MANDALA

Forecasting CPU's data centre capacity requests

CitiPower, Powercor, United Energy (CPU)

Final report

NOVEMBER 2025

Contents

MANDALA

Mandala is an economics research and advisory firm. Mandala specialises in combining cutting-edge data and advanced analytical techniques to generate new insights and fresh perspectives on the challenges facing businesses and governments.

Note: All dollar figures are Australian dollars unless indicated otherwise.

CPU will need 3,576MW of capacity to meet customer requirements in FY31

Mandala estimates that 3,576MW of total capacity will be needed to meet customer requirements by FY31. This estimate represents the total network capacity required across the determination period to service data centre demand in CPU's catchment.

Of this total, 3,079MW comes from probability-adjusted “framework capacity” of projects in the current pipeline. This figure accounts for the likelihood that projects will progress to energisation.

An additional 497MW is estimated to account for missing pipeline capacity. Projects energising in FY31 would typically enquire between FY26-28, but most have not yet submitted requests. We used a trend-based projection of FY26-30 growth patterns to estimate this missing capacity.

This “missing capacity” estimate is likely conservative. The approach assumes linear growth over five years. Data centre growth in Melbourne may accelerate beyond this linear projection, meaning actual capacity requirements could be higher than our estimate.[1]

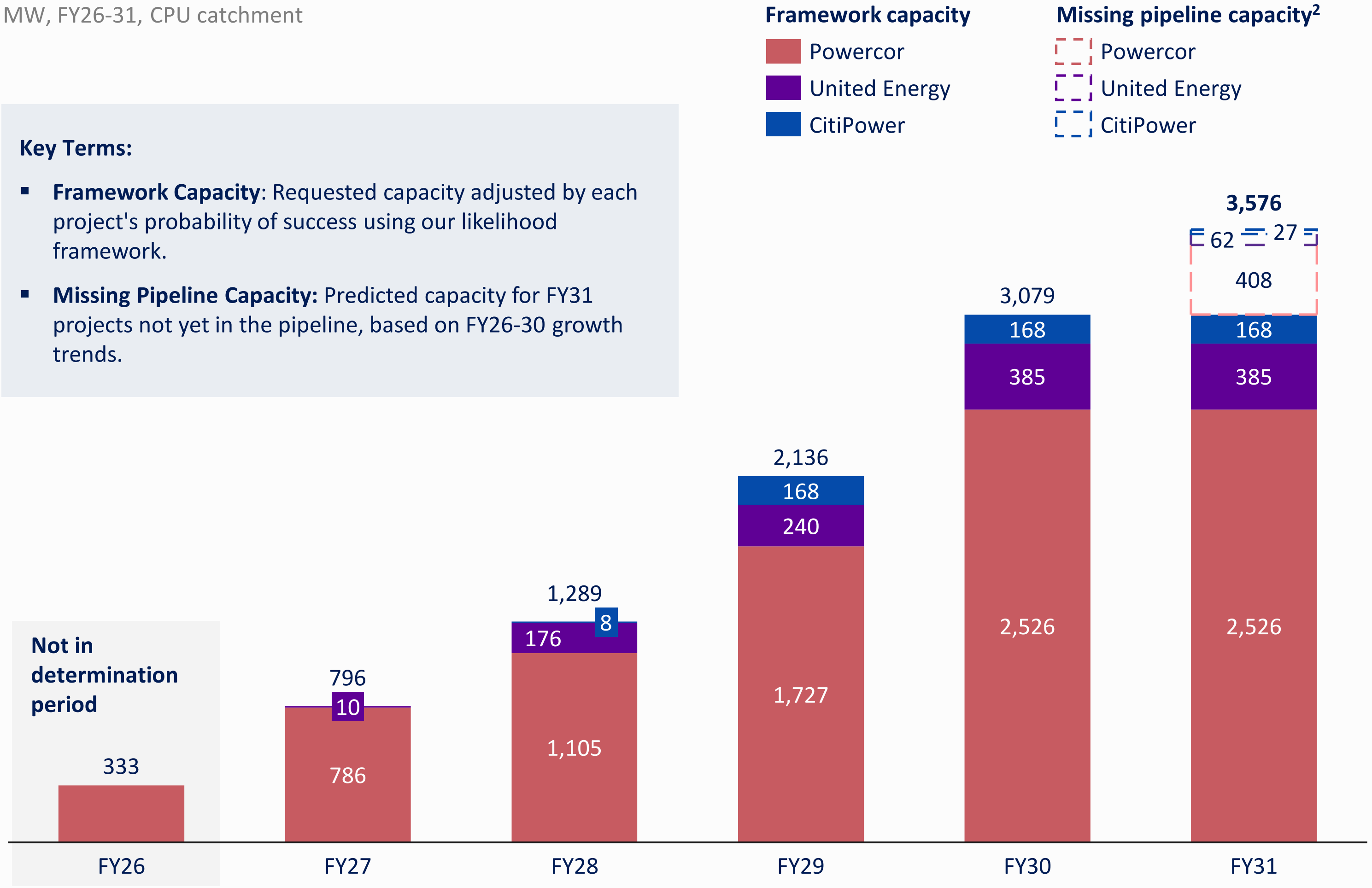
1 Oxford Economics (2025) *Data centre energy demand*.

Exhibit 1: Estimated data centre capacity with trend-based FY31 adjustment[1]

MW, FY26-31, CPU catchment

Key Terms:

- **Framework Capacity**: Requested capacity adjusted by each project's probability of success using our likelihood framework.
- **Missing Pipeline Capacity:** Predicted capacity for FY31 projects not yet in the pipeline, based on FY26-30 growth trends.



Note: 1 Only “Active” pipeline projects not in the “Speculative”’ phase have been included in this calculation. Projects with unknown energise dates have been excluded. 2 Missing pipeline capacity per network is calculated as a proportion of the total missing capacity apportioned by each network’s share of framework capacity in FY31.
Sources: CPU pipeline (2025), Mandala analysis.

Our estimated capacity is 44% lower than the total design capacity currently requested by customers

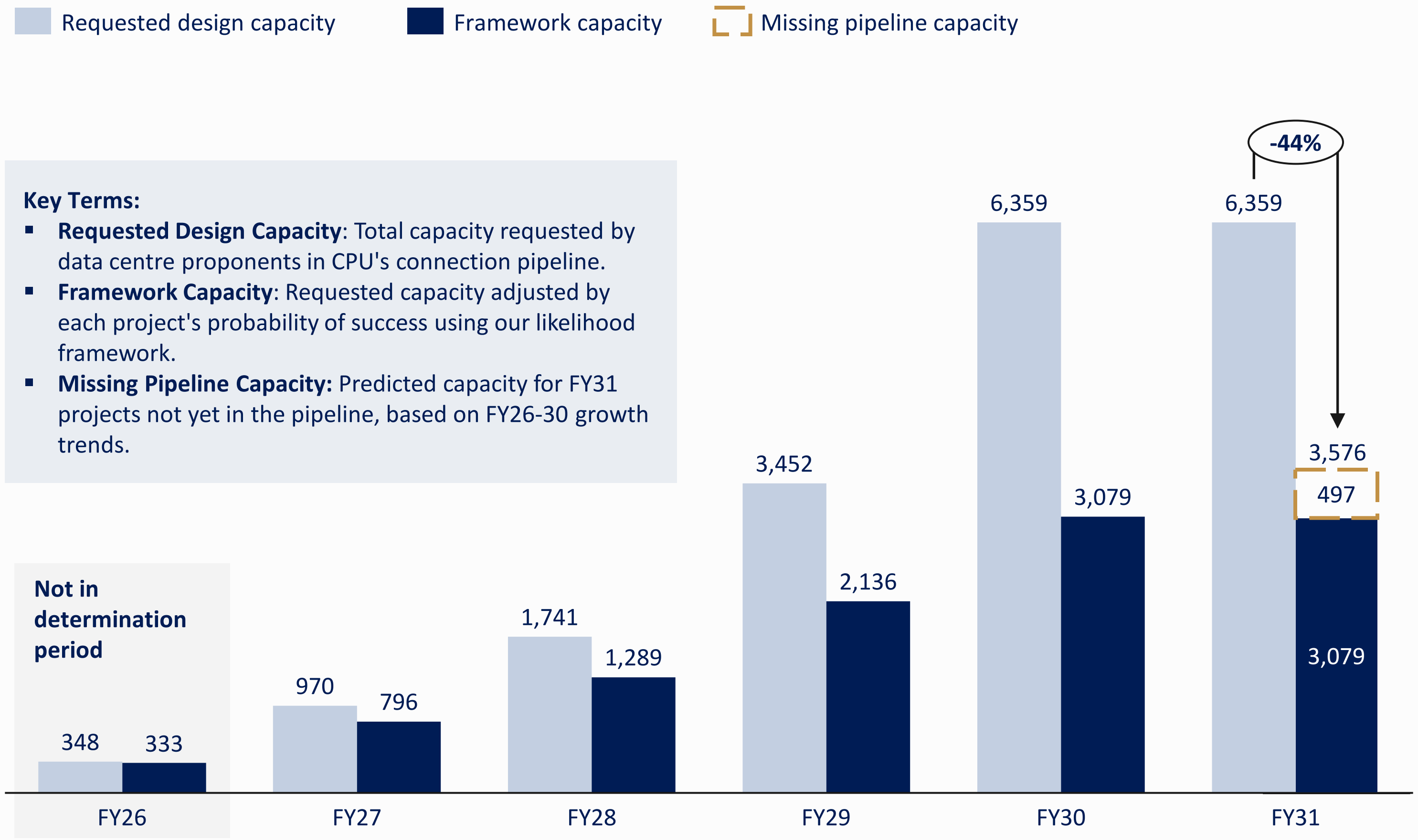
Our total capacity estimate of 3,576MW in FY31 is 44 per cent lower than the 6,359MW requested design capacity from data centre proponents.

