CONNECTIONS

DATA CENTRE CONNECTIONS

UE RRP BUS 3.6.01 – PUBLIC

2026–31 REVISED PROPOSAL

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1. Overview

Data centres present an economic opportunity for Victoria. Timely access to reliable, forward-looking insights on data centre developments – including location, capacity requirements, and timing of connection – is essential to inform coordinated anticipatory investment decisions. We are well-positioned to provide this insight, given we hold the most up-to-date knowledge of connection enquiries and project pipelines through direct engagement with proponents and visibility into emerging demand. Additionally, there is available capacity in the distribution network to connect storage and generation to alleviate some of this demand pressure.

It is recognised the concern some stakeholders have on the impact of data centre connection forecasts on our revised revenue forecast. This is recognised in our revised proposal through:

- the recovery of tax costs from all high voltage and sub-transmission connections from the connection proponent. Therefore tax costs for data centres are not included in our revenue forecast
- the exclusion of new connection data centre demand forecasts from our operating expenditure model. Therefore new data centre connections have no impact on our forecast operating expenditure

The incremental revenue associated with forecast data centre connections is estimated to be less than $2.1M or less than 0.1 per cent of total revenue. This incremental revenue is forecast to be fully contributed by newly connected data centres. Newly connected data centres will also contribute to transmission costs. This will lower network charges for all network customers.

Today, our network catchments contain 85 per cent of all operational data centres in Victoria. This includes 83 per cent of Melbourne's operational data centres.

In our regulatory proposal, we did not provide a forecast for data centre connections. Since that time we have received numerous enquiries which has prompted us to include a forecast in the revised proposal.

A summary of our forecast for data centre connections is presented in table 1. To determine net connections, we have assumed 85 per cent of data centre connection expenditure will be funded by the data centre proponent.

TABLE 1 DATA CENTRE CONNECTION FORECASTS ($M, 2026)

EXPENDITURE	REGULATORY PROPOSAL	DRAFT DECISION	REVISED PROPOSAL
Data centre connections: gross	-	-	115.9
Data centre connections: net	-	-	17.4

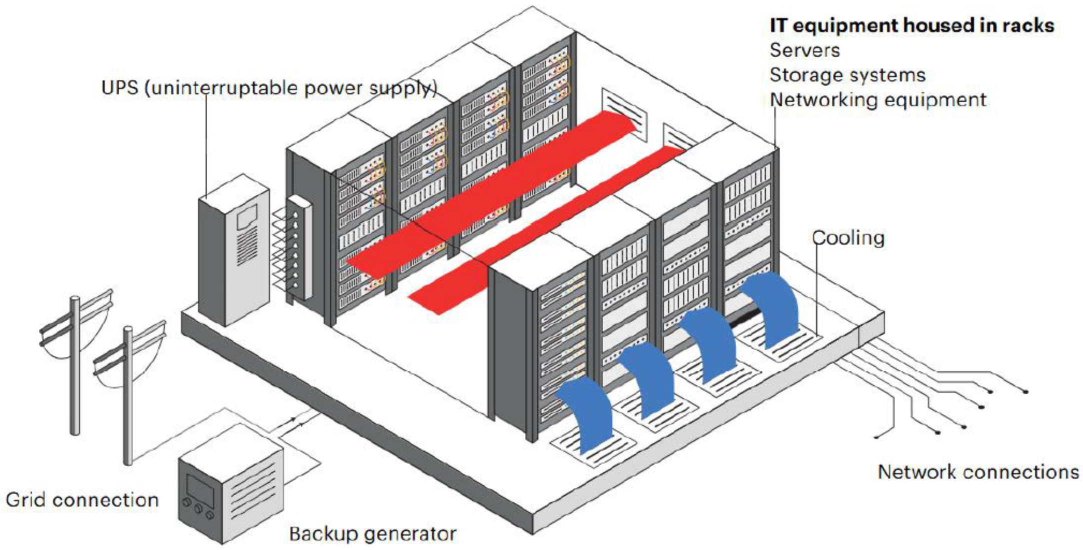
2. Background

A data centre is a specialised facility that houses servers used to store, process, and deliver information. Data centres support a wide range of digital services that residential and business customers rely on such as streaming, banking, cloud storage and communications. They are essential infrastructure for the functioning of modern digital life and a modern economy.

