



DATA CENTRES

A guide to sustainable energy procurement

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Data Centres are some of the largest energy consumers in Australia, only eclipsed by the resources sector.

Australia's top one-hundred Data Centres consume more energy than all Coles and Woolworths combined, translating to 4% of Australia's total energy consumption.

Energy is the principal cost to any Data Centre, making up an average of 20% operational costs, of which 40% contributed to cooling and the remainder from system demand all of which directly affect customer rates.

With increasing energy demand, Data Centres are now looking to minimise social impact by moving to sustainable energy solutions including rooftop solar and alternatives to traditional carbon-heavy energy supply.

Traditional retail agreements rely on renewable energy accreditation schemes with no traceability back to energy producers. More green-minded businesses seek to purchase additional renewable energy certificates and carbon credits to offset their overall carbon footprint. With the industry shifting to a heavy focus on tangible sustainability solutions, such approaches are no longer an acceptable solution for carbon reduction.

Businesses want to see results from their spend, ensuring it goes toward tangible renewable energy projects.

WePower provides such businesses with an independent marketplace that enables them to contract for energy directly with renewable energy projects, thereby making a tangible environmental impact in their local area whilst purchasing renewable energy at competitive rates with full transparency.

WePower marketplace connects corporate buyers and renewable energy sellers to conclude renewable energy transactions easily. We streamline every single step of the traditionally complex procurement process:

- energy needs evaluation and project discovery - we allow companies to analyse their current energy consumption and identify renewable projects best matching their procurement criteria;
- simple procurement process - we enable buyers to bid the price they are willing to pay for the required energy volume from projects best matching their criteria; and
- final contract settlement - we have standardised usually deal-specific power purchase agreements (PPAs), enabling streamlined direct PPA transactions or secondary Retail PPA transactions, bringing more flexibility for businesses to easily manage their energy portfolios while adapting to change in their energy consumption needs.

WePower is working with Australian Data Centres by accessing sustainable energy solutions via the WePower Marketplace, utilising our tools to simplify procurement processes with flexible solutions reducing legal, procurement and energy costs, while facilitating direct relationships with energy producers.



MARKET OVERVIEW

50,000

DCs registered in Australia

The Data Centre market is highly contested with over 50,000 Data Centres registered in Australia resulting in a competitive market where cost becomes a significant driver.

At the same time, many Data Centres are seeking to differentiate themselves from the competition by burnishing their social environmental credentials.

To remain competitive, Data Centres look to energy efficiency initiatives where feasible. However, energy demand continues to grow as system density and processing power increase, drawing more load while generating more heat and placing further demand on cooling systems.

Traditionally, uptake of renewable solutions including solar and wind by businesses involved significant transaction costs (i.e. in terms of technical, legal and financial input), limiting mass adoption.

Pressure from the public is pushing Large Corporates, Government and Finance entities to reduce emissions which is pushing through to IT strategies including Co-Lo, Cloud and Aggregators to do the same.

20%

Of DCs operational costs

Energy is the largest single cost with an average 20% operational cost in any Data Centre, with much of the cost passed to the end customer. Therefore, Data Centres have generally stayed with low-cost black energy agreements supplied by retailers offering the benefits of supply stability, ease of management and reduced risk.

Adding further complexity, Data Centres bill energy supply to end customers, reconciling monthly. Having variable energy costs or supply risk can result in higher workloads for back-office teams, increased complexity for billing systems, pressure from investors and billing confusion translating to a poor customer experience, ultimately leading to loss of revenue.

CHALLENGES

Moving to renewable energy has been associated with higher costs, higher complexity and not fit for purpose for a business running a 24 x 7 operation.

Renewable energy output is not constant, creating unique challenges for Data Centres who require consistent 24 x 7 supply with only small fluctuations on a seasonal level. As such blended technologies (Solar, Wind, Hydro) may be required adding complexity for procurement and legal teams.



Although large Data Centres consume enough energy to justify direct Power Purchasing Agreements, many do not want to commit to long term agreements with high transaction costs, variable supply and labour-intensive procurement practices.

Understanding the complexities and risks are critical when looking toward a direct Power Purchasing Agreement including:

Supply

- Single Renewable Energy Projects will not meet 100% supply for 24 x 7 operation.
- Multiple projects, blending technologies may be required creating concurrent complex negotiations.
- Physical delivery of the energy will require the participation of an energy retailer.

Flexibility

- Direct Power Purchasing Agreements are typically 7-10 years.
- Long-term committed load consumption with little to no flexibility should your energy loads increase or decrease over time.

Legal

- Deal-specific PPAs necessitate involvement of experienced energy lawyers, not typically found within a business' legal team (internal or external).
- Multiple projects will require a separate negotiation process, resulting in extended contracting timelines and costs.

Procurement

- Does your team have the skills to manage the process, or do you need to bring in external energy consultants to procure energy?
- How increased or decreased demand is handled?
- Contracting discussions and negotiations can take over 24 months.