Capacity growth over the determination period is cumulative. New projects add to data centres energised in earlier years, increasing total network demand across CPU's catchment as financial years progress.

The divergence between requested design capacity and our capacity estimates increases over time. There is uncertainty about whether all projects will proceed as planned. Some assessed projects may be cancelled, delayed, or connect at reduced capacity. Our likelihood framework captures this uncertainty by assigning probability weightings to each project based on their development stage and other factors. Projects with later energisation dates are at earlier development stages, resulting in lower probability weightings and a widening gap in later years.

Exhibit 2: Requested design and framework probability adjusted data centre capacity

MW, FY26-31, CPU catchment



Key Terms:

- **Requested Design Capacity**: Total capacity requested by data centre proponents in CPU's connection pipeline.
- **Framework Capacity**: Requested capacity adjusted by each project's probability of success using our likelihood framework.
- **Missing Pipeline Capacity:** Predicted capacity for FY31 projects not yet in the pipeline, based on FY26-30 growth trends.

Note: See appendix for detailed breakdown by DNSP. Only "Active" pipeline projects not in the "Speculative"' phase have been included in this calculation. Projects with unknown energise dates have been excluded.
Source: CPU pipeline (2025), Mandala analysis.

When compared to adjusted AEMO forecasts these estimates are consistent

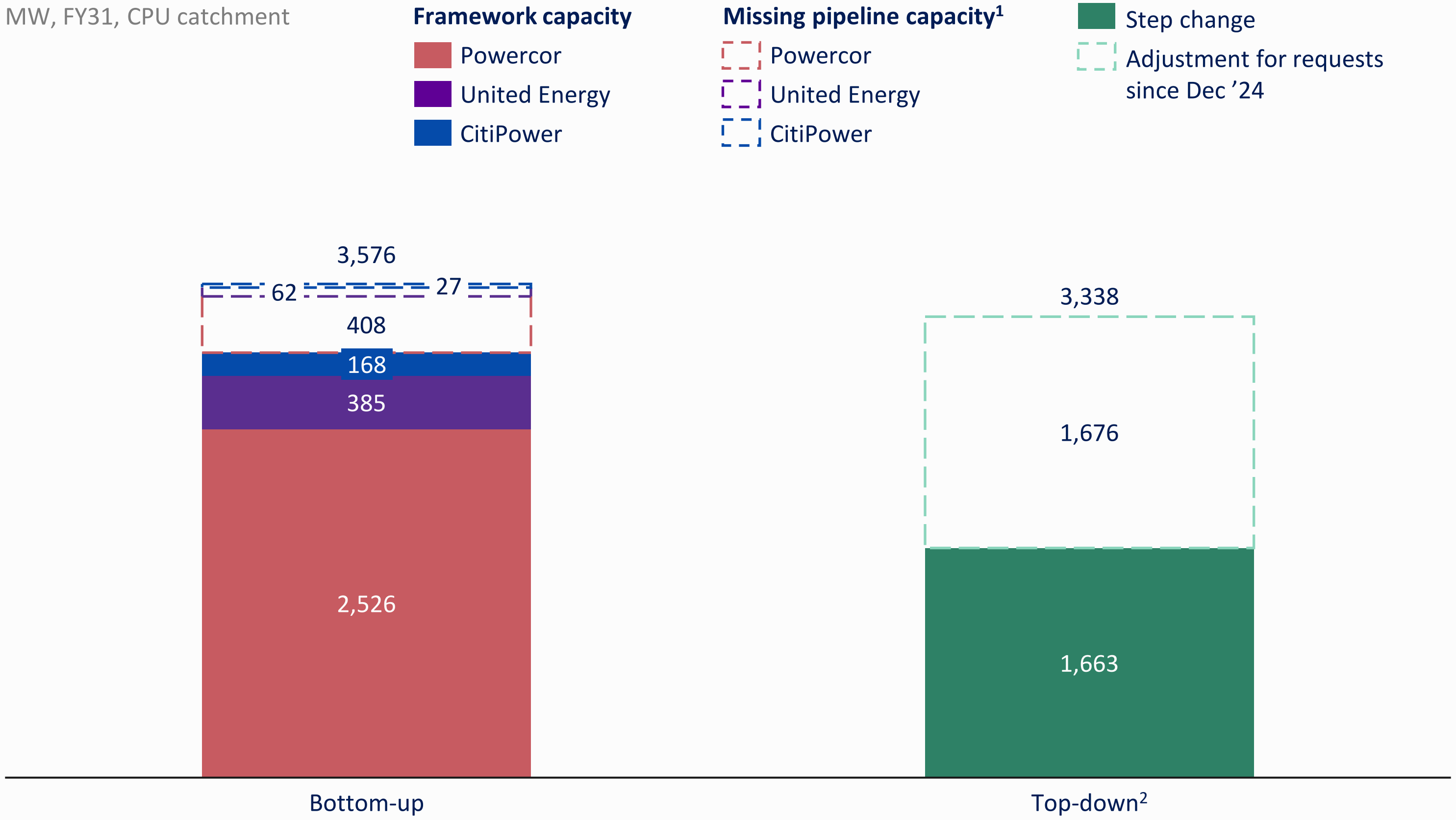
When AEMO's demand forecasts are converted to capacity for comparison to CPU's pipeline, there is 1,663MW of capacity required. This is in comparison to 3,576MW for CPU's framework capacity, but provides a further datapoint to confirm the growth in energy demand from data centres in the catchment.

AEMO's base figure for the step change scenario of 1,663MW may be lower than expected for several reasons. Data centre demand forecasts were estimated based on information collected in November 2024, and there has been significant market interest and growth in both the use and development of generative AI tools, and in data centres themselves, since then.

CPU has received 27 requests for projects since November 2024 (when data was collected), representing an additional 1,676MW of framework-adjusted capacity. When this capacity is added to the base step change capacity (1,663MW), the total capacity is consistent between CPU's framework capacity and AEMO forecasts.

Sources: Mandala (2025) Empowering Australia's Digital Future, McGuire (2025) *Data Centres will soon make up 12 per cent of energy demand: AEMO.*

Exhibit 3: Top-down estimates of installed MW capacity in CPU's catchment



Based on application of project likelihood framework to CPU pipeline projects and estimate of future pipeline projects.

Based on AEMO's 2025 data centre energy demand forecasts under the Step Change scenario, additional capacity since Dec. '24 inclusive, and information from Data Center Map.

Note: 1 Missing pipeline capacity per network is calculated as a proportion of the total missing capacity apportioned by each network's share of framework capacity in FY31. 2 The top-down approach reflects CPU's total market share and is not disaggregated by DNSP.

Sources: CPU pipeline (2025), AEMO (2025) *Inputs, Assumptions and Scenarios Report,* Oxford Economics (2025) *Data Centre Demand,* Data Center Map (2025) *Melbourne Data Centers,* Mandala analysis.

We assess projects in CPU's pipeline based on three categories

These metrics are grouped into three categories, aligned with CPU's probability assessment probability criteria (see methodology).

The "distribution connection probability" captures the likelihood that a proponent will connect to the transmission network, rather than the distribution network. The "proponent track record" and "connection request complexity" metrics reflect the underlying determinants of project success, contributing 10 to 30 per cent of the overall weighting.

The five "progress metrics" represent the increasing likelihood of success as a project obtains approvals in the lead-up to becoming operational. These steps are not sequential and can be undertaken concurrently.

Payments made by the proponent at key stages of the development process are a strong indicator of commitment. These are the signing of an SDEC, and a firm offer being issued.

The progress metric weightings add to 95 per cent, allowing for a small residual uncertainty that some in-construction projects may not become operational.

Exhibit 4: CPU pipeline progress metrics, weightings, and corresponding AER stages

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	Speculative
	Connection request complexity	Simple = 1 Medium = 0.7 Complex = 0.5	Speculative
3 Progress metrics	Site identification and feasibility	10% – 30%	Enquiry to offer
	Utility assessment	10% – 30%	Enquiry to offer
	Planning and building permit	15%	Enquiry to offer
	Grid connection and firm offer	10%	Committed/in-flight
	In construction	10%	Committed/in-flight

4 **We also validate our results using Monte Carlo simulation modelling.**

Powercor has the capacity to support direct connections at 66kV and 220kV or above, even for large hyperscalers

According to Oxford Economics[1] (commissioned by AEMO), large hyperscaler projects in Melbourne are more likely to connect to the transmission rather than the distribution network. This reflects the preference for large hyperscalers to connect at higher voltages to support higher loads rather than a specific network preference.

Powercor can connect data centres at <66kV under its distribution licence and can support direct connections at higher voltages of 220kV due to its transmission licence. This is why it receives a high share of large connection requests, with around 45 per cent of "Active" data centre applications exceeding 100MW capacity.

Despite this capability to complete connections above 100MW, we take a conservative approach by assuming that 20 per cent of large connection requests (>100MW) connect to transmission outside of Powercor's network.[2] This applies to any >100MW requests that have not yet signed an SDEC. In reality, the likelihood of large data centres connecting through transmission outside of Powercor's network is likely lower than 20 per cent.

