

Bringing their Own Power? Options for Data Centres and Renewable Energy

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KEY FINDINGS

The emergence of data centres arrives at a pivotal moment in Australia's energy transition – with major downside risks and upside opportunities. The six key findings of this report are:

1. **Data centres can be 'climate negative' or 'climate positive' depending on policy and industry choices:** there is a wide spectrum of potential scenarios from catalysing fossil-fuel through to unlocking renewable energy supply depending on how data centre growth is managed.

2. **If the goal is to ensure all data centres 'bring their own power', the AEMC proposal to base a national energy obligation on renewable energy certificates is risky:** the Australian Energy Market Commission proposal is to mandate data centres to retire Renewable Energy Guarantee of Origin (REGO) certificates equivalent to their consumption on an annual basis.

   However, there is no precedent for a certificate-only offtake underpinning a new renewables project in Australia; a 'bundled' PPA for electricity and certificates is the standard for a bankable project. For a certificate-only offtake, very high prices would be required to compensate for the lack of certainty on electricity sale revenues and there may be unintended consequences (e.g. certificate price spikes).

   There is an expectation in some circles that mandating certificates will lead to bundled PPAs as it did when applied to electricity retailers under the Renewable Energy Target but that is not necessarily so. Some data centres will want to purchase both electricity and certificates, but the AEMC notes it did not recommend PPAs because of data centre advocacy they are too costly - which signals some data centres want to just purchase certificates. The transitional arrangements for data centres also creates risks data centres can avoid or delay purchasing certificates from new projects.

   If the goal is to ensure all data centres – and not some – bring their own power then the mandate should be based on a PPA or equivalent contract that underpins new renewables.

3. **PPAs or equivalent contracts that underpin new renewables and storage can be incorporated into the national energy obligation model recommended by the AEMC:** The broader AEMC model would establish Australia as a global leader on data centre energy regulation. Data centres would be required to demonstrate to the Australian Energy Regulator (AER) they hold contracts for firm power supply before grid connection. It is a short step from there to also require a PPA (or equivalent such as an Electricity Services Entry Mechanism contract).

   Data centres here and internationally are one of the largest contractors of PPAs. New models are emerging to accommodate data centre operations (e.g. firm supply with scope for growth over time as operations scale).

   Other concerns raised about PPAs can be addressed e.g. impacts on small data centres can be addressed by applying a size threshold for the obligation.

4. **Growth in new large-scale renewables needs to be accelerated to be sure of avoiding renewables shortages for data centres or data centres crowding out other users:** comparing AEMO's data centre growth projections with recent large-scale renewables growth rates, data centres are likely to consume a high proportion of large-scale renewables growth. If data centres are mandated to 'bring their own power' by contracting for new renewable energy and storage, there is a risk of shortages for data centres and/or crowding out other users. Renewable energy supply needs to be accelerated to avoid scenarios in which data centres drive an increase in fossil fuels or delay decarbonisation across the economy.

5. **Data centres should be leveraged to unlock renewable energy supply beyond their requirements – turning data centres from a 'problem' to a 'solution':** currently, there is a shortage of activity amongst offtakers with the scale and credit rating to underpin new renewable energy. The large electricity retailers have signed very few solar and wind PPAs in the 2020s, high market uncertainty has dampened activity in the Corporate PPA market and government schemes such as the Capacity Investment Scheme have not to date been very successful in increasing the rate of projects reaching financial close. Data centres stand out as one of a select group of offtakers that can help fill the gap that currently exists.

   How can data centres be leveraged and turn them from a 'problem' to a 'solution'? One option is to offer concessional finance for renewables and storage projects contracting with data centres – expediting projects and lowering costs – if they satisfy conditions that unlocks new renewable supply beyond their requirements. Data centres would not need to contract beyond their requirements but by acting as 'anchor offtakers' - enable increased renewable energy supply by signing a PPA that supports the development of industrial or digital precincts, anchoring a buyers group (e.g. in a co-location data centre) or signing a 'partial PPA' that releases surplus renewable energy into the market.

   The CEFC is already equipped to play this role but at a multi-gigawatt scale a Special Purpose Vehicle (comparable to the Tomago model) could contract firmed renewable energy through a portfolio of PPAs for multiple data centres and other large users.

6. **A stable, effective policy framework needs both regulatory and financing models to work for data centres as well as the renewable energy sector.** A regulatory model is required to set a standard that ensures data centres 'bring their own power' but financial incentives can go towards solving for the wider offtaker gap that is holding back large-scale renewable energy growth.

   Consequently, there are two major changes recommended:

   1. Mandate a PPA (or equivalent contract) with a new renewables project and surrender of REGOs equivalent to data centre electricity consumption as part of the national energy obligation

   2. Establish guidelines for provision of concessional finance for renewable energy projects for data centres where they are acting as an anchor offtaker enabling renewable energy supply for other users.



EXECUTIVE SUMMARY

Australia is experiencing a wave of investment in data centres, driven by the rapid growth of cloud computing, artificial intelligence and digital services.

Managing the growth of data centres will need more than rules to ensure they 'bring their own power' to avoid shortages - data centres can also play a role in growing renewable energy across the economy.

Under the central scenario used by the Australian Energy Market Operator (AEMO), data centre electricity consumption is projected to increase from around 5 terawatt-hours (2025) to 15 terawatt-hours (2030) and to 34 terawatt-hours by 2035-36.

The emergence of data centres as large new electricity loads during the transition from coal-fired power stations to renewable energy and storage creates both significant opportunities and complex challenges for the energy system.

The question is whether growing data centre demand will support or hinder Australia's transition to a clean, affordable and reliable electricity system. Data centres could help to underwrite new investment as long-term customers for new renewable energy projects and battery storage, absorb renewable generation during the day and provide a foundation for new electricity infrastructure. However, if demand growth is not matched with new renewable generation and firming capacity, data centres could be powered by coal and gas, increase wholesale electricity prices and greenhouse gas emissions, and crowd out other electricity users seeking to decarbonise their operations.

This report argues that data centres should not only be required to 'bring their own power' but encouraged and enabled to support additional renewable energy for the wider economy to support the transition. Obligations on data centres to procure new renewable energy and storage are necessary to avoid growth in coal and gas but additional measures are required to grow the renewable energy supply for both data centres and the wider economy. In essence, concessional finance via the Clean Energy Finance Corporation (CEFC) or a Special Purpose Vehicle (SPV) should be offered to data centres conditional on acting as 'anchor offtakers' that unlock renewable energy across the economy. The alternative is a serious risk of shortages of renewable energy supply for data centres as well as other parts of the economy – even if data centres buy renewable energy, in a constrained market they may meet their own requirements while delaying decarbonisation elsewhere. A climate-positive outcome requires data centres to help increase the supply of renewable energy and storage, not just compete for it.

Growing renewable energy requires a solution to the 'offtaker gap'

The emergence of data centres is occurring at a time when there is a large pipeline of renewable projects but they are struggling to secure finance and get built. One of the key factors is the decline in contracting activity by large offtakers – buyers with the scale and credit rating to contract for the output of new renewable energy projects. Large renewable energy projects are capital intensive, and debt providers require revenue certainty before they will lend money for projects to be built. In practice, this usually means a long-term power purchase agreement (PPA) from a large buyer with an investment grade credit rating, or an equivalent arrangement provided through a government agency or scheme.

There are four types of parties that can underwrite new renewable energy projects in Australia – but in each case there has been a decline in activity.

Table 1: Offtakers for Large-Scale Renewable Energy

Offtaker	Model	Current Status/Trends
Electricity Retailers	Electricity retailers sign PPAs with electricity generators to supply their customers	The three 'tier-1' electricity retailers (AGL, Origin, Energy Australia) that supply 60 to 75 per cent of the market have signed very few PPAs with solar or wind farms in recent years.
Large electricity users	Large electricity users sign 'Corporate PPAs' either to reduce costs, reduce price volatility by fixing a price through a long-term agreement or meet renewable energy or climate targets.	There are fewer buyers and PPAs due to a variety of factors e.g. a price gap between buyers and sellers (supply-chain inflation has increased the price of PPAs), high uncertainty over the future direction of the electricity system and therefore forward prices. Currently, the only major offtakers are very large resource companies or data centres.
Public utilities	Public utilities or retailers with a buying mandate can be offtakers or facilitate offtakes.	Public utilities played an important role in Queensland, but their activity has slowed with a change in government policy.
Government schemes	Government auctions or contract-for-difference schemes can provide equivalent or better revenue certainty to PPAs with retailers or large users.	The Capacity Investment Scheme (CIS) is designed to enable renewable projects to reach financial close, but to date few of the solar or wind projects with CIS awards have reached financial close.

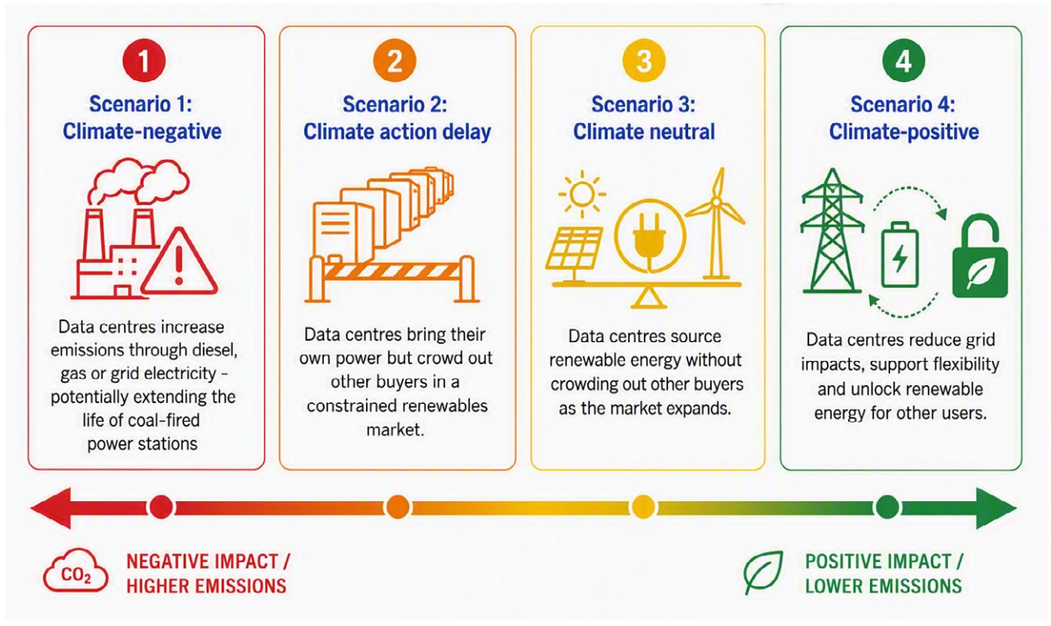
The result is an offtaker gap for large-scale renewable energy. When the Australian renewable energy market was working well, there were a mix of government schemes and large offtakers signing 'wholesale PPAs' that enabled projects to reach financial close, with the remaining output sold into the wholesale market or to mid-scale buyers via 'retail PPAs' mediated by retailers.

The retail PPA market has slowed dramatically because fewer projects are reaching financial close and mid-scale buyers are not large enough to sign PPAs at the scale required to support new projects. Consequently, there is unmet demand for renewable energy.

Four scenarios for data centres and renewable energy: From climate-negative to climate-positive

Data centres have the potential to either exacerbate the renewable energy supply–demand imbalance or become a new group of large offtakers that underwrite new renewable and storage projects (Figure 1). To understand the range of outcomes, four scenarios are outlined here. A climate-negative outcome (Scenario 1) occurs if data centres are powered by fossil fuels – on-site diesel generation, co-located gas generation, gas offtake agreements or coal-fired power stations if renewables are not developed quickly enough to meet demand. Data centres are currently exploring gas power supply in NSW, Queensland and the Northern Territory. A better outcome occurs if data centres 'bring their own power' from new renewable energy projects – but in a constrained renewables market, data centres could crowd out other users (Scenario 2) or be accommodated by a more abundant renewables supply (Scenario 3). A climate-positive outcome occurs when data centres buy renewable energy and act as anchor offtakers for new projects that increase renewable supply for other users.

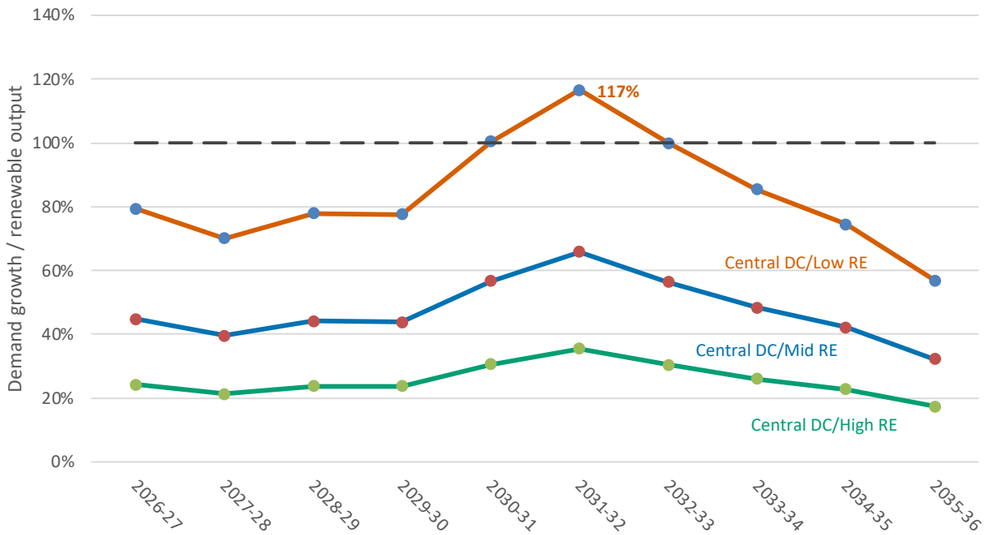
Figure 1: Scenarios for Data Centres and Renewable Energy



How likely are data centres to create shortages in renewable energy and crowd out other users?

