreement. The Moy Wind Farm produces enough renewable electricity to power Mars’ UK factories and offices.<sup>3</sup>

In Australia, renewable energy procurement is just catching on. In 2017, Telstra, Carlton & United Breweries and Sun Metals announced major projects or tenders. There are now several projects completed or underway, involving over a dozen organisations. You can find six detailed case studies, including interviews with project managers, in UNSW’s report ‘Facilitating End User Deployment of Off-site Renewable Generation’.<sup>4</sup>

In July 2017, Sunshine Coast Council flicked the switch on its own solar farm. The council became Australia’s first local government to offset its entire electricity consumption across all its facilities and operations from off-site renewable energy. The council estimates that it will save \$22 million over a 30-year period, based on today’s electricity costs. You can find more information, including its business case and system specifications at the council’s website,<sup>5</sup> and under the section [Which Model is the Right Model?](#)

Telstra is partnering with a new 70 megawatt solar farm near Emerald, in Queensland. The telco has signed a long term power purchase agreement with renewable energy developer RES Australia, under which it will take all the output and the renewable energy certificates from the solar farm.

Just south of Townsville, zinc refiner Sun Metals is building a 116 megawatt solar farm, which will provide around one-third of its electricity needs. The Korean-owned company will own the solar farm, and expects it to be completed in early 2018.

1 [www.there100.org](http://www.there100.org)

2 [www.there100.org/ikea](http://www.there100.org/ikea)

3 [www.there100.org/news/14216799](http://www.there100.org/news/14216799)

4 [www.lowcarbonlivingcrc.com.au/resources/crc-publications/crclcl-project-reports/rp1032-final-project-report-facilitating-end-user](http://www.lowcarbonlivingcrc.com.au/resources/crc-publications/crclcl-project-reports/rp1032-final-project-report-facilitating-end-user)

5 [www.sunshinecoast.qld.gov.au/Environment/Sunshine-Coast-Solar-Farm](http://www.sunshinecoast.qld.gov.au/Environment/Sunshine-Coast-Solar-Farm)

# Melbourne Renewable Energy Project: a new generation of energy

The Melbourne Renewable Energy Project (MREP) marks the first time in Australia that a group of local governments, cultural institutions, universities and corporations have collectively purchased renewable energy from a newly built facility.

MREP will support the construction of a new wind farm at Crowlands, a small agricultural community about 2.5 hours from Melbourne by car. The 39-turbine 80 MW capacity wind farm will be twenty kilometres north east of Ararat, in Western Victoria. It will be owned and operated by Melbourne-based clean energy company Pacific Hydro, and the power will be supplied by its retail arm, Tango Energy.

Under this project, members have committed to purchase 88 GWh of electricity per year from the Crowlands Wind Farm under a long-term power purchase agreement. The agreement has enabled Pacific Hydro to proceed with the project, and because the wind farm is bigger than the purchasing group's needs, it will generate additional renewable energy and dispatch it to the grid. The Crowlands Wind Farm will create more than 140 jobs during construction and eight ongoing operation and maintenance jobs.

The MREP approach enables cities, corporations and institutions to take an active role in securing renewable electricity supply and taking action on climate change. It provides long-term price certainty, enabling customers to mitigate the risk of increased energy costs in a volatile market. It will also be critical to cities such as Melbourne achieving their CO<sub>2</sub> reduction targets.



**"As an important public asset, it is our duty to improve our environmental impact and live up to the sustainability expectations of our stakeholders – our customers, our employees, our Club Melbourne Ambassadors, and our community.**

**Our venue is growing by 25 per cent but our carbon footprint will stay the same, with the MREP giving us the ability to offset our expanded building with green energy. Sustainability is at the forefront of our business and we're proud to play our part in this project for Melbourne."**

Leighton Wood,  
Chief Operating Officer,  
Melbourne Convention  
and Exhibition Centre



## Crowlands Wind Farm

**80 MW** capacity =  **39** wind turbines



**140+**  
Jobs during  
construction



**8 Jobs**  
Ongoing operation and  
management of the plant



Opportunities  
for local  
businesses

## Made possible by the Australian first, Melbourne Renewable Energy Project

### Principle Partners



### Energy Partners



PacificHydro



## Melbourne Renewable Energy Project

**88 GWh**  
of energy



over a third of Crowlands  
Wind Farm total capacity



**17,600**

average households power use every year

OR



**22,512 cars**

off the road every year

OR



**96,800 tonnes**

of greenhouse gas pollution every year

This project will help Melbourne achieve



Electricity  
from  
renewables



**0**  
Net emissions



**"A strong sustainability focus is an essential part of being a world leading zoo-based conservation organisation. As the world's first zoo to achieve carbon neutral certification, we aim to inspire the community to practise environmentally sustainable behaviours to protect the natural world. The Melbourne Renewable Energy Project is an important part of our commitment to the continual improvement of our environmental sustainability practices and we are proud to unite with like-minded organisations that share our values. This project will allow Healesville Sanctuary to receive 100 per cent renewable energy and reduce its carbon footprint by 84 per cent, a significant step towards a cleaner future."**

Dr Jenny Gray,  
CEO,  
Zoos Victoria



**"We're proud to be involved in the Melbourne Renewable Energy Project. We take seriously our responsibility as a public-spirited and global university to lead debate and act on sustainability issues. The project signals the University's commitment to sustainability across all of its core activities, underpinned by our Sustainability Charter and Sustainability Plan to 2020. The University continues to implement on-campus projects to reduce energy demand and develop renewable energy capacity on site."**

Allan Tait,  
Chief Financial Officer  
and Vice-Principal of  
Administration and Finance,  
University of Melbourne



**"Federation Square is very proud to be a carbon neutral precinct. The organisation works diligently towards promoting the importance sustainability practices to the wider community. We see this project as an exciting opportunity to collaborate with like-minded businesses to pioneer this innovative, renewable energy project."**

Jonathan Tribe,  
CEO,  
Fed Square Pty Ltd





**“Being a foundation member of the Melbourne Renewable Energy Project is consistent with our strategy to develop a leadership position in sustainability and innovation, and we are pleased to be involved. Within the full scope of municipal services we provide, our day-to-day work involves maintaining public parks and gardens and urban forests and street trees – vital community assets which in addition play a role in the climate change equation.**

**Along with the project partner organisations, we hope to inspire other large organisations to replicate the MREP model and take their own step towards reducing their greenhouse gas emissions.”**

Chris Campbell,  
CEO,  
Citywide Service Solutions



**“As a local government leader in sustainability initiatives, the City of Port Phillip is excited that this project will help us achieve our goal of zero net emissions by 2020. Linking up with partners, such as the City of Melbourne, to combine buying power is a smart way of reducing greenhouse gas emissions. It also assists us with managing financial risk and stimulating job creation, while moving towards a clean, lower emissions economy.”**

Bernadene Voss,  
Mayor,  
Port Phillip Council



**“Moreland has always been at the forefront of sustainability initiatives and we are excited to be linking up with other councils, universities and the private sector, to achieve even greater outcomes.**

**“We’re confident this innovative and unique model for purchasing ‘home grown’ renewable energy will stimulate interest among other local governments, businesses and institutions looking to decarbonise their operations. This is a model that can be replicated by others and could play a strong role in stimulating growth in local renewable energy generation.”**

Cr Helen Davidson,  
Mayor,  
Moreland City Council





# Why do things differently?



More and more large energy customers are turning to renewable energy purchasing. Why? There is an increasing expectation in the community that organisations take action on climate change, and many are responding with strong commitments.

In a volatile electricity market, long-term renewable energy contracts also present opportunities to avoid risk and reduce costs. Plus, it presents an opportunity to deliver additional benefits to the broader community. Renewable energy purchasing is a cost effective way to deliver on corporate commitments to reduce greenhouse gas emissions, be carbon neutral, or buy more clean energy.

You will not only guarantee the supply of renewable electricity over the contract period, but you can also realise other benefits that enhance your organisation's reputation and contribute to customer attraction and retention. These co-benefits may be linked to your community investment initiatives, such as training and employment opportunities, biodiversity protection or Indigenous inclusion.

## Bank Australia - meeting customer expectations

As a 100 per cent customer owned bank, Bank Australia regularly engages with its customers to understand the social, environmental and economic issues of importance to them. In its 2016 survey, the two issues most frequently listed in customers' top priorities were encouraging growth in renewable energy and acting on climate change by reducing carbon emissions.

Acting on its customers' priorities, the bank has made a commitment to switch to 100 per cent renewable electricity, and will continue to operate as a carbon neutral business. 'Our customers have told us that renewable energy is a priority for them. By enabling new investment in renewable energy, the project will also help Bank Australia to meet our customers' expectations.'

Damien Walsh, Managing Director of Bank Australia

## NEM CY19 Base Electricity Futures Daily Settle Price \$/MWh



# A changing electricity market

The Australian electricity market is undergoing unprecedented change, driven by the transition away from coal fired power stations. Changes to both supply and demand have resulted in significant fluctuation in electricity prices. Over the last two years, we have seen the withdrawal of ageing coal fired power generation units that are no longer economic to operate, including the Northern Power Station in South Australia and Hazelwood in Victoria. The withdrawal of the Liddell power station in NSW has also been announced. On the other hand, utility scale solar and wind energy generation capacity are being built rapidly, motivated by the rise in fossil fuel prices, a fall in the cost of renewable energy generation and the Renewable Energy Target. Closures of aluminium smelters and other large manufacturing plants have reduced demand, causing short-term reductions in spot prices. These factors contribute to a volatile and uncertain business environment.

The graphs below demonstrate how the announced closure and re-opening of power stations has a significant impact on wholesale spot prices. Entering into long-term contracts can mitigate this volatility by delivering a stable long-term price.

Renewable energy procurement also involves purchasing Large Scale Generation Certificates (LGCs), and these certificates are also subject to price increases and volatility. Spot prices for these certificates have fluctuated in the past five years, from about \$25 to \$90 per certificate. These costs are passed onto all customers through retail electricity contracts. By securing long-term contracts, customers can obtain prices at lower cost.

**“Renewable energy is common sense energy – it’s a great thing for the Chief Financial Officer as well as the Chief Sustainability Officer.”**

Steve Howard,  
Chief Sustainability Officer,  
IKEA Group



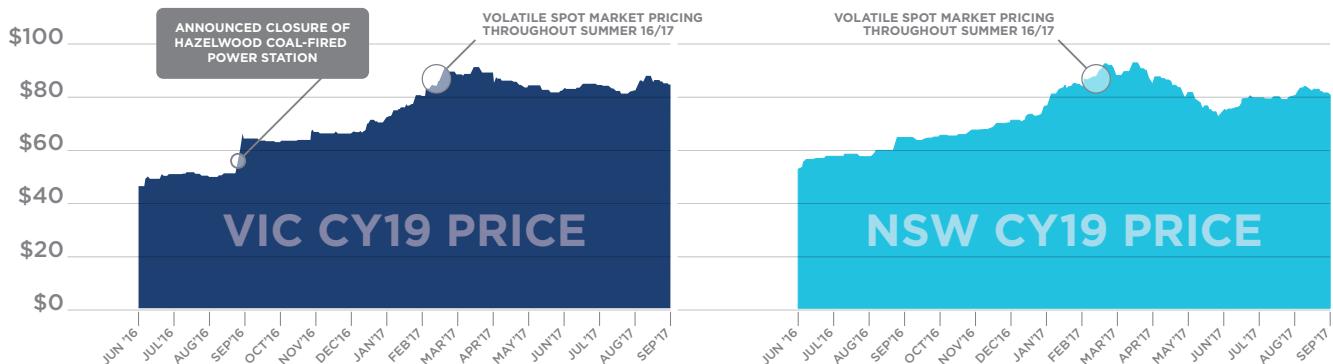
**“The high penetration of variable renewable supply increasingly needs to be managed through measures such as additional dispatchable generation capacity, demand response capacity and appropriate storage technologies.**

**Wholesale prices will continue to be volatile in this rapidly transforming market environment. Corporates interested in power purchase agreements need to understand the fundamental market drivers and their impact in order to mitigate their energy price risks over the long term.”**

Gilles Walgenwitz,  
General Manager, Energy  
and Carbon Markets, Energetics



## NEM CY19 Base Electricity Futures Daily Settle Price \$/MWh





# Purchasing renewable energy

**Renewable energy can be purchased in a range of different ways. This section covers two very different issues that will determine whether your organisation should consider procuring renewable energy and the contracting model you choose – one is about your objectives, and the other, your electricity consumption.**



# What's driving your organisation?

Your corporate objectives and drivers will be critical in determining the source of your electricity supply and, importantly, the contract structure you adopt. They will support your business case, shape the evaluation criteria in your procurement process, and determine the technology you select. For example, if cost savings are your primary objective, you may opt for the lowest cost project, with a relatively long contract term. This could involve contracting with an existing renewable energy power plant, rather than a new one. Alternatively, a shorter contract term may reduce long-term risk, but come at a slightly higher cost per unit of electricity. And if your organisation has strong connections to a place, you may choose a local project, even if that involves a more costly technology.

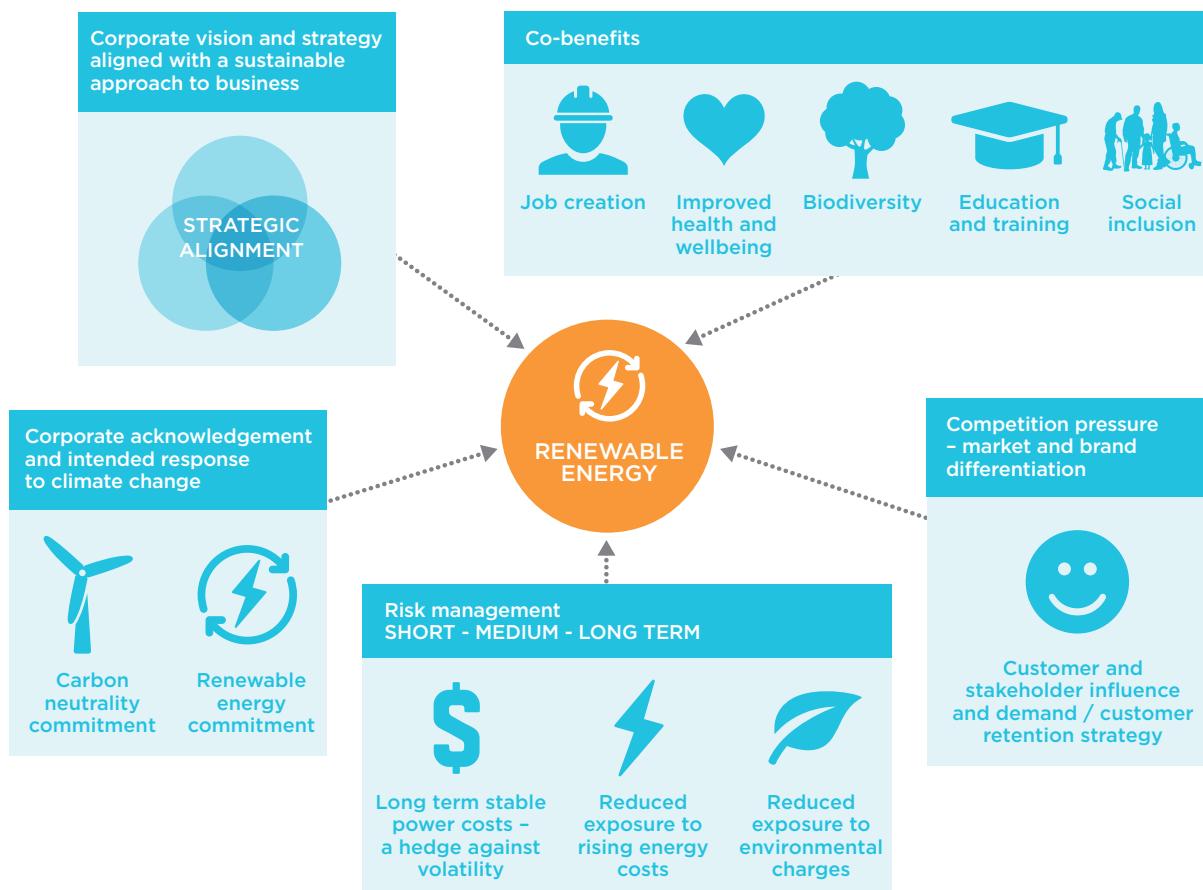
Your corporate drivers will determine answers to the questions below, which in turn, will determine the model you will choose.