Financial

- Can your accounting systems handle derivative accounting, or will changes be required?
- Can you pass on the fluctuations in the energy costs to your end customers?
- Will your investors be comfortable with variable energy costs, with flow-on implications to operating profits?
- Will your PPA continue to generate value for your business over the term of the agreement (7-10 years) in respect to changes in the average market prices?



Back Office

- Changes to accounting processes may be required if your accounting systems are not set up for derivative accounting.
- Will your business be able to manage the relationship with the Generator, or will you need to bring in additional expertise?

Data Centres need to consider if short term cost reduction may be overshadowed by long term complexities not previously considered when entering a direct Power Purchasing Agreement.

Solutions

WePower offers an independent marketplace that connects companies directly with green energy generators making a tangible environmental impact whilst buying green energy at competitive rates with full transparency.

Simplification and flexibility are at the heart of our solutions, with all projects on a single pane, your procurement teams can view all ongoing and upcoming projects, register interest and manage supply loads to meet your needs.

A standard form of agreement (SFOA) for all our underlying Power Purchasing Agreements significantly reduces time to procure and legal cost. The learning incurred on the initial transaction is effectively amortised over all subsequent transactions.

SFOAs enables a progressive purchasing model so you can diversify projects and technologies including Wind, Solar and Hydro, purchasing less more often stabilising production curves and risk exposure when compared to having all production from a single project

A SFOA will be offset by reduced risk and reduced cost of procurement and management.

WePower enables 3 types of contracting: Direct PPA, Direct PPA with Firming, and Retail PPA.




- Direct PPAs offer the flexibility and highest potential for reduced cost, while incorporating progressive purchasing and multiple technologies.
- Direct PPAs with Firming, guarantee supply combined PPA and retail offering ensures you have the benefits of a Direct Power Purchasing Agreement with the added security of supply from an approved retailer.
- Retail PPAs are ideal for businesses looking for low-risk constant supply while still achieving social targets with an auditable renewable energy solution.

Adoption of the WePower Marketplace shifts control of energy back in the hands of Data Centres, supplying choice, flexibility and reduced cost while meeting social, environmental and commercial targets.



Progressive purchasing reduces risk by diversifying renewable energy projects, reduces exposure to wholesale energy market fluctuations while increasing renewable energy uptake.

If you are looking to save cost, with flexibility or meeting social obligations WePower can help you achieve all with zero fees for access, transactions and utilisation.

Contract type	Details	Pros	Cons
Direct PPA 	<p>Financial agreement between Energy Producer and Consumer.</p> <p>The PPA is a financial derivative product known as a Contract for Difference (CfD). It is not a contract for the physical delivery of energy.</p>	<ul style="list-style-type: none"> • Highest economic value solution • Sits alongside existing retail agreements • Enables progressive purchasing • Business can choose their project(s), potentially deriving additional community and sustainability kudos 	<ul style="list-style-type: none"> • Time to production can exceed 12 months • Risk of value erosion over long term • Risk of supply interruption • Derivative accounting practices need to be undertaken
Direct PPA with Firming 	<p>The direct PPA is “sleeved” by an energy retailer, who “firms up” the business’ load from its own resources – thereby guaranteeing supply.</p>	<ul style="list-style-type: none"> • Advantages of CFD • Long Term price certainty for the PPA component • The current retailer may support sleeving and firming • Businesses can choose their project(s), potentially deriving additional community and sustainability kudos. 	<ul style="list-style-type: none"> • Lower economic value than a direct PPA • Require derivative accounting still required • Retail contract may need to shift if an existing retailer does not support sleeving and firming.
Retail PPA 	<p>An energy retailer offers a standard energy contract that is explicitly linked to a particular renewable energy project(s).</p>	<ul style="list-style-type: none"> • Shorter terms (1 – 3 years) lowers exposure to market changes (if there is a decrease). • Guaranteed Supply • Business can choose their project(s), potentially deriving additional community and sustainability kudos 	<ul style="list-style-type: none"> • Lowest economic value. • Limited choice of retailers.

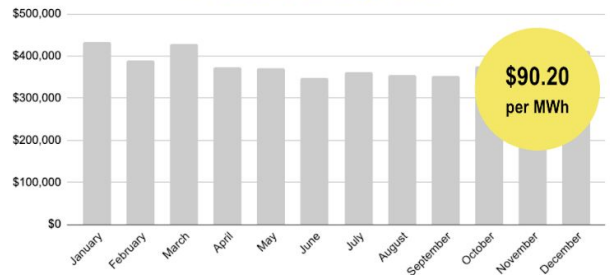


Solutions Wind PPA could reduce a Data Center's wholesale electricity and LGC spend by up to 37%

Business As Usual

energy cost = \$4,590k / year @ \$87.20 / MWh
 LGC cost = \$157k / year @ \$3.00 / MWh
total energy cost = \$4,747k / year @ \$90.20 / MWh

Wholesale Energy Cost



Scenario with WePower

CFD value = \$1,126 / year @ \$21.39 / MWh
 LGC value = \$636k / year @ \$12.08 / MWh
total value = \$1,762k / year @ \$33.47 / MWh

Wholesale Energy Cost vs CFD Value (\$55 PPA)