If data centres are to 'bring their own power', there is a high risk of shortages of renewable supply. Based on the central scenario used by AEMO for data centre electricity consumption growth, their demand would exceed renewable supply in a low renewables growth scenario and fluctuate between 40 and 60 per cent under a medium renewables growth scenario. If a high growth renewables scenario occurs, data centres would only require a more comfortable 20 to 40 per cent of new large-scale renewable energy supplys.

Figure 2: Growth in Data Centre Demand and Renewable Energy Supply, Central Scenario

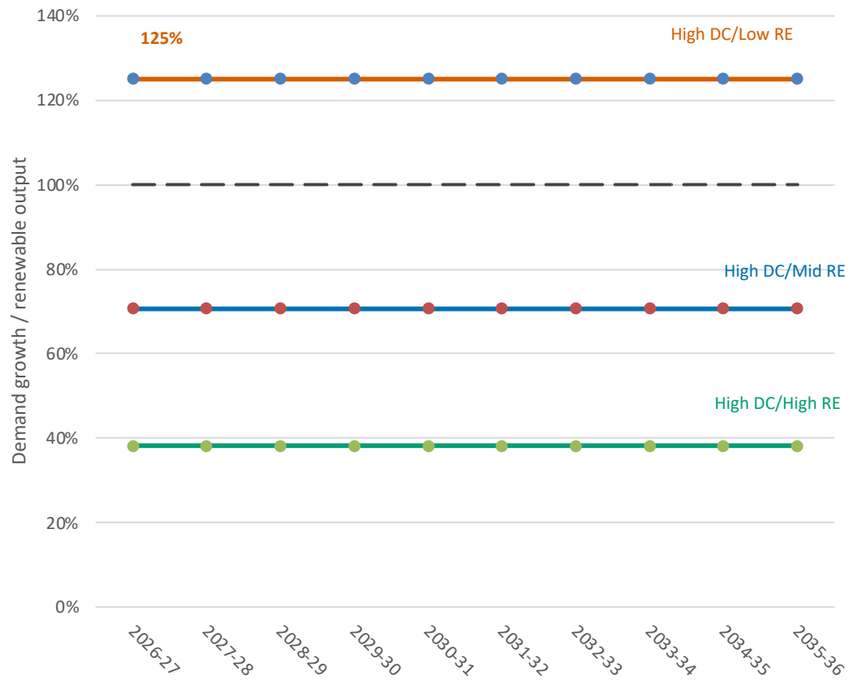


Note: renewable energy growth scenarios are based on the volume of financial closures that have occurred in recent years. Low RE = 1.3 GW (2024); Mid RE = 2.3 GW (2025); High RE = 4.2 GW (2024). 30% capacity factor is used on assumption of mix of solar and wind.

Sources: Australian Energy Market Operator (2026) Electricity Statement of Opportunities; Clean Energy Council (2026), Clean Energy Australia data on annual volume reaching financial close.

If the high-growth data centre scenario used by AEMO comes to pass, the risks of shortages increase significantly. The average requirement of data centres would be greater than 70 per cent under a medium large-scale renewables growth scenario and 40 per cent in a high large-scale renewables growth scenario.

Figure 3: Growth in Data Centre Demand and Renewable Energy Supply, High Growth Scenario



Note: the lines are straight because annual data centre consumption projections have not been provided by AEMO. Annual increases in consumption have been averaged to reach the projected growth of 34 terawatt-hours by 2035–36.

There are multiple factors that could ameliorate the risk of shortage (e.g. faster growth of commercial solar) or exacerbate the risk (e.g. faster growth of industrial or electric vehicle demand). Nonetheless, these scenarios underline it is imperative to accelerate renewable energy growth to avoid the risk of data centre electricity consumption leading to fossil fuel growth or crowding out other electricity users.

How can data centres be leveraged to increase supply of renewable energy?

Data centres could themselves increase the supply of renewable energy beyond their own requirements in three primary ways:

1. **Data centres can act as anchor offtakers for regional industrial ecosystems,** where their long-term demand supports new renewable energy, enabling upgraded transmission capacity and wider industrial development.
2. **Data centres can sign partial PPAs** with new renewable projects, contracting enough capacity for the project to reach financial close while leaving surplus capacity to be sold to other users.
3. **Data centres can act as anchor offtakers for renewable energy buyers groups**, enabling smaller buyers to participate in larger deals that they could not negotiate alone. There are a range of different buyer group models. One example is the Telstra Murra Warra PPA, whereby Telstra negotiated the PPA and other buyers were invited to join on a take-it-or-leave-it basis. Coca-Cola, ANZ, the University of Melbourne and Monash University joined increasing the size of the offtake.

The question then is what regulatory and financial levers exist to enable the climate-positive instead of the climate-negative scenarios. The starting point is the advice from the Australian Energy Market Commission to Energy and Climate Change Ministers on a national energy obligation for data centres.

The AEMC model is broadly robust but the certificate-only approach to new renewable energy requirements is risky

The AEMC has recommended four key obligations be placed on data centres (Table 2). In relation to offsite renewable energy (Recommendation 1), the AEMC model would require data centres to obtain and retire renewable energy certificates (REGOs) from new renewable energy projects equivalent to their annual consumption. The AEMC explicitly recommends against mandating data centres to sign PPAs.

Table 2: AEMC Recommendations on Regulations for Data Centres

No.	Recommendation
1	Mandate new data centres to purchase certificates – Renewable Energy Guarantee of Origin (REGOs) - from new renewable energy generators.
2	Introduce an obligation for data centres to prove to the Australian Energy Regulator (AER) they have sufficient 'firm' contracts to cover their load.
3	Introduce a requirement to register with the Australian Energy Market Operator (AEMO) above a defined threshold with voluntary incentives for demand flexibility services.
4	Support demand flexibility and co-location with generation through the connection agreement process with streamlined connection pathways for data centres with co-location and/or firming.

Whilst the overall package contains many good features and would make Australia a global leader in data centre energy regulation, basing an obligation for new renewable energy on certificates alone is risky.

- **Financing new renewable energy projects on certificate-only offtakes is inherently challenging.** The AEMC proposal would only require data centres to contract for one of the two sources of revenue for a renewable energy project – the renewable energy certificates but not the electricity sales. A debt provider evaluating a project only holding a certificate offtake will be highly conservative regarding the assumptions on electricity sale revenues as they are subject to high risk and uncertainty. Either the certificate price will need to increase substantially to fill the gap created by lower assumed wholesale electricity revenues, or funders will provide less debt finance i.e. they will size the debt they are willing to provide to the level at which they are confident the project can service its debt repayments. The result will be a smaller project, or the project will need to attract a higher proportion of equity finance from investors who are willing to bear higher risk for a higher cost of capital.

  The AEMC appears to suggest projects might be able to buy REGOs from the open market at a price that can underwrite new projects, sketching out a scenario in which data centres increase their annual purchases of REGOs incrementally over several years and claiming that 'even a marginal increase in REGO demand may be sufficient to improve the viability of some renewable energy projects.[1] This is in fact highly improbable:

> "Studies have concluded it is unlikely that corporate REC purchases have led to additional RE investment or greenhouse emissions avoidance. As corporations have become increasingly aware of this evidence, their growing interest in PPAs largely suggests PPAs are an alternative to the voluntary purchasing of unbundled PPAs."[2]

- **Certificate-only purchases underwriting new renewable energy projects are unprecedented in Australia:** Based on a review of the BRC-A's renewable energy contracting database, there is no precedent for a certificate-only offtake underwriting a new project in Australia. In the hothouse environment in the run-up to the 2020 Renewable Energy Target when LGC prices soared to $70-$90/MWh, there were projects that were built 'merchant' (self-funded by developers with no offtakers) and there were certificate-only contracts - but these were complemented by electricity offtakes with other contractors. Outside of that period, all deals that have led to new renewable energy projects were bundled PPAs purchasing both the electricity generated and certificates.
- **There may unintended consequences from a certificate-only offtake obligation:** firstly, large increases in REGO prices would be required for certificate-only offtakes to underwrite new projects – the AEMC notes the certificate price will rise to whatever is required for projects to reach financial close – which could have impacts for other users. It's possible that a 'data centre REGO price' would form but there is a risk of wider certificate price impacts for other mid-scale buyers. Secondly, a complex transitional mechanism is envisaged which creates risks that data centres can delay procurement and projects do not receive the certainty they require to get project financing.

[1] Australian Energy Market Commission (2026), Data Centre Energy Obligation: advice to Energy and Climate Ministers.

[2] Backstrom, J., Gillenwater, M., Brander, M. & Inman, C. (2024) Corporate Power Purchase Agreements: a Policy Perspective, SSRN: https://ssrn.com/abstract=4708811 or https://dx.doi.org/10.2139/ssrn.4708811.

- **There is an expectation in some circles that mandating certificates will lead to PPAs – the likely outcome is some but not all data centres will use PPAs:** under the renewable energy target, electricity retailers mandated to retire renewable certificates equal to a portion of sales signed PPAs for the electricity and certificates. Some observers consider the result of a certificate-only obligation for data centres will be the same. Some data centres - probably the majority even - will want to purchase both electricity and certificates. However, the AEMC notes it did not recommend PPAs because of data centre advocacy they are too costly and inflexible - which clearly signals some data centres intend to purchase certificates from the secondary market as required.

Another consideration is that instead of creating a standard that expedites agreements, it could create a zone of uncertainty as projects try to negotiate PPAs that are 'beyond the standard' or certificate prices that are well above market rates to get the revenue needed for a bankable project.

> **"The likely outcome of an obligation to only surrender certificates is some operators will sign offtakes with new projects and some will just buy certificates. If the goal is to ensure all data centres 'bring their own power', the energy obligation for data centres should be based on a power purchase agreement or equivalent contract with a new project before grid connection"**

PPAs or equivalent contracts with new renewables should be included in the national energy obligation developed by the AEMC

If the goal is to ensure all data centres – and not some – bring their own power then the national energy obligation for data centres should be based on a PPA or equivalent contract (such as an Electricity Service Entry Mechanism contract)[3] that underpins new renewables.

- PPAs are a proven mechanism for underwriting new renewable energy, data centres here and internationally are one of the largest contractors of PPAs and new models are emerging to accommodate data centre operations.
- A PPA with a renewable project that is pre-financial close will create additional supply - data centres can be permitted to retire certificates from existing period in the interim without ambiguous transition arrangements.
- The risks of certificate price spikes for other buyers will be minimised.

A data centre size threshold could be introduced for the PPA requirement to address concerns about impacts on smaller data centres.

Under the AEMC model, data centres would be required to demonstrate to the AER they hold contracts for firm power supply before grid connection. It is a short step from there to also require a PPA (or equivalent such as an Electricity Services Entry Mechanism contract).

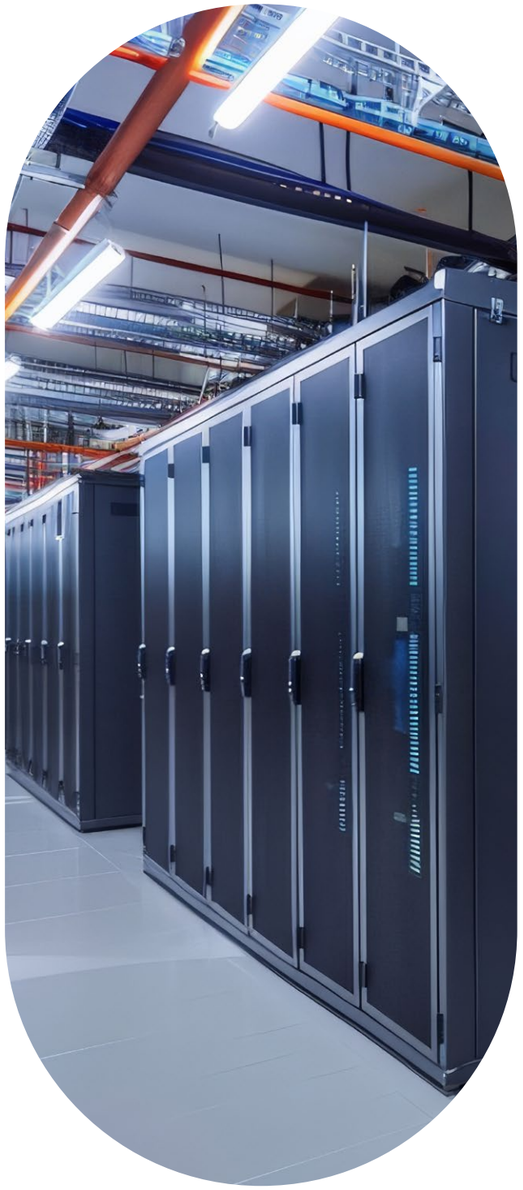
Concessional finance models can secure a climate-positive outcome and ensure data centres can access renewable energy

The focus of current public debate is to identify the right model to regulate data centres to 'bring their own power'. This is important but the scenario analysis shows that it might not be enough; there is a real risk of renewable energy shortages for either or both data centres and other buyers if renewable energy supply is not accelerated.

In exchange for acting as 'anchor offtakers' that unlock additional renewable energy supply, concessional finance could be offered to renewables projects supplying data centres. The CEFC could offer debt at a lower margin or longer tenor than commercially available in exchange for satisfying conditions that result in data centres signing PPAs that release more renewable electricity supply to the market through for example an industrial precinct or 'clean energy digital precinct' or buyer groups.

The core principle – or the bargain being offered – is concessional finance for cheaper electricity and quicker project development in exchange for conditions for data centres to act as anchor offtakers that unlock renewable energy for other users.

At a multi-gigawatt scale, a 'digital infrastructure SPV' could be feasible. Similar to the model used to negotiate 3GW of firmed renewable energy for Tomago[4], an SPV could contract firmed renewable energy through a portfolio of PPAs for multiple data centres (and other large users). An SPV could diversify risks across projects, manage timing risk associated with staged data centre loads, procure renewable and storage projects competitively, and apply standardised contracts and reporting requirements. To justify the set-up and transaction costs on top of existing CEFC financing capability, an SPV would need to operate at a multi-gigawatt scale.



[3] The Electricity Services Entry Mechanism, currently under development, aims to create standardised fungible contracts for bulk renewable energy, shaping and firming. The aim is to create a liquid market in fungible contracts for renewable energy projects to enable them to reach financial close.