- Do you have an interest in securing a stable long-term electricity price, or would you prefer to follow the market?

- Do you want to be the owner of the power plant, or would you prefer that somebody else own and operate the power plant and sell you the electricity?
- Are you aiming to get your electricity from a single identifiable source, or does it not matter if the electricity comes from multiple sources?
- Is it important that the renewable electricity project be a newly constructed project, or can it be sourced from existing power plants?
- Do you require the electricity to be accredited as renewable energy for the purposes of a carbon neutral accreditation?
- Are you prepared to pay a premium to achieve the above objectives, or do you want to achieve the lowest cost?
- Do you have a preferred region for the power plant to be located?
- Do you have a preferred technology (wind, solar, or biomass)?
- Are you interested in being able to talk about additional co-benefits, such as community or educational benefits?

Don't worry if you don't know the answers yet. As you read on, this guide will provide more context for these questions. You can find a more complete discussion of contract options in the section, [Which model is the right model?](#)

## Corporate drivers for purchasing renewable energy



## Finding out if renewable energy is important to your organisation

Many organisations have corporate environmental, corporate social responsibility, or clean energy commitments that set priorities for action on energy or greenhouse gas emission reductions. If your organisation has no clear mandate to purchase renewable energy, but you want to understand if it is something you should be doing, a stakeholder engagement and a materiality assessment will help. They are tools to help you determine what is important for the long-term sustainability of your business and provide robust processes to underpin decision-making and action. For more details, see [Building the business model](#).

## How to purchase renewable energy

You can buy renewable energy in a number of ways, including installing rooftop solar on your own buildings and buying GreenPower® from your electricity retailer. This manual is about how to procure large-scale, off-site, grid-connected renewable energy (as we have done through MREP). While it isn't suited to all organisations, this approach has the potential to significantly change our energy mix and bring down our emissions by driving investment in new renewable energy projects. It also has the potential to provide long-term price certainty and deliver savings to large organisations.

Our electricity is generated by many power stations – including from renewables – and supplied into the grid. It is impossible to identify who is consuming which electrons. But it is possible to buy your electricity in such a way that the amount of electricity consumed by your organisation is fed into the grid from renewables, and not attributed to anybody else. This way, even though your electricity is supplied by the grid, you can legitimately say that your purchase came from a renewable source. It is verified through a renewable energy certificate (REC) system that tracks the amount of clean energy generated ([read more about this under The energy market and renewables](#)).

So to purchase renewable energy, you need to buy LGCs in addition to your electricity. There is an extra cost because it currently costs more to build a new renewable power plant than it does to sell electricity from an existing coal-fired power station that has been fully depreciated. When you buy GreenPower® from your electricity retailer, your retailer purchases and surrenders LGCs on your behalf.

### What is a Power Purchase Agreement?

Put simply, a PPA or 'offtake' agreement is a contract between an electricity buyer and an electricity generator. The agreement can take several forms, and can provide both parties with certainty about price over a long period. In relation to renewable energy, a PPA can refer to a contract to purchase electricity from a specific project, or renewable energy certificates, or both. They can be signed with an existing power plant, or one yet to be constructed. PPAs are routinely used in the electricity wholesale markets between retailers and generators. PPAs can also be used to finance on-site solar PV systems. However, in this report a PPA refers to a transaction between an off-site renewable energy generator and a corporate energy user - with the involvement of an intermediary such as a retailer to facilitate the supply of electricity; or directly without the involvement of a retailer.<sup>6</sup>

The PPA you choose will be determined by your corporate objectives. They can involve a set amount of electricity each year, or a varying amount, such as the amount consumed or generated at a certain meter.

In most instances a direct contract, without a retailer, will be a contract for difference (CFD), also referred to as a Financial PPA. This is a financial product used to hedge against electricity price increases and volatility. Customers will still need to enter into a separate contract with a retailer for the supply of electricity. For more information about this approach see the section, [Contracts for difference](#).

New renewable energy projects need revenue certainty. That's why PPAs can be critical to the development of new renewables – they provide the investor or financier with the certainty required to proceed with the investment. PPAs range in length from about 10 to 25 years; the longer terms are more common. Longer terms involve lower prices because the revenue needed to pay off the power plant can be spread over a longer period. So, for electricity consumers, PPAs can offer significant cost savings compared to short-term electricity purchasing contracts.

#### TIP:

Long term PPAs may not suit organisations with highly variable electricity needs – for example, organisations that have a frequently changing property portfolio. Such organisations may still consider an agreement to purchase Large Scale Generation Certificates, which can be traded on if necessary, consider CFDs or set the contract at a smaller volume to reflect their expected minimum consumption.

6. For more information about PPAs in general, see this report by Baker McKenzie, 'The Rise of Corporate PPAs': [www.bakermckenzie.com/en/insight/publications/2015/12/the-rise-of-corporate-ppas/](http://www.bakermckenzie.com/en/insight/publications/2015/12/the-rise-of-corporate-ppas/)

Customers who wish to enter into a PPA should:

- be creditworthy
- have relatively stable electricity needs and be likely to exist over a 10 to 15 year timeframe
- be able to commit to a minimum demand over this same period
- have a sizable electricity demand.

In general, MREP participants did not start out with detailed knowledge about renewable energy PPAs.

The development of these agreements within the Australian regulatory framework were also new to many advisors, including legal, procurement, probity and energy market consultants. We needed to develop our understanding of the complexities at each step, particularly in trying to meet mixed needs. Advisors and consultants will become more familiar with corporate PPAs and be better able to assist as they become more common.

Key staff implementing the project were sustainability professionals or facilities managers. They called on input from communications, procurement and legal staff as the project reached important milestones. MREP particularly relied on champions within each organisation to maintain momentum and overcome strategic barriers.

**KEY LESSON:** Take the time to identify the specialist resources you will be able to call upon, and make sure your organisation – and any partners – really understand what it means to enter into long-term renewable energy procurement agreements.

## How much electricity consumption will support a renewable energy project?

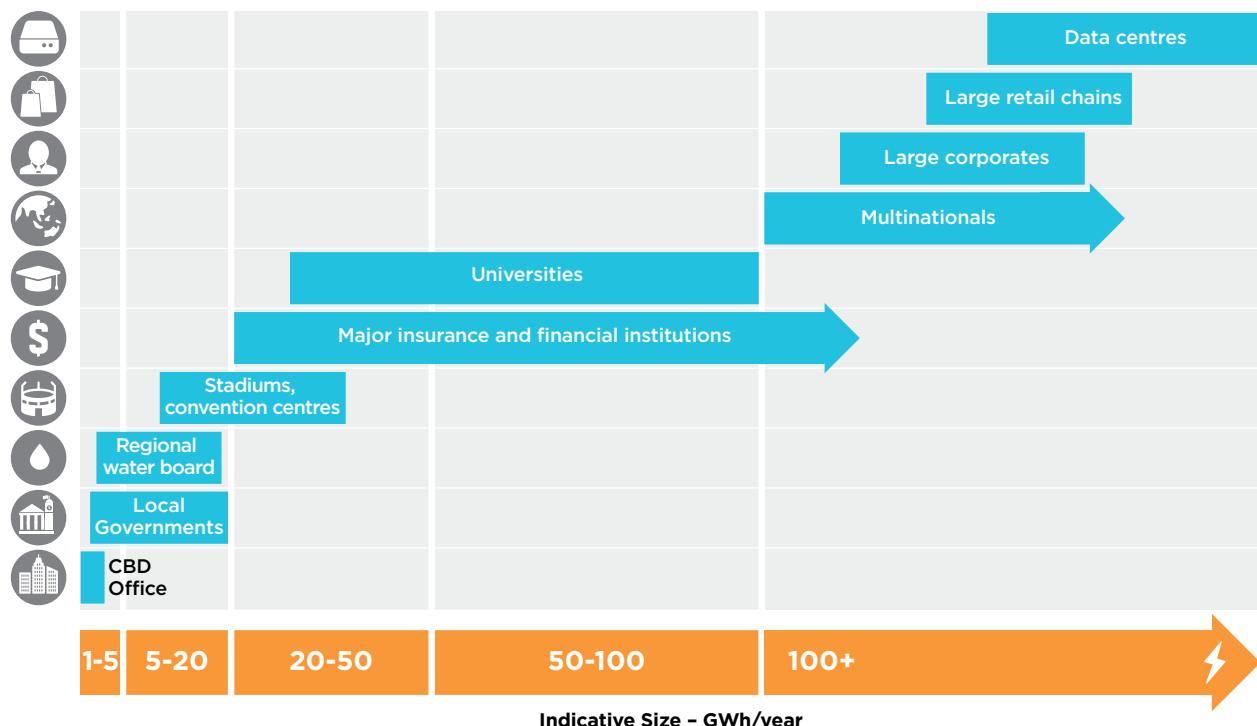
You need to understand your electricity load needs, and match these to a power plant.

The volume of electricity required to support a new project will determine whether or not a PPA could work for you, whether or not you need partners, and which type of renewable energy project suits best.

To decide if a PPA suits your organisation, first consider on-site or ‘behind the meter’ renewable energy. Solar systems can be scaled down to fit on a rooftop. If your electricity demand is small enough and your rooftops are large enough you may not need to source your renewable electricity from off-site sources. But if your organisation’s energy consumption is large and you don’t have sufficient roof space or available land, on-site solar will not cover your electricity needs. A large-scale off-site project may be a viable option.

The smaller your organisation and the less energy you require, the smaller the power plant you will be able to support. If you consume less than 25 to 50 GWh/year, partnering with other organisations may be the most effective way to underwrite the development of a new power plant. The larger you are and the more electricity demand you are prepared to commit, the fewer partners you would need, and you may be able to enter into a PPA on your own.

### Indicative consumption needs by type of organisation



### **What are MW and MWh's?**

Megawatts (MW) are a measure of power (millions of joules per second) and relate to the capacity of a power station to produce electricity. Megawatt hours (MWh) are a measure of energy over time. (On a typical electricity bill you will see kilowatt hours (kWh): 1,000,000 kWh = 1,000 MWh = 1 GWh.)

For example, 1 MW of electrical power running at full capacity (100 per cent) over a year (8760 hours) will produce 8760 MWh, or 8.76 GWh.

### **What does 'capacity factor' mean?**

When you start undertaking research, you'll encounter the term 'capacity factor'. There are a number of variables that determine whether or not a power station will operate at full capacity. A solar farm, for example, can only operate at full capacity during daylight hours. Other factors such as latitude, temperature, shading, cloud cover and the quality of the panels also influence generating capacity. On average, a solar farm has a capacity factor of 20 to 25 per cent – meaning that it generates up to one quarter of its total potential output. So if you have a 1MW solar farm operating at 25 per cent capacity, it will generate 2.2 GWh (1MW x 365 x 24 hours x 25 per cent = 2,190,000 kWhs per year).

By comparison wind farms may have a capacity factor of around 35 per cent and can range from 25 to 45 per cent, depending on the location.

Wind farm capacity factors are lower than coal and baseload gas plants, but when the wind is blowing they use their energy source more efficiently.<sup>7</sup>

The scale of the project may determine your technology type. Wind farms tend to require a larger scale development and will require a larger electricity purchase in order to support their development. The smallest commercial wind farm built in Australia in recent years is a 20 MW project at Coonooer Bridge, near Bendigo. Its six turbines generate an annual electricity output of about 78,000 MWh.

Historically in Australia, wind farms have been able to deliver electricity at lower cost than solar, but this is changing. Recent utility-scale solar farm developments in Australia have been in the range of 10MW to 100MW, with annual outputs of starting at 24 GWh. Solar projects can be developed at smaller scales – 1MW or smaller – and consequently, can work with smaller contractual load commitments.

However, there are efficiencies of scale with larger plants. This will often be reflected in higher prices. Be aware of these trade-offs when deciding whether to go it alone, or to partner with other organisations as you decide on the scale of your project.

At the time of developing our tender, the MREP group determined that an offtake agreement for 100 GWh per annum was required to underpin a new renewable energy project. This was based on the electricity output from a relatively small wind farm. Since then, technology and associated project costs have fallen significantly, particularly in the case of solar. The economics will vary depending on the size and location of a potential project and the amount of generation produced, as well as the the costs of connecting to the grid, acquiring land, obtaining finance and project development. A competitive procurement process will test the relative economics of projects and the cost your organisation will pay for electricity and LGCs.

<sup>7</sup> Sources: <https://www.wind-watch.org/faq-output.php> and [www.environment.nsw.gov.au/resources/households/WindEnergyfactsheet.pdf](http://www.environment.nsw.gov.au/resources/households/WindEnergyfactsheet.pdf)





# The energy market and renewables

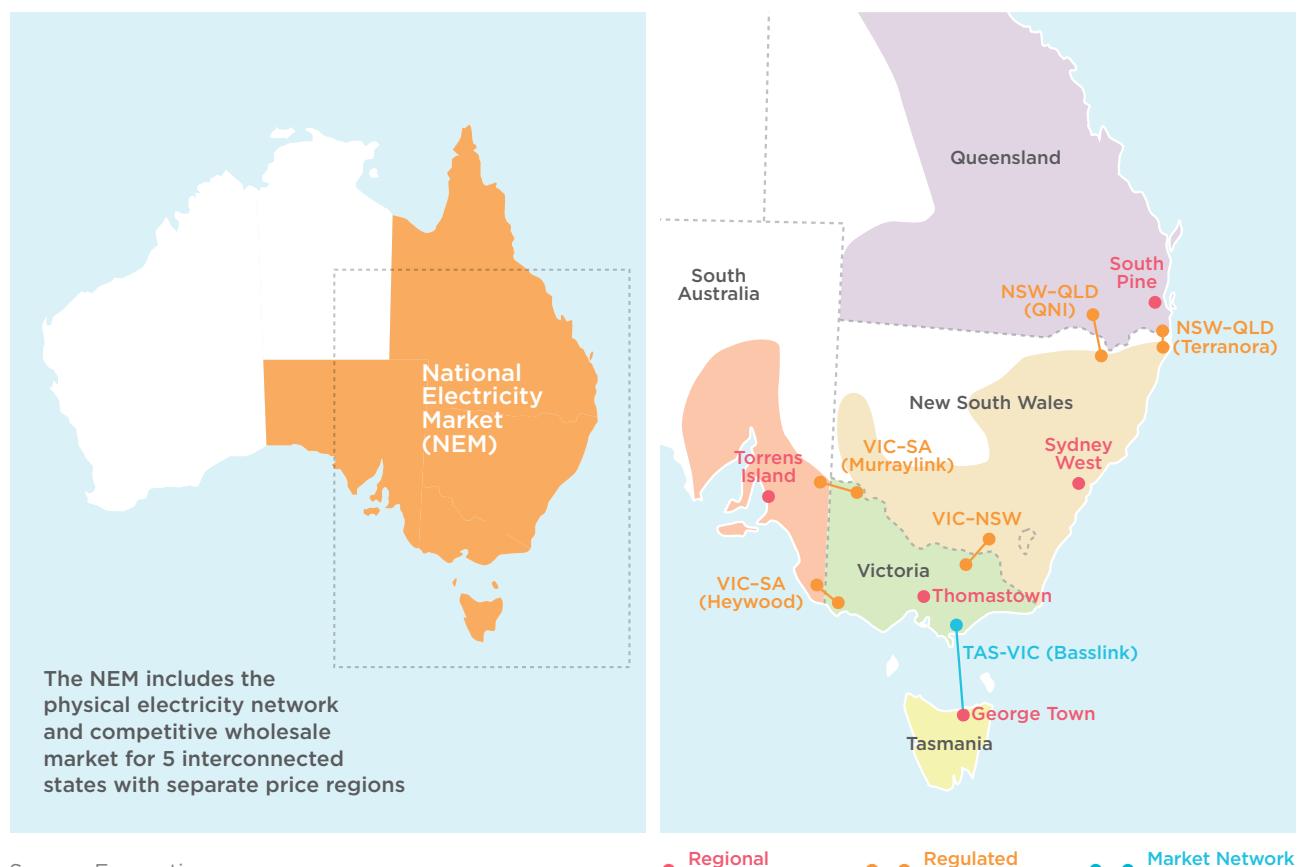
You don't need to be an expert on the energy market, but it's important to know the basics. This section provides a brief overview of how the electricity market works, as well as the renewable energy target, GreenPower® and sources of renewable energy.