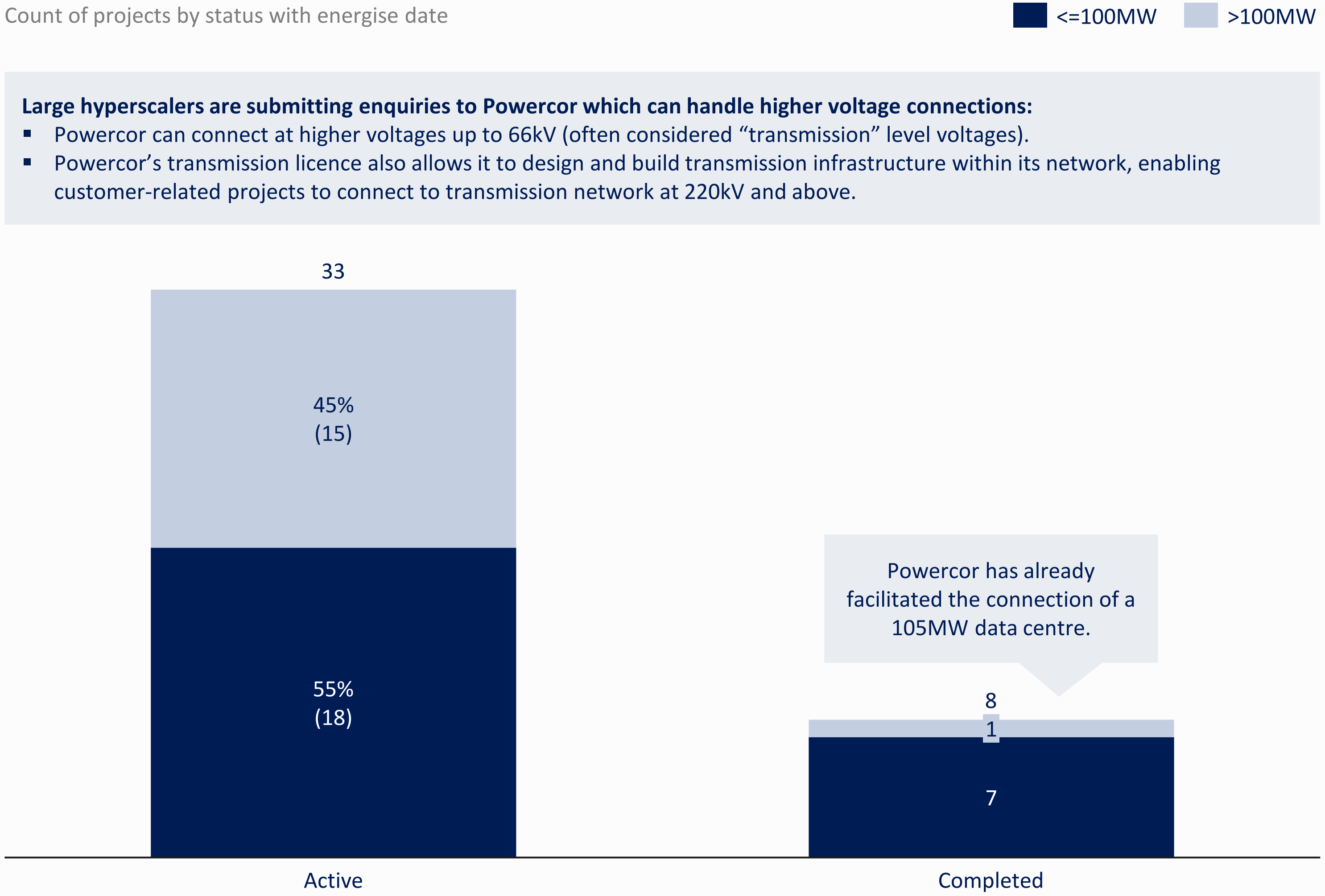
1 Oxford Economics (2025) *Data centre energy demand.*
Source: Essential Services Commission (n.d.) *Electricity and gas licences.*

Exhibit 5: CPU data centre connection requests

Count of projects by status with energise date

Large hyperscalers are submitting enquiries to Powercor which can handle higher voltage connections:

- Powercor can connect at higher voltages up to 66kV (often considered "transmission" level voltages).
- Powercor's transmission licence also allows it to design and build transmission infrastructure within its network, enabling customer-related projects to connect to transmission network at 220kV and above.



Note: See Exhibit 18 for detailed breakdown by DNSP. Only "Active" pipeline projects not in the "Speculative"' phase have been included in this calculation. Projects with unknown energise dates have been excluded.
Source: CPU pipeline (2025).

Almost half of all projects are from proponents with a strong track record and high connection complexity

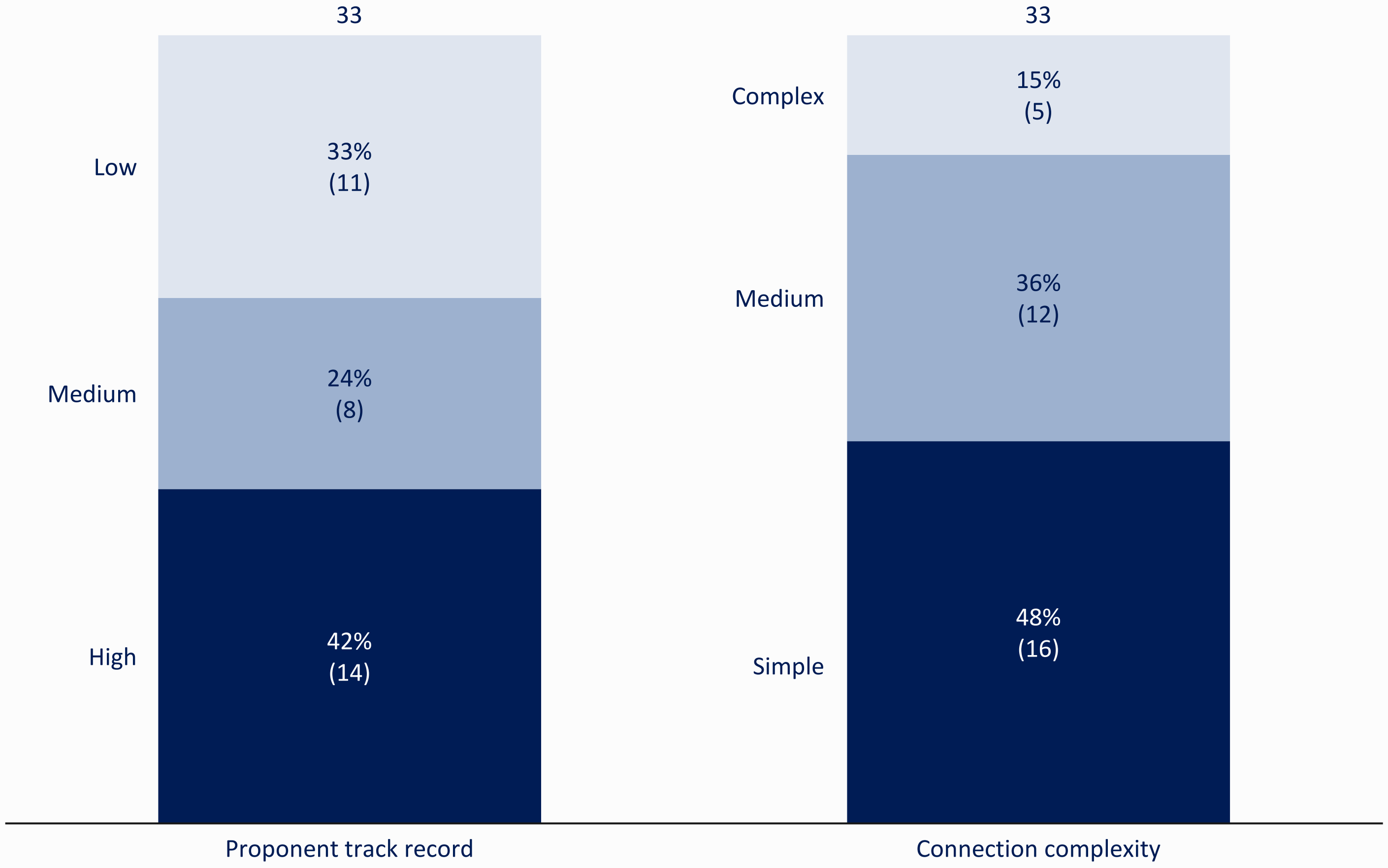
Proponents scoring high for track record are companies that have a proven track record in developing data centre projects. The lowest scoring proponents are those with no experience and are submitting their first standalone project. Proponents with no previous experience in Australia are also rated low. Proponents who have multiple similar projects, particularly at similar scale, are rated high.

This means that companies like AWS or AirTrunk, who have experience building and operating data centres in the CPU network are more likely to see successful transition from initial enquiry to operational data centres, compared to low rated track record companies which are often less mature.

We also assess the connection complexity of the project based on the size of the requested connection in MW, and the potential difficulty in physically connecting the site to the grid. Some projects (the simplest) require a straightforward connection, while others require augmentation to connect. Augmentation can range from minor to complex, with some projects requiring terminal station upgrades, or where the local network has very limited capacity to expand the connection is less likely to proceed.

Exhibit 6: Data centre projects by proponent track record and connection complexity

Count of active projects with energise date



Note: See Exhibit 19 for detailed breakdown by DNSP. Only "Active" pipeline projects not in the "Speculative"' phase have been included in this calculation. Projects with unknown energise dates have been excluded.
Source: CPU pipeline (2025), Mandala analysis.