[4] https://theconversation.com/why-the-2-5-billion-tomago-aluminium-deal-is-no-ordinary-bailout-289629



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1 Introduction

Australia is experiencing a wave of investment in data centres, driven by the rapid growth of cloud computing, artificial intelligence (AI) and digital services.

Whilst there is high uncertainty, electricity demand from the sector is increasing rapidly and projected to become a material component of Australia's energy system. Under the AEMO's central scenario, data centre electricity consumption is projected to increase from around 5 terrawatt-hours (3% of operational demand) to around 15 terrawatt-hours (8% of operational demand) by 2030 and to 34 terrawatt-hours (13% of operational demand) by 2035-36.[5] Concurrently, Australia is attempting a transformation of its energy system, replacing ageing coal-fired power stations with renewable energy and storage. The emergence of data centres as large new electricity loads during this transition creates both significant opportunities and complex challenges.

The question is whether growing data centre demand will support or hinder Australia's transition to a clean, affordable and reliable electricity system. There are multiple scenarios as to how the growth of data centres could play out. Large data centres could be long-term customers and help to underwrite new investment for renewable energy and battery storage. The relatively stable demand profiles of data centre could also absorb renewable generation during the day. However, if demand growth is not matched with additional renewable generation and firming capacity, data centres could be powered by coal and gas, increase wholesale electricity prices and greenhouse gas emissions.

The Commonwealth Government has announced there will be national mandatory standards for data centres including energy consumption.[6] The Australian Energy Market Commission (AEMC) has provided advice on regulatory options for ensuring data centres use new renewable generation, contract firming capacity, contribute to grid flexibility and co-locate with generation as far as possible. Consultation is occurring on new legislated standards for AI infrastructure including energy.[7]

This report aims to contribute to the debate and policy-making on buying off-site renewable energy for data centres. The report is structured as follows:

- Section 2 examines the context for the emergence of data centres: the 'offtaker gap' for large-scale renewable energy.
- Section 3 outlines four scenarios for the impacts of data centres on the energy system and emissions, ranging from 'climate negative' through to 'climate positive'.
- Section 4 investigates options for regulating off-site renewable energy procurement by data centres within a national energy obligation.
- Section 5 considers financial models that could leverage data centres as anchor offtakers to accelerate renewable energy.

[5] Australian Energy Market Operator (2025) Electricity Statement of Opportunities, https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-reliability/nem-electricity-statement-of-opportunities-esoo.

[6] https://www.pm.gov.au/media/ai-australias-interests.

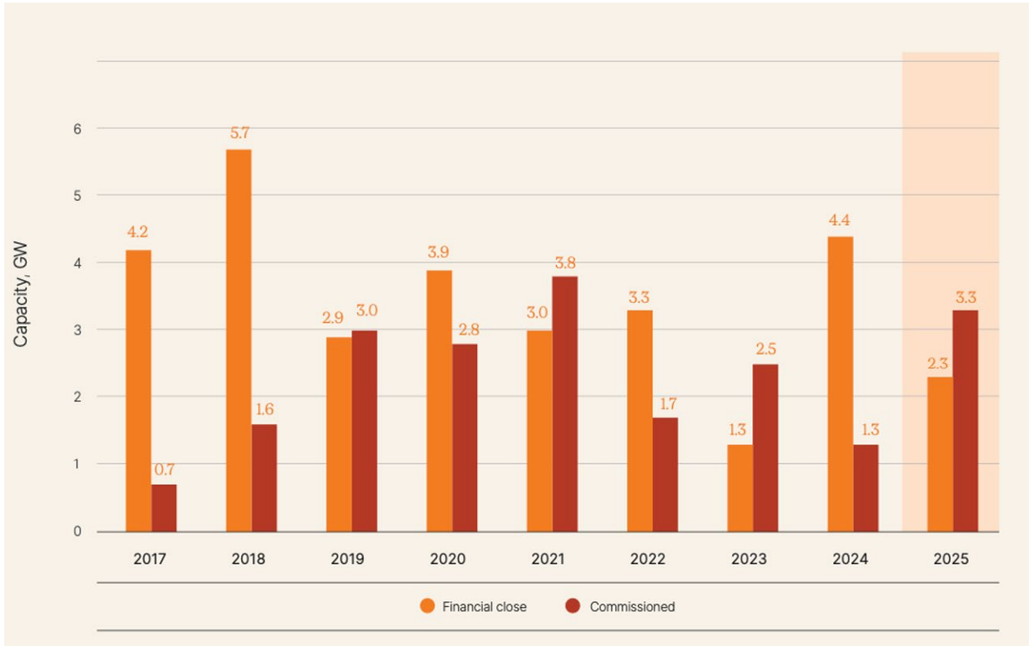
[7] https://www.pmc.gov.au/domestic-policy/office-ai/getting-it-right-building-ai-infrastructure-works-australia.

2 The context for the emergence of Data Centres: the Offtaker Gap for Large-Scale Renewable Energy

The emergence of data centres is occurring at a time when large-scale renewable projects are struggling to secure finance and get built.

There is a large pipeline of solar and wind farms but the growth of large-scale renewable energy, especially wind farms, has been slower than projected in recent years. The Federal Government estimated around 4 GW of new capacity was required each year to achieve national target of 82 per cent renewable energy by 2030. After breaking through 4 GW threshold in 2024, the volume of projects reaching financial close fell by almost half last year.

Figure 4: Renewable Energy Generation, Financial Committed and Commissioned Projects



Source: Clean Energy Council (2026) Clean Energy Australia, p.15. https://cleanenergycouncil.org.au/news-resources/clean-energy-australia-report-2026.

Note: Financially committed = project capacity (GW) that has reached financial close and secured the finance to construct; Commissioned = project capacity (GW) that has been connected.

2.1 The 'offtaker gap' for large-scale renewable energy

One of the factors behind the struggles of renewable projects to secure finance is the decline in large 'offtakers' – buyers with the scale and credit rating to contract for the output of large, new renewable energy projects. Large renewable energy projects are capital-intensive. Debt providers require revenue certainty to ensure they will be repaid before they will lend money for projects to be built. In practice, this means a power purchase agreement from a large buyer with an investment grade credit rating (or equivalent from a government agency or scheme). A power purchase agreement is a long-term contract (7-10 years or longer) between an energy buyer and a renewable energy generator with an agreed price for the electricity and/or the renewable energy certificates associated with the output.

There are four types of parties that can underwrite new renewable energy projects in Australia – but in each case there has been a decline in activity.

Table 3: Offtakers for Large-Scale Renewable Energy

Offtaker	Model	Current Status/Trends
Electricity Retailer	Electricity retailers sign PPAs with electricity generators to supply their customers	There are three 'tier-1' electricity retailers (AGL, Origin, Energy Australia) that supply 60 to 75 per cent of the market across different states.[8] However, the tier-1 retailers have signed very few PPAs with solar or wind farms in recent years. The smaller 'tier 2' retailers have been more active but there are limits to the volume of PPAs they can sign due to their scale and credit rating – and most of these PPAs are with projects after they reach financial close.
Large electricity user	Large electricity users sign 'Corporate PPAs' either to reduce costs, reduce price volatility by fixing a price through a long-term agreement or meet renewable energy or climate targets. 'Wholesale PPAs' signed directly between a buyer and project can underwrite new projects. Retail PPAs, intermediated by retailers between projects and buyers, typically cover projects post-financial close but can also underwrite new projects.	The depth of the corporate PPA market has declined in recent years. There are fewer buyers and PPAs due to a variety of factors, including a price gap between buyers and sellers (supply-chain inflation has increased the price of PPAs) and high uncertainty over the future direction of the electricity system and therefore forward prices.[9] Where corporate PPAs have occurred, they have usually been signed by very large resource companies or data centres - 'full PPAs' where the offtake is buying all the electricity. In earlier years, it was more common for large buyers to sign 'partial PPAs' with some of the output then being on-sold to mid-scale buyers via retail PPAs.
Public utility	Public utilities or retailers with a buying mandate can be offtakers or facilitate offtakes.	Queensland has been the leading state for Corporate PPAs for some years – and the major factor has been the role of CleanCo.[10] The Queensland Government set a mandate for CleanCo to buy renewable energy. CleanCo signed large PPAs that enabled projects to reach financial close and then on-sold capacity to buyers as retail PPAs. For example, CleanCo signed a PPA with Macintyre wind farm for 400MW which enabled the 923MW project to reach financial close. CleanCo then on-sold the capacity through its retail arm to Coles. Bunnings, Kmart, Target and Officeworks. However, with the change in government, CleanCo buying of renewable energy has slowed.
Government scheme	Government auctions or contract-for-difference schemes can provide equivalent or better revenue certainty to PPAs with retailers or large users due to their credit ratings.	Earlier government auctions provided a contract-for-difference to guarantee the agreed strike price for the project wherever there were shortfalls in wholesale market revenues. By contrast, the CIS has been designed to provide a lower price that was sufficient to secure debt finance but insufficient to secure equity investment. To date, however, the CIS has not worked that way in practice. Very few of the solar or wind projects with CIS awards have reached financial close, generally attributed to a combination of intense competition for awards leading to unrealistically low bid prices amidst rising supply-chain prices.

When the Australian renewable energy market was working well, there were government schemes and a mix of large offtakers (corporates, public retailers) signing 'partial PPAs' that enabled projects to reach financial close with the remaining output either being sold into the wholesale market ('merchant') or to mid-scale buyers via retailers. Australia developed a vibrant market in 'retail PPAs' – PPAs mediated by retailers after the project has reached financial close with mid-sized electricity buyers like banks, universities, retailers. The retail PPA market has slowed dramatically in recent years because less projects are reaching financial close and the mid-scale buyers are not big enough to sign PPAs at the scale required for new projects. Consequently, there is unmet demand for renewable energy in this part of the Australian economy.

The opportunity here with data centres is obvious: their scale and energy requirements position them as a new group of offtakers that could underwrite new large-scale renewable energy projects.

[8] Australian Energy Regulator (2025) Annual Retail Markets Report 2024-25, https://www.aer.gov.au/publications/reports/performance/annual-retail-markets-report-2024-25.

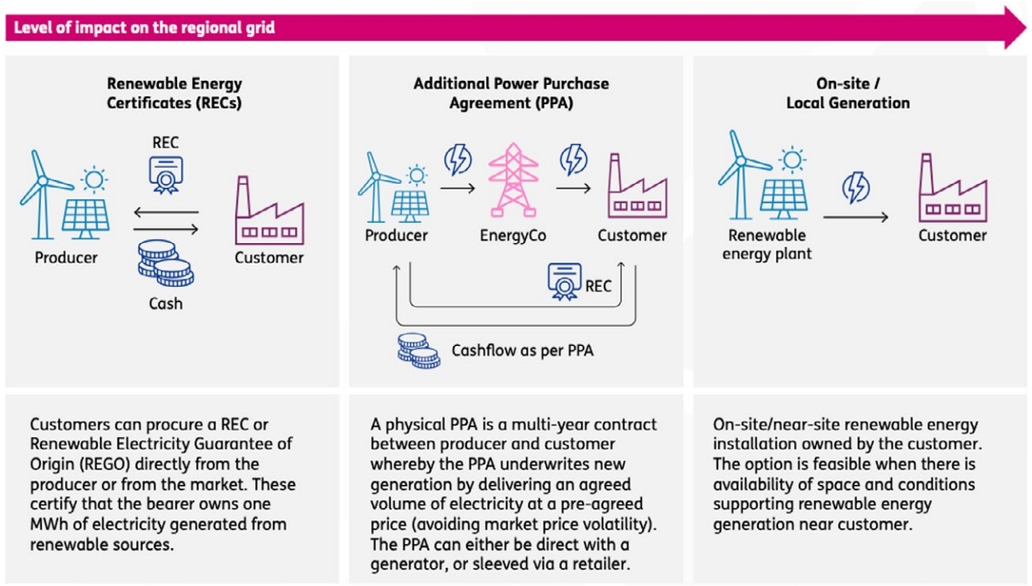
[9] Briggs, C., Weston, B. & McKeon, J. (2025) State of the Market: Corporate Renewable Power Purchase Agreements in Australia: State of the Market 2025, https://businessrenewables.org.au/state-of-the-corporate-market-report/.

[10] Ibid.

2.2 Data Centres: Options for Buying Renewable Energy

There are three major ways in which renewable energy can be purchased by data centres – on-site generation, a power purchase agreement for off-site electricity and/or the certificates that are associated with the electricity production.

Figure 5: How Data Centres can Buy Renewable Energy



Source: Baringa (2025), Getting the Balance Right: Data Centre Growth and the Energy Transition, Prepared for the Clean Energy Finance Corporation.



2.3 Best Practice for Buying Renewable Energy: Setting the Standard for Data Centres

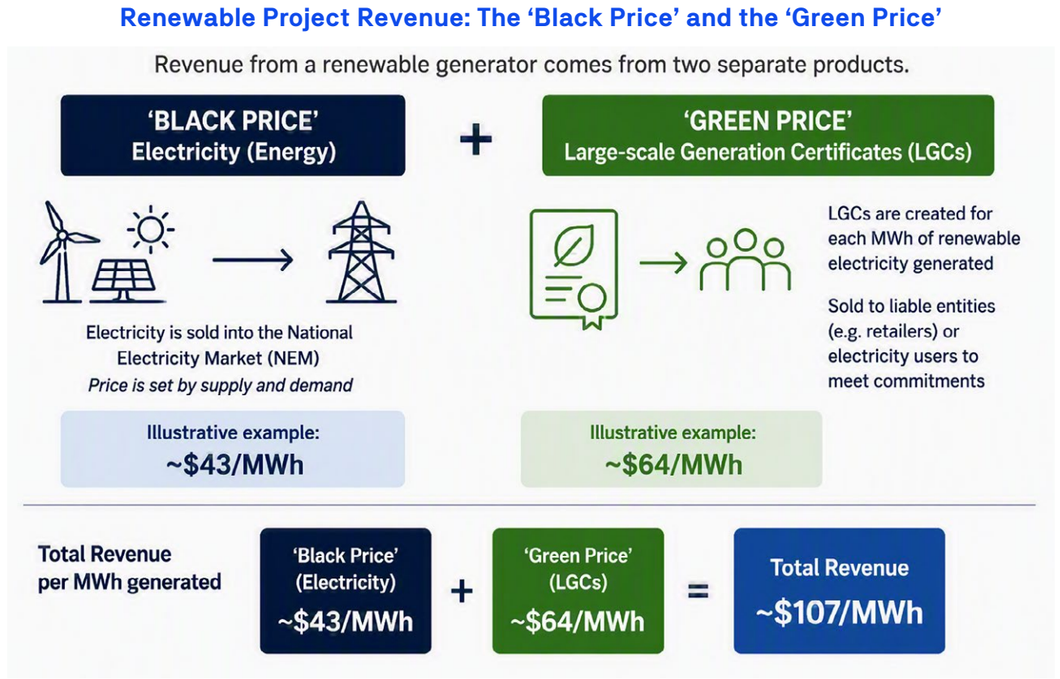
Not all renewable energy deals are the same. There is plenty of 'devil in the detail' when it comes to buying renewable energy and its real-world impact. There is a spectrum of impact depending on whether the deal is with a new or operating project, a bundled deal for both the energy and certificates or just the certificates, and the term length. Importantly, as the Business Renewables Centre – Australia noted in its best practice guide, the options realistically available change depending on the size of the purchase: what is best practice for a large buyer like a data centre is different from a mid-scale buyer like a local council.[11]

It is important to understand some of the distinctions to ensure regulation and policy for data centres is geared towards best practice.