Rather than each business or user hosting their own systems, data centres provide a centralised and secure platform that supports the delivery of digital services at scale. The key components of data centres are summarised below, and shown in figure 1:

- servers, which are computers that process and store data. They can be equipped with central processing units and specialised accelerators such as graphics processing units. On average servers account for around 70 to 80 per cent of electricity demand in modern data centres, although this varies greatly between data centre types
- storage systems which are devices used for centralised data storage and backup. Storage systems account for around five per cent of electricity consumption
- networking equipment includes switches to connect devices within the data centre, routers to direct traffic and load balancers to optimise performance. Networking equipment accounts for up to five per cent of electricity demand
- cooling and environmental control refers to equipment that regulates temperature and humidity to keep IT equipment operating at optimal conditions. The share of cooling systems in total data centre consumption varies from about seven per cent for efficient hyperscale data centres to over 30 per cent for less-efficient enterprise data centres
- uninterruptible power supply (UPS) batteries and backup power generators are used in data centres to keep it powered during outages. Both UPS and backup generators are rarely used, but necessary to ensure the extremely high levels of reliability that data centres require
- other infrastructure, such as lighting and office equipment for on-site staff.

FIGURE 1 DATA CENTRE COMPONENTS



Source: Reproduced from International Energy Agency's Energy & AI report (2025)

The share of each component in a data centre’s electricity consumption varies depending on the nature and efficiency of the equipment they utilise.

Broadly data centres can be grouped into three distinct types:

- **hyperscalers** which are large, high-capacity facilities designed to deliver computing, storage, and network services at scale. They are developed to support the operation of a single organisation, enabling highly centralised control over cloud platforms, artificial intelligence systems, and large-scale digital services. For example, Microsoft operates hyperscale data centres to deliver its global Azure cloud platform and Google uses them to power services such as Search, YouTube, and Google Cloud
- **co-locators** that provide data centre services for multiple tenants. Tenants lease physical space, power, cooling, and network connectivity to house their IT equipment. Some co-locators provide physical or virtual servers, so the tenant does not need to supply and maintain their own hardware
- **others** including edge, telecommunication and enterprise facilities. They are typically smaller and located closer to end-users to provide services that require fast response times. This can include content delivery, mobile networks, and Internet of Things applications. They represent a small share of Australia’s existing and prospective data centre development.

The rise of digitalisation and cloud technologies over the last decade has led to exponential growth in the demand for data centres’ processing capacity. Simultaneously, the increasing demand for computational power was being offset by increases in energy efficiency. In the decade to 2017, the number of computations that could be processed with a watt of energy grew thirteenfold. However, despite computational energy efficiency continuing to grow at approximately 37 per cent per annum, the energy consumption of data centres in Australia has outstripped these gains.

2.1 Our regulatory proposal

Our regulatory proposal did not include a forecast for data centre connections.

2.2 AER draft decision

Although we did not include a data centre forecast in our regulatory proposal, we have noted the guidance provided by the AER as to what it considers acceptable evidence (i.e. in effect, a preferred methodology). This included:

- for committed in-flight projects, evidence of CWAs
- for projects between the connection enquiry and connection offer stage, each be based on unit rates from historical projects or where historical precedents are not available, based on a comparable unit rate. Each project should be subject to a weighted probability of it proceeding
- for future project where enquiries have not yet been received, evidence must be provided of the volume of interest. For example, there have been public announcements or scoping and drawing documents. An option was provided to include projects scheduled for constructed in the later years of the forecast period if they were supported by independent evidence
- requirement to demonstrate that the data centre forecast can be reconciled with forecasts prepared by AEMO.