# The National Electricity Market

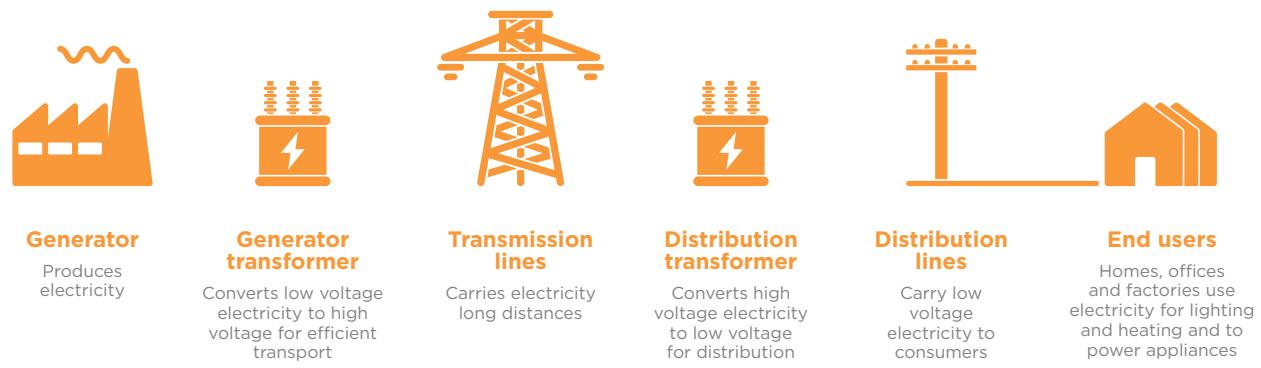
The National Electricity Market (NEM) is the wholesale electricity market for eastern and southern Australia: Queensland, New South Wales, the Australian Capital Territory, Victoria, South Australia and Tasmania.<sup>8</sup> It accounts for about 80 per cent of Australia's electricity consumption. Western Australia and the Northern Territory are not connected to the NEM; they have their own electricity systems and separate regulatory arrangements. All the information in this manual applies to the NEM, although many of the principles and approaches could be applied elsewhere.

## The National Electricity Market



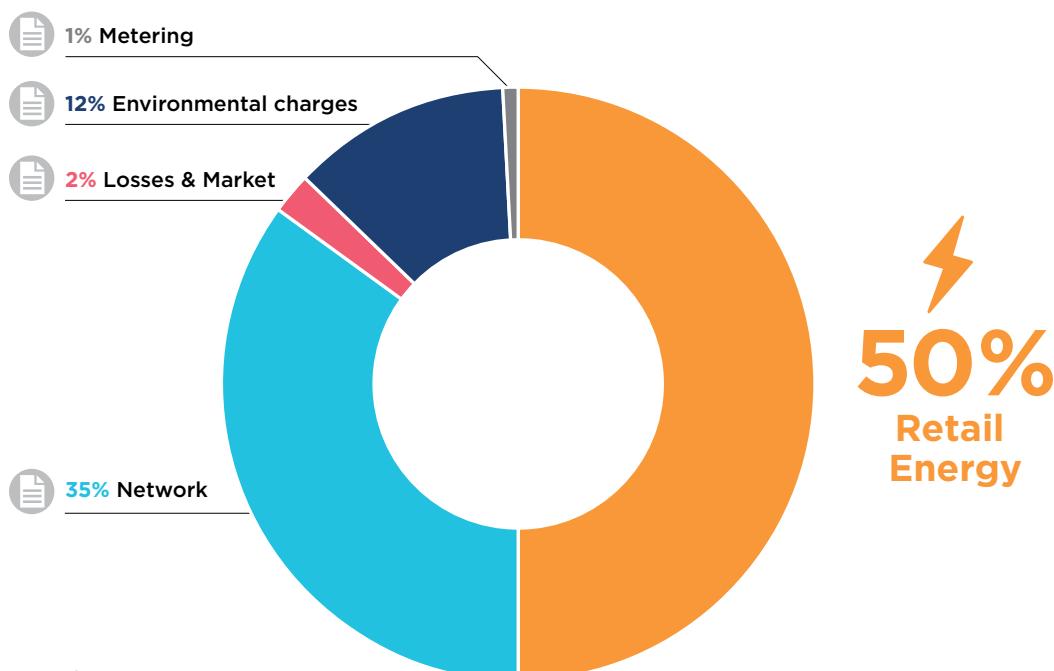
<sup>8</sup> For more information, visit Australian Energy Market Commission: [www.aemc.gov.au/Australias-Energy-Market/Markets-Overview/National-electricity-market](http://www.aemc.gov.au/Australias-Energy-Market/Markets-Overview/National-electricity-market)

## The electricity supply chain



Typically, about half your bill is for the electricity you consume and half goes to network fees for transmission<sup>9</sup> and distribution,<sup>10</sup> and other charges. If you purchase renewable energy through a retailer from the grid – as in the MREP model – you will still be required to pay the non-retail components shown in the diagram below.

## Typical grid connected electricity cost breakdown



9 For more information, visit Australian Energy Market Commission: [www.aemc.gov.au/Australias-Energy-Market/Electricity/Transmission](http://www.aemc.gov.au/Australias-Energy-Market/Electricity/Transmission)

10 [www.aemc.gov.au/Australias-Energy-Market/Electricity/Distribuition \(sic\)](http://www.aemc.gov.au/Australias-Energy-Market/Electricity/Distribuition (sic))

## Retailers

Electricity retailers manage the interface between you and the electricity grid. The energy market rules state that in order to receive electricity supply, a meter must be served by a registered market participant, which in the case of most energy users will be a licensed retailer. So unless you generate all your electricity on-site ('behind the meter') without relying on the grid, you will still need to buy your electricity from a retailer.

One of the key functions of a retailer is to balance supply of electricity from generators with demand from their customers in the most cost effective way. In the case of renewables, retailers also play a role in ensuring that you are supplied with electricity when the sun isn't shining, or the wind isn't blowing, and to manage the costs of this 'firming' function. They deal with highly volatile wholesale electricity spot market costs and deliver you a set price. The wholesale electricity price can vary from -\$100/MWh to \$14000/MWh, while the price you pay for electricity is likely to be closer to a stable \$70 to \$90/MWh. To do this, retailers enter into a range of complex hedging arrangements – they purchase electricity from generators via a range of financial instruments, including long-term PPAs, spot market purchases and futures options.<sup>11</sup>

Under a renewable energy procurement approach, you can choose to involve a retailer in an arrangement with the renewable power plant. Alternatively, you can choose to de-couple your renewable electricity purchase from the retailer, and have a separate retailing arrangement. The pros and cons of these options are discussed in the section, **Which model is the right model?**

## Renewable Energy Target

The Renewable Energy Target (RET) is an Australian Government scheme designed to encourage the additional generation of electricity from sustainable and renewable sources. In 2015 an amendment to the legislation adjusted the 2020 target from 41,000GWh to 33,000GWh, which is forecast to be approximately equivalent to 20 per cent of the electricity consumption in Australia.

The RET works by allowing both large-scale power stations and the owners of small-scale systems, such as rooftop household solar panels, to create certificates for every megawatt hour of power they generate.

Certificates are then purchased by electricity retailers who sell the electricity to householders and businesses. Large renewable generators create Large scale Generation Certificates (LGCs) and small generators

(such as rooftop household solar) create Small scale Technology Certificates (STCs). Together, these are referred to as Renewable Energy Certificates (RECS).

These electricity retailers have legal obligations to surrender certificates to the Clean Energy Regulator, in percentages set by regulation each year. This creates a market that provides financial incentives to both large-scale renewable energy power stations and the owners of small-scale renewable energy systems. Certificates can also be purchased and surrendered by organisations as a form of voluntary emissions reduction additional to the RET.<sup>12</sup>

### The RET and carbon neutrality

Many organisations have targets to purchase 100 per cent renewable energy or to become carbon neutral.

Carbon neutral status is certified under the National Carbon Offset Standard (NCOS), which is an independent certification framework, administered by the Department of the Environment and Energy.

There are a number of requirements your organisation must meet in order to achieve carbon neutrality under NCOS. These include offsetting the greenhouse gas emissions associated with your energy consumption. This can be done by either purchasing carbon offset certificates, renewable energy certificates, or a combination of both.

If your organisation has a commitment to purchase 100 percent renewable energy you can purchase LGCs equivalent to your electricity consumption, but this won't be enough to achieve carbon neutral status. This is because approximately 20% of your LGCs will need to be surrendered to acquit your RET obligation. You will therefore need to purchase LGCs or carbon offsets certificates equivalent to your 20% RET obligation. Similarly, if your organisation has a commitment to consume 100% additional renewable energy (that is, additional to the RET), you will need to purchase additional LGCs equivalent to your RET obligation.

The City of Melbourne and a number of other organisations in MREP decided to purchase LGCs equivalent to their electricity consumption and buy the additional 20 per cent through the offset market, such as from renewable energy projects overseas, reforestation or savannah land management projects. Buying offsets from projects such as these are cheaper than LGCs. In the voluntary market, offsets typically range between \$1 and \$20 per tonne of carbon. In 2017, purchasing offsets by buying LGCs through short-term purchases cost considerably more – up to \$90 per tonne.

11 For more information, visit Australian Energy Market Commission:  
[www.aemc.gov.au/Australias-Energy-Market/Electricity/Retail](http://www.aemc.gov.au/Australias-Energy-Market/Electricity/Retail)

12 For more information, visit Clean Energy Regulator:  
[www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target](http://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target)

# GreenPower®

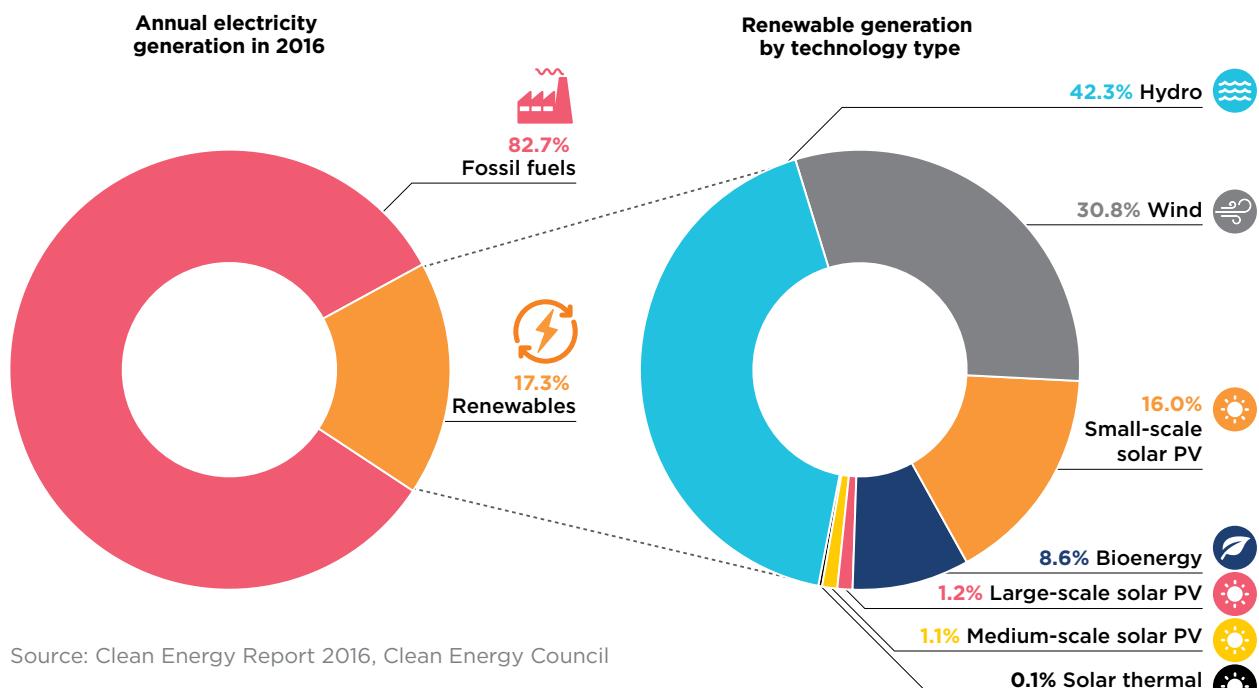
GreenPower® is a government audited and certified scheme which presents an easy option for purchasing renewable energy. When you purchase GreenPower®, your retailer purchases an equal amount of electricity generated from renewable energy sources.<sup>13</sup> The retailer purchases and surrenders RECs to match the amount of electricity you have consumed.

While easily recognised and simple to use, this option is relatively expensive compared with long-term large-scale renewable PPAs. The standard GreenPower® product doesn't easily enable the customer to claim that their electricity was generated by a specific power plant. Finally, because the certificates are purchased from existing power plants, you cannot make the claim that your renewable electricity purchase caused the development of a new renewable energy facility. However, GreenPower® has created a product called GreenPower® Direct that can be combined with a corporate PPA from an existing or new project.

## Energy sources

About 40 per cent of Australia's renewable energy comes from large dams and hydroelectricity projects built a long time ago. Right now, almost all new large-scale renewable energy developments are either wind or solar. They are the most likely sources for procuring new renewable energy, but in some cases, biomass or small-scale hydro energy may be suitable.