Electricity and Certificates

There are two sources of revenue for a renewable energy project – the electricity and the green certificates. Electricity and certificate sales need to add up to sufficient revenue to cover repayments to secure debt finance. There can be a relationship between the two where certificate prices increase in the context of lower electricity prices to cover the gap for a renewables project to be bankable (and vice-versa).

Figure 6: Revenue Streams for Renewable Energy Projects



[11] Business Renewables Centre – Australia. (2022) Best Practice Corporate Renewable Power Purchase Agreements, www.businessrenewables.org.au.

From the perspective of renewable energy buyers, there are three basic options in relation to electricity and certificates:

Table 4: Renewable Energy Procurement – Certificates and Electricity

Electricity and certificates	Certificates only	Electricity only
The most common option and highest impact because it is providing certainty for both revenue streams for a renewable energy generator.	It is common for smaller buyers without much purchasing power to just buy certificates alongside their retail electricity contract. Some other contexts in which this occurs is in the public sector where there is an existing retail electricity contract.	It is rare for a buyer to just buy the electricity but may occur if, for example, they are a trade-exposed business that is exempt from liability under the renewable energy target and therefore does not require the certificates.

Renewable energy certificates play multiple roles which need to be taken into consideration:

- Revenue source for renewable generators;
- Compliance mechanism for demonstrating renewable energy purchases;
- Source of renewable energy purchases for smaller buyers that do not have the scale to negotiate directly or sign PPAs.

Whilst purchasing certificates adds to demand for renewable energy and may have an indirect impact on prices, studies have found that buying green certificates off the secondary market has a weak to negligible impact on investment in new renewable energy.

> **Studies have concluded it is unlikely that corporate REC purchases have led to additional RE investment or greenhouse emissions avoidance. As corporations have become increasingly aware of this evidence, their growing interest in PPAs largely suggests PPAs are an alternative to the voluntary purchasing of unbundled RECs."**[12]

It is therefore best practice for larger buyers to negotiate bundled PPAs.

New and operating renewable energy generators

Additionality is the principle that a renewable energy purchase results in new renewable generation. To be 'additional', the contract for purchase with the renewable energy generator needs to be signed before they reach 'financial close' (when financing has been secured for construction) and to have supported them in reaching financial close.

Buyers often purchase renewable energy after a project reaches financial close and it is in construction or operating. Typically, a PPA will need to provide coverage for at least 50 - 60 per cent of the revenue for the project to be 'bankable' and the generator will then sell the remainder into the wholesale electricity market (selling 'merchant') or progressively contract the remaining output over time to retailers or electricity users. Most retail PPAs are signed between mid-scale buyers and renewable projects selling uncontracted output after the project has reached financial close.

Whilst these PPAs are not 'additional', they do contribute to renewable energy investment in various ways:

- Revenue certainty for re-financing: renewable projects typically secure debt finance for some of their operational life and need to refinance at the end of the term of the debt (say 10 years). PPAs support refinancing by providing revenue certainty across the operational life of renewables projects.
- Demand signal: the purchase of renewable energy creates a demand signal for retailers to buy more renewable energy capacity to be on-sold.

For mid-sized or smaller buyers, retail PPAs with operational projects are the best practice way in which they can contribute to renewable investment and a healthy market for renewable energy includes a vibrant retail PPA sector.

However, the health of this market segment rests on larger buyers signing contracts that are 'additional' and bring forward new renewable energy - this is the key challenge for the growth of renewable energy.



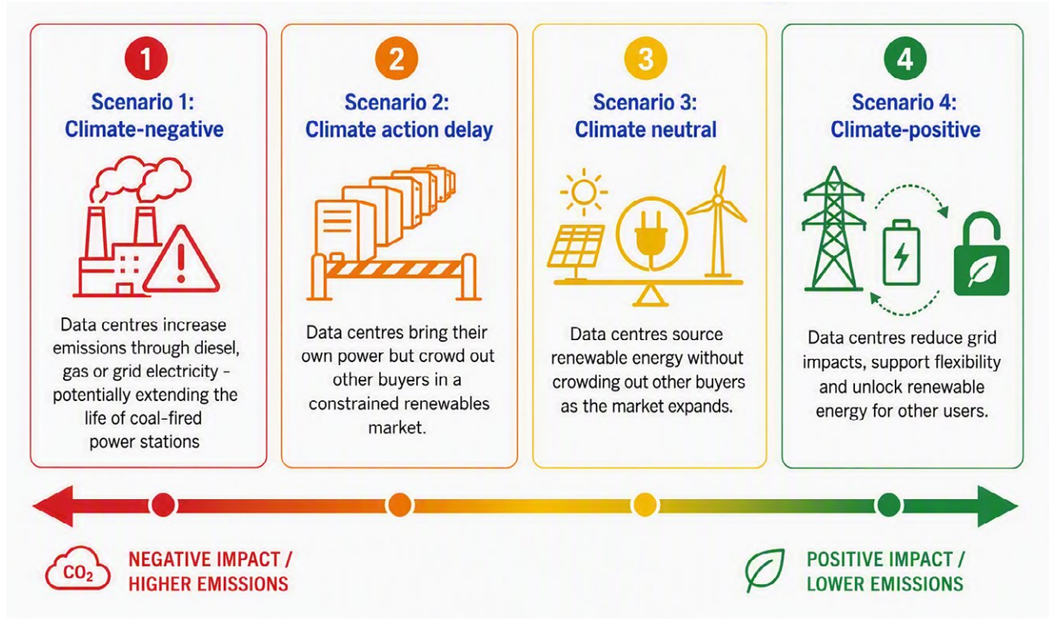
[12] Backstrom, J., Gillenwater, M., Brander, M. & Inman, C. (2024) Corporate Power Purchase Agreements: a Policy Perspective, SSRN: https://ssrn.com/abstract=4708811 or https://dx.doi.org/10.2139/ssrn.4708811.

3 Data Centres, Renewable Energy and Emissions: Four Scenarios

There is a wide spectrum of outcomes for the energy system and greenhouse gas emissions that could occur from the growth of data centres.

There are four broad scenarios for how the impact of data centres, renewable energy and greenhouse gas emissions could play out.

Figure 7: Scenarios for Data Centres and Renewable Energy



Data centres could turbo-charge greenhouse gas emissions by relying on gas-fired power and triggering the extension of coal-fired power stations (#1), if they 'bring their own power' they could crowd-out other buyers (#2) or be part of a growing market (#3) or they could unlock supply for the renewables market (#4).

3.1 Climate-negative - data centres are powered by fossil fuels (Scenario 1)

Under this scenario, data centres are powered by fossil fuels in different ways:

- On-site diesel generation: most if not all data centres are likely to have diesel generators as back-up power as they can start quickly, provide high power output and store fuel. Data centres may rely entirely on diesel generators or install on-site renewable generation and battery storage – and potentially micro-grids – to reduce but generally not eliminate use of diesel generators
- Gas generators co-located with data centres have become increasingly common in the US and there are also examples of data centres signing offtakes with gas power stations.[13]
- If high-growth projections materialise and data centres purchase grid electricity, a worse-case scenario is that the demand surge could extend the life of coal-fired power stations if renewables are not developed to meet the demand.

In Australia, there are proposals for data centres to use gas generators across a range of projects:

- Cloud Carrier in Moss Vale (NSW) has proposed developing a dedicated 700 MW gas power station;[14]
- In Queensland, Anthropic is developing a $30 billion, 2.16 GW data centre that would consume the equivalent of one-fifth of summer peak demand. The site is in the Darling Down region and local gas power stations have been identified as potential sources of power;[15] and
- the Northern Territory government has signed an agreement in relation to a site for a $40 billion, 2 GW data centre with Beetaloo Energy which could be powered via gas pipelines as 'baseload' with potential additions of renewable energy.[16]

Data centres being powered by existing and new gas power stations and extending the life of coal power stations is a live scenario.

3.2 Data centres 'bring their own power': will they 'crowd-out' other renewable energy buyers (Scenario 2) or will a 'rising tide lift all boats' (Scenario 3)?

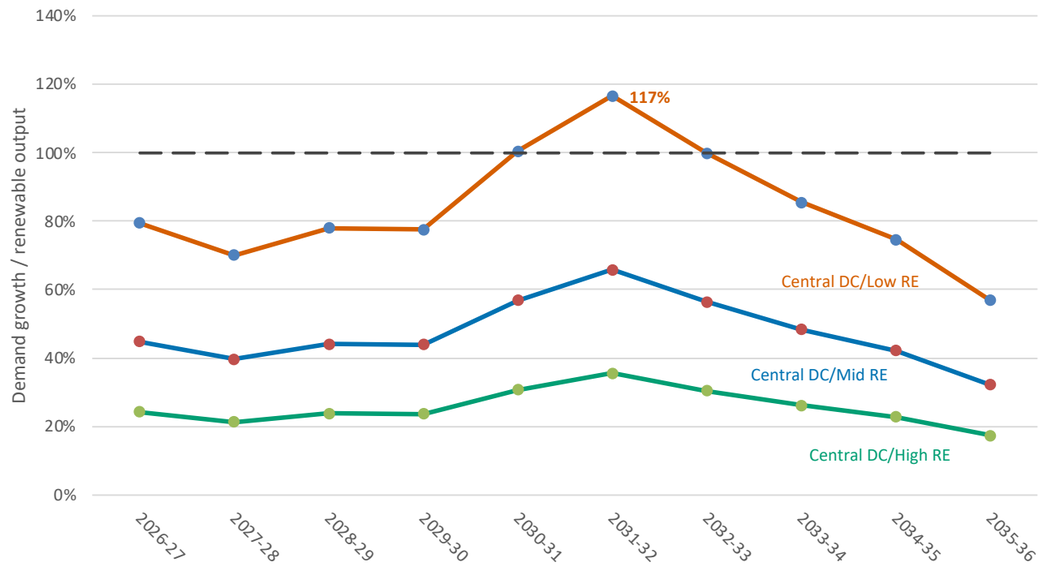
In these scenarios, data centres 'bring their own power' from new renewable projects – but there are different outcomes depending on how the growth in data centre electricity consumption compares to the growth of renewable energy. In order to understand the likelihood of these scenarios, data from AEMO projections for data centres electricity growth are compared to growth trajectories for renewable energy based on recent experience.

- AEMO's projections include a central scenario and high data centre growth sensitivity scenario for data centre electricity consumption growth. In the central scenario, data centre electricity consumption is projected to increase from 5 terrawatt-hours (2024-25) to 15 terrawatt hours (2029-2030) and 34 terrawatt hours (2035-36). Under the high growth sensitivity, data centre electricity consumption would grow to 52 TWh by 2035-36.[17]
- A high, mid and low scenario for new renewable energy generation reaching financial close was developed based on the best recent year (4.2 GW, 2024), a mid-range year (2.3 GW, 2025) and the worst recent year (1.3 GW, 2023). Assuming a mix of solar and wind (30 per cent capacity factor), based on recent experience there is a range from just over 3.4 TWh (low) to 11.2 TWh (high) of new renewable energy capacity reaching financial close in a year.

Under AEMO's central scenario for data centre electricity consumption growth, both the crowding-out (scenario 2) and rising tide lifting all boats (scenario 3) worlds are possible (figure 8).

- Data centre electricity consumption peaks over 100 per cent in a low renewables growth scenario (in other words, there would be insufficient renewable energy to power data centres) and is generally over 80 per cent;
- If only medium growth renewable energy is achieved, data centre electricity consumption is generally 40 – 60 per cent and peaks at around two-thirds of growth.
- However, data centre growth can be accommodated in a high renewables growth scenario as it fluctuates from 20 – 40 per cent.

Figure 8: Growth in Data Centre Demand and Renewable Energy Supply, Central Data Centre Growth Scenario



Note: renewable energy growth scenarios are based on the volume of financial closures that have occurred in recent years. Low RE = 1.3 GW (2024); Mid RE = 2.3 GW (2025); High RE = 4.2 GW (2024). 30% capacity factor is used on assumption of mix of solar and wind.

Sources: Australian Energy Market Operator (2026) Electricity Statement of Opportunities; Clean Energy Council (2026), Clean Energy Australia data on annual volume reaching financial close.

The risks of shortages of renewable energy and crowding out of other users increases under AEMO's high data centre growth scenario (figure 9):

- If the high data centre electricity consumption projections were to occur alongside low renewable energy development, it would greatly exceed new renewable development (120 per cent);
- High data centre growth would still require around 75 per cent under a medium renewables growth scenario leaving little for other users. Even under a high renewables growth scenario it is equivalent to around 40 per cent of the growth in renewable energy.

Demand is also unlikely to be flat or linear as in the scenario but subject to surges: the demand peaks under this scenario would be higher in practice.