Most projects do not yet have planning and building permits, or made firm grid connection offers

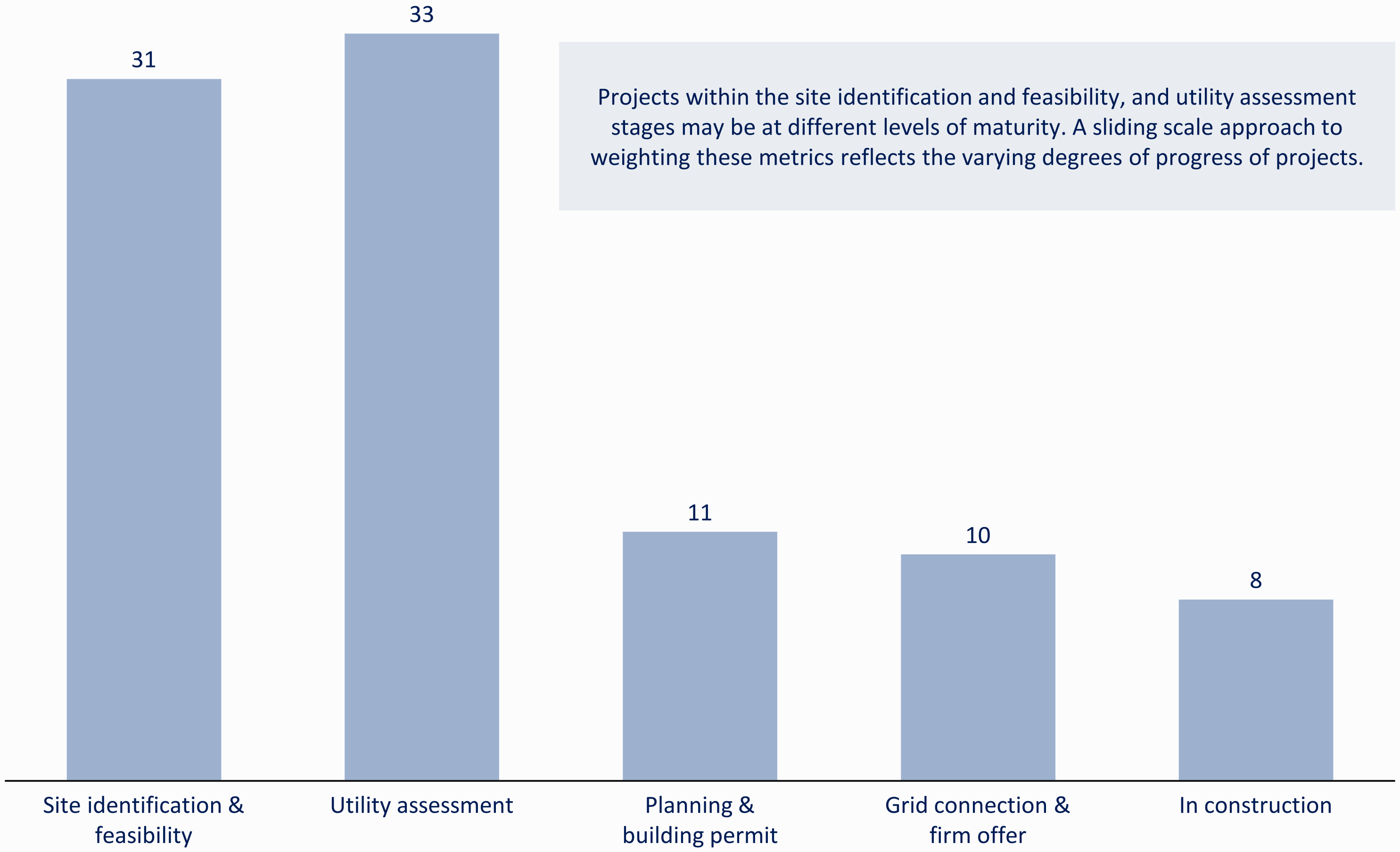
Most data centres in CPU's pipeline have undertaken site identification and feasibility assessments and utility assessments (to varying degrees), but have not yet secured planning and building permits, grid connections or begun construction.

The progress metrics applied in our framework, are not necessarily 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 determination period, while projects that have secured grid connection, made a firm offer or are under construction are likely to connect in the early years of the determination period.

Exhibit 7: Data centre projects by progress metric

Count of active projects with energise date by stage reached



Projects within the site identification and feasibility, and utility assessment stages may be at different levels of maturity. A sliding scale approach to weighting these metrics reflects the varying degrees of progress of projects.

Note: See Exhibit 20 for detailed breakdown by DNSP. Only "Active" pipeline projects not in the "Speculative"' phase have been included in this calculation. Projects with unknown energise dates have been excluded.
Source: CPU pipeline (2025), Mandala analysis.

There is uncertainty in our estimates with 80% of simulated scenarios between 2,570MW and 3,549MW

The mean simulated capacity for FY31 is 3,052MW, compared to the framework capacity estimate of 3,079MW (excluding additional 497MW modelled capacity in FY31).

To quantify the uncertainty in our probability estimates, we used Monte Carlo simulation. This approach runs 100,000 scenarios, each with different project success probabilities sampled around our framework estimates, to model the range of possible outcomes.

The 80 per cent prediction interval ranges from 2,570MW to 3549MW, reflecting the uncertainty in our project success probability estimates. This means actual FY31 capacity could reasonably fall anywhere within this range.

Key Terms:

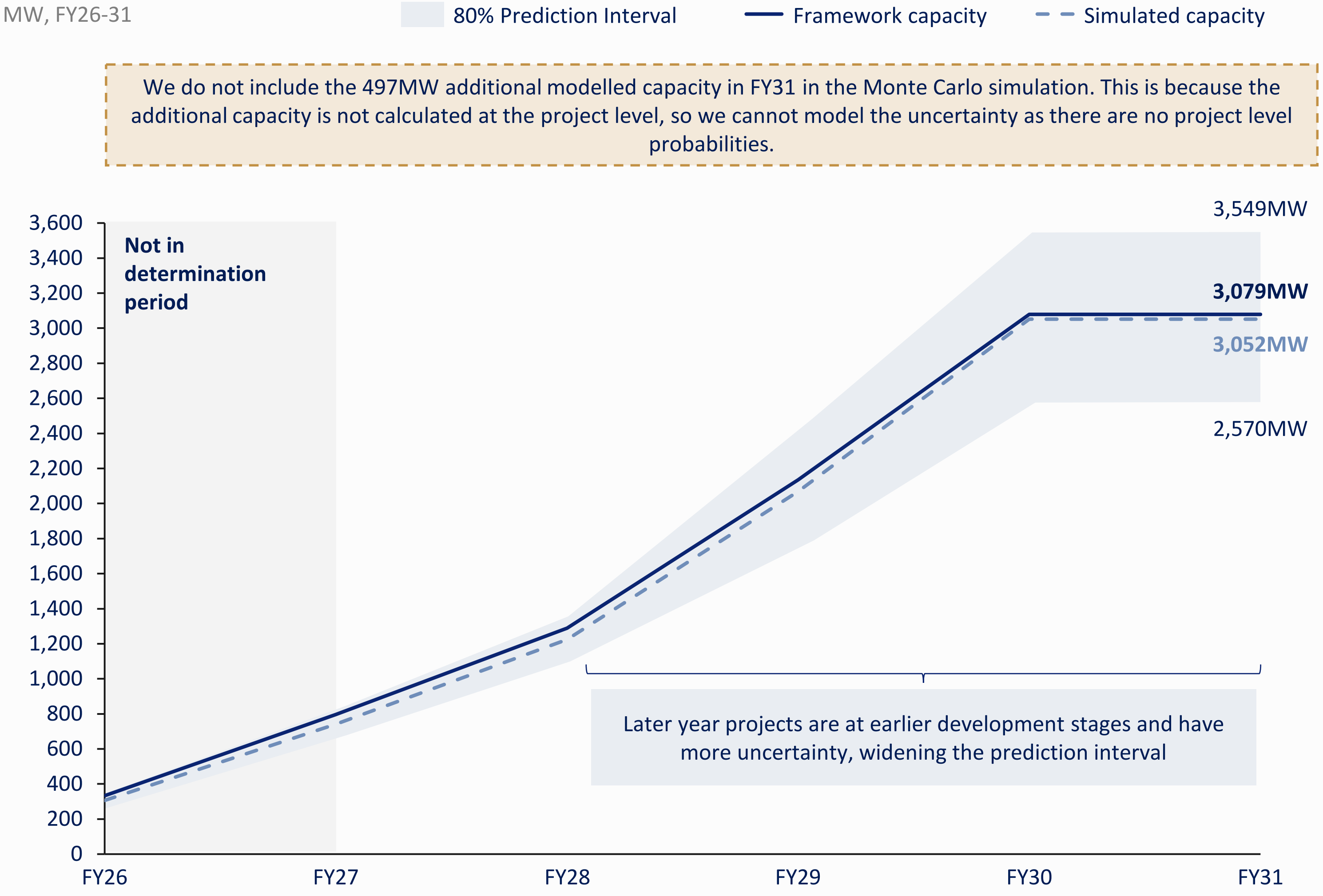
- **Framework Capacity**: Requested capacity adjusted by each project's probability of success using our likelihood framework.
- **Simulated Capacity**: Mean capacity from Monte Carlo scenarios that model uncertainty in project success probabilities.

1 Modelled additional capacity for FY31 excluded as it has no associated projects or project likelihoods to model uncertainty.

Exhibit 8: Simulated data centre capacity for CPU network modelled across 100,000 scenarios

MW, FY26-31

We do not include the 497MW additional modelled capacity in FY31 in the Monte Carlo simulation. This is because the additional capacity is not calculated at the project level, so we cannot model the uncertainty as there are no project level probabilities.



Note: Only "Active" pipeline projects not in the "Speculative"' phase have been included in this calculation. Projects with unknown energise dates have been excluded.
Source: CPU pipeline (2025), Mandala analysis.

AEMO forecasts assess demand for energy, rather than installed capacity or committed connections

AEMO's forecasts capture the forecasted data centre load based on information on existing and prospective data centre projects and macro-economic demand-side drivers such as AI adoption and digital transformation.

Forecasts were developed by Oxford Economics Australia, who applied assumptions to projects such as ramp-up period, load factor, mature load realisation factor. These capacity adjustment factors reflect real-world utilisation of data centre capacity including staged commissioning and progressive load realisation.