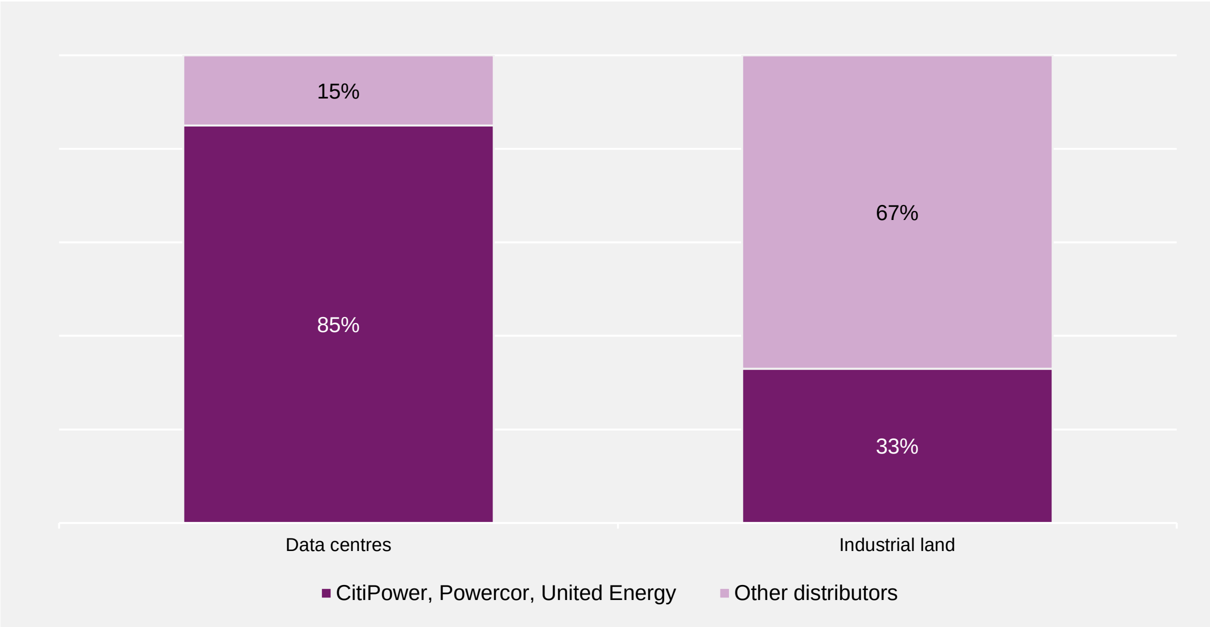
3. Our revised proposal

In developing our revised proposal, we have carefully considered the AER's feedback as set out in its draft decision. We have sought to address the AER's information requests for our forecasts to be capable of acceptance.

For additional context, today, less than 1.5 per cent of Victoria's data centres are connected to the transmission network. Further, as shown in figure 2 below, most of these data centres—85 per cent—are connected to our networks (85 per cent).

The preference for data centres to connect within our network areas is expected to continue. Our networks comprise 33 per cent of greater Melbourne's industrial zones.

FIGURE 2 PROPORTION OF DATA CENTRES CONNECTED TO OUR NETWORKS



Our track record of converting data centre connection enquiries to customers is also strong. From when we first receive a connection enquiry from a data centre, we have an 87 per cent conversion rate to the proponent becoming a customer of our network. This is reflected in the number of repeat data centre customers we have, with some customers having up to four separate projects connected to our network.

3.1 Our response to the AER draft decision

The draft decision established a series of prerequisites for a data centre connection allowance to be provided, including the following:

- for committed in-flight projects, evidence of committed works agreements
- for projects between the connection enquiry and connection offer stage, each be based on unit rates from historical projects or where historical precedents are not available, based on a comparable unit rate. Each project should be subject to a weighted probability of it proceeding
- for future project where enquiries have not yet been received, evidence is provided of the volume of interest. For example, there have been public announcements or scoping and drawing documents. An option was provided to include projects scheduled for constructed in the later years of the forecast period if these projects could be supported by independent evidence

- requirement to demonstrate that the aggregate data centre forecast align with forecasts prepared by AEMO.