[13] For example, Google signed an offtake with a gas power station in Illinois: https://www.powermag.com/google-backs-first-u-s-gas-fired-power-plant-with-integrated-ccs-for-data-centers/.

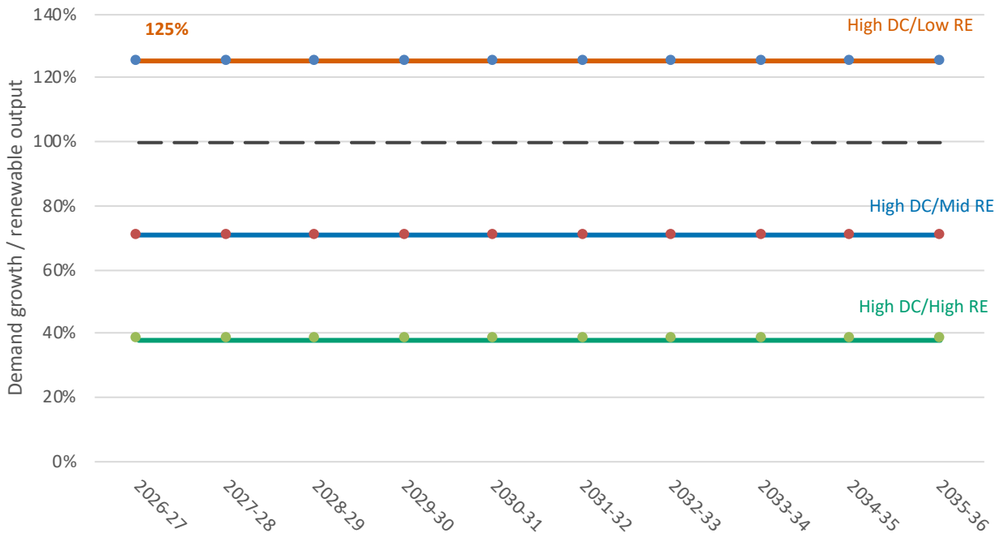
[14] Burfitt, P. (2026) 'Cloud Carrier proposes gas-fired power station to power Moss Value AI data centre', https://www.abc.net.au/news/2026-03-04/gas-plant-ai-data-centre-moss-vale/106405944, March 4.

[15] Hannan, P. (2026)' "Bowen Test": Anthropic's giant data centre plan will test Federal resolve on wind and solar', https://reneweconomy.com.au/bowen-test-giant-data-centre-plan-will-test-federal-resolve-on-renewables-rule/, Renew Economy, September 17.

[16] O.Lathouris (2026) 'Proposed $40 bn, 185ha data centre to use six times Top End's annual electricity consumption', https://www.abc.net.au/news/2026-07-22/beetaloo-digital-energy-ai-hyperscale-data-centre-40-billion/106943690, July 22.

[17] Australian Energy Market Operator (2026) Electricity Statement of Opportunities, p.38. https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-reliability/nem-electricity-statement-of-opportunities-esoo.

Figure 9: Growth in Data Centre Demand and Renewable Energy Supply, High Data Centre Growth Scenario



Note: renewable energy growth scenarios are based on the volume of financial closures that have occurred in recent years. Low RE = 1.3 GW (2024); Mid RE = 2.3 GW (2025); High RE = 4.2 GW (2024). 30% capacity factor is used on assumption of mix of solar and wind.

Sources: Australian Energy Market Operator (2026) Electricity Statement of Opportunities; Clean Energy Council (2026), Clean Energy Australia data on annual volume reaching financial close.

Obviously, these are simplified scenarios. There are multiple factors that could ameliorate the risk of shortage (e.g. faster growth of commercial solar) or exacerbate the risk of shortages (e.g. faster growth of industrial electrification or electric vehicle demand). Nonetheless, even if data centres 'bring their own power', these scenarios underline there could be shortages of renewable supply and progress on decarbonising the economy delayed as other buyers are unable to source renewable energy: it is imperative to accelerate renewable energy growth to avoid the risk of data centre electricity consumption leading to fossil fuel growth or crowding out other electricity users.[18]

3.3 Climate-positive: Data Centres bring their own power and unlock renewables for other buyers (Scenario 4)

Data centres therefore also have an interest in accelerating renewable energy - and could be an active player in accelerating renewable energy to avoid these shortages. In a climate-positive scenario, data centres:

- Install onsite renewable energy and storage, invest in energy efficiency to minimise off-site consumption
- Flex their demand to minimise impacts on the grid, reduce peak demand and match renewable energy generation
- Act as offtakers that unlock new renewable energy for other users.

Data centres are not purchasing any more renewable energy than in scenarios 2 or 3 – but the way in which it is bought could unlock renewable energy for other buyers. There are three primary ways in which this could occur.

[18] Whilst there is a large pipeline of renewable energy projects and a major focus on developing these projects through transmission upgrades and renewable energy zones, Anita Stadler (Energetics) has observed the speed of development has actually slowed in the past three years. Stadler also estimates that in addition to 12 TWh of electricity demand from data centres under AEMO's central scenario to 2030, there is an additional 24 TWh of new demand for renewable energy in 2030. A.Stadler (2026) 'The Narrowing Window: why corporate renewable buyers need to act now', https://wattclarity.com.au/articles/2026/09/the-narrowing-window-why-corporate-renewable-energy-buyers-need-to-act-now/.

Table 5: Models for Data Centres to Unlock Additional Renewable Energy

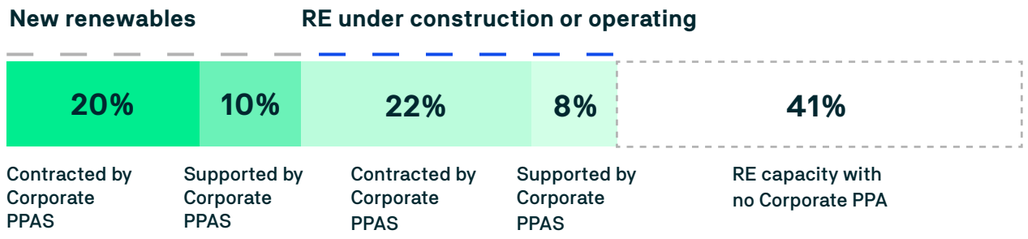
Model	How it works
Data centres sign a 'partial PPA' with surplus capacity sold to other users	Data centres sign a PPA for sufficient capacity for the project to reach financial close (e.g. 60%) but not all output so the remainder can be sold to other users.
Data centres are anchor offtakers for developing a regional industrial ecosystem	A data centre – or cluster of data centres – could be anchor customers for new renewable energy generation, demonstrating there is sufficient demand to enable investment in new transmission lines to support the development of regional industrial ecosystems.
Data centres are anchor offtakers for a buyers group	Large users such as data centres can also be the anchor offtaker for a renewable energy buyers group which sign PPAs collectively, thereby enabling larger renewable energy offtakes.

3.3.1 'Partial PPAs' with surplus capacity sold to other users

Offtakers can sign 'full' PPAs for all of the project's output or 'partial' PPAs for some of the project's output. Generally, at least 50 – 60 per cent is required to be contracted for a project to be bankable. Where there is a partial PPA, the remaining output is either sold 'merchant' (i.e. bid into the wholesale market at the prevailing price) or subsequently contracted through 'retail PPAs' with mid-scale buyers intermediated by retailers.

Analysing the Business Renewables Centre – Australia agreement database, corporate PPAs contracted around one-fifth of new renewable capacity from 2017 – 2025 but also just over one-fifth after the project had reached financial closure. However, additional uncontracted capacity with projects that have signed Corporate PPAs represents an additional 18 per cent illustrating the role large offtakers have played releasing more capacity across the economy beyond their own requirements.

Figure 10: Data centre electricity consumption as a proportion of new renewable energy generation



Source: Briggs, C., Weston, B. & McKeon, J. (2025) State of the Market: Corporate Renewable Power Purchase Agreements in Australia: State of the Market 2025.

Large users have increasingly signed PPAs for all of the output in recent years and data centres hungry for power may do the same. However, if they sign partial PPAs, data centres would be meeting their own electricity requirements and unlocking renewable capacity for other users.

3.3.2 Anchor Offtaker: Regional Industrial Ecosystem

A data centre – or cluster of data centres – could be the anchor for new transmission lines and renewable energy to support the development of regional industrial ecosystems. One or more data centres signing offtakes with a renewable generator that cannot connect without new transmission could be an anchor customer that creates firm demand for a transmission upgrade to an industrial region. Clusters of hyperscale data operators – combined with some other industrial users – could create sufficient demand to support a transmission network that unlocks other industrial development. There are some international examples where large customers contribute to funding connections before the regulated network was willing to build.

CASE STUDY:

How Data Centres could support Renewable Energy and Transmission Development in Geraldton, Western Australia

Geraldton could be a strategic location for Western Australia's clean energy transition. The Mid West region possesses some of Australia's best wind resources, strong solar resources, available industrial land, access to port infrastructure at Oakajee, and growing interest from both renewable energy developers and data centre operators.

Currently, the region's growth is constrained by the need for additional transmission infrastructure to connect new renewable generation and large industrial loads to the South-West Interconnected System (SWIS). The development of large-scale data centres could provide the demand catalyst needed to support both new renewable energy investment and transmission expansion.

The Challenge: firm demand to underpin transmission connection

The WA Government is investing in transmission upgrades through initiatives such as Clean Energy Link - North, recognising that additional network capacity is needed to connect renewable energy projects in the Mid West, but these upgrades have not yet included the 140-kilometre connection to Geraldton. The Mid-West Chamber of Commerce has said the lack of high-voltage transmission connection is a 'major hurdle to attracting new businesses'.[19]

Many proposed industrial developments around Oakajee Strategic Industrial Area, including renewable hydrogen projects, are dependent on transmission expansion and sufficient electricity demand to support investment. It is a classic chicken-and-egg problem where no party wants to move first for a $300 million investment in a high-voltage transmission line.

The Opportunity: Data Centres as Anchor Loads

Transmission investments need to be underpinned by new electricity demand to utilise that capacity before they can proceed. Data centres represent large, long-term electricity loads that can support investment in both generation and network infrastructure. The proposed DUG Technology High Performance Computing (HPC) Campus near Geraldton is planned to scale from an initial 400-petaflop data hall to a campus capable of supporting up to ten data halls and four exaflops of computing capacity. The company specifically identified Geraldton's access to renewable energy, available land, and connectivity as key advantages.[20]

Such facilities can operate as "anchor loads" by providing a stable, long-term electricity demand profile. Data centres alone are unlikely to justify a major transmission expansion into Geraldton – but they could play a critical enabling role by acting as large, creditworthy electricity customers that sign a PPA with new renewable generation and provide confidence in future electricity demand. Combined with renewable energy development and other industrial projects at Oakajee, data centres could be an anchor load that helps unlock the next stage of transmission investment in the Mid West, positioning Geraldton as a major renewable energy and digital infrastructure hub for Western Australia. This type of coordinated investment challenge is also one in which the CEFC could play an enabling role (see section 5.1).

International examples

This model mirrors international cases where data centres or energy-intensive infrastructure co-located with renewable energy resources has underpinned transmission augmentations and regional economic development.

Nevada (USA): Nevada is investing in the multi-billion-dollar Greenlink transmission project, which connects renewable energy zones and supports growing industrial and data-centre loads. Data-centre demand around the Tahoe-Reno Industrial Center has strengthened the case for developing both renewable generation and network infrastructure. Google has partnered with utility NV Energy using a Clean Transition Tariff structure that enables new clean-energy projects to be developed specifically for large electricity users.[21]

West Texas (USA): Microsoft and Chevron are developing Project Kilby, a multi-gigawatt data-centre development supported by dedicated 2.67GW of co-located dedicated electricity generation ahead of transmission investment.

[19] https://www.abc.net.au/news/2026-08-04/wa-oakajee-site-under-considering-for-oil-refinery/106990138.
[20] https://announcements.asx.com.au/asxpdf/20230718/pdf/05rqyqn2xvyc1j.pdf.
[21] https://www.datacenterdynamics.com/en/news/google-buys-115mw-of-geothermal-energy-to-power-nevada-data-centers/.

3.3.3 Anchor offtaker for a buyers group

Large users such as data centres can also be the anchor offtaker for a renewable energy buyers group which sign PPAs collectively, thereby enabling larger renewable energy offtakes. Successful renewable buyers groups often have one or two larger buyers as the 'tenant' or 'anchor' buyers in a broader group of smaller buyers with their scale, internal expertise and credit ratings enabling a larger deal with mid-sized buyers. Whilst there is a diverse range of buying group structures, there are several models that could apply:

- Lead buyers in a consortium PPA: Consortium PPAs are often standardised contracts with identical core terms (see Telstra case study).[22]
- Lead buyers in a supply-chain PPA: larger buyers act as anchor buyers for a PPA that includes buyers within their supply-chain, driven by goals to reduce Scope 3 emissions. Under this model, data centres could be anchor buyers in PPAs that extend to their clients. Co-location data centres in particular are a context where this model could be applied.[23]

CASE STUDY:

Telstra's Murra Warra Wind Farm Corporate PPA Consortium[24]

The Corporate PPA by Telstra with **Murra Warra Wind Farm** demonstrated how multiple organisations could participate in a single, standardised PPA structure. Rather than each buyer negotiating separate arrangements, a consortium of large energy users signed onto essentially the same contract terms, differing primarily in the volume of electricity and renewable energy certificates purchased.