### Australian electricity generation 2016



13 For more information, visit GreenPower®: [www.greenpower.gov.au](http://www.greenpower.gov.au)

14 [www.arena.gov.au/about/funding-strategy-investment-plan/wind-energy/](http://www.arena.gov.au/about/funding-strategy-investment-plan/wind-energy/)

15 [www.cleanenergycouncil.org.au/dam/cec/events/SIF-17/matt-walden-presentation/Matt%20Walden.pdf](http://www.cleanenergycouncil.org.au/dam/cec/events/SIF-17/matt-walden-presentation/Matt%20Walden.pdf)

To date, wind farm developments have had development costs in the range of \$100 to \$80 MWh.<sup>14</sup> Because there have been fewer large-scale solar developments, the industry has been less experienced in managing and delivering projects, which in turn resulted in higher costs compared with projects delivered overseas. This is rapidly changing and costs for large-scale solar have begun to decline. A competitive grant process undertaken by the Australian Renewable Energy Agency for 2017-18 reported projects costs in the range of \$140 to \$100 MWh.<sup>15</sup> Solar farms developed in Australia recently include Greenough, Moree, Canberra, Nyngan and Broken Hill.

If you decide your project must be built in a particular geographical location (as discussed in What's driving your organisation?), it may affect your technology choice. Solar systems perform better in sunnier places – they deliver a lower cost per MWh in these locations. Likewise, wind projects may have a lower cost of generation in southern Australia.

However, energy users should note that wholesale prices vary across the NEM regions and changes in supply and demand in each region could impact electricity prices differently over time. According to Energetics, the large-scale build out of renewable energy capacity may result in lower prices being realised by renewable energy projects in the future. To understand scenarios for future prices, it is essential to be aware of physical market constraints such as network congestion and interconnection capacity between states.



**“Energy users must look beyond headline PPA prices to consider the physical market infrastructure capacity, long-term supply mix and expected price developments in the respective NEM markets. Failure to do so could result in what appears to be a cheap PPA price becoming very expensive five years down the track.”**

Anita Stadler,  
Principal Consultant, Energetics





# Which model is the right model?

**There are various contracting models that organisations can enter into with a renewable energy power plant. Each will deliver different benefits to your organisation and each carries different monetary costs and risks. This section will outline the various options and the impact they have on your project and contract.**



# Contract options for renewable energy

There is a range of contracting options, so you can tailor your approach to your organisation's needs. The information in this section is based on work undertaken by UNSW as part of the Low Carbon Living CRC.<sup>16</sup>

Contract options for purchasing large-scale renewable energy include the following:

- owning a large-scale off-site power plant and contracting with a retailer to supply you with the electricity, through the distribution network, to your various sites.
- long-term agreement with an electricity retailer, with an underlying power purchase agreement with an identified off-site renewable energy project. This project can be an existing power plant, or a new power plant.
- long-term agreement to buy renewable energy certificates from a renewable power plant (which doesn't include retail electricity supply). These can come from a new project or an existing power plant.

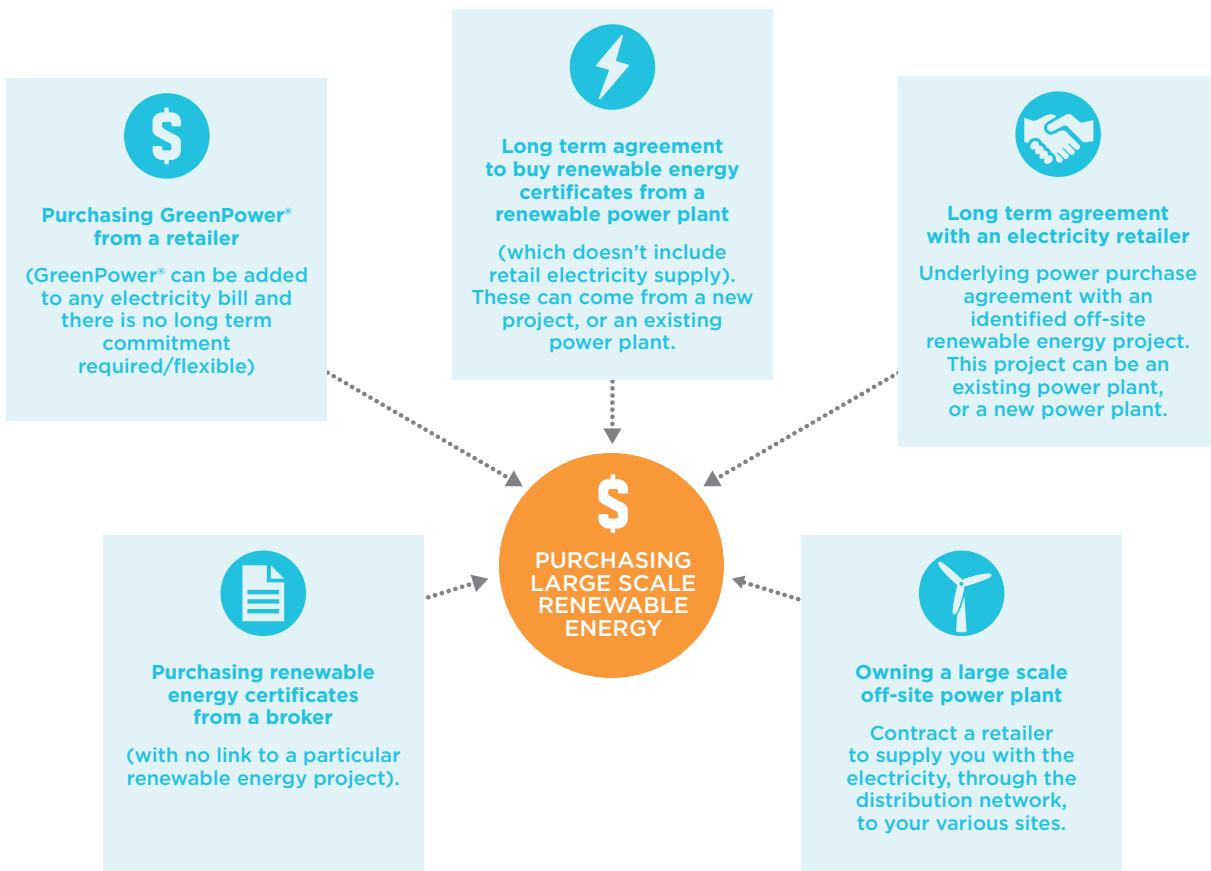
- purchasing renewable energy certificates from a broker (with no link to a particular renewable energy project).
- purchasing GreenPower® from a retailer (GreenPower® can be added to any electricity bill and there is no long-term commitment required).

## Revenue streams for generators

When you're considering your contracting model, be aware of the different sources of revenue for generators. Each involve different benefits, monetary costs and risks. You can provide renewable energy projects with revenue streams and support the development of a new renewable energy project by contracting for one or more of the following products:

- selling the LGCs created when renewable energy is generated at the project
- selling electricity on the spot market (referred to as 'merchant revenue', or 'going merchant')
- selling electricity through a PPA, with a guaranteed price over a long-term period (usually 10 to 20 years)
- a derivative contract, such as a contract for difference ([see the section, Contract for difference](#)).

## Contract options for renewable energy



<sup>16</sup> For more information, see this report: [www.lowcarbonlivingcrc.com.au/resources/crc-publications/crclcl-project-reports/rp1032-final-project-report-facilitating-end-user](http://www.lowcarbonlivingcrc.com.au/resources/crc-publications/crclcl-project-reports/rp1032-final-project-report-facilitating-end-user)

## **Ownership structure: buy or own**

You can contract with a renewable energy generator to purchase electricity, or own the power plant yourself. Several factors will influence your decision, including:

- your organisation's experience in operating and developing large capital assets and its appetite for the associated risk
- the alignment with your organisation's core operational focus
- the availability and cost of capital.

Buying, owning, managing and maintaining a renewable energy plant is complex and involves various risks. You will also need a greater understanding of the operation of electricity markets and how these will affect the revenue and business case.

Investing in large infrastructure requires a detailed level of due diligence proportional to the scale of investment. You will need to consider planning and development approvals, the quality and performance of plant, construction contractors' experience and capabilities, and grid connection issues, such as suitable connection points and network constraints. Even if these functions are outsourced to other organisations, you will need the necessary knowledge and skills to manage these contracts. This will include managing operation and maintenance (O&M) regimes and contractors once the plant is built. It may be an advantage if your organisation has expertise in infrastructure engineering, procurement and construction, and in owning and operating utilities or infrastructure assets.

While some of the above considerations are also relevant when contracting to buy electricity from a newly built facility, the risk is shared when the plant is owned by another party that is responsible for supplying the electricity or certificates to you. When your organisation owns the asset, the risks associated with its ownership and operation sit with you.

If you own an off-site renewable power plant, energy market rules mean that a retailer will most likely need to supply the electricity to you. Some very large energy consumers, such as aluminium smelter operators and large telecommunication companies, have developed in-house capability to trade on the national market and are licensed to act as their own retailer. Realistically, this option would only be attractive to the largest of energy users.

In deciding whether owning a power plant is an option, consider whether doing so presents strategic advantages. If you own land or have access to low-cost finance this may reduce acquisition costs and the long-term average cost of electricity from the plant. Similarly, organisations with a long-term strategic perspective may favour ownership of large energy producing assets. However, if your financing costs are higher than renewable energy project developers, it may be cheaper for them to develop and own the plant and supply you with the electricity.

Borrowing funds to develop a renewable energy facility may present opportunity costs to your organisation, preventing you from undertaking other investments, or delivering other services to your stakeholders. These trade-offs will likely affect the approach you take. So far in Australia, large customers tend to favour buying electricity from power plants rather than owning the power plants, but the mining sector – and the Sun Metals mineral refinery in Townsville – is an exception.

## **Project type: new or existing**

Should you buy renewable energy from a new facility, or one that already exists? There are various factors that will influence this decision:

- the 'story' your organisation wants to tell
- the degree of risk involved in developing a new power plant
- the length of the contract term.

If you contract with a developer to construct a new renewable energy power plant, you can tell a strong story about driving new investment in renewables, as well as creating jobs and local benefits. This approach, however, involves longer development timeframes and different risks. Will the supplier complete the project, and on time? Will it perform as expected? Will it be possible to connect to the transmission or distribution network at the nominated location?

Contracting with an existing plant can often be achieved in a much shorter timeframe but lacks the strong story of driving new investment in renewables. Because existing plants have already navigated many of the above risks and have known operating costs, the price offered may be lower, particularly if the plant has already been operating for some time and has partially or fully made a return on investment.

New generators tend to seek longer term offtake contracts as this enables them to secure financing for the project. New projects will often seek contracts of at least 10 years. An existing project may be able to offer a shorter term offtake agreement.

At the time of writing, there were few existing projects not already contracted with an offtake agreement. Some wind farms built from ACT and Victorian Government tenders have uncontracted capacity. There have also been announcements of utility-scale solar farms to be constructed on a 'merchant' basis – that is, they intend to derive revenue by selling into the spot market rather than securing PPAs. There may be opportunities to sign contracts with projects such as these as they are developed.

## **Form of renewable energy procured: LGCs, electrons, or both**

Buying renewable energy is more complex than you may imagine. As discussed in relation to the Renewable Energy Target, customers must purchase Large scale Generation Certificates (LGCs) to certify that the volume of electricity they consume is matched by an equal volume of electricity supplied to the grid by a renewable generator.

You need to enter into arrangements for both electricity supply and LGCs. You can choose to buy these separately, by purchasing electricity from one retailer and LGCs from a generator or broker ('LGCs only'). This is referred to as an unbundled contract. Alternatively, you can enter into arrangements to purchase both from the retailer. This is referred to as a 'bundled' contract.

Finally, you can also provide support to a new renewable energy project by buying electricity from a retailer that agrees to buy the same volume of energy from a renewable energy project, but without buying the same volume of LGCs ('electrons'). In this case, your electricity isn't considered to be renewable, but it is sourced from a renewable energy power plant. This is the model used by the Sunshine Coast Regional Council for its solar farm (as described in the case study below) and would work best if you were the owner of the power plant. This arrangement would be more appealing to the generator and financier if it was accompanied by a contract for difference.

Buying 'LGCs only' offers a simpler contract structure and the opportunity to purchase certificates at a better price when compared to short-term LGC contracts or the standard GreenPower® offer. It provides a certain revenue stream over a long-term period that will help a renewable energy project secure finance. Because it is a simpler contract structure, with a single generator, it gives you flexibility to change retailers periodically.

A bundled contract is attractive because it can provide a more comprehensive hedge against future budget volatility and cost increases. It also provides a stronger marketing story – the perception of a clear relationship between the customer's electricity purchase and a specific power plant – while also allowing your organisation to meet carbon neutrality requirements. The downside is that it involves a more complex contracting structure, potentially with multiple parties. This will involve higher set-up costs, and require more time and legal resources. It may also involve a long-term relationship with one retailer – if you aren't happy with that retailer, you can't easily change. A long-term retail arrangement will need to involve mechanisms to protect both parties from market price changes over time that could make the deal undesirable. Although these mechanisms were developed as part of MREP, they are not yet standard contract features.

For customers, the advantage of the 'electron only' model is that it may be cheaper than buying electricity with LGCs and offer greater long-term price certainty. It can provide a strong connection with a specific power plant, but it won't be renewable energy for carbon accounting and reporting purposes. It may be time

consuming to work with a retailer to create a model to satisfy both parties.

### **LGC treatment: sell or surrender**

If you decide to purchase LGCs, you have the option of selling them to another party, or retiring them. If you sell them, it can earn revenue. It is a cheaper option; however, as noted above, you cannot claim to have purchased renewable energy, for the purposes of carbon accounting. This approach may suit organisations that do not have corporate objectives to achieve carbon neutrality or renewable energy targets, but that are interested in securing long-term energy price certainty and supporting local economic development. In this scenario, the customer is still supporting the development of new renewable energy generation in the grid, along with the resulting jobs and economic activity.

Alternatively, you can retire or surrender the certificates – they are taken out of circulation. This avoids double counting; the owner can claim that they have 'used' that amount of renewable energy, and it ensures that nobody else can also claim that energy. Surrendering certificates means that the renewable energy you have 'consumed' is additional to the RET. This is a more expensive option than selling the certificates.

Both of these options provide bankable revenue for the generator, which can allow a project to go ahead.

With each of the options described above, the customer may elect to either self-manage the administration of LGCs or require the retailer (or other third party) to manage LGCs on their behalf. This would include surrendering certificates in accordance with obligations under the RET scheme, and surrendering certificates for any carbon neutrality or corporate renewable energy targets you may have. If you self-manage certificates, you will need to hold a REC Registry Account with the Clean Energy Regulator. The primary advantage to self-administration is that it enables you to take a portfolio approach to certificate management and discharging RET liability. For example, LGCs purchased through this kind of contract could be used to discharge RET liability on other meters not included in the renewable energy purchasing contract, providing the customer with some LGC price certainty and hedge against future LGC prices. Customers may also decide to 'bank' certificates (retain them for future use) or sell certificates that are not required for any regulatory or carbon accounting purposes.

Under MREP, the 14 partner organisations had different preferences for how to treat LGCs, based on their objectives – especially in relation to responding to climate change – as well as appetites for risk and financial constraints. The tender required suppliers to provide a range of different LGC treatment options. This added complexity and delayed the development of tender documentation and the awarding of the tender. It would have been simpler if all organisations had the same needs and tendered for one way to treat LGCs.

## **Counterparty: customer or retailer**

As you develop your model, you must decide who will contract with the renewable energy company. Will your organisation be the counterparty, or will it be an energy retailer?

Under the direct contracting approach, the customer makes an agreement with the project developer about all payments, terms and conditions.