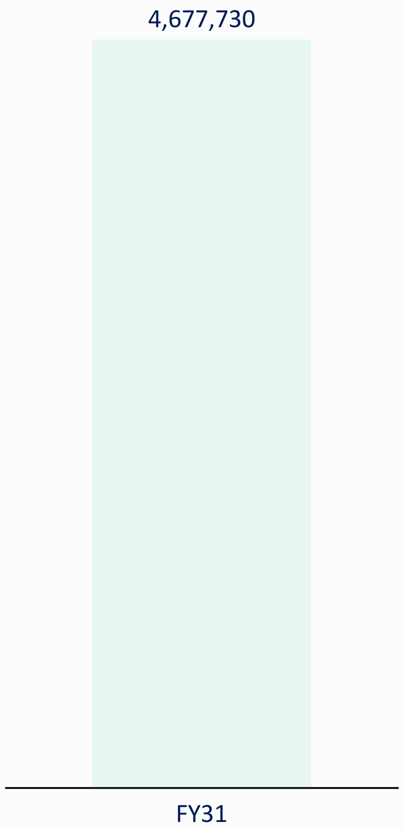
This means demand forecasts reflect used a data centre's typical use of its capacity rather than its installed capacity. As connection requests to CPU are based on installed capacity, demand forecasts need to be converted to capacity equivalents to provide a comparable validation point for the bottom-up capacity estimates.

Sources: AEMO (2025) *2025 Inputs, Assumptions and Scenarios Report,* Oxford Economics (2025) *Data Centre Demand.*

Exhibit 9: AEMO Victorian data centre demand forecasts

MWh, FY31 Step change

AEMO forecasts 4.68TWh demand for energy by data centres in Victoria ...



... but this accounts for a number of features not relevant to CPU's pipeline capacity customer requests

- **Transmission vs distribution.** Some data centres, like hyperscalers, will connect directly to a transmission network provider, rather than distribution network provider.
- **Mature load realisation factor.** Data centres take time to operate at their mature load as tenants take time to come onboard and often lease more space than is needed, underutilising their contracted capacity.
- **Ramp-up period.** Demand estimates do not reflect the time lag between initial commissioning and when the installed capacity becomes operational.
- **Load factor.** The average energy demand from data centres typically reflects a proportion of their installed capacity, not the total design capacity.
- **Existing and future data centres.** Victoria already has operational data centres in varying degrees of maturity and ramp up. Demand forecasts account for these existing and already committed projects.

This means that these features all need to be accounted for to compare the AEMO demand forecasts with CPU's capacity forecasts.

Note: Based on 2025 forecasts developed by Oxford Economics Australia for AEMO.

We convert demand to implied capacity by accounting for the transmission network, other DNSPs, existing data centres, and load and ramp factors

To convert Victorian AEMO demand estimates (MWh) to CPU capacity estimates (MW), we undertook a multi-step approach where we:

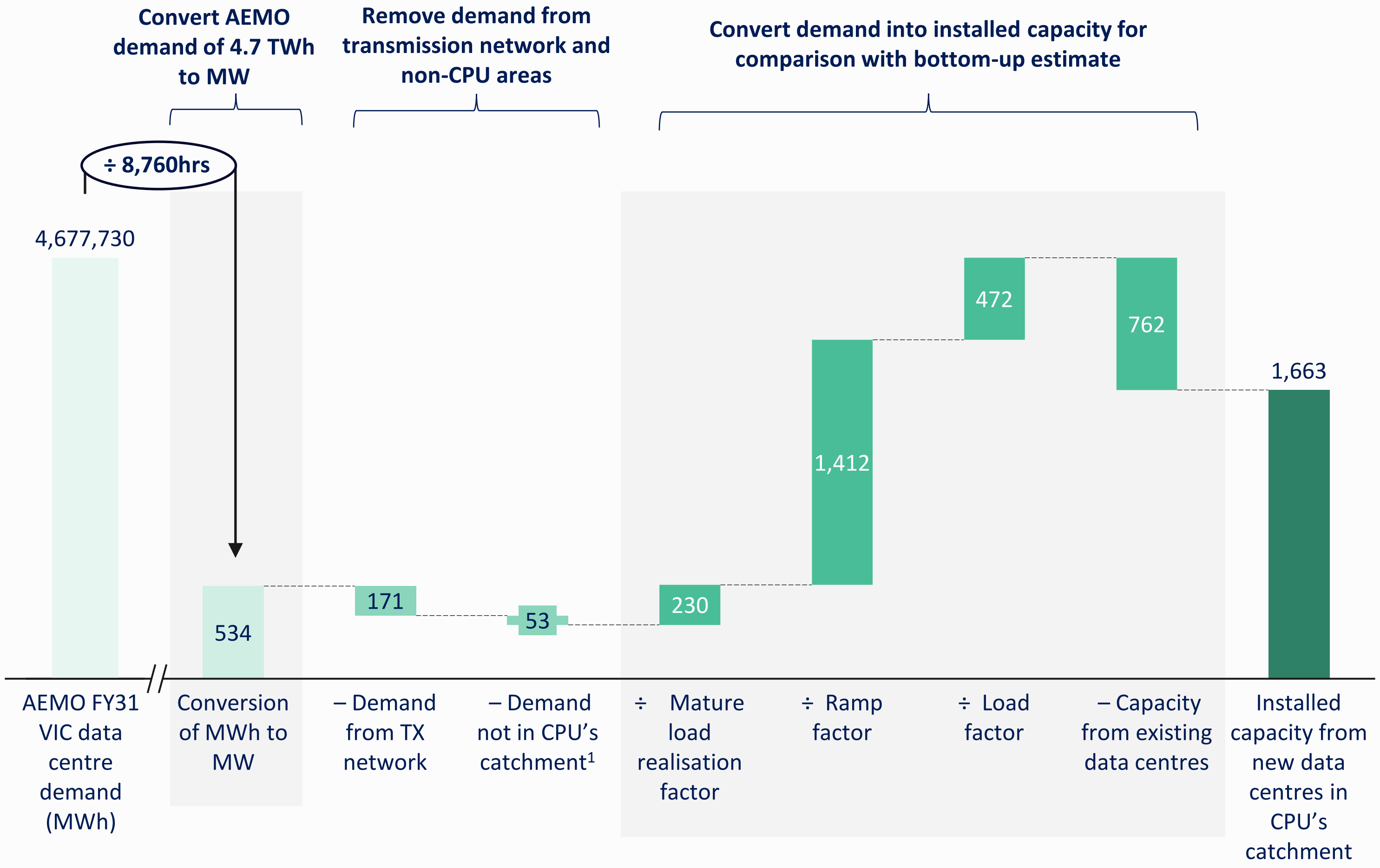
1. **Removed demand from the transmission network and non-CPU areas:** Applied assumptions to isolate demand derived from the distribution network in CPU's catchment and removed demand from other DNSPs. This represents a conservative estimate, noting Powercor's ability to connect at transmission-level voltages.
2. **Converted demand into installed capacity.** Applied factors to convert the demand figure (which reflects real use and ramp up of existing and committed projects) into installed capacity.

This figure is likely an underestimate of actual installed capacity (see page 14 for discussion). For example, AEMO forecasts suggest that capacity from existing data centres in CPU's catchment is approximately 1,663MW in FY31. However, committed installed capacity for FY26 alone in for CPU's catchment is 1GW, which is approximately 60% of AEMO forecasts for FY31.

Sources: CPU advice (2025).

Exhibit 10: AEMO data centre demand converted to installed capacity from new data centres

MW (unless otherwise stated), Step Change scenario, FY31



Note: 1 Market share is taken as a total rather than by DNSP.
Sources: AEMO (2025) *Inputs, Assumptions and Scenarios Report,* Oxford Economics (2025) *Data Centre Demand*; Data Center Map (2025) *Melbourne Data Centers,* Mandala analysis.

AEMO's forecast does not capture an additional 27 enquiries that have been made to CPU since November 2024