This model reduced transaction costs, accelerated project financing, and made large-scale renewable energy procurement accessible to organisations that may not have had the scale or expertise to negotiate an individual PPA

Project Details

- **Project:** Murra Warra Wind Farm Stage 1
- **Location:** Near Horsham, Victoria
- **Capacity:** 226 MW (Stage 1)
- **Developers:** RES Australia and Macquarie Capital
- **PPA signed:** December 2017
- **Operational:** 2019-2020
- **Annual generation:** Approximately 1,000 GWh per year

The Consortium Structure

The consortium was led by Telstra, which had already pioneered Australia's first large-scale corporate renewable energy PPA through the Emerald Solar Farm agreement earlier in 2017. For Murra Warra, Telstra brought together a group of major electricity users consisting of:

- Telstra
- ANZ
- Coca-Cola Amatil (now Coca-Cola Europacific Partners)
- The University of Melbourne
- Monash University

Together, these organisations contracted the entire output of the 226 MW first stage of the wind farm. Telstra's scale and expertise enabled it to negotiate a wholesale PPA that would've been beyond the capacity of other buyers. The underlying terms of the PPA were identical and offered on a take-it-or-leave-it basis to other buyers. This standardisation meant that smaller participants could effectively "join" a large-scale procurement led by Telstra without negotiating a bespoke PPA, which reduced legal, commercial and transaction costs. The deal was attractive because the terms were better than could be negotiated by smaller buyers alone. Ben Burge (Telstra) stated: 'From our perspective it's a ... win, win, win. We get to lock in costs for one of our major inputs, energy, at long-term well below market rates. We are supporting a high quality renewable energy project in a regional community ... on top of that we get to bring some of our enterprise customers ... along for the ride. ANZ, Coca-cola amatil and the University of Melbourne have shown leadership on how to collaborate this space.'[25]

The 'buyers consortium' PPA model demonstrates that a large buyer can lead a consortium that aggregates demand, reduces transaction complexity and underwrites a new renewable energy project.

Summary

When considering regulatory and policy options, it's important to have a clear framework on the scenarios and outcomes that could result from the growth of data centres, renewable energy and emissions. There is a risk data centres could be the catalyst for a surge in fossil-fuel use (scenario 1). The Federal Government has committed to regulatory and policy approaches to ensure data centres use renewable energy – which is a better outcome (depending on how rigorously renewable energy buying requirements are implemented). However, if the volume of new renewable energy development is closer to recent 'low' years than 'high' years, data centres could crowd out other renewable energy buyers and delay of broader decarbonisation (scenario 2). If renewable energy development can be accelerated, it might be a positive scenario with data centres bringing their own power amidst wider growth in renewable energy (scenario 3) – but the offtaker gap is a significant barrier to rapid development. Leveraging the buying power of data centres to unlock additional renewable could support a 'climate positive' outcome (scenario 4).

[22] K.Harrison (2018) 'US Corporate Demand Aggregation: a primer', Bloomberg New Energy Finance.

[23] It is worth noting that the Business Renewables Centre Australia (BRC-A) 'Next Gen PPAs' Program to 2030 (co-funded by ARENA and RACE for 2030) is now launching - this is a buyers' group program for large energy buyers (such as data centres).

[24] Business Renewables Centre – Australia (2026) 'RES Secured Australia's First Ever Utility Grid-Scale Connected Corporate PPA', https://businessrenewables.org.au/case_study/res-secured-australias-first-ever-utility-scale-grid-connected-corporate-ppa/.

[25] S.Vorrath (2017) 'Telstra signs up for 429MW wind farm, at stunning low cost', https://reneweconomy.com.au/telstra-signs-up-for-429mw-wind-farm-at-stunning-low-cost-13414/.

4 Regulating Data Centres: A National Approach to Off-Site Renewable Energy Procurement

The rapid emergence of data centres has led to Federal and State Governments developing regulatory and policy responses to manage the potential impacts on the energy system.

Data centres would be the first type of user to be subject to specific requirements to buy renewable energy – but they are not just any type of user. As the AEMC noted: 'while the NEM has successfully accommodated large loads and periods of significant demand growth in the past, data centres represent a distinct challenge due to the speed, scale and concentration of new connections'.[26] The key question is what form should the requirement to buy offsite electricity equivalent to grid electricity demand take in the national energy obligation for data centres?

4.1 The Australian Energy Market Commission's Advice: National Energy Obligations for Data Centres

The AEMC has provided policy advice to Energy and Climate Change Ministers on setting a national energy obligation for data centres. The AEMC recommends meeting the key objectives set by Energy Ministers' by requiring data centres to:

- invest in new, additional renewable energy generation in their jurisdiction;
- be supported by sufficient firming capacity, so consumers are no worse off;
- meet expectations to operate flexibly;
- locate efficiently, minimising network impacts and augmentation costs.

The AEMC's has four policy recommendations for the national energy obligation for data centres.

Table 6: AEMC Recommendations on Regulations for Data Centres

No.	Recommendation
1	Mandate new data centres to purchase certificates – Renewable Energy Guarantee of Origin (REGOs) - from new renewable energy generators.
2	Introduce an obligation for data centres to prove to the Australian Energy Regulator (AER) they have sufficient 'firm' contracts to cover their load.
3	Introduce a requirement to register with the Australian Energy Market Operator (AEMO) above a defined threshold with voluntary incentives for demand flexibility services.
4	Support demand flexibility and co-location with generation through the connection agreement process with streamlined connection pathways for data centres with co-location and/or firming.

Each of these objectives are important – and to some extent inter-connected – but the focus here is on the approach to requiring new, additional renewable energy generation.

The AEMC has recommended meeting the objective of ensuring data centres use new renewable energy through a requirement that data centres surrender certificates (REGOs) created by new renewable energy generators. Large Generation Certificates (LGCs) will cease at the end of the Renewable Energy Target, December 31, 2031. REGOs will replace LGCs and replicate much of the architecture of LGCs, but there will be greater specificity about the characteristics of the generation; whereas an LGC represents a MWh produced by any plant at any time of day, each REGO certificate will be stamped with information on the time of production and the specific plant.

[26] Australian Energy Market Commission (2026), Data Centre Energy Obligation: advice to Energy and Climate Ministers, p.10.

The requirements on data centres would specifically be:

- procuring REGOs to match consumption in peak, off-peak and potentially shoulder periods over the past year.
- obtaining REGOs from new renewable energy projects – that is projects that have not reached financial close and are therefore 'additional'. The AEMC claims that 'even a marginal increase in REGO demand may be sufficient to improve the viability of some renewable energy projects without additional government or consumer funding'.[27]

REGO obligations would be reduced by behind-the-meter renewable energy generation and storage.

REGOs from existing generators would be permitted as a 'temporary transitional arrangement to allow time for new generators to be built and connected'.[28]

Data centres would not be required to 'sign PPAs or contract in a particular way'.[29]

The obligation would be placed on data centres owners that connect to the grid (therefore co-locators would need to establish internal contractual arrangements with tenants to support them in meeting their obligations'). The obligation is recommended to be legislated through amendments to the *Future Made in Australia (Guarantee of Origin) Act 2024,* or alternatively through amendments to the National Electricity Law and National Electricity Rules.

4.2 Evaluating the AEMC's recommended approach: basing the energy obligation on REGOs is risky

The AEMC model would establish Australia as one of the global leaders in the energy regulation of data centres. The obligation for data centres to hold firm contracts for their load before grid connection, incentives for demand flexibility and co-location with generation combined with robust governance and oversight by energy regulators would establish a strong foundation for integrating data centres into the energy system.

However, the recommendation to use REGOs as an alternative to PPAs - or an equivalent such as the proposed new standardised contracts (Electricity Service Entry Mechanism's)[30] - as the vehicle for incentivising new renewable energy generation is risky. There is no track record to indicate certificate-only offtakes can underpin a wave of investment in new renewable energy. Indeed, there are risks of unintended consequences in the renewable energy certificate market by asking them to play a role they have not performed beforehand.

4.2.1 Financing new renewable energy projects on certificate-only offtakes is inherently challenging

The AEMC proposal would require data centres to only contract for one of the two sources of revenue for a renewable energy project – the renewable energy certificates (REGOs) but not the electricity sales. For debt providers assessing whether to finance a project, the certificate revenues would be fixed through the offtake but the electricity revenues would be subject to wholesale rates which are set and reset every half hour and can range from $23,200/megawatt-hour (MWh) to negative prices below zero. There are many variables that can impact upon the wholesale market revenues for a renewable energy project both relating to wider market trends (e.g. coal plant extensions or closedowns can increase or decrease prices) and relating to the project (e.g. curtailment of output due to network or market constraints). Consequently, when a debt provider evaluates a renewable energy project without an offtake for electricity revenues, they will be very conservative in the assumptions on forward revenues used in their financial modelling – the revenues will be strongly discounted because of the risks and uncertainties about the future of wholesale electricity prices.

For a new renewable project seeking finance there are two pathways:

- If their project is to attract debt at the scale they are seeking, the certificate price will need to increase substantially to fill the gap created by the lower wholesale electricity revenues that will be assumed in the financial models of debt providers;
- The debt providers will provide less debt – sizing the debt they are willing to provide to the level they are sure the project can service their debt repayments – and therefore the project will either proceed with less capacity or the project will need to attract a higher proportion of equity finance from investors who are willing to bear higher risk for a higher cost of capital.

Unless projects are able to negotiate higher certificate prices, the consequence will be smaller projects and/or higher cost projects.

The AEMC appears to suggest projects might be able to buy REGOs from the open market at a price that can underwrite new projects. The AEMC sketches out a scenario in which data centres increase their annual purchases of REGOs incrementally over several years and claims that 'even a marginal increase in REGO demand may be sufficient to improve the viability of some renewable energy projects.'[31] This is in fact highly improbable. In addition to needing to fill the gap created by the lack of revenue certainty for electricity sales, there is no certainty over the forward prices of certificates and therefore no practical way a new project could secure debt finance on this basis.

One of the factors for the emergence of Corporate PPAs in the first place was precisely because purchasing certificates and the marginal impact on price of any individual buyer did not lead clearly or directly to additional renewable energy:

> **"Studies have concluded it is unlikely that corporate REC purchases have led to additional RE investment or greenhouse emissions avoidance. As corporations have become increasingly aware of this evidence, their growing interest in PPAs largely suggests PPAs are an alternative to the voluntary purchasing of unbundled RECs."**[32]

Most certificate purchases are from retailers or electricity users buying from projects that have already reached financial close. These purchases do play a role in supporting renewable projects across their lifetime but they are not underwriting new renewable energy.

[27] Ibid. p.18.

[28] Ibid., p.19.

[29] Ibid.

[30] The Electricity Services Entry Mechanism is currently under development with the aim to commence in late 2027. Under the ESEM, standardised fungible contracts would be created for bulk renewable energy energy, shaping and firming. For wind and solar projects, the ESEM would pay a standard, fixed price based on the 'regional reference' spot price in each state from year 3 of the project onwards – based on an assessment that projects will be able to secure offtakers for the first 3 years but not long-term tenors. The aim is to create a liquid market in fungible contracts for renewable energy projects to enable them to reach financial close.

[31] AEMC, Op. Cit., p18.

[32] Backstrom, J., Gillenwater, M., Brander, M. & Inman, C. (2024) Corporate Power Purchase Agreements: a Policy Perspective, SSRN: https://ssrn.com/abstract=4708811 or https://dx.doi.org/10.2139/ssrn.4708811.

4.2.2 Certificate-only purchases underwriting new renewable energy projects appear to be unprecedented in Australia

Based on a review of the Business Renewable Centre – Australia's database, a certificate-only offtake that led to a new project appears to be unprecedented in Australia. In the hothouse environment in the run-up to the 2020 Renewable Energy Target, there was exceptionally high demand for renewable energy because retailers needed to sign offtakes to meet steepling RET liabilities which increased sharply up to 2020. Consequently, LGC prices rose to peaks of $70 - $90/MWh and there was a construction boom in renewable energy. There was also much lower penetration of renewable energy and therefore lower risk of curtailment reducing dispatched output and wholesale market revenues. During this period, there were solar farms that reached financial close on projected wholesale and LGC revenues – the demand for renewable energy was so robust that projects were built on a merchant basis.[33] There were some projects that signed LGC-only offtakes (primarily with government agencies with existing electricity supply agreements) but they also had an electricity offtake with another party.[34] There does not appear to be any case of a new renewable energy project being underwritten by a certificate-only offtake.

Outside of that period, bundled PPAs negotiating prices for both electricity and the certificates have always been part of deals that led to new renewable energy projects. The current context is very different to the boom period ahead of the 2020 RET:

- there is no policy mechanism driving large retailers to sign offtakes;
- there is high uncertainty over forward electricity prices;
- there is a surplus of LGCs and the price has ranged between $5 - $10/MWh in recent months.
- It is unknown what the price of REGOs when the RET finishes but there will be no mandated liability for retailers.

There is no known case of a certificate-only offtake leading to a new renewable energy project and the exceptional cases that supported contracting without a bundled PPA in the run-up to the 2020 do not exist in this current moment.

4.2.3 REGO prices would need to be very high for a certificate-only offtake to underwrite a new project – with potential unintended consequences

Past experience suggests it's improbable that projects could be financed with merchant electricity revenues and a certificate offtake alone – but of course if the price of REGOs rises high enough it is possible. As the AEMC notes, the certificate price will rise to whatever is required for projects to reach financial close – leading to a price spike for REGOs.

A spike in REGO prices could have unintended consequences. Certificates play a dual role: they provide revenue to projects and enable medium- and small-scale buyers to procure renewable energy. A distinct 'data centre REGO price' may emerge, separate from the wider market price. However, relying heavily on certificate prices—rather than including PPAs in data centre energy obligations—risks broader price impacts or constraints on certificate supply, reducing access for mid-scale renewable energy buyers.

4.2.4 There are risks and ambiguities with the transitional arrangement

The AEMC model envisages a transitional arrangement whereby data centres would be required to increase the proportion of certificate purchases over time. It leaves open the question of when and how the increase in certificate liability for new projects is applied. There are major risks and question marks over how this will work in practice:

- **How robust will be the transition mechanism:** Past experience with policy makers negotiating with industries over the application of environmental instruments such as carbon pricing and the safeguard mechanism does not provide confidence this will be robustly applied – there is a risk that there will conditions for increasing purchases that can be gamed and used as opportunities to delay REGO purchases from a new project. It's not hard to imagine a world in which data centre operators claim the provisions are excessively onerous due to insufficient renewable energy supply and negotiate concessions that allow for on-going purchases from existing projects.
- **Will it undermine the effectiveness of REGOs for underwriting new investment:** To the extent this occurs, it will weaken the effectiveness of the mechanism for providing the certainty required to underpin new investment. There is no experience with renewable energy certificate markets to indicate incremental purchases of uncertain volumes over time can create the certainty needed for investment in new renewable energy projects.

Whereas a PPA or equivalent contract unambiguously supports new renewable energy, this model contemplates a complex and uncertain transitional mechanism.