Alternatively, a retailer can enter into the agreement with the developer. The customer then enters a separate agreement with the retailer, specifying the generation source, price and procurement terms. For customers, this approach is administratively simpler and bypasses many of the skill, transaction, risk and legal cost barriers of making the agreement yourself. However, smaller retailers may not have credit ratings that allow them to enter into long-term contracts, which may limit interest and competition for your tender.

Contracting directly with a developer may allow you to tell a stronger marketing story about the arrangement. However, the biggest incentive for a direct contract is that very stable organisations, such as universities, are more creditworthy than electricity retailers. Their lower credit risk will translate into a financial advantage when entering into a long-term contract. Where there is no financial incentive for a direct agreement, it makes sense to investigate contracting through a retailer.

Whether you sign a contract directly with a generator or indirectly through a retailer may depend on the type of product you are interested in purchasing. If you are purchasing LGCs only, a direct contract with a generator is a simpler approach, but a bundled LGC and electricity contract will need to involve a retailer. The MREP group signed two contracts, one with the generator to purchase LGCs and one with the retailer (a subsidiary company of the generator) for the supply of electricity.

## **Deal type: individual or group**

To develop your organisation's plan for procuring renewable energy, you need to assess whether to undertake the procurement process on your own or with a group of other customers. Considerations about managing a group are discussed in detail under [Establishing common project objectives](#) and [Agreeing how to work together](#).

When you partner with others, you may choose to share the costs of procurement, lawyers and consultants. The loads required from each customer are smaller, meaning that smaller organisations may access large-scale purchasing options.

On the other hand, partnering with others carries the added complexity of managing a group of stakeholders, relationships, multiple sets of expectations, internal approval processes and group communications. Facilitating and coordinating decision-making and communications among the group will require time and resources. The group's interests will need to be well aligned and its objectives clear. As a general rule, the smaller the group and the more strongly aligned the interests, the easier this process will be.

### Sunshine Coast Regional Council solar farm

When it established its 15MW solar farm inland from Coolum, the Sunshine Coast Regional Council decided to own the facility directly. In an interview with UNSW, the council's Simon Crock and Phil Woods explained: 'It came down to price... We can borrow through the state government using their AAA credit rating so we get pretty competitive borrowing terms, both with regards to the low interest rate but also a longer debt term than most commercial entities are able to secure'.

The council decided to build a new facility in part because of its strategic vision, which has a strong focus on environmental sustainability. It also sought to minimise the cost volatility it had experienced when purchasing renewable energy through GreenPower®.

Because the council is the project developer, it creates its own LGCs. It decided to surrender 24 per cent of its certificates to meet its RET obligation, and sell the remainder. This means that only one quarter of the council's electricity usage is renewable, even though it owns a renewable energy facility. While it means the council cannot claim to be 100 per cent renewable or NCOS compliant, Crock and Woods explain that on-selling the certificates enabled the project to proceed: 'We took the approach that it was better to make it financially viable to have a renewable energy facility.'

You can find a more detailed case study in the UNSW report, 'Facilitating End User Deployment of Off-Site Renewable Generation'.<sup>17</sup>

<sup>17</sup> [www.lowcarbonlivingcrc.com.au/resources/crc-publications/crclcl-project-reports/rp1032-final-project-report-facilitating-end-user](http://www.lowcarbonlivingcrc.com.au/resources/crc-publications/crclcl-project-reports/rp1032-final-project-report-facilitating-end-user)

# Contracts for difference

A contract for difference is an arrangement between the generator and customer for sharing the revenue (or shortfall in expected revenue) from electricity sold on the electricity spot market. It provides the generator with a guaranteed revenue stream should spot market revenues fall below a contracted price. Contracts for difference were adopted by the Australian Capital Territory and Victorian Governments in their recent wind auctions.

These contracts do not relate to the actual supply of electricity. They are a financial instrument also referred to as a derivative product. Under the model, contracts are signed with an agreed 'strike price' – a guaranteed rate of revenue for the project. When the generator achieves spot market revenues above the strike price within a specified period (a month, quarter or contract year), any additional revenues are paid to the customer. When revenues fall below the strike price, the customer pays the generator an amount to meet the strike price. This provides the generator with a guaranteed income stream, and can be crucial in enabling the developer to secure finance. For the customer, the contract acts as a hedge against rising retail electricity prices – if spot market prices rise above the strike price, the additional revenue will offset higher costs under the customer's retail electricity contract.

You need to weigh the potential benefits against the additional administrative costs and risks. Contracts for difference require customers to adopt derivative accounting standards and may involve additional administrative requirements. Customers should also undertake additional due diligence to understand the risks of poor plant performance or failure to commission the power plant within the contracted periods. You will need to assess and verify the expected output and specify measures to manage under performance. It is prudent to seek specialist advice about these arrangements ([see the Consultants section for further information](#)).

The contract for difference approach may suit customers with large energy portfolios and sophisticated energy management teams, or who already have hedging arrangements in place (such as for vehicle fuel) or other forms of derivative contracts.

The Melbourne Renewable Energy Project purchasing group decided on a contract structure that would accommodate different renewable energy purchasing preferences for different customers in the group. The purchasing group made this decision because each organisation had different needs and objectives.

**KEY LESSON:** The approach taken by the group added considerable complexity to the tender and the resulting contract. This meant a lot of time was spent consulting with group members and prospective suppliers. We learned that forming a group with the same purchasing preferences would keep your contract model simple and lead to a more straightforward tender process. Simpler contract structures are easier to communicate, evaluate and negotiate. This means less time spent engaging with stakeholders along the way.

The MREP Tender identified a combination of contracting requirements. In each case, the contract period was for 10 years. The customers in the purchasing group chose either:

- A contract for the sale of retail electricity supply and provision of LGCs.
- A contract for the purchase of LGCs only with a specified fixed annual load

For the customers who chose the combined retail electricity supply and LGC contract, an agreed proportion of the retail price will be fixed for the ten year period, based on the cost of production at the renewable energy facility. The remainder of the retail price is based on energy market movements and will be reset every two years under a market indexing and reset provision.

Within the customer group who chose the combined retail electricity supply and LGC contract, different LGC volumes were required.

Some customers chose to purchase a volume of LGCs equal to the volume of electricity they consume. This means that a portion (-20%) of the LGCs will be surrendered to meet the RET obligation. The remainder of the LGCs can be used to offset their emissions reductions. However, because of the RET obligation their electricity will only be -80% carbon neutral under NCOS.

The remainder of the customers chose to purchase a volume of LGCs equal to ~120% of the electricity they consume. This means they will be able to surrender ~120% to meet the RET obligation and fully offset their emissions reduction. Their electricity purchase will be 100% carbon neutral under NCOS.

The MREP Customers also required the renewable energy project to deliver a number of community and economic benefits to the region. A community sustainability fund will be created to share profits with local community groups.



# Project planning

So you want to investigate renewable energy purchasing more thoroughly. How do you start? This section explains how to begin, including mapping electricity consumption, engaging consultants, building a business case and determining whether to work with purchasing partners (and if so, identifying those partners).

Before you begin, it is critical that you understand your organisation's corporate objectives and drivers for taking this initiative, and that your internal stakeholders and decision makers agree. Refer to [What's driving your organisation](#) for more information.

# Understanding your electricity needs

Entering into a large-scale renewable energy purchasing model requires a medium term commitment of about 10 to 15 years and can involve contracts for 20 or 25 years. You will need to map out your current and projected energy needs.

Is your energy consumption likely to change significantly over this timeframe? Will your demand increase, decrease, or stay the same?

Future energy needs may be affected by:

- predicted future business growth or contraction
- predicted construction, purchase or sale of buildings
- planned efficiency improvements
- planned increase in equipment requiring energy
- planned on-site renewable energy and battery installations
- external economic, environmental and social factors out of your control.

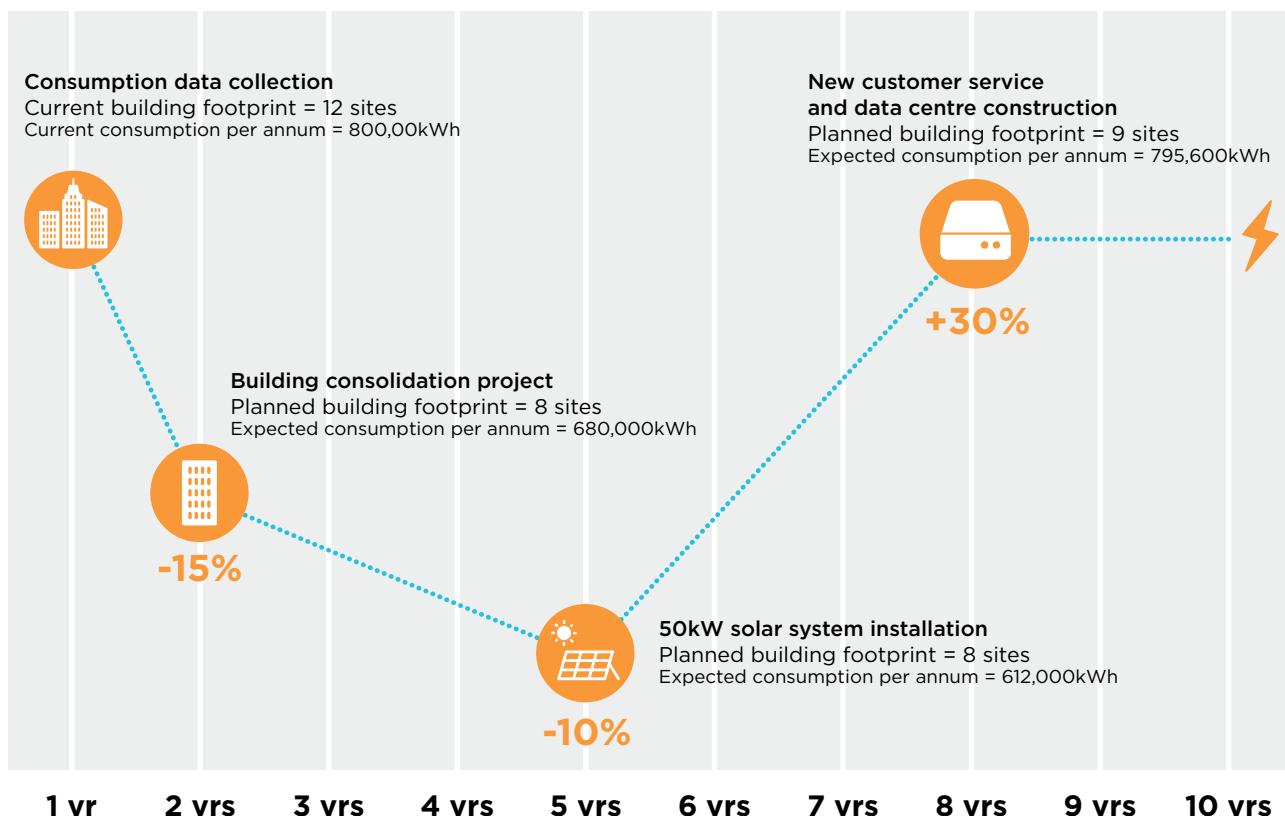
Analyse your projected electricity needs and note when you expect changes will occur. For example, if you plan to install a 1MW solar system on your building in two years, note that your electricity consumption will decrease by the expected electricity generation of the system at that point in time.

## Understanding your load

If you are considering entering into a retail contract, you should also be aware of any changes to your load profile. Retailers will consider the 'shape' of your load profile: will usage change during the day (for example, between day and night) or between seasons (such as increased demand for air conditioning in summer)?

If you are partnering with another organisation, you should consider their electricity demand profile. Your combined load shape may determine which technologies is suitable. For example, different kinds of renewables may be necessary to account for the consumption patterns of an office operating during work hours and a function centre operating at night. You will need to consider how to factor this into your agreement with the retailer.

## Mapping your electricity consumption over time



### **Why is load profile relevant to retail contracts?**

Retailers supply electricity all day, including when the sun isn't shining and the wind isn't blowing. At these times, they buy electricity from the 'pool' and pay the spot price, which changes depending on demand. The 'pool' price is influenced by demand which fluctuates during a day and across seasons. Retailers enter into hedging arrangements to manage their risk exposure to fluctuating spot prices and these hedging arrangements come at a cost. For large commercial and industrial customers, the load profile may affect the average retail price that your retailer is able to offer you.

As an electricity customer, it isn't necessary that you understand the relationship between various generating technologies and your electricity demand. However, having a general understanding will give you an expectation of the types of technologies and plant sizes that you may be expecting to secure through your procurement process. A higher daytime demand would be better matched to a solar plant, whereas a wind project would more likely suit a more consistent day and night load. The type of technology you choose may also be significant if you decide to bundle your renewable energy contract with your retail supply contract.

## **Project governance**

An effective governance framework determines who makes decisions, how and when, as well as protocols for reporting internally and for informing other stakeholders. The project will require sign-off at many stages, including project plans, milestones risk assessments and tender release. By establishing appropriate governance structures, you will ensure your project achieves internal approval at the appropriate milestones. Importantly, these structures will enable you to solve strategic problems as they arise.

The project governance framework must suit the needs of your organisation. Some organisations may require board sign-off, while for others, it may be a role for a general manager. Similarly, depending on your organisation's drivers, you may need to involve key staff. For example, if the project is an opportunity for branding, you may include a communications manager in the steering group.

To make sure the governance framework is effective in practice, engage key decision makers early to make sure the organisation's objectives are aligned with the approach you are taking. Likewise, if you are partnering with other organisations, engage with appropriate senior decision makers and build senior relationships across the group.

As the project lead, the City of Melbourne managed MREP under a governance structure set out in the diagram shown on the opposite page. Internally it formed a senior level steering committee, comprised of directors responsible for sustainability strategy, operations and electricity purchasing, as well as heads of governance, finance and legal services. The steering committee received reports on project direction and timeframes. It reviewed risks and provided direction on strategic challenges. A project working group was formed with a project manager and input from specialist areas such as procurement, legal and finance. The project team managed relationships with partner organisations, who in turn worked through their own governance and reporting processes.

The MREP project team regularly engaged and consulted with representatives from the purchasing group. Partner organisations relied on the project team to research issues, develop options (together with internal and external advisors) and recommend actions. The project team communicated with partners by way of phone calls, regular project emails, workshops and information sessions with key internal and external advisors and presentations to internal decision makers.

An evaluation panel, consisting of six of the 14 organisations, was selected to participate in the tender evaluation process and make a recommendation to award a tender. The evaluation panel was assisted and administered by external specialist advisors.

### **Agreeing how to work together**

If the purchasing project involves a partnership, you need to agree on a way to work together and a clear decision-making framework in the early stages. This could take the form of a Memorandum of Understanding (MoU) or a Participant Agreement, but the more defined it is, the better. The agreement will provide clarity on issues such as how decisions are made, what level of sign-off is required at which milestones, how information is shared, how the group communicates, who leads the project, whether there will be working groups, and how to define everyone's roles and responsibilities.

The MREP partners established an MoU forming a group for the purposes of undertaking market testing. This provided the City of Melbourne with a degree of certainty in the partners' interest in the project prior to committing significant resources. The MoU set out project objectives and roles. After the market testing phase, we developed a Participant Agreement to govern the group's activities during the tender process. Building on the MoU, the Participant Agreement set out decision-making processes and protocols for interacting with the media and speaking on behalf of the project. It provided a framework for ongoing cooperation in the planning, development and delivery of the project. Recognising that we would need to compromise to develop a complex tender

with multiple partners, the group agreed to a decision-making framework that revolved around the question: what can you live with? (and consequently: what can't you live without?).