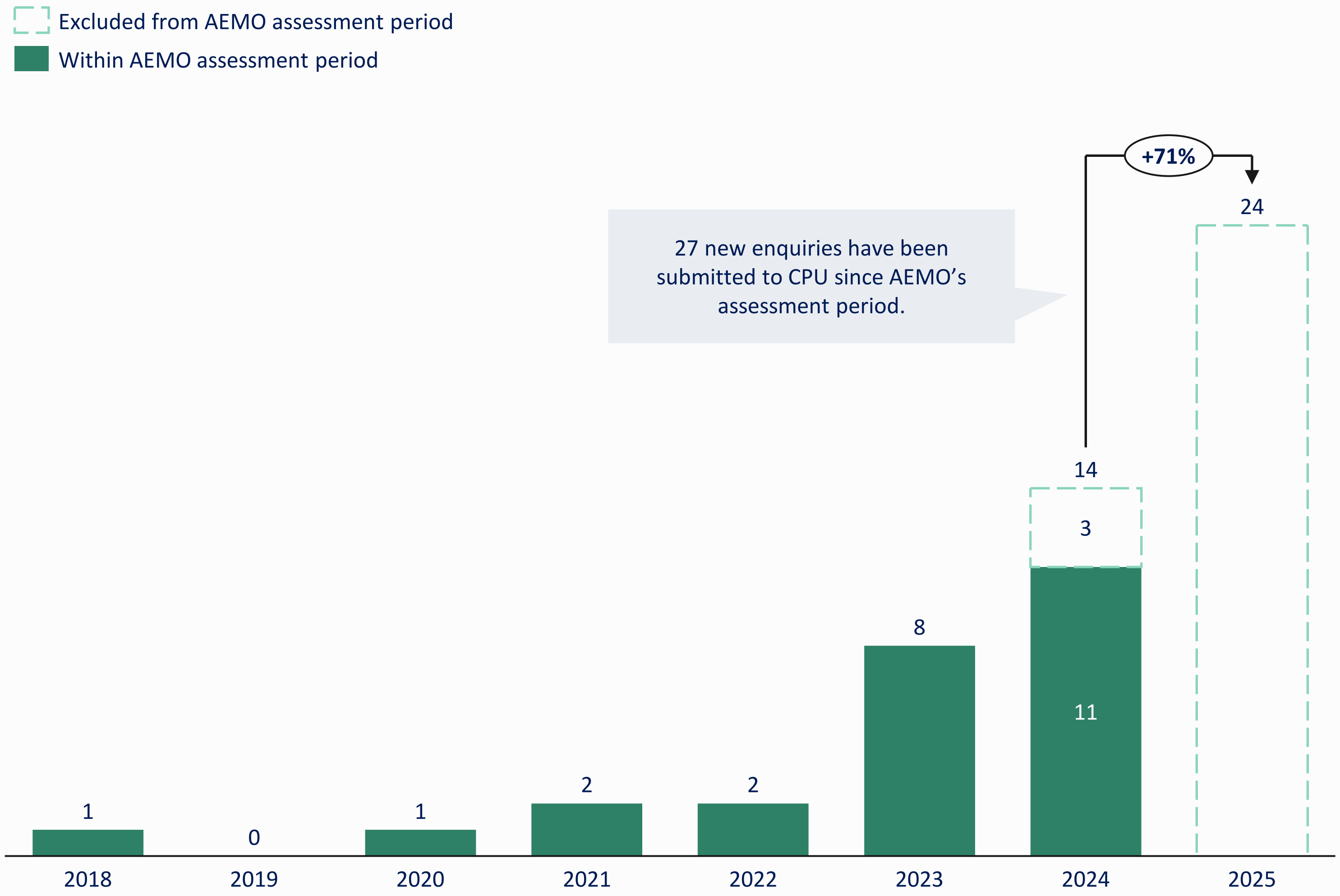
AEMO's forecasts are based on data, including prospective projects from DNSPs, as of November 2024. This means that it does not capture new enquiries submitted since the end of the assessment date (since December 2024 inclusive).

CPU has experienced a 71 per cent increase in project enquiries between 2024 and 2025. Of these enquiries, 27 projects fell outside AEMO's assessment period.

This suggests that AEMO's projected demand forecast is likely an underestimate as it does not capture the recent increase in project enquiries. Even if not all project enquiries proceed to energisation, the materially higher volume reflects an increased interest that likely translates to greater future energy capacity than AEMO's forecasts.

Exhibit 11: Number of project enquiries submitted to CPU per year[1]

Count of project enquiries, 2018–25



Note: 1 Excludes 17 project enquiries with no enquiry dates.
Source: CPU Pipeline (2025), Mandala analysis.

The equivalent implied capacity in CPU's catchment from AEMO forecasts is 3,338MW

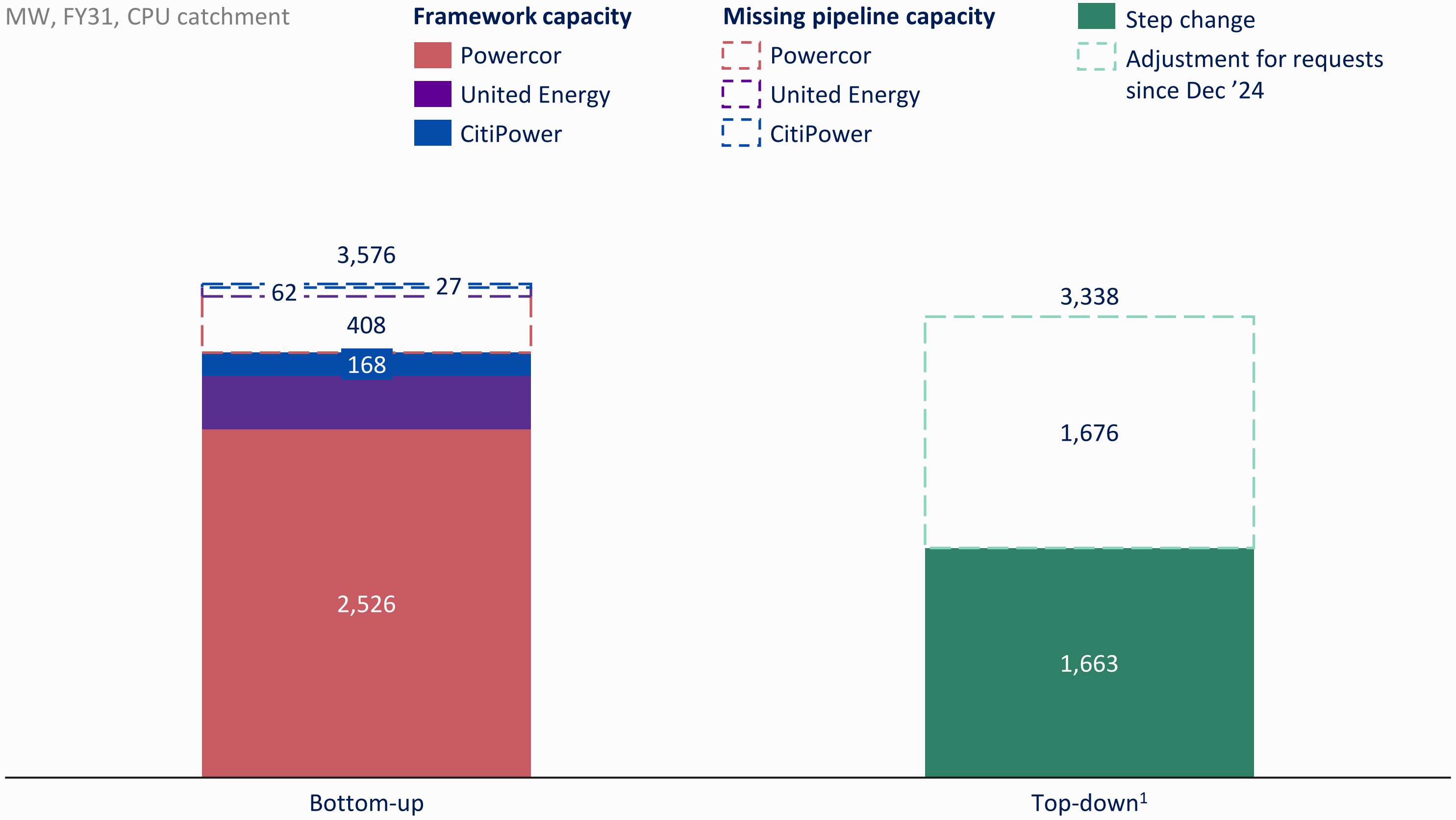
When AEMO's demand forecasts are converted to capacity for comparison to CPU's pipeline, there is 1,663MW (step change scenario) of capacity required. This is in comparison to 3,576MW for CPU's framework capacity, but provides a further datapoint to confirm the growth in energy demand from data centres in the catchment.

AEMO's figure may be lower than expected for several reasons. Data centre demand forecasts were estimated based on information collected in November 2024, and there has been significant market interest and growth in both the use and development of generative AI tools, and in data centres themselves, since then.

CPU has received 27 requests for projects since November 2024 (when data was collected), representing an additional 1,676MW of framework-adjusted capacity. This demonstrates the consistency between CPU's framework capacity based on actual pipeline data and a like-for-like comparison to AEMO forecasts.

Sources: Mandala (2025) Empowering Australia's Digital Future, McGuire (2025) *Data Centres will soon make up 12 per cent of energy demand: AEMO.*

Exhibit 12: Top-down estimates of installed MW capacity in CPU's catchment



Based on application of project likelihood framework to CPU pipeline projects and estimate of future pipeline projects.

Based on AEMO's 2025 data centre energy demand forecasts under the Step Change scenario, additional capacity since Dec. '24 inclusive, and information from Data Center Map.

Note: 1 Missing pipeline capacity per network is calculated as a proportion of the total missing capacity apportioned by each network's share of framework capacity in FY31. 2 The top-down approach reflects CPU's total market share and is not disaggregated by DNSP.

Sources: CPU pipeline (2025), AEMO (2025) *Inputs, Assumptions and Scenarios Report,* Oxford Economics (2025) *Data Centre Demand,* Data Center Map (2025) *Melbourne Data Centers,* Mandala analysis.

CPU's pipeline currently has 6,359MW of assessable capacity requested by customers

Of the 7,716MW of data centre connection requests in the CPU pipeline, from enquiry through to operational connections, we assess only 6,359MW.

Projects in the "Speculative" stage are excluded from our analysis, as reasonable likelihood estimates cannot be assigned due to limited information available on their progress.