4.3 Will the certificate obligation lead to PPAs? Sometimes yes, sometimes no

There is an expectation in some circles that mandating retirement of certificates for data centres will lead to bundled PPAs as it did when applied to electricity retailers under the Renewable Energy Target. In reality, a certificate-only obligation for data centres will likely lead to a mix of outcomes where some data centres buy the electricity and certificates and some just buy the certificates. Some data centres – maybe the majority - will want to purchase the electricity and the certificates. However, the AEMC notes it did not recommend PPAs because of data centre advocacy they are too costly and inflexible - which clearly signals some data centres intend to purchase certificates from the secondary market as required.

By far the most likely outcome is that some data centres will sign bundled PPAs (or equivalent) and some data centres will only purchase certificates either from existing generators under the transitional mechanism or from 'new' projects that have secured financial close from another offtaker.

An associated risk is that instead of simplifying and clarifying the standard it creates transactional uncertainty. There is a tension between data centre interests in flexibility and renewable project developer interests in certainty to secure debt finance. The AEMC model leans too far towards data centre interests and creates a standard that is not in and of itself sufficient for projects to reach financial close – data centres can just buy certificates or they can negotiate agreements for both the power and certificates. However, the response of developers could be use to use the standard as leverage with data centres that only want to purchase certificates to negotiate PPAs that are 'beyond the standard' or pay certificate prices that are well above market rates to get the revenue needed for a bankable project.

[33] For example, see https://reneweconomy.com.au/kidston-solar-farm-lays-case-going-merchant-84317/; https://arena.gov.au/blog/black-and-green/.

[34] See for example Numurkah solar farm which had an LGC contract with the Victorian Government and an electricity offtake with Laverton Steel works. Bannerton solar farm had an LGC contract with Yarra Trams and an electricity offtake with Alinta Energy. In these cases, a certificate-only offtake contributed to the project reaching financial close but they were complemented by electricity offtakes.

4.4 PPAs or equivalent contracts with new renewables should be included within a national energy obligation

If the goal is to ensure all data centres – and not merely some – 'bring their own power' then the national energy obligation should mandate data centres hold a PPA or equivalent contract (such as an Electricity Service Entry Mechanism contract)[35] that underpins new renewables before grid connection.

- **PPAs are a proven mechanism for underwriting new renewable energy:** a PPA – or equivalent contract - is the standard mechanism for securing finance for large-scale renewable energy.
- **The risks of impacts on certificate prices for other buyers are minimised:** without REGOs bearing the sole burden of securing revenue certainty, there is less risk of a price spike that impacts on other buyers.
- **A PPA obligation does not require complex transitional processes:** If a data centre has signed a PPA with a new project, no complex transitional processes are required. Signing a PPA with a new project means there is an inherent gap in timing from signing the PPA to when it starts generating. All buyers that sign PPAs with new projects have a period in which they are buying electricity (and certificates) from existing generators. If the data centre provides evidence of a PPA or equivalent with a new project to the AER, they can be reasonably permitted to buy REGOs from existing generators until the new generator commences.

There has been substantial commentary about the risk of a mis-match between the timing of new renewable energy generation and the operations of a data centre. The time to build may well be longer than the time the new data centre wants to start operating. However, this is not a problem that can be solved through contracting. If a data centre has signed a PPA with a new renewable energy generator, it is making its contribution to increase supply. The transmission networks will need to decide if there is capacity for the data centre to connect before the new supply and there are incentives for co-location to reduce the risk of mis-match between supply and demand. It's not an issue that should impact on whether REGOs or PPAs are the preferred mechanism for the energy obligation.

Mandating a PPA (or equivalent contract such as an ESEM) would dovetail with the role of the AER under the AEMC model. Under the AEMC model, the AER would be tasked to review whether the data centre has sufficient firm contracts to cover their load before grid connection. It is a short step from there to also task the AER with reviewing evidence that the data centre has a PPA or equivalent contract to support a new renewable energy project.

4.4.1 Concerns about the workability of PPAs for data centres can be addressed

The AEMC makes reference to some concerns raised by data centres – specifically, impacts on smaller data centres, data centres preference to retain flexibility over timing of purchasing, and the length of time a PPA takes - without spelling out in detail why they have recommended REGOs instead of PPAs. There have been some other concerns raised in public debate. Each of these concerns can be addressed:

- **Impacts on smaller data centres can be addressed by applying a size threshold for the PPA requirement:** smaller and large electricity buyers do as explained have different capacities in relation to buying renewable energy. The concern raised re smaller data centres could be addressed by introducing a size threshold – with larger buyers mandated to sign a PPA or equivalent and smaller buyers mandated to procure REGOs from new projects as currently recommended by the AEMC.
- **The time to negotiate a PPA appears comparable to planning and grid connection processes:** The Business Renewables Centre – Australia has collected survey data since 2019 on the time required for buyers to negotiated corporate PPAs. The majority of buyers have consistently reported a duration of 1 – 2 years.[36] AEMO reports there is 26 GW of renewables and storage projects in the pipeline that are 'anticipated' and a larger pipeline of projects at an earlier stage.[37] Data on the average timing of planning and grid connection processes for data centres is not publicly available. However, AEMO has stated it has a target of approximately 2 years from application to energisation.[38]
- **Flexibility, PPAs and scaling operational demand for data centres:** another characteristic of data centre operation being raised is uncertainty over forward demand and that data centres often don't start at full capacity but scale their load over time after commencing operations. Data centres want the flexibility to contract at a lower volume and scale up over time.

There are a few options for managing data centre interests in flexibility in PPA and electricity contracting.

Firstly, Procurement models are emerging to manage these demands. If retailers or energy traders intermediate these PPAs, they can manage timing variations in demand across a portfolio of assets. The Firmus Technologies and Gunvor Group PPA negotiated this year also illustrates the type of model emerging to accommodate data centre operational requirements – a portfolio of generation and storage assets that includes a 12-year PPA for 600 MW and a commitment to underwrite 1.2 GW by 2032 (see case study).

A leading corporate PPA adviser, Anita Stadler (ERM Energetics), has observed the market is moving towards models that integrate bulk renewable energy, shaping to manage fluctuations and firmness and the link with data centres: 'ESEM attempts to create liquid products for these services, while emerging data centre policies seek to mandate their procurement.'[39] A national energy obligation that includes a requirement for PPAs will be a catalyst for the development of offers that align with data centre requirements.

Secondly, retailers allow for some flexibility in annual electricity consumption as standard practice with scope to negotiate additional flexibility (at a price). Data centres are not the only sector with uncertainty over forward demand so it is commonplace for flexibility within energy contracting.

Thirdly, buyer groups can negotiate arrangements where the contracted load applies across the group allowing for flexibility in consumption within the group.

Fourthly, a data centre could also contract for successive PPAs covering growth if it can find projects that match its scale (as a single buyer or part of a consortium).

Ultimately, however, a renewables project requires certainty around the contractual commitment to secure finance. Incremental increases in REGO purchasing over time without a contractual commitment will not work to underpin new investment in renewable energy. Solutions exist and are emerging to provide flexibility but within the requirement for contracts that enable renewable energy projects to secure finance.

[35] The Electricity Services Entry Mechanism, currently under development, aims to create standardised fungible contracts for bulk renewable energy, shaping and firming. The aim is to create a liquid market in fungible contracts for renewable energy projects to enable them to reach financial close.

[36] Survey data has been published in annual State of the Corporate PPA market reports. See https://businessrenewables.org.au/state-of-the-corporate-market-report/.

[37] AEMO (2026) Generator Information, https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/generation-information.

[38] https://certifiedstrategic.com/insights/aemo-5-4gw-australian-data-centre-pipeline-june-2026.

[39] A.Stadler (2026) 'The Shape of PPAs is Changing – from volume to value', https://wattclarity.com.au/articles/2026/09/the-shape-of-ppas-is-changing-from-volume-to-value-are-you-positioned-to-capture-the-premium-in-emerging-nem-value-pools/.

CASE STUDY:

Firmus and Gunvor portfolio PPA for AI data centres

In June 2026, Firmus Technologies and Gunvor Group announced a 12-year energy supply agreement that illustrates how data centres with uncertain future loads can contract for long-term energy supply while supporting new renewable generation and storage.

Under the agreement, Gunvor will supply 600 MW of firm electricity to support Firmus' planned AI Factory campuses in South Australia while facilitating the development of 1.2 GW of new renewable generation and 1.5 GWh of battery storage by 2032.

Long-term firm power supply	Gunvor will provide Firmus with long-term electricity supply beginning in 2027, supporting the company's planned growth in AI computing.
Additional renewable energy investment	Gunvor has committed to underwriting the development of 1.2 GW of additional renewable energy capacity, creating a direct link between growing AI demand and new renewable energy investment.
Battery storage firming	GreenPoint Energy's Koolunga Battery Energy Storage System comprises 200 MW / 800 MWh of grid-forming battery storage and is expected to provide more than half of Firmus' initial contracted firming requirement. The battery is targeted for commercial operation in the first quarter of 2028.
Flexible demand response	The agreement also includes a demand-response mechanism under which Firmus will reduce electricity consumption for up to 220 hours per year when wholesale prices exceed agreed thresholds.

By aggregating these elements, the structure finances new generation and storage assets for delivering firm energy and provides a pathway for scaling. This type of PPA structure illustrates that contracts can accommodate data centre needs while financing new renewable energy.

Energy traders and retailers could develop integrated generation, storage and flexible-demand PPA models in response to regulation mandating PPAs.



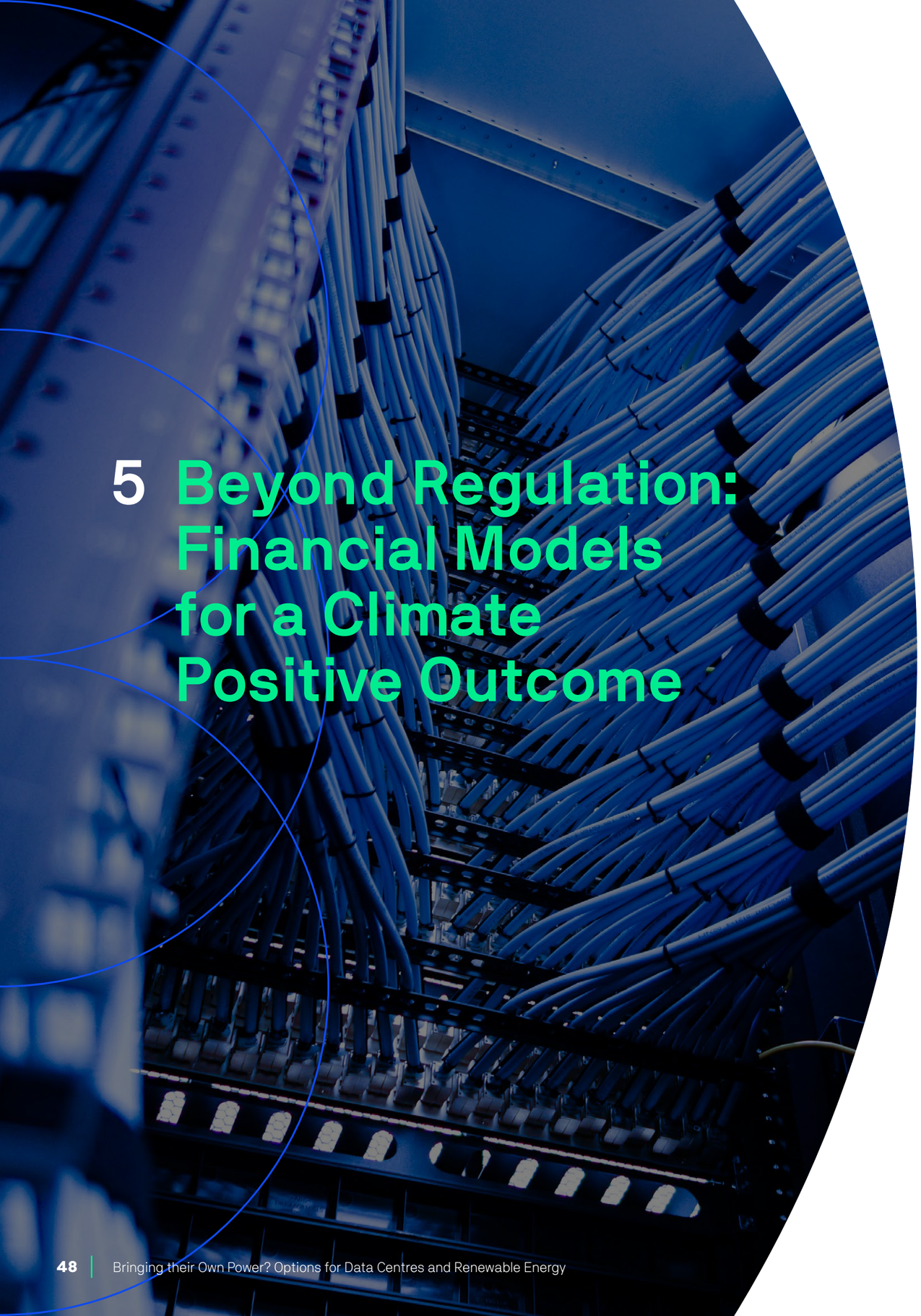


Summary

Australia would be a global leader in data centre energy regulation if it implemented the AEMC model. There are many positive aspects of the AEMC's regulatory model including the firming requirements, creating incentives for onsite generation and storage and flexible demand, and oversight by the AER for robust governance.

However, the proposal to only mandate REGO purchases is likely to create a situation where some data centres 'bring their own power' and other data centres buy certificates and source electricity from other sources.

Mandating PPAs could be integrated comfortably into the architecture of the model recommended by the AEMC in a way that can meet both the needs of data centres and renewable energy developers whilst ensuring all data centres are bringing their own renewable energy.



5 Beyond Regulation: Financial Models for a Climate Positive Outcome

The focus of public debate is on the right model to regulate data centres to 'bring their own power'. This is a foundational element of solving this problem - but as the scenario analysis highlights it might still not be enough for a climate positive outcome.