Our revised proposal adopts an alternate estimate based on this estimation methodology, as set out below.

3.2 Our revised proposal

The following section steps through how we have prepared our forecasts for the revised proposal, including both top-down and bottom-up assessments.

In recognition we are not experts in the economics of data centres, we engaged Mandala Partners to assist in this task. Mandala are economic specialists in data centres and have worked with some of the largest data centres in Australia, including a number already operational or under construction across our networks.

Mandala was provided with information on each registered data centre application we have received as of October 2025. As set out in their review (attached with our revised proposal), Mandala reduced the capacity being requested by 44 per cent.[1]

3.2.1 Bottom-up assessment

The bottom-up assessment commenced with classifying each registered data centre connection application into 'committed/in-flight' or 'connection enquiry and connection offer stage'. The number of projects classified under each category is presented in table 2.[2]

TABLE 2 REGISTERED DATA CENTRE CONNECTION APPLICATIONS (MW)

CONNECTION STATUS	UNITED ENERGY
Committed / in-flight	-
Connection enquiry / offer stage	802

Committed in-flight projects

We do not have any data centres in this category.

Connection enquiry and offer stage

If no agreement is in place with a connection proponent, a weighted probability assessment for each project is required by the AER.

For these projects, it is also expected we provide an expenditure estimate based on historical precedents or, where not available, a comparable unit rate. As mentioned above, we have 9 projects currently under construction across our 3 networks on which to base our costings. These historical precedents have been utilised to develop bespoke costings for each project where an agreement is not in place.

We discuss below the process followed for both project costs and developing a probability weighted capacity forecast.

Weighted probability assessment

1 Mandala, Forecasting CPU's data centre capacity requests, Final report, November 2025

2 In practice we have many more classifications than this, but for the purposes of this analysis, we have applied our interpretation of the AER's classifications.

For the revised proposal, each registered data centre connection application has been subject to a weighted probability assessment performed by Mandala. Assessing the weighted probability requires knowledge of data centre economics, something Mandala was well placed to do.

The Mandala framework is based on three categories of assessment:

- **connection type metric**: the likelihood that a proponent will connect to the transmission network, rather than the distribution network
- **foundation metrics**: reflects the underlying determinants of project success, contributing 10 to 30 per cent of the overall weighting
- **progress metrics**: representing the increasing likelihood of success as a project collects approvals prior to becoming operational. These approvals are not sequential and often obtained concurrently. Payments received from the proponent during the feasibility process are a strong indicator of commitment (e.g. payment of a specification and design enquiry fee (**SDEC**)) or receipt of a firm offer. The progress metric weightings add to 95 per cent, allowing for a small residual uncertainty that some in-construction projects may not become operational.

A summary of Mandala's framework is shown in figure 3.

FIGURE 3 DATA CENTRE LIKELIHOOD FRAMEWORK

Category	Metric	Weighting	AER stage
1 Connection type metric	Distribution connection probability	Certain = 1 Probable = 0.8	Speculative
2 Foundation metrics	Proponent track record	Strong = 0.3 Medium = 0.2 Weak = 0.1	
	Connection request complexity	Simple = 1 Medium = 0.7 Complex = 0.5	
3 Progress metrics	Site identification and feasibility	10% – 30%	Enquiry to offer
	Utility assessment	10% – 30%	
	Planning and building permit	15%	
	Grid connection and firm offer	10%	Committed/in-flight
	In construction	10%	
4 We also validate our results using Monte Carlo simulation modelling.			