The group held project meetings involving all members, as required, leading up to critical decisions. As the facilitator, the City of Melbourne provided fortnightly email updates. The group members engaged with senior managers for feedback and decision-making.

The group also agreed on project eligibility and performance evaluation criteria. To be eligible, it was decided that the facility had to:

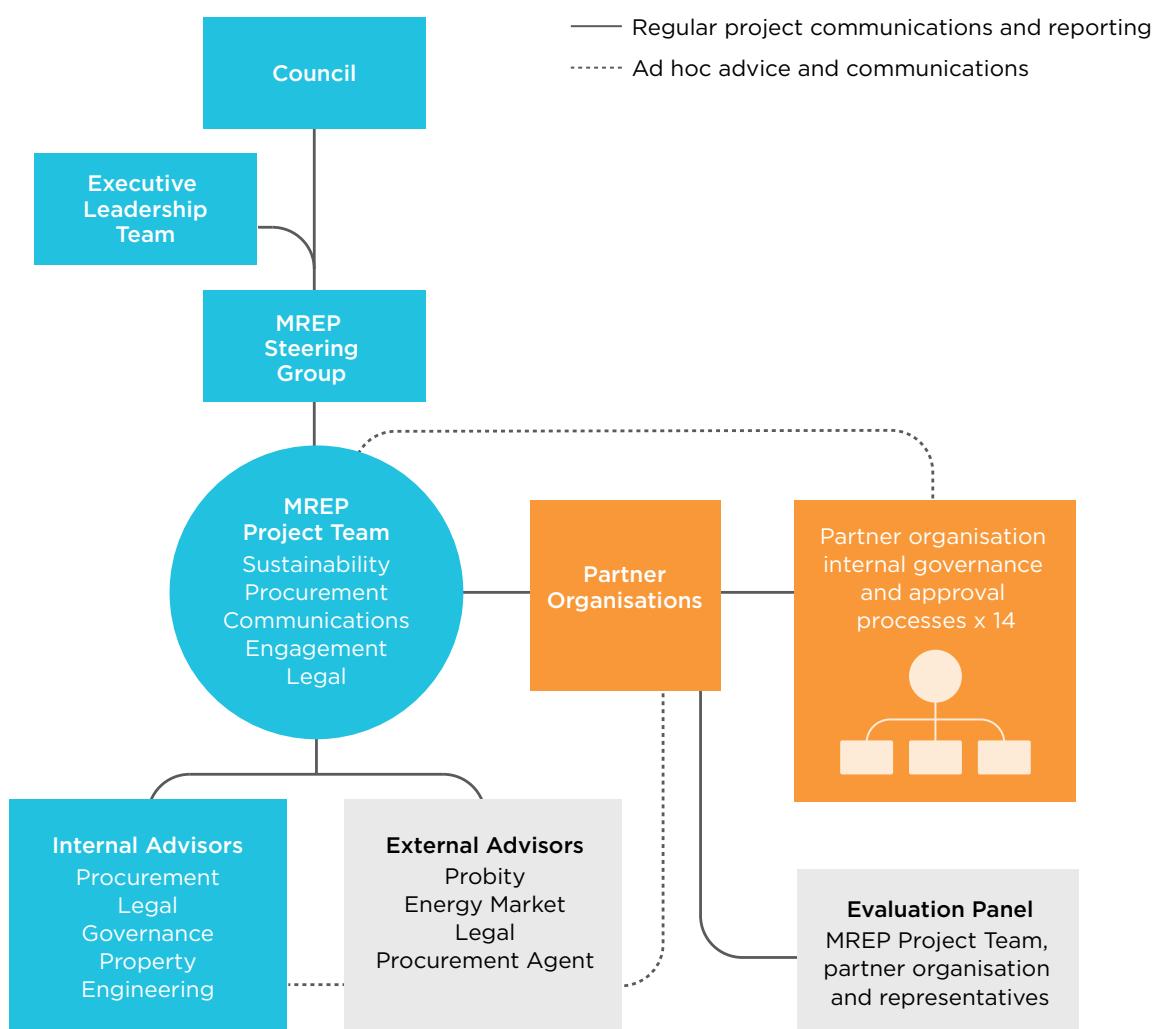
- be a new, utility scale, renewable energy generating project in Australia connected to the NEM
- be in an advanced stage of development (having achieved planning approval and undertaken preliminary network connection studies)
- involve no clearing of native bush, without offsetting the impact on habitat through recognised bio banking mechanisms
- involve no use of biomass products.

Through the evaluation criteria, we sought to balance relevant environmental, social and economic considerations:

- price
- renewable energy project delivery risk
- community and environmental benefits
- Victorian or local community economic and promotional benefits.

**LESSON:** While the MoU and Participant Agreement set out everyone's intention to participate in a tender, there was no obligation to accept its outcome. Partners could pull out if they were not satisfied with the tender result. From a group management perspective this introduced uncertainty. It was unclear how many partners would remain in the group and how much load would be required to successfully contract with the preferred supplier. This presented challenges at critical decision points. Maintaining a smaller group of two to four partners would mitigate this risk to some extent. A greater degree of senior engagement among all participants may also have mitigated this risk. This could also have been addressed by securing stronger commitments about participating in a tender from the outset and committing to the outcome, provided certain criteria were met.

## Melbourne Renewable Energy Project governance structure



# Resourcing

To purchase renewable energy through a PPA, you'll need to develop a team internally, and most likely, draw on specialist external advice across several areas. Use this section to help identify the areas where your internal expertise is lacking and determine how to seek external support.

## In-house

You'll need a team that is able to:

- manage the project flexibly while adapting to new knowledge
- research energy markets and procurement processes and call on existing knowledge from the procurement team, legal team and from your project partners
- develop a procurement process suited to the project objectives while meeting your organisation's internal governance requirements (this may require something different to your standard procurement process)
- learn about energy markets, pricing and contracting models, and communicate this information to decision makers
- manage external consultants and advisors and call on additional advice where necessary
- manage stakeholders, including relationships with any partners in your purchasing group
- understand and engage with legal documents, including contracts
- bring strong project management skills and experience, strong stakeholder relationship management skills and the ability to think innovatively to solve complex problems.

The MREP project team was comprised of staff from various branches of City of Melbourne, who provided specialist knowledge on legal, procurement, communications and energy market issues as required, but they were not a group of energy procurement specialists. They relied on consultants for external advice. The project team met regularly to maintain project momentum and to work across a range of skills to develop solutions to various challenges.

**LESSON:** The process can become complex – especially where partners are involved – so engage a strong project manager. Bear in mind that because you may not be following a traditional procurement approach, the manager doesn't necessarily need to be a procurement specialist, but must be able to work with a team across a range of skills and knowledge to tailor solutions to meet the project's needs.

## Consultants

Energy procurement and contracting is a specialist area. You will likely need to engage:

- energy market advisors
- procurement facilitators, brokers, or advisors
- probity advisors
- legal advisors.

The costs associated with engaging specialist consultants can be significant – in the tens of thousands of dollars – and may increase with unexpected project developments. You will need to determine how to share costs for the project with your project partners. Will the partners share costs equally, proportionally to their electricity consumption, or will the lead organisation bear more of the costs of facilitating the group and engaging external advice? Scope the roles and likely costs involved before committing to undertaking the project.

### TIP:

Identify consultants who are able to partner with you for the duration of the project rather than simply providing ad-hoc, short-term advice. As you begin, you are likely to discover that there is a lot you don't know about electricity tendering. You will develop a long term working relationship with your advisors. Your advisors will help you learn about the market and solve problems as they arise and will be able to build on experiences and lessons as the project evolves. To ensure you work effectively as a team with your external advisors, communicate your expected timeframes, next steps and project challenges as they arise. This will enable them to adapt and assist you with your project needs.

## Energy market advisors

Energy market advisors will be critical to improving your understanding of the energy market, developing a business case and analysing your tender responses. Their roles will include:

- forecasting electricity prices and understanding price movements
- developing a business case comparing large-scale renewable energy purchasing with business as usual and with purchasing GreenPower® over short-term contracts
- identifying risks that could result from energy market movements, your proposed tender and your chosen contract structure
- understanding the role of electricity retailers and electricity account cost structures
- advising on structuring your contract to minimise costs and risks to you and the supplier
- evaluating the price offered in the tender responses
- undertaking technical due diligence for the project and commercial due diligence on the supplier(s).
- assist with contract negotiations and variations, particularly as it relates to the pricing model, volume risk and performance risk more broadly.

Given the long-term nature and complexity of PPAs, it is important to ensure that your energy advisor has sufficient knowledge to understand and advise you on the various options and risks. This includes the range of contract and pricing models that would best suit your organisation. Your advisor should have in-depth energy market and renewable energy industry knowledge and experience.

#### **When selecting an energy market advisor, consider the following:**

- independence from counterparties (i.e. renewable energy generators and retailers)
- an Australian Financial Services Licence, to advise on contract for difference approaches, if applicable
- ability to develop or access robust long range electricity price forecast models and price evaluation models capable of simulating market volatility on a micro scale (i.e. trading intervals, not only average flat prices per annum)
- ability to develop evidence-based alternative future electricity market scenarios
- ability to understand, assess and advise on mitigation strategies for risk associated with the development of renewable energy projects, including network related issues.
- ability to provide commercial due diligence services of generators to retailers
- strategic decision support capabilities to ensure internal stakeholders are effectively engaged in what can be a complex, technical area.

#### **Procurement agents**

Depending on your in-house procurement capabilities, you may require the services of a procurement agent to administer the process. This may be the same firm who provides you with energy market advice.

A procurement advisor can manage the entire process on your behalf, or simply act as your agent and implement a process that you lead. The advisor will assist you in:

- developing procurement and evaluation processes
- developing tender and evaluation documentation
- administering and chairing an evaluation panel
- preparing your evaluation documentation
- managing the release of your tender to market, including placing advertising, delivering tender briefings, distributing documentation to vendors, taking questions and providing answers, and receiving tender responses.

#### **Probity advisors**

A probity advisor helps you ensure that the procurement process is fair, reasonable and defendable in the event that your procurement decisions are challenged by prospective suppliers or unsuccessful bidders. They can help you design your procurement process, or act as an independent participant who reviews the process and comments on any probity issues. They are particularly relevant to public sector organisations, or organisations with public accountability requirements.

Select a probity advisor who has had previous experience in energy market procurement, or utility and infrastructure procurement, or similar fields. They should have an understanding of your business or your type of business. Set clear expectations of each other's roles. If you have partners, it makes sense for everyone to work with the same probity advisor. Some questions you might ask yourself:

- Will the advisor play a hands-on role resolving issues and problems if they emerge, or is their role to oversee the process and advise you when it is going wrong?
- Will they develop the procurement process, evaluation process and protocols for engaging with tenderers, or will their role be limited to reviewing documents you present them with?
- Do they have existing templates of procurement plans or evaluation plans for you to adapt, or will you be required to develop your own procurement plan and evaluation plan?

After the tender process is complete, some organisations - such as councils, state government bodies and universities - may need to engage an independent probity auditor to assess whether the probity requirements were met. If you have an internal procurement specialist, ask them to advise on your organisation's requirements.

#### **Legal advisors**

Energy contracting is a specialist area. Unless your internal legal team has had particular experience in this field, you will require specialist advice. Your lawyers will:

- assist in developing a tender specification that meets your needs
- engage with vendors in a way that minimises time, risk and cost to all parties
- assist with tender evaluation to help you understand the offers from suppliers
- evaluate and advise on the apportionment of contractual risks
- assist with contract negotiations and variations to terms and the impacts these may have on your business
- draft contracts.

When engaging a legal firm:

- Develop a clear scope that will set out their role.
- Ask who will be involved in the engagement and what experience they have with renewable electricity contracting.
- Ask whether there are any gaps in their areas of expertise and who they propose to engage to fill these gaps.
- Obtain a cost estimate for the scope of work and ask if there will be any additional costs and what will these be.
- Find out if the firm is providing advice to your organisation only, or also to any of your partner organisations in the procurement process.
- Establish how the firm will engage with your internal legal team and what they expect from your in-house legal counsel.
- Understand if their approach to the procurement process involves developing the tender specification in collaboration with energy advisors, or reviewing the specification when it has been drafted.
- Clarify the approach for contract development – whether the firm proposes to develop contract key terms, write a draft contract, or respond to a contract that the supplier presents in response to a tender.
- Ask about the firm's approach to contract negotiation.

### Technical advisors

You will require advice to evaluate the technical risk associated with developing the proposed renewable energy facility. This includes issues such as:

- grid connection constraints – understanding the ability of the project to export to the grid, and the risk that the network operator may limit their ability to export during peak periods
- capacity factors ([see What are MW and MWh's?](#))
- reliability of the selected technology, the technology provider and the contract for maintaining the operation of the plant (known as an Energy Performance Contract).

The level of due diligence required will vary depending on the nature of your contract and your risk exposure to the project. For example, if your retail price relies on the output of electricity from the plant, you will need a higher level of due diligence than if you are purchasing LGCs. If you are taking an equity stake in the power plant, it will be higher again. Some of these services may be provided by your energy market advisor, depending on their skills and capabilities. You may also need to engage specialist engineers to assist with this work and they will need to work closely with your energy market advisors.

## Building the business case

Your business case will compare renewable energy procurement with alternative approaches, such as buying offsets, purchasing GreenPower® over short-term contracts, or business as usual.

The biggest question is the cost of electricity over the contract period. Unless you have in-house expertise, you will need to rely on external specialist advice to provide you with this analysis.

But price isn't the only variable. You will also need to take project objectives and benefits into account, including:

- reputation and marketing benefits
- the costs of achieving carbon neutrality by different means
- other benefits derived by your organisation; for example, regional development, community engagement, or training and apprenticeships
- the benefits resulting from long-term price certainty.

Your organisation's preferences will determine whether you quantify these additional benefits – or simply rely on price considerations. You can clarify some of your corporate and external drivers by undertaking a stakeholder engagement and a materiality assessment. For example, the Global Reporting Initiative<sup>18</sup> and AccountAbility Principles Standard 2008 (AA1000APS) and Stakeholder Engagement Standard 2015 (1000SES)<sup>19</sup> provide processes to inform strategic decision-making and performance reporting that can be applied to a single issue. The processes involve:

- identifying who the stakeholders in your organisation are
- mapping how much interest and influence these stakeholders have on your business
- identifying if renewable energy is important to your stakeholders
- assessing the relevance and significance of renewable energy for the long-term sustainability of your business, considering future risks and opportunities and stakeholder interest and influence.

This process can assist you to build the business case and inform your strategy to drive action towards a low carbon economy. You can use these insights to respond to your stakeholders. If they consider investing in renewable energy important to your business, this process will give you the mandate to act. It can also be applied to prospective partners to determine how they align with your organisation.

18 [www.globalreporting.org/resourcelibrary/GRIG4-Part2-Implementation-Manual.pdf](http://www.globalreporting.org/resourcelibrary/GRIG4-Part2-Implementation-Manual.pdf)

19 [www.accountability.org/standards/](http://www.accountability.org/standards/)

### Bank Australia – carbon neutrality and renewable energy purchasing

Bank Australia has been carbon neutral since 2011. Ahead of the 2015 Paris climate talks, the bank made a commitment to switch to 100 per cent renewable electricity through the ‘We Mean Business’ platform.