Data centres could 'bring their own power' but still face shortages or crowd out other buyers, effectively delay the growth of renewable energy and emissions reduction across other parts of the economy. The core problem is how to accelerate renewable energy supply – and data centres could play a key role in unlocking renewable energy: data centres could move from being a 'problem' to a 'solution'.

To reiterate, there are three primary ways in which data centres could support additional development of renewable energy beyond their own requirements:

1. **Signing partial PPAs** that support additional capacity that is on-sold to other electricity users
2. **Anchor offtakes for regional industrial ecosystems:** anchor buyers for renewable energy and transmission that support wider industry development
3. **Anchor offtakes for a buyers group:** anchor PPA buyers for a group that supports a larger project.

There are sound reasons both data centres and policy-makers should want to investigate financial models that can enabled lower-priced renewable energy for data centres and unlock renewable energy for other users.

- For **data centres,** there is a very serious challenge to establish a social licence to operate - linked to potential impacts on electricity prices, local environmental impacts and broader social anxiety about the impacts of AI on employment (not to mention the future of humanity!). Access to energy is also a key constraint or barrier for data centre development.
- For **policy-makers,** regulation alone may be insufficient to enable data centres to source the power they require from renewable energy and to avoid wider impacts on electricity prices and greenhouse gas emissions. If data centres are unable to easily source renewable energy, the pressure will grow to use fossil-fuel alternatives. Beyond meeting the needs of data centres, accelerating the build-out of renewable energy is important to realise the economic development objectives of *Future Made in Australia* and enhance energy sovereignty in globally turbulent markets.

The core organising principle – or the bargain being offered – is concessional finance for cheaper electricity and quicker project development in exchange for conditions for data centres to act as anchor offtakers that unlock renewable energy for other users. There will be objections to providing data centres with concessional finance but the foundation is that it is subject to satisfying a public interest test that the data centre offtake is unlocking additional renewable energy supply.

In this section, two options for using financing models to encourage and enable data centres to leverage renewable energy are outlined: CEFC financing models and a Special Purpose Vehicle. A Special Purpose Vehicle comparable to the model used for Tomago could negotiate a multi-gigawatt portfolio of renewables and storage projects for multiple data centres and other large users. Only at scale would there be a case for an SPV beyond standard CEFC financing arrangements.

5.1 Financing for Data Centres and Renewable Energy: a role for CEFC

Australia is fortunate to have a well-established green bank – the Clean Energy Finance Corporation (CEFC). Established by the Australian Government in 2012, its role is to accelerate investment in technologies and infrastructure that support Australia's transition to net zero emissions by addressing financing barriers and mobilising private-sector capital. The CEFC operates as a commercial investor, deploying debt, equity and structured finance alongside private investors to support clean energy technologies. The CEFC committed $9.1 billion in investments supporting a total transaction value of $19.6 billion in the year to 30 June 2026.[40]

The CEFC's investment model is well-suited to providing concessional finance that enables data centres to be anchor offtakers for renewable energy projects. The CEFC often acts as a cornerstone investor, co-lender or provider of concessional finance where projects face higher-than-normal technology, market or coordination risks in a way that is designed to attract much larger volumes of private capital.

The CEFC could support PPAs between data centres and renewable energy projects to leverage additional capacity by applying existing tools to new contexts. The core proposition is that concessional finance could be offered to data centres where they meet conditions to act as an anchor offtaker and contract with one or more renewable assets pre-financial close in an arrangement that releases additional renewable energy supply beyond their own requirements. There will be objections to the provision of conditional finance to data centres: the justification in this proposal is that the data centre meets a public interest of acting in a way that contracts renewable energy not only to fully meet their own requirements but also increases the supply of renewable energy. There would also need to be thresholds applied to ensure the additional renewable energy supply is sufficiently large to warrant concessional finance.

The models or contexts in which the CEFC could play this role are outlined below (table 7).

Table 7: Models for CEFC Funding, Data Centres and Renewable Energy

	Model	How it works
1	**Concessional finance for clean digital precincts or regional industrial ecosystems to enable anchor offtakes**	There are multiple contexts in which concessional finance for data centres linked to renewable energy could be part of portfolio financing approaches to unlock multiple investments. For example: 1. Industrial precincts: Geraldton has been used as a case study but there are other regions where a combination of anchor offtakers for renewable energy and transmission could enable industrial development (e.g. Queensland industrial regions). 2. Clean digital infrastructure precincts: digital precincts could form including multiple hyperscale data centres, cloud providers, telecommunications infrastructure that are supplied primarily by local renewable energy and storage. A precinct or portfolio financing model could be used for locations where there are multiple inter-dependent investments that are difficult to finance individually; coordinated financing in these contexts is required across an ecosystem of inter-linked projects including transmission and renewables -opening up a role for the CEFC. Data centres could be one of the anchor offtakers for a portfolio financing approach. In this model, concessional finance is used to strengthen the connection between demand growth of strategic loads and additional renewable investment.
2	**Data centres as anchor offtakers for a buyers group**	Renewable buyers groups typically require at least one large user with a strong, investment grade credit rating to negotiate a PPA that banks will finance. The CEFC could encourage data centres to be the anchor offtaker for renewable energy buyers groups by offering financial support where data centres are participating as anchor offtakers in buyers groups that increase the scale of purchasing beyond their own requirements.
3	**Concessional finance to renewable energy projects linked to large anchor offtakers (data centres & other large buyers)**	CEFC provides a concessional debt facility to one or more renewable energy projects (or SPVs) where a large buyer will act as an anchor offtaker via a long-term PPA that meets the following conditions: • a long-term PPA as the anchor offtaker with one or more renewables assets pre-financial close; • contracting a specified volume of new renewable energy with scale beyond their own requirements either as a partial PPA or through a buyers group; • other conditions e.g. storage. For the CEFC, the loan is repaid through the operating revenues of the renewable asset(s). In the current context where there is a gap between project revenues and the cost of renewable projects (especially wind farms), concessional finance could enable projects to reach financial close. Data centres would be expected to be a key source of demand but the facility should be open to other large users beyond a defined threshold – with the goal to not only support renewables for large users but unlock renewable energy across the market. This model could also apply in the context of a buyers group. The key innovation in this model is not the financing instrument itself, but the deliberate use of large electricity users as anchor offtakers to accelerate investment in renewable generation and storage.

Note: another option would be a renewable-linked loan to a data centre on the condition it signs a long-term PPA as an anchor offtaker and the loan is repaid against operational revenues against the security of the data centre assets, corporate guarantees, project revenues or other borrower security.

[40] Clean Energy Finance Corporation (2026) Investment Update 2025-26, https://www.cefc.com.au/insights/investment-updates/investment-update-a-defining-year-in-australia-s-transition-to-net-zero/, p.19.

5.2 Financing for Data Centres and Renewable Energy: a role for a Special Purpose Vehicle?

As part of ensuring the continued operation of Tomago, the Federal and NSW Governments established a Special Purpose Vehicle as an intermediary (through AEMO Services) to contract firmed renewable energy through a portfolio of PPAs. A similar model could be considered for large data centres as an SPV could deliver low electricity costs in exchange for commitments and use of renewable energy.

One option could be to establish an SPV for data centres whereby:

- Multiple data centres participate;
- CEFC provides concessional finance;
- Renewable and storage projects are procured competitively;
- Participation requires additionality (new build renewables);
- Standardised contracts, reporting, additionality requirements etc

An SPV could diversify risks across projects and manage the timing risk associated with the staged development of data centre loads.

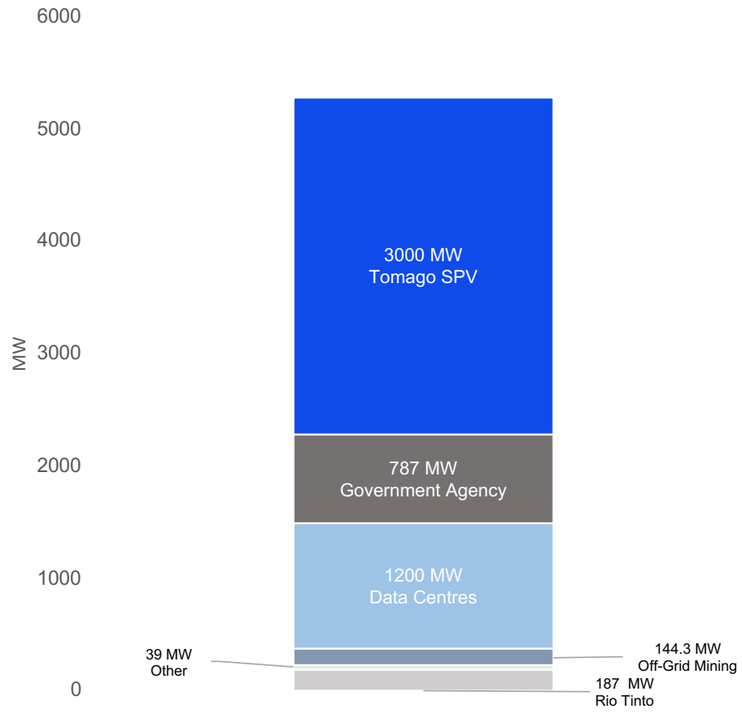
However, to justify the set-up and transaction costs on top of the existing CEFC financing capability on a project-by-project basis, an SPV would need to be a large-scale vehicle funding multiple projects at a multi-gigawatt scale. If there are for example several multi-gigawatt data centres this could form the basis for an SPV organised along similar lines to the Tomago SPV.



5.3 Solving the Offtaker Gap: What are the Alternatives?

The emergence of data centres is occurring in the context of a gap in large offtakers. In 2026, the Corporate PPA market was 'tall but narrow' – the volume was the largest on record but almost all of the Corporate PPAs were either government-brokered or signed through data-centres.

Figure 11: Corporate PPAs (MW), by Segment, 2026



Note: the two deals in the government-brokered segment are Tomago (negotiated through the AEMO Services Ltd SPV), and Transport for NSW (procured renewable energy for operations).

Returning to the four pathways for offtakes, the prospects also do not look strong in the immediate future for any of these pathways. There are no signs the first-tier retailers will contract large-scale renewable energy at scale. Corporate buyers with 2030 targets are under pressure to contract but the same combination of market and policy uncertainty that has mostly limited deals to data centres and resource companies are still in operation. Queensland public utilities do not have the renewable energy buying mandate under the previous government. The CIS has not yet been successful in supporting many projects and a new instrument (ESEM) is under development.

Table 8: The Pathways to an Offtake for Renewable energy Projects – Current Prospects

Offtaker	Model	Prospect
Electricity Retailers	Electricity retailers sign PPAs with electricity generators to supply their customers	The core problem is that the large retailers that supply around two-thirds of the market and own coal assets have signed very few PPAs for renewables after mandatory requirements ended in 2020. Not only does this mean that the parties that hold the contracting power to enable the transition from coal are not investing in renewables, but the uncertainty around when coal plants will close and therefore forward prices casts an enormous shadow over the electricity market and discourages other parties from contracting renewables. A policy mechanism equivalent to the RET, a carbon price or a coal closure mechanism could resolve the impasse but there is no sign governments will do this.
Large electricity users	Large electricity users sign 'Corporate PPAs' either to reduce costs, reduce price volatility by fixing a price through a long-term agreement or meet renewable energy or climate targets.	The 2026 PPA buyer pool was very narrow. There are a large number of organisations with 2030 targets so there may be a return to market. The 2026 market however continues to exhibit the high market and policy uncertainty that has led to a narrowing of the buyer pool over recent years.
Public utilities	Public utilities or retailers with a buying mandate can be offtakers or facilitate offtakes.	Synergy (Western Australia) is signing PPAs but the change in Queensland Government policy means the Queensland utilities are no longer as active signing renewable PPAs.
Government schemes	Government auctions or contract-for-difference schemes can provide equivalent or better revenue certainty to PPAs with retailers or large users due to their credit ratings.	Under the Capacity Investment Scheme, a successful bidder receives an options contract with a 'cap and collar' structure which is designed to provide the project with the minimum revenue required to secure debt finance. In practice, it has rarely worked to date. Just 3 out of 31 wind farms that have received a CIS award have reached financial close. Stadler notes 'project progression is slowing, with 25% of projects spending more than 30 months in the "Proponent Implementation" phase, roughly double the duration observed three years ago.'[41] The Electricity Services Entry Mechanism will create a suite of fungible contracts designed to enable renewable energy and storage projects reach financial close. Contracts are currently under development – the aim is for the ESEM to commence in late 2027. However, it is a 'genuinely novel instrument' which has not been used anywhere to finance a renewable energy project before. As Guthrie has noted: 'The policy ambition is clear. The harder question is whether that ambition can be translated into contracts that developers will bid, banks will debt-size and investors will back. If the mechanics do not work, the capital will not come.'[42] If - and to what extent - the ESEM will underpin new renewable energy projects is unknown.

The bottom line when looking at the current prospects for offtakers is that data centre offtakes are critical to growing large-scale renewable energy.

[41] A.Stadler (2026) 'The Narrowing Window: why corporate renewable buyers need to act now', https://wattclarity.com.au/articles/2026/09/the-narrowing-window-why-corporate-renewable-energy-buyers-need-to-act-now/.

[42] J.Guthrie (2026) 'The ESEM's contract co-design paradox – will financiers actually bank it', https://www.gtlaw.com.au/insights/key-topics/beyond-transition/esem-contract-co-design.



6 Conclusion

The emergence of data centres arrives at a pivotal moment in Australia's energy transition, bringing major downside risks and upside opportunities.

Outcomes could range from 'climate-negative' to 'climate-positive'. Even if regulatory arrangements require data centres to buy renewable energy, failing to increase supply creates two risks: data centres may crowd out other users, and the arrangements may not hold if operators mobilise to use gas-fired power instead.

A stable, effective policy framework needs to work for data centres as well as the renewable energy sector. There are two major changes recommended in this report:

1. Mandate a PPA (or equivalent) with a new renewables project for data centre electricity consumption as part of an energy obligation
2. Provide concessional finance for renewable energy to supply data centres in exchange for acting as an anchor offtaker that underwrites supply that can be released for other users.

Both effective regulatory and financing models are required to turn data centres from a 'problem' to a 'solution' for the offtaker gap that is holding back the growth of large-scale renewable energy.


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