In the application of its framework, Mandala considered the following:

- it is recognised that some data centres will seek connection to the transmission network. Mandala have adopted a conservative approach, assuming that 20 per cent of large connection requests (those greater than 100MW) seek connection to the transmission network. This assumption has been applied to all applications greater than 100MW that are yet to enter an SDEC. In practice though, Mandala believes the likelihood of large data centres connecting to the transmission network will be lower

- Mandala observed half of our project applications are from proponents with a medium or high track record. Proponents scoring high for track record are those who have already successfully developed data centre projects, particularly at similar scale. The lower scoring proponents are those with no experience and submitting their first standalone project. Proponents with no previous experience in Australia are also rated low
- connection complexity was considered by Mandala in addition to difficulty in connecting the proponent to the grid. Some projects were identified as relatively straightforward connections whilst others require substantial augmentation that include terminal station upgrades
- most data centres, Mandala found, had completed site identification, feasibility and utility assessments but were yet to secure planning and building permits, grid connections or commenced construction. These milestones are, however, in practice rarely undertaken sequentially. For example, proponents may not have secured a site when they initiate early utility assessment enquiries. Projects that are in the early stages of development are likely to connect to the grid in the later years of the forecast period. Projects that have secured grid connection, received a firm offer or are under construction are highly likely to connect in the early years of the forecast period.

Before developing its final forecast, Mandala excluded projects that were outside of the future regulatory period. We did not have any projects in this category.

Applying its framework to registered applications as of October 2025 and applying the weighted probability assessments to each bespoke project, Mandala concluded the capacity forecast to be 385MW.

Mandala also conducted a sensitivity analysis of their probability assessment using a Monte Carlo simulation. This approach conducted 100,000 scenarios, each with different project success probabilities sampled around their estimates, to model the range of possible outcomes. The 80 per cent prediction interval ranged from 2,570MW to 3,549MW across our three networks.

Project costs

Project expenditure estimates were prepared by us. These were prepared internally given no other party has the relevant expertise or network understanding to perform the task. Data centre connections are complex and highly dependent on capacity, network location and their point of connection.

Project costs were estimated considering projects with similar scopes. Each project is unique. Further, recent applications are seeking a level of capacity at an order of magnitude above historical projects. Hence, an element of judgement is required in determining costs, something we believe we are well placed to do given our experience and understanding of our network and strong track record in data centre connections.

Estimating connection costs requires consideration of the capacity requested, the point of connection, level of redundancy required and the requirement for a zone substation or further line work. What the proponent installs behind their meter has no relevance and we have no visibility either of what they intend to install.

Overall, nine scenarios were developed to accommodate these considerations, as summarised in table 3.

TABLE 3 REPRESENTATIVE CONNECTION COSTS FOR A DATA CENTRE ($M, 2026)

SCENARIO	COST
510 MVA to 750 MVA (N-1) capacity requested with 66kV point of connection	86.8
260 MVA to 500 MVA (N-1) capacity requested with 66kV point of connection	64.1
< 260 MVA (N-1) capacity requested with 66kV point of connection	41.3
< 140 MVA (N-1) capacity requested with 66kV point of connection and 66kV lines to site	20.5
< 100 MVA capacity requested and air insulated substation with 66kV lines to site	48.6
760 MVA to 1,000 MVA (N-1) capacity requested with 132kV point of connection	40.6
510 MVA to 750 MVA (N-1) capacity requested with 132kV point of connection	37.6
260 MVA to 500 MVA (N-1) capacity requested with 132kV point of connection	24.9
< 260 MVA (N-1) capacity requested with 132kV point of connection	24.0

To be clear, because data centres are either connected to the sub transmission or high voltage networks, they are responsible for all augmentation required to support their connection. That is they will be liable for all costs including those related to transmission augmentation. In certain situations, some data centre connections may be rebated part of the cost of the connection through time. This circumstance would arise should another customer connect to the assets funded by the data centre or we decide to connect assets the data centre has funded to our broader distribution network.

This project expenditure forecasts were calculated prior to the application of the weighted probability assessment. The weighted probability assessments have been used to discount the expenditure estimate on a bespoke basis.

Future projects

For future projects, where applications are yet to be lodged, the draft decision required independent evidence of their existence. These projects are referred to as ‘missing’ pipeline capacity.