Electricity is currently the largest source of the bank’s greenhouse gas emissions, so meeting its 100 per cent renewable electricity commitment will significantly decrease the bank’s carbon footprint and its need to purchase carbon offsets.

Bank Australia evaluated several options for renewable electricity including purchasing GreenPower® from a retailer and purchasing electricity from the Melbourne Renewable Energy Project. MREP is projected to lead to cheaper renewable electricity than purchasing GreenPower® on the open market. The project also has additional benefits like increasing renewable electricity supply and advocating for renewable energy, which are in line with Bank Australia customers’ expectations.

## Cost modelling

The energy market is a complex system with a variety of inputs that impact prices, such as demand (both peak and total), generation mix and policy settings. Individual cost modelling can be valuable to help you understand how changing market dynamics affect your organisation. The impacts will vary depending on your consumption, demand profile and network charges, as well as the mix of small and large accounts across different sites in your portfolio.

### TIP:

Remember that energy market forecasts are imperfect. Modelling complex systems relies on many assumptions. A forecast model isn’t a prediction that certain scenarios will play out. It is a tool for understanding the impacts of your decisions in different scenarios.

When you test your decisions against a model, ask yourself: ‘would I be comfortable with this decision, if this scenario came to pass?’ Treat your models and forecasts as tools, rather than relying on them as predictions.

It won’t be possible to make a perfectly informed decision, but you need to be comfortable with the modeled inputs and assumptions made about future conditions. You must be able to live with the contracted price if those conditions do not transpire and other scenarios come to pass.

To get the best results from your consultants, be sure to ask:

- What data sources will they use?
- How many scenarios will they model?
- Will they model high, medium and low cost scenarios?
- Can they compare the renewable energy purchase to a business as usual scenario?
- How easily can they adjust the model if new information becomes available? How much time will this take and how much will it cost?

During the development of the MREP business case, the electricity market conditions changed significantly. These included the closure of some power stations and the increase in large scale renewable energy investments. This impacted inputs affecting the cost model (such as the Australian Energy Market Operators demand forecast, fuel cost and supply mix assumptions). As a result, we needed to update our cost model. This considerably delayed our decision-making processes and our consideration of tender offers.

**LESSON:** It is a dynamic market. Policy settings and market conditions can change throughout the course of the tendering process and they are likely to change again once the tender is awarded. You need to be aware of this volatility and prepare for how it may affect your process. Take a long-term view and be clear about your objectives. If you are partnering with other customers as part of a procurement group, consider how changes in market conditions or regulatory settings could impact on your partners’ willingness to proceed with the tender.

# Risk assessment

The commercial benefits of entering into a long-term electricity market agreement can be attractive; however, a PPA exposes the energy user to risks not usually associated with standard retail electricity contracts. That said, many of the risks can be effectively mitigated in the design of the contract and price models, the procurement strategy, the due diligence process and the final contracts.

You could undertake separate risk assessments regarding the procurement process, the contract and renewable energy project development, and, if relevant, the partnership with multiple organisations.

Identify potential risks and risk mitigation tactics, particularly where decisions are required. Use a risk register to document issues that may affect the project's progress. If you have a specialist risk unit, they may be able to assist you. Your external probity, procurement, legal and energy market advisors will also help you understand the procedural and market risks. Involve your steering committee or senior governance team to identify risks and mitigation strategies.

Risks relating to the procurement process might include:

- changes in key personnel
- consultants becoming unavailable
- negotiation with preferred vendors becoming time consuming or costly due to the complexity of tender requirements, or having the wrong people at the negotiation table
- procurement process not being flexible enough to accommodate an innovative process
- tender specification being too narrow and excluding innovative solutions

- probity standards not being followed and the tender result being contested
- unexpected costs leading to the project being over-budget, which results in loss of support from the group to continue with the process.

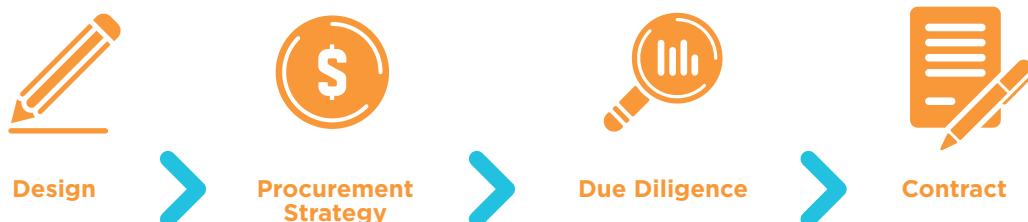
Risks relating to managing a procurement partnership:

- a partner pulling out or becoming a high credit risk
- not achieving critical mass to purchase energy
- unexpected costs leading to the project being over budget, which results in loss of support from the group to continue with the process
- approval taking too long because of delays in getting feedback, resolving issues and reaching agreement.

Risks relating to the development of the renewable energy project:

- the preferred supplier not having the experience and capability to deliver the project
- the technology (solar panels or wind turbines) not performing as expected, resulting in the under-supply of LGCs or electricity
- grid connection approvals not being obtained from the network operator
- network constraints at the power plant's location preventing it from feeding electricity into the grid (referred to as curtailment)
- planning approvals not being obtained or complied with
- changes in federal or state regulations relating to the construction of renewable energy facilities or the sale of renewable energy into the grid
- a change in market conditions, including the emergence of new technologies, that would impact on the business case.
- Force majeure events (events beyond anyone's control).

## Areas of risk to be addressed



Source: Energetics

# Project partner identification

Once you understand your energy load requirements and the likely scale of your project – as discussed in **Understanding your electricity needs** – you can determine whether you need partners to increase your electricity demand to underpin a large-scale renewable energy project. This section will discuss the process for identifying suitable partners and building partnerships. In summary: it is easier to partner with organisations that are similar to yours.

## Corporate objectives and project drivers

It's easier to establish common objectives if you team up with organisations that have similar corporate objectives and project drivers. To fast-track your consultation and partnership negotiations, come up with a list of your drivers and ask potential partners whether theirs align with yours. They don't need to be exactly the same, but they should be complementary. For example, there may be a misalignment if your partner wants to pursue small-scale biomass projects to work with local farmers, but you are seeking the lowest cost option.

### Questions for project partners

- Do you have sustainability or corporate social responsibility drivers?
- Do you have a corporate target for carbon emission reduction?
- Do you have a corporate target for renewable energy generation?
- Are you accredited, or aiming to be, under NCOS?
- Do you have support for this approach at the most senior levels of your organisation?
- Are there any other outcomes you want to see delivered through a new renewable energy project? (For example: creating jobs in a specific area, employing people from historically disadvantaged groups, facilitating education opportunities, or enhancing biodiversity.)

## Loads, locations and retail contract needs

Typically, larger consumers pay lower electricity rates than smaller consumers. If you have a mix of large and small loads across partners your electricity costs may reflect a spread of rates. Larger customers may find that they end up cross-subsidising the smaller customers, or customers with different load profiles. It is better to be aware of these dynamics early on than to discover them later. It may be more equitable to partner with organisations who have comparable loads, but your group may also be driven by other considerations, such as regional partnerships.

## Processes, probity requirements and timeframes

Consider the compatibility of your processes with those of your partner organisations. If you work in similar sectors, you're more likely to have similar procurement processes and decision-making requirements. Where internal decision-making requirements are different timelines may not align, causing delays. Here are some things to consider:

- Does your partner rely on internal legal advice or seek external counsel?
- Do they have a specialist internal procurement unit, or rely on consultants?
- Who needs to provide sign-off and at which stages and how many people need to be involved? How long do decisions usually take in each organisation

## Long term commitment

All partners must have the capacity to make a commitment of at least 10 to 15 years. The best value for money comes with longer commitments, but long-term contracts need to be underpinned by stable organisations with relatively stable electricity needs. Public sector organisations, institutions (such as universities) and operators of infrastructure assets (such as ports, airports, roads, or water networks) fit these criteria.

## Credit risk

Consider the credit risk of partner organisations. If they have a high risk of default on debt, they may not be able to live up to a long-term commitment to purchase electricity. Financiers may factor the higher credit risk into the cost of finance, which may result in a higher price for the electricity or LGCs you buy. Partnering with similarly rated entities may mitigate this risk. Partnering with a larger group of customers may also spread the risk that any one of the group may default on the long-term contract. This is likely to be viewed favourably by investors and financiers.

### How do I find interested partners?

The most likely way to identify partners is through people in your networks and industry associations, so start by speaking with them. Explore opportunities with organisations like yours, and ask energy or sustainability managers if they have had similar discussions. Here are some more ideas for contacts:

- formal or informal networks of local governments, universities or water authorities.
- airports, health boards, food processing businesses, industries with refrigerative loads, and data centres
- regional chambers of commerce or industry peak bodies
- local governments and state regional development agencies that may be aware of large energy customers in their area.

## Establishing common objectives

Prior to entering into a partnership it is important to agree on common objectives. As a starting point, you'll need to understand each party's load contribution, expectations about a contract term and expectations about price. It is also important to explore and understand the budget and resources they will contribute to support the procurement project. It may be helpful to frame the conversation around what you can and can't live with, so you understand any deal breakers at this stage.

All the organisations in MREP were committed to demonstrating leadership and responding to climate change by minimising environmental impacts from traditional energy sources. There was also a preference amongst the group that the renewable energy project be located in Victoria, to support local jobs – the MREP partners operate primarily in Victoria. But each organisation had different ideas about other co-benefits that could complement the project and enhance their brand or corporate responsibility objectives.

- The majority of organisations, including City of Melbourne, City of Yarra, City of Port Phillip, Moreland City Council, RMIT, University of Melbourne, Zoos Victoria, Bank Australia and NAB had Reconciliation Action Plans in place and were looking for ways to support Indigenous employment.
- Organisations with a regional presence, such as Australia Post, NAB and Bank Australia saw the opportunity to connect with their customers by having a physical presence (the power station) in their region.
- Bank Australia's strong customer base in the Latrobe Valley meant it was looking for opportunities to help the community transition to a low carbon economy, as coal fired power stations shut down. That could have meant the location of the power station itself, or manufacturing contributing to its construction.
- Zoos Victoria had a particular interest in supporting biodiversity and protecting endangered species.
- The universities had a particular interest in educational outcomes.

It took time and trust to flesh out these other expectations and to reach an understanding that the project could not deliver every co-benefit.

LESSON: Motivators are important for determining the outcomes you want. But you will have to make some compromises, especially in a group.

## Agreeing on common objectives

### Key things to agree upon



Develop a new project

or



Support an existing project



One project location

or



Multiple project locations



Single source renewable energy

or



Mixed source renewable energy



Own and operate the power plant

or



purchase electricity from an independent owner operator (generator)



The reputation and sustainability credentials you seek in the developer/retailer



Job creation



Education and training



Promotional opportunities



Biodiversity protection or habitat restoration



Aboriginal and Torres Strait Islander inclusion or Caring for Country principles



Local economic benefit / other income streams (for the landholder or other)



Social inclusion for otherwise marginalised groups



# The procurement process

**This section provides information about how to navigate the procurement process, including market testing, cost modelling and tendering.**



Most organisations have established ways of purchasing electricity, but this procurement process will be different. Most likely, it will require additional market scoping and engagement, more thorough due diligence – especially if a new facility is to be constructed – and new ways of structuring contracts. Work closely with your procurement team in the early stages to determine the process that will work best for you. Be prepared to be flexible, so you can test the market without locking yourself into a particular approach until you are ready.

#### Key steps:

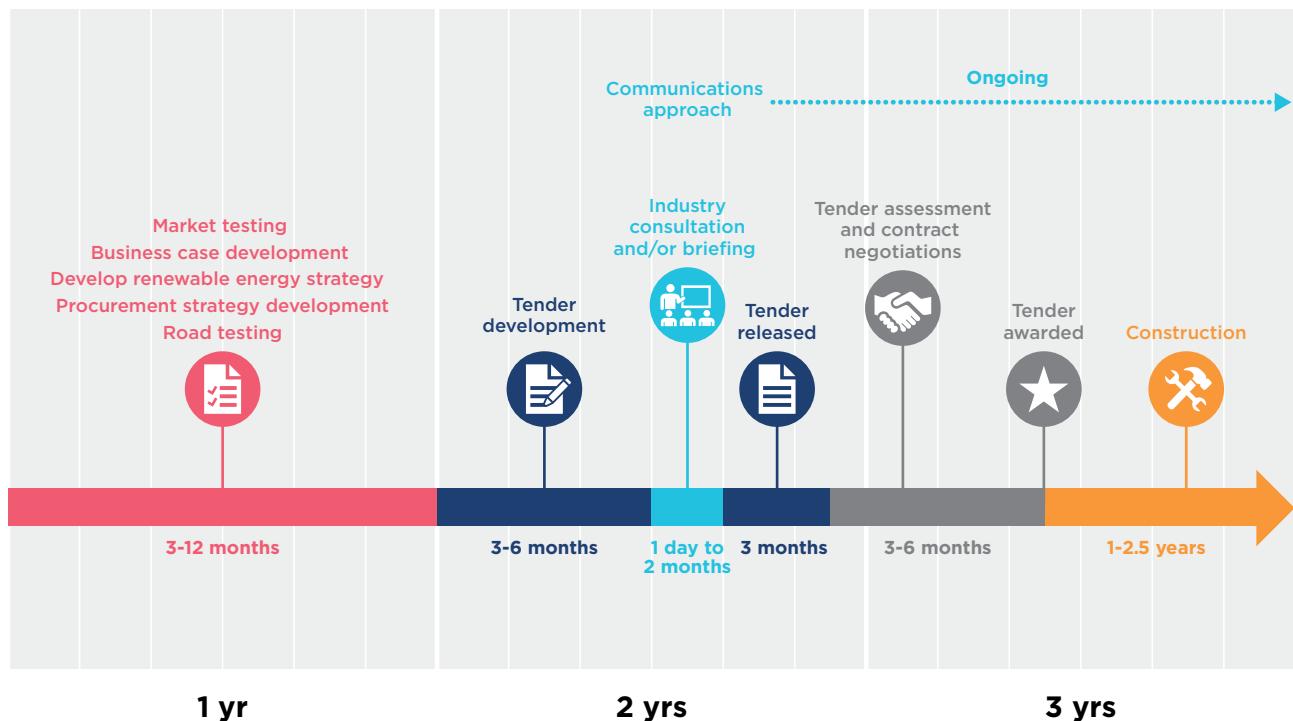
1. Test the market
2. Develop a procurement plan
3. Develop tender documentation and a tender plan
4. Develop contract documentation
5. Inform the industry, release the tender and conduct information sessions
6. Evaluate tenders and award

Timeframes might vary depending on the complexity of the tender and whether or not you are in a group. Buying LGCs from a broker is quite simple and straightforward, whereas developing contracts for difference and bundled contracts is more complex. The indicative timeline below shows a range of possibilities, from best case to blow outs.

#### TIP:

During project planning, map out the partner approval processes of all organisations to ensure you are creating adequate and realistic timelines. Partner approval processes vary depending on the type and size of the organisation.

#### Indicative Project Timeline



# Market testing

The electricity market and the renewable energy sector are changing quickly. Before committing to spend considerable resources developing and executing a procurement process, it is prudent to test market conditions to determine whether a tender is viable.

Consider the following:

- the prevailing prices of electricity and certificates, and the federal and state government policies that affect them
- the availability of suppliers delivering the types of energy projects you are seeking
- attitudes of suppliers towards your favoured contract structure and length.