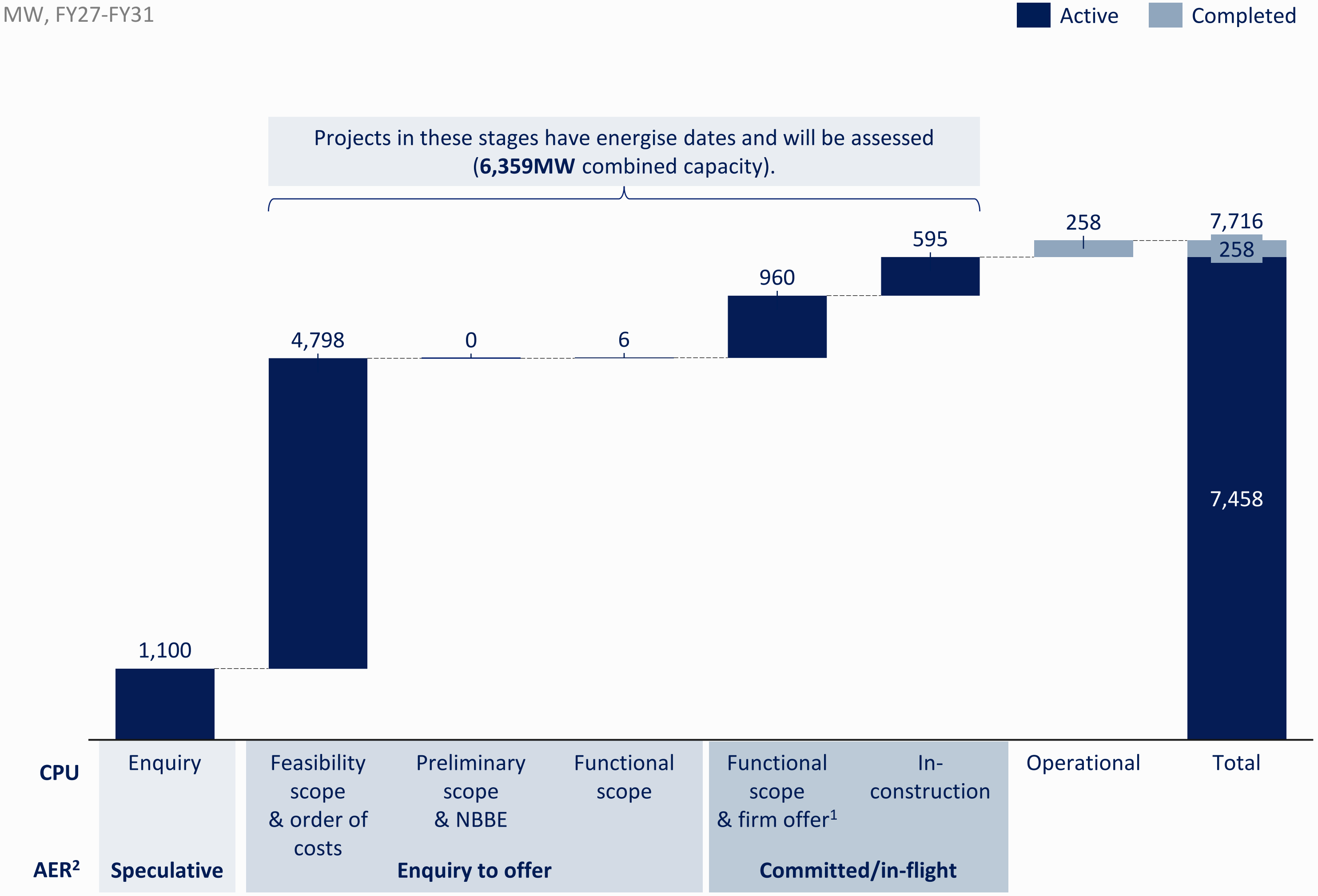
Operational projects are also excluded, as they are already connected and do not represent new capacity to be energised within the determination period (FY27-FY31).

There is no standard approach across DNSPs for classifying project status. CPU applies a more detailed seven-stage framework, which does not have a standard mapping to AER's three recommended categories.

We have mapped CPU's stages to the AER framework based on project maturity and progress within the connection application process.

Exhibit 13: CPU current pipeline analysis

MW, FY27-FY31



Note: 1 The '"Design & Firm Offer" stage is aggregated into "Functional Scope & Firm Offer". 2 Mandala mapping between CPU and AER stages. "Dormant", "Cancelled" and pipeline projects outside of determination period and with missing energise dates have been excluded in this calculation.
Source: CPU pipeline (2025), Mandala analysis.

Projects with FY31 energise dates are currently not assessable as they are classified as "Speculative"

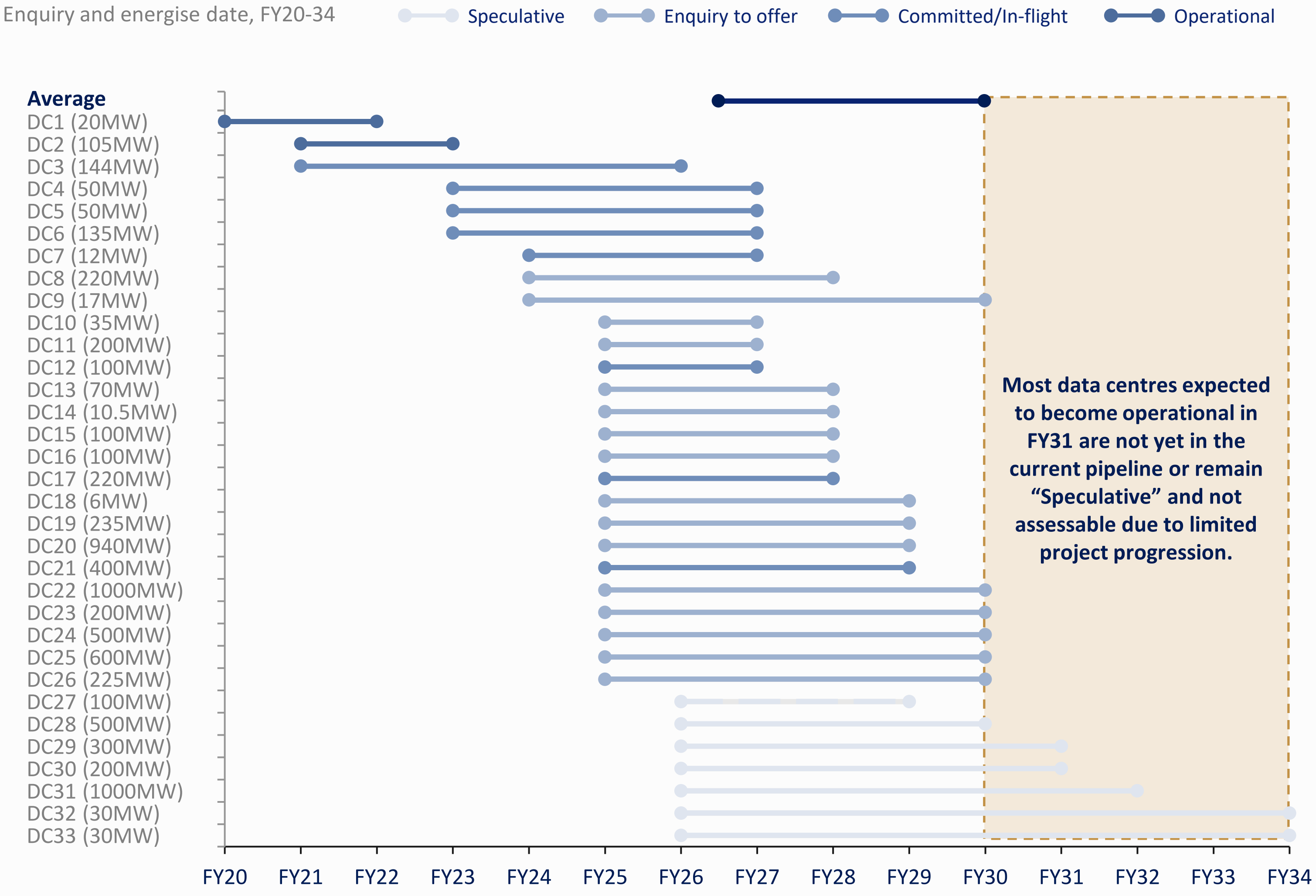
Projects in the CPU pipeline take an average of three to four years from enquiry to energisation. This means projects energising in FY31 would typically enquire between FY26 and FY28.

Many of the enquiries to energise in FY31 have not yet been submitted. The enquiries that have been received remain in early development stages and have been classified as "Speculative," making them not assessable at this time. This creates a data gap that makes demand appear to stop growing after FY30.

Without adjustment, forecasts would show no new projects in FY31. This would imply CPU experiences no additional growth beyond FY30 levels, which contradicts observed trends and market conditions.

Exhibit 14: Overview of current CPU pipeline by submission and projected energise date

Enquiry and energise date, FY20-34



Note: Only "Active" and "Completed" projects with listed enquiry and energise dates have been included.
Source: CPU pipeline (2025), Mandala analysis.

In October 2025 alone, CPU received 500MW of capacity requests for FY31 energisation