The pipeline assessment included only known connection applications as of October 2025. This will understate the number of data centre connection applications we will receive in the forecast period given we do not yet have visibility of applications in the later stages of the forecast period. That is, without adjustment, the capacity forecast would flatline at 385MW between FY30 and FY31.

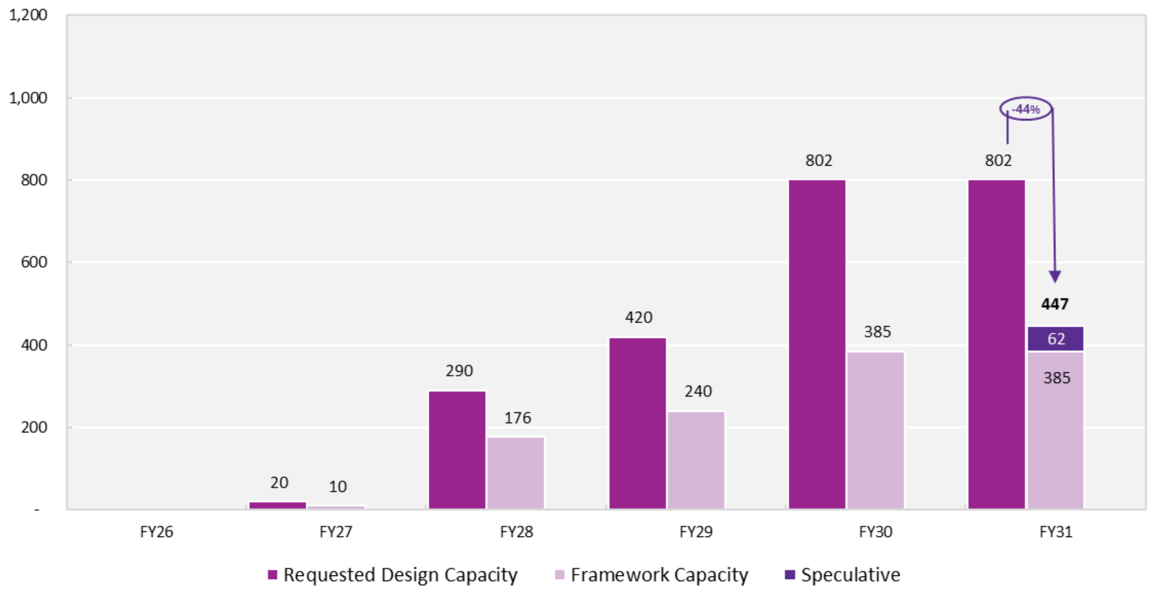
A flatline forecast for these years is inconsistent with what Mandala have observed.

As part of its assessment, Mandala prepared a forecast of ‘missing pipeline’ applications. The ‘missing pipeline’ was estimated to be 62MW. Mandala estimated future capacity requests for FY31 not yet in in the pipeline by calculating typical annual capacity increase by performing simple linear regression on framework capacity growth from FY26–30. It was then extended forward to estimate what FY31 capacity would be if the pattern continues and the missing capacity calculated based on the difference between trend-based and framework capacity estimate. This estimate is likely conservative as it is based on linear growth over the forecast period, while data centre demand in our catchment is more likely to be exponential.

Total project capacity

Collectively, Mandala's forecast capacity relative to our existing pipeline is shown in figure 4. Mandala have assessed that expected capacity will be 44 per cent lower than our total connection pipeline.