There are many ways to test the market.

- Seek expressions of interest. This could form the first step of an invitation-based tender.
- Speak with a number of known suppliers. This will help you develop your scope, but it may be less useful in getting a sense of pricing. (Be careful not to prejudice the outcome of an eventual procurement process.)
- Review published information about recently signed contracts.
- Review information published by Australian Renewable Energy Agency about projects in pre-development phase.

- Contact relevant state government departments to understand opportunities within your state.
- Assess recently announced government wind and solar auctions, if any.
- Contact regulators and industry bodies such as the Clean Energy Regulator and the Clean Energy Council.
- Speak with your energy advisor and with consultants who assist renewable energy developers.

MREP sought information from renewable energy projects, which were of sufficient scale to supply the group with its annual electricity needs. The request did not specify geography or technology. However, because MREP did not make a firm commitment to enter into a contract, respondents provided only overviews with broad pricing, rather than detailed proposals. The market has shifted significantly since testing was undertaken, but the results indicated that solar energy was cheaper in Queensland than in Victoria and wind was cheaper than solar overall. Biomass was more expensive than other technologies. The market testing indicated that there were sufficient projects to meet the group's requirements. It also provided the group with an understanding of long-term contract pricing compared with business as usual. On this basis the group decided to proceed to tender.

## Competition law

The Consumer and Competition Act promotes fair trading and competition and prohibits anti-competitive practices. Provisions prohibiting collusive behaviour apply to suppliers as well as customers. Depending on the situation, there is potential for the purchasing group to breach provisions regarding agreements that contain a cartel provision, or may have the effect of substantially lessening competition within the meaning of section 45 of the Act.

The Australian Consumer and Competition Commission (ACCC) can 'authorise' businesses to engage in certain anti-competitive arrangements or conduct when it is satisfied that the public benefit outweighs the public detriment, including from any lessening of competition. An authorisation enables the group to undertake the purchasing activity, even if that activity would otherwise have been in breach of the Act. You can seek legal advice about these provisions and determine whether you need to apply for authorisation.

The organisations involved in MREP decided to seek authorisation from the ACCC to establish a joint electricity purchasing group, and jointly negotiate electricity supply agreements. The process took four months to complete (but it can be expected to take about six months). The ACCC determined that there were public benefits in reducing transaction costs and achieving economies of scale, as well as reducing greenhouse gas emissions and potentially increasing competition for retail supply of renewable electricity. It granted the authorisation for a period of fifteen years.<sup>20</sup> The ACCC does not make a determination about whether the purchasing group would contravene the Act – that would be a matter for the courts. Bear in mind that many purchasing groups choose not to seek authorisation, but seek your own legal advice.

<sup>20</sup> You can download the authorisation on the ACCC website: [wwwregisters.accc.gov.au/content/index.phtml/itemId/1194790/fromItemId/401858](http://wwwregisters.accc.gov.au/content/index.phtml/itemId/1194790/fromItemId/401858)

# Develop a procurement plan

Your procurement plan will need to meet your organisation's corporate rules and procurement requirements. While the process doesn't need to be led by a specialist, it is recommended that you engage a procurement advisor to help you plan. This may be an internal advisor or external advisor. Be prepared to challenge the established way of doing things. For example, it can prove useful to involve senior project team members who do not have a procurement background. Remember, this purchasing approach is unusual, so the procurement process may need to accommodate that.

The procurement plan will define roles and steps, and ensure that the process is fair, robust and defensible. It may include information about:

- purpose
- key deliverables
- key performance indicators
- budget information
- roles and responsibilities
- engagement with experts
- contract requirements
- market assessment
- procurement strategy
- probity and tender evaluation strategies
- procurement schedule
- risk assessment.

## TIP:

Consider any procurement restrictions as soon as you can. If you are partnering with other organisations, check whether their procurement requirements and processes are different to your own and whether both can be accommodated.

# Develop a tender

Corporate PPAs are a new and emerging area in Australia. Most suppliers will be engaging with this emerging market for the first or second time, and there will be a lot of uncertainty on both sides.

Work with your energy market advisors, procurement team and lawyers to develop the tender documentation – when you're done, have it reviewed by external advisors.

The tender may include several parts:

- conditions of tendering
- specification (such as NEM connection, new or existing project, construction timeframe, planning approval and technology type)
- evaluation process and criteria
- eligibility criteria, including corporate social responsibility and credentials of the energy producer and retailer
- description of contracting model
- schedules for respondents to complete, which may include: planning approvals, price schedule, community engagement plan, referees, capability and experience, stakeholder consultation, economic development, and marketing and communication specifications.

## TIP:

If you are a purchasing in group, standardise members' requirements in the tender specification – that is, don't include different requirements for different customers. This will avoid the need to manage variable demands from stakeholders, and make it simpler to communicate tender needs to the market. It will also make it easier to evaluate and develop the final contract.

## Tender evaluation process

The documentation needs to explain to prospective tenderers how their responses will be evaluated. Set out an evaluation plan detailing the process: how a decision will be made, how evaluation will take place and how scores will be determined. The full evaluation plan may not be included in the tender, but the two documents must be consistent.

As you determine weightings for scoring, bear in mind that some criteria – such as development risk, supplier capabilities and track record, and customer service and relationships – may need to carry greater weight than they would in a normal tender.

## Tender evaluation weightings

MREP established five criteria for assessing tender responses. The most important was price (including the cost of contract management and price certainty), which was assigned 60 per cent of the weighting. Community and environmental benefits were assigned 12.5 per cent, retailer service and project delivery risk were both assigned 10 per cent. Finally, Victorian local community economic and promotional benefits were weighted at 7.5 per cent.

In 2014, the Australian Capital Territory released a request for proposals for wind energy for its large-scale feed-in tariff scheme. It stated that successful proponents would be awarded a feed-in tariff on a value for money basis (in dollars per MWh). In addition, it provided the following evaluation weightings:

- risks to timely project completion – 50 per cent
- local community engagement – 20 per cent
- ACT economic development benefits – 20 per cent
- reliance on treasury financial guarantee – 10 per cent.

Developing renewable energy projects is complex. It is likely that the evaluation panel will need to clarify issues and seek clarifying information from respondents. Depending on the scale and particular requirements of your tender, you could receive few or many responses. The tender result could be compromised if you need to exclude responses on the basis of unclear or insufficient information. Consider allowing for a two-step process in your procurement plan if you receive too many responses.

Try to establish an approach that will give you the information you require, while being fair to all participants and meeting your organisation's procurement needs. Given the scale and complexity involved, consider creating a special process outside your standard procurement process, and have it approved by your senior executive. Consult with your procurement team and probity advisor. You are likely to require specialist advice from external experts in undertaking the evaluation. Make sure that your procurement plan allows for this.

# Develop contract documentation

Preparing contracts takes a lot of time, resources and costs, and requires specialist legal input. You can prepare draft contracts either before issuing a tender document, or after a preferred tenderer has been selected. There are pros and cons to each approach.

By drafting contract documentation before releasing a tender, you can clearly articulate your desired contractual outcome and provide clarity to respondents. This helps when it comes to developing the final contracts, because tenderers will have responded to something specific. However, the process is also costly for respondents, so they may not seriously engage with a draft contract until they have been shortlisted as a preferred supplier. At that stage, contract negotiations may result in significant changes to the contracts anyway. There is a risk that the initial contracts may need to be set aside for new documents, after the tender is run and terms are negotiated.

Instead of developing a fully formed draft contract, you could develop a term sheet, which identifies the key contractual points that the customer wishes to incorporate into a final contract. This approach may be quicker and less costly to both parties.

Another option is to develop term sheets and contracts after the tender has been run and a preferred tenderer, or shortlist of tenderers, have been selected. This approach requires robust tender specification, which clearly set out the expected terms of sale. By doing it this way, you will defer the cost of developing contracts until the nature of the contractual arrangement is better understood. This arrangement may suit a procurement process where your specification is less prescriptive and you are open to a range of purchasing options; for example, if you haven't decided whether or not to purchase LGCs, or to enter into a contract for difference arrangement and you intend to decide after evaluating the proposals.

**TIP:**

Lawyers and energy market consultants' time is valuable – and expensive. It may seem natural to contain costs by limiting their communication with one another, but the resulting delays and miscommunications may result in a more lengthy and costly process in the long run. Ensure that your consultants are communicating effectively and are involved when developing contract terms and documents.

As you develop contract documentation, one critical issue is 'bankability' – the financier must be prepared to lend to the project based on the terms that are agreed. Financiers, and therefore, project developers, will be particularly interested in supplier and customer termination clauses, the firmness of load over the long term, liabilities in case of default, and force majeure events (events beyond anyone's control). Meanwhile, you – and any partners – will be seeking a degree of flexibility to match your business needs, reasonable remedy provisions, and contract termination provisions in the case of under-performance or failure to supply, as well as measures to ensure that service standards are met.

The project will be more attractive for financiers if they can transfer some of their lending risk to the customers, by way of credit support. Under this arrangement, customers agree to underwrite some of the risk, should the retailer fail. The financier may also seek 'take or pay' obligations meaning that you would pay for the agreed volume of electricity or LGCs even if you fail to consume the agreed volume. It is common in energy contracts for a customer to have a right to vary their contracted load year to year by an agreed margin, usually 20 per cent. Instead of take or pay provisions, your supplier may agree to a charge for excess or under-consumption, based on a predetermined formula. There may also be other contractual solutions for managing the variability in your load that you could negotiate with your supplier.

## Releasing the tender

To make sure potential suppliers are prepared and adequately resourced to respond, it is wise to signal to the market your intent to undertake a tender well in advance.

Electricity suppliers have limited resources and responding to a tender can cost thousands of dollars. When there are several tenders in the market, suppliers may choose to respond to the largest tender, or to the tender that seems simplest, or best suited to their business models.

You can signal intent to tender in the form of public announcement through industry publications or peak bodies such as the Clean Energy Council. Indicate in broad terms the size of the electrical and LGC demand, any generation technologies that are included or excluded from the specification, the contracting model you have selected and the term of the contract.

**TIP:**

Make sure the tender is open for a minimum of two months, to allow enough time for complete responses. If the tender is especially complex, consider allowing a longer period of time. Be aware of other tenders or project opportunities in the market that may compete with yours.

When you release the tender, you can offer information by holding public sessions or corresponding with interested parties. Be clear about what projects will and won't qualify. Be careful that any communications with industry conform with your procurement plan and are approved by your procurement team or probity advisor.

The MREP contract and pricing model was innovative and hadn't been tested in the market previously. As a consequence, suppliers found the contract structure challenging to understand. This resulted in considerable delay to the negotiation and development of final contracts.

**LESSON:** Spend time on market engagement before you issue the tender. This will simplify the process of developing and negotiating final contracts.

# Evaluation, negotiation and award

You will need to form an evaluation panel, which may include outside experts, depending on your in-house knowledge and skills. The panel will require a Chair, who may be non-voting, and a secretariat to assist with managing documentation. Depending on your organisation, a probity advisor may need to attend meetings. Your lawyers don't need to be part of the panel, but you will need to call on them for advice and to negotiate on terms.

The panel is also likely to need support from energy market specialists to undertake a price review, technical due diligence and support you in the negotiation of the PPA. If you are taking an equity interest in the plant, you will need to undertake due diligence by specialists with experience in renewable energy construction and development.

## Evaluation, negotiation and award



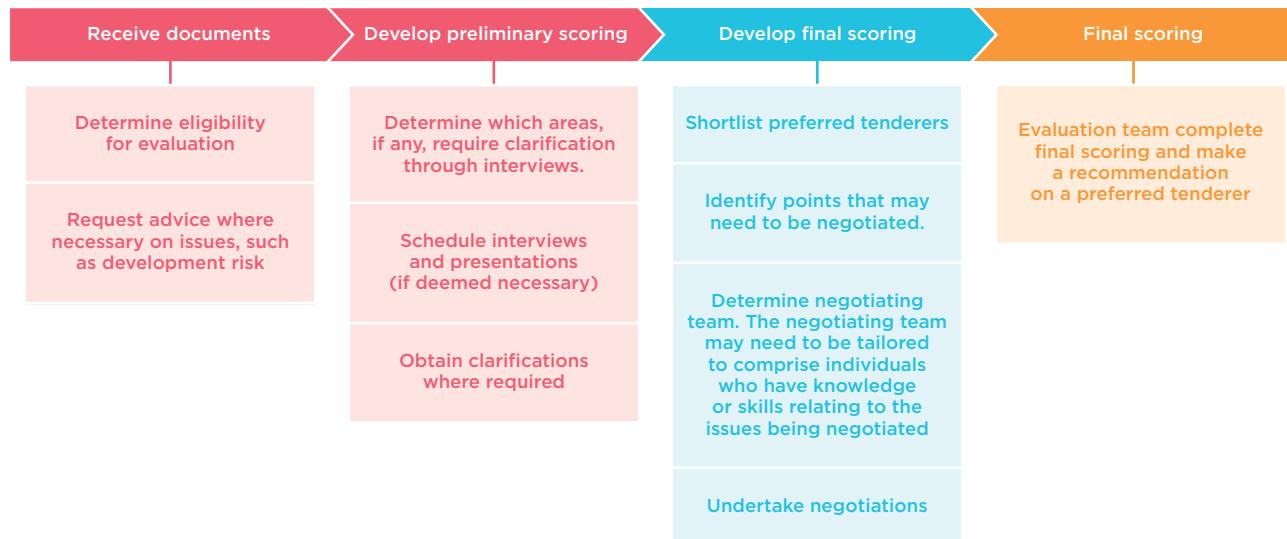
Evaluation



Negotiation



Award



### TIP:

If you are purchasing as a group, your evaluation team and negotiating team may need to reflect the composition, needs and interests of the group. You may be able to draw on knowledge and skills from your partner organisations. But the evaluation and negotiation process will need to be confidential. Consider how you will seek input from your partners when negotiating without compromising confidentiality.

### TIP:

Allow two months or more for the tender review and negotiation period. You need enough time to review the tenders, report back to project partners and undertake any necessary negotiations.

# Further Reading

MREP tender documents

<http://melbourne.vic.gov.au/mrep>

ACT Government wind power

[http://www.environment.act.gov.au/energy/cleaner-energy/wind\\_power](http://www.environment.act.gov.au/energy/cleaner-energy/wind_power)

Baker McKenzie

Report: The Rise of Corporate PPAs – A New Driver for Renewables <http://www.bakermckenzie.com/en/insight/publications/2015/12/the-rise-of-corporate-ppas>

Webinar

<http://www.bakermckenzie.com/en/insight/publications/2016/03/the-rise-of-corporate-ppas/>

Eastern Alliance for Greenhouse Action

Report: Electricity Procurement in the Local Government Sector

<https://eaga.com.au/wp-content/uploads/Local-Govt-Energy-Procurement-Discussion-Paper-2017-05-11.pdf>

Australian Renewable Energy Agency

Report: The Business of Renewables

<https://arena.gov.au/assets/2017/07/AU21476-ARENA-Corporate-Report-REVISED-v1-1.pdf>

## Acronyms

LGC – Large scale Generation Certificate

MREP – Melbourne Renewable Energy Project

NCOS – National Carbon Offset Standard

NEM – National Energy Market

PPA – Power Purchase Agreement

REC – Renewable Energy Certificate

RET – Renewable Energy Target

STC – Small scale Technology Certificate

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