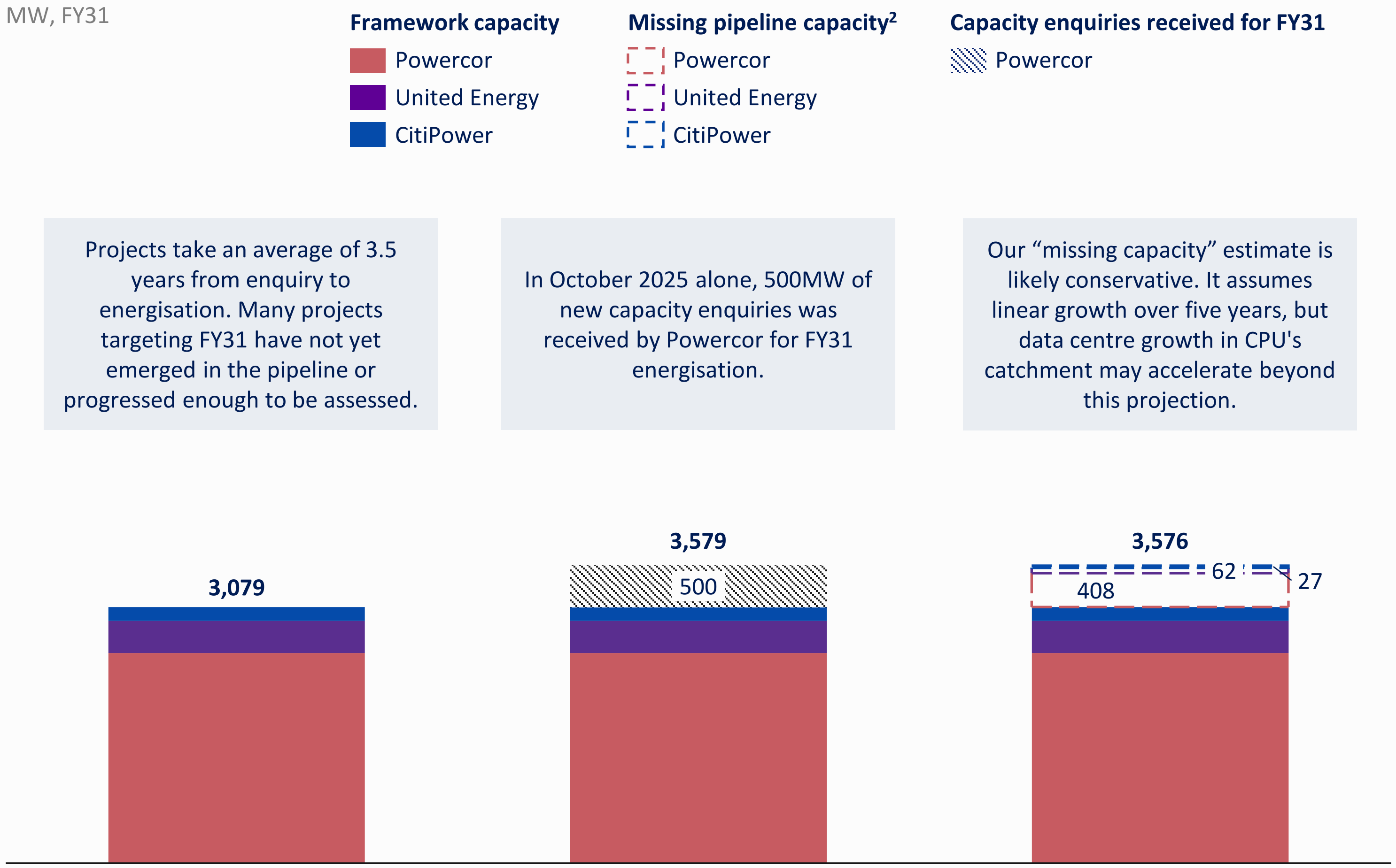
The current pipeline underestimates FY31 capacity. Without adjustment, the framework capacity would remain flat at 3,079MW between FY30 and FY31, implying zero new capacity additions.

In October 2025 alone, Powercor received 500MW of capacity enquiries for FY31 energisation. These enquiries are not yet assessable due to their early development stage but demonstrate continued demand of connections.

As time progresses, existing applications will advance through development stages and new enquiries will be submitted. We estimate 497MW of additional capacity will energise in FY31. This estimate is likely conservative as it assumes linear growth over five years, while data centre demand in CPU's catchment may accelerate beyond this projection.[1]

Source: 1 Oxford Economics (2025) *Data centre energy demand*.

Exhibit 15: Overview of current CPU pipeline by submission and projected energise date[1]

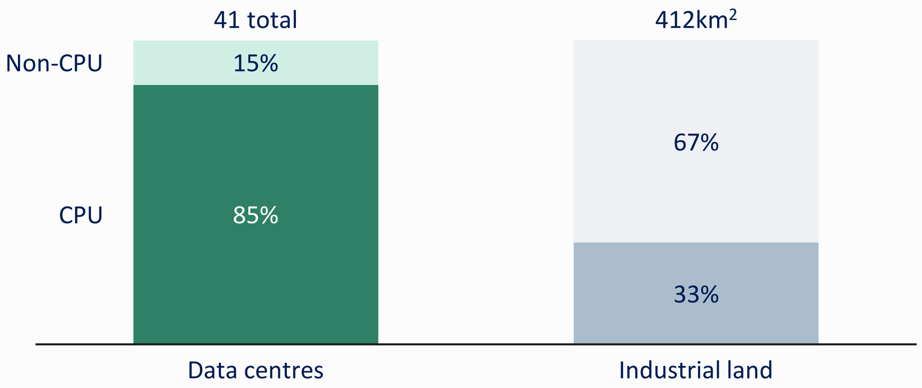


Note: 1 Only "Active" pipeline projects not in the "Speculative"' phase have been included in this calculation. Projects with unknown energise dates have been excluded. 2 Missing pipeline capacity per network is calculated as a proportion of the total missing capacity apportioned by each network's share of framework capacity in FY31.
Source: CPU pipeline (2025), Mandala analysis.

CPU's catchment represents 85% of operational data centres in Victoria …

Exhibit 16: Share of industrial land and data centres in CPU's catchment

%, 2025



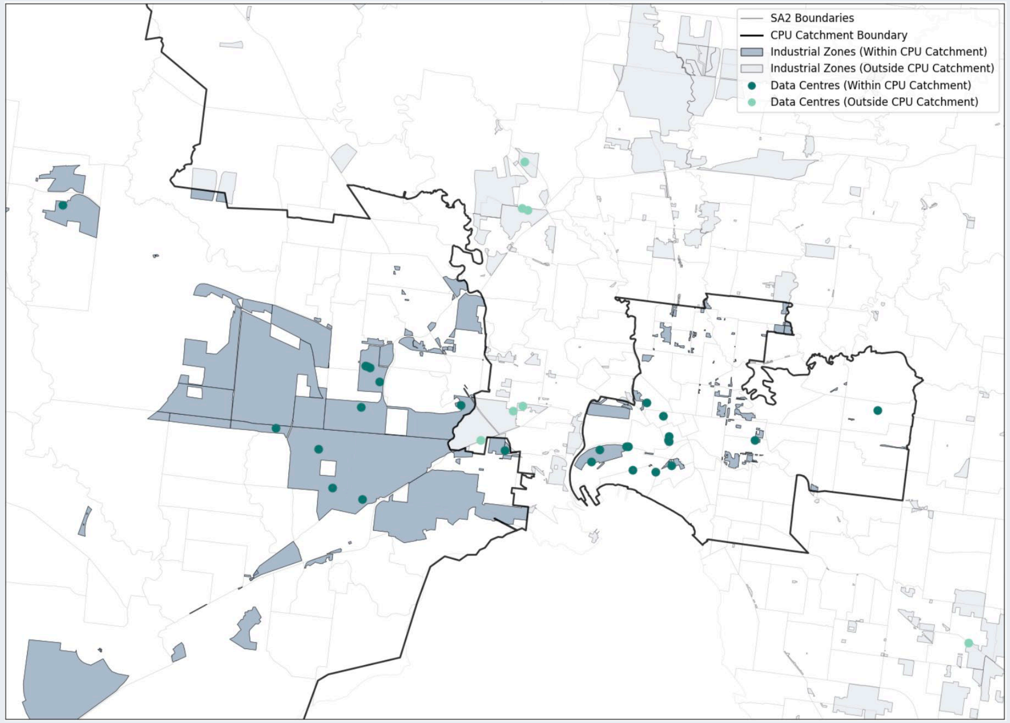
- CPU's catchment currently contains **85% of all operational data centres in Victoria**, of which **28.5% of these data centres are larger capacity centres and requests are expected to grow this number**.
- CPU covers **33% of Greater Melbourne's Industrial Zones**, including industrial areas west of the CBD which are **well placed for data centre expansion** due to their affordability, connectedness, and higher vacancy rate.[1]

Sources: 1 Expert consultations, ABS (2021) Digital boundary files, DataVic (2023) *Melbourne Industrial and Commercial Land Use Plan*, Powercor (2025) *Network Visualisation Portal*, Data Center Map (2025) *Melbourne Data Centers*, Mandala analysis.

… with significant clustering in the western suburbs of Melbourne

Exhibit 17: Map of Greater Melbourne – CPU catchment, industrial zones and operational data centres

SA2 boundaries (2021); CPU catchment (2025); Industrial zones (2020); Data centres (2025)[2]



Sources: 2 ABS (2021) *Digital boundary files*, DataVic (2023) *Melbourne Industrial and Commercial Land Use Plan*, Powercor (2025) *Network Visualisation Portal*, Data Center Map (2025) *Melbourne Data Centers*; Mandala analysis.

Connection request and likelihood data by DNSP

Total active connection requests[1]		
Powercor	United Energy	CitiPower
23	8	2

Exhibit 18: CPU data centre connection requests by DNSP (see Exhibit 5)

Status	Active			Completed		
DNSP	Powercor	United Energy	CitiPower	Powercor	United Energy	CitiPower
> 100MW	12	2	1	1	0	0
<=100MW	11	6	1	5	0	2

Exhibit 19: Data centre projects by proponent track record and connection complexity (see Exhibit 6)

Metric	Proponent track record			Connection complexity		
DNSP	Powercor	United Energy	CitiPower	Powercor	United Energy	CitiPower
High / Simple	11	1	2	2	2	1
Medium	4	4	0	7	4	1
Low / Complex	8	3	0	14	2	0

Exhibit 20: Data centre projects by progress metric (see Exhibit 7)

Metric	Site identification & feasibility	Utility assessment	Planning & building permit	Grid connection & firm offer	In construction
Powercor	21	23	11	10	8
United Energy	8	8	0	0	0
CitiPower	2	2	0	0	0

Note: 1 These counts represent the number of projects by DNSP included in the framework capacity estimate. Only "Active" pipeline projects (excluding those in the "Speculative" phase) have been included. Projects with unknown energisation dates have been excluded.

1 Mandala estimate of CPU capacity

2 Explanation of Mandala methodology

3 Comparison to AEMO forecast

4 **Appendix**

- Supporting analysis
- **Methodology**

Method: Project likelihood is calculated based on eight weighted metrics that capture both foundational elements and tangible development progress

Project likelihood (% chance of success)

Approach

We developed a framework consisting of 3 main factors to estimate the likelihood of a project to succeed in connecting to CPUs distribution network.
This included:

1. Connection type (X%), accounting for the chance of large data centres (>100MW) connecting to the