FIGURE 4 PROBABILITY ADJUSTED DATA CENTRE CAPACITY (MW)



3.2.2 Top-down assessment

The draft decision required our data centre connection capacity forecast to be reconciled with that of AEMO. For the following reasons, however, aligning with AEMO's forecasts needs to be considered with caution:

- AEMO's data centre capacity forecasts are largely informed by distributors. This is because only a very small proportion of data centres are connected to the transmission network (e.g. just 1.5 per cent today)
- the information AEMO possesses from distributors is not current. AEMO's latest Inputs Assumptions and Scenarios Report (IASR) was published in August 2025 but based on a report prepared by Oxford Economics that uses data collected from us in November 2024.[3] Since this time, in aggregate our networks have received a further 1,676MW of data centre connection applications
- AEMO forecasts actual demand rather than installed capacity. We are obligated to provide the capacity requested by proponents. Capacity requests are usually higher than the capacity utilised by the data centre proponent, at least in the early years of their connection. AEMO does not forecast installed capacity; rather, its forecasts are intended to capture utilised capacity to assist it manage the wholesale market and the security of the transmission network
- AEMO's forecasts are provided at a state level only. Translating them therefore requires assumptions as to how data centre demand is distributed.

3 Oxford Economics, Data Centre Energy Demand, July 2025

Notwithstanding the above, Mandala have conducted a reconciliation with AEMO forecasts for the purposes of the revised proposal. The reconciliation requires many assumptions, which are all explicitly identified, however the temporal differences and different forecast needs make a fulsome reconciliation impossible.

To make AEMO's Victorian data centre forecasts comparable with our forecasts, Mandala applied a multi-step approach involving:

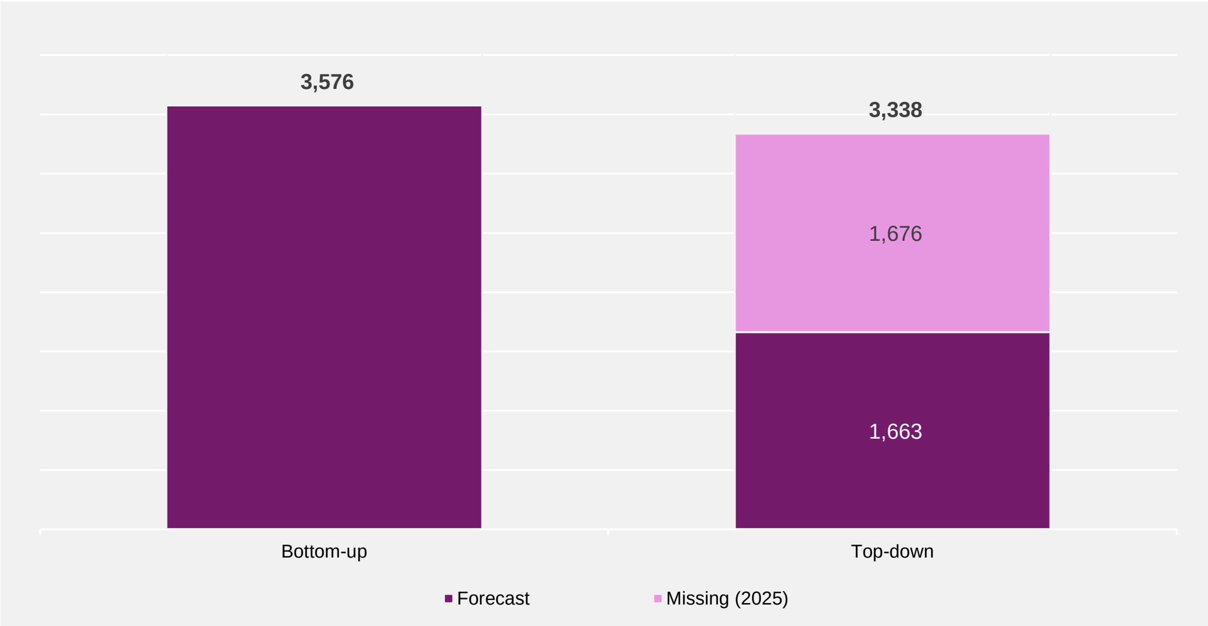
- converting AEMO's energy forecasts (MWh) into capacity forecasts (MW)
- removing any capacity supplied from the transmission network (assumed to be 32 per cent, although less than 1.5 per cent is supplied by the transmission network today)
- applying assumptions to isolate capacity derived from our distribution network based on current distributor market shares
- converted demand into installed capacity. This was complex calculation involving consideration of weighted mature load realisation factor, weighted ramp factor and weighted load factor. It is also necessary to assess the capacity being utilised by data centres already connected to our network and in operation.

Mandala's top-down reconciliation has been prepared in aggregate for our three networks and is set out in more detail in their attached report and model. A summary of this reconciliation to our forecasts is also shown in figure 5.

Mandala consider AEMO's forecast understates future data centre installed capacity primarily because it is based on dated information. Since November 2024, there has been significant market interest and growth in the use and development of generative AI tools, and in data centres themselves. Mandala notes that committed installed capacity for FY27 for our three networks is 1GW. For context, this is approximately 60 per cent of AEMO's forecasts for FY31.

Since November 2024, we have also received a further 27 proponent requests, representing an additional 1,679MW of capacity requests across our three networks. This demonstrates the significant temporal understatement in AEMO's forecasts and the subsequent non-comparability between our forecasts (based on actual data) and AEMO.

FIGURE 5 MANDALA RECONCILIATION WITH AEMO: AGGREGATE FOR CPU (MW)



In concluding, we also note we are in the fortunate position of managing three Victorian distribution networks. This places us in a unique position to understand the distribution of data centre activity. It also guarantees there is no double accounting between our three networks.

Through our transmission business, we also have some awareness of data centre proponents considering transmission connections. We therefore consider our analysis robust.

3.2.3 Power purchase agreements

Discussions we have had with various stakeholders have cited concerns with newly connected data centres accessing power purchase agreements (PPAs). They question whether sufficient capacity will be available in the wholesale market to support the level of data connection capacity being sought.

While it is something to keep in mind, and theoretically a data centre proponent may be less willing to proceed with construction if they cannot access a PPA, we believe the impact is likely to be small. This is because:

- the potential returns on offer for data centres are still likely to be greater than cost of energy
- there are other bilateral options open to data centres in market to meet green commitments
- supply tends to meet demand.

It's understood that some data centres proponents are considering co-location with generation and/or options for long term storage on site. We have been advised further that there is no shortage of PPAs available in the market and being in possession of such an agreement is critical to demonstrate bankability of a project. Finally not all providers of PPAs need be in Victoria. The recent New South Wales Distribution System Plan Opportunities Report[4] for example results through investment in sub-transmission assets, the export of an additional 3,830GWh.

As discussed early, it is important to understand that the capacity being sought by new data centres is rarely the capacity used in the early years of their operations. Data centres tend to ramp up capacity

[4] Ausgrid, Endeavour Energy, Essential Energy, Distribution system plan opportunities report, November 2025

over time meaning the initial PPAs they require are well below the suggested capacity of their connection and build over a 3 to 4 year period from initial supply.

3.2.4 Customer contributions

In its draft decision, the AER accepted our assumed contribution rate of 85 per cent. Our revised proposal has maintained this assumption, consistent with the draft decision and our historical experience.

Although not relevant to our data centre connection forecasts, we draw the AER's attention to the change we have made to connection policy with respect to the tax liability associated with customer contributions. From 1 July 2026, all high voltage and sub transmission connections to our network will be liable for the tax payable on their contribution. Data centre connections will fall into this category given their connections are only able to be supported by the high voltage or sub transmission network.

3.3 Revised proposal forecast

Our revised proposal forecast for data centre connections is set out below in table 4.

Our approach is consistent with the methodology detailed in the AER's draft decision and based on an unbiased and robust assessment provided by an independent industry expert.

TABLE 4 DATA CENTRE CONNECTION FORECASTS ($M, 2026)

DATA CENTRE CONNECTION	FY27	FY28	FY29	FY30	FY31	TOTAL
Gross connections	11.0	26.2	35.3	17.9	25.6.4	115.9
Net connections	1.6	3.9	5.3	2.7	3.8	17.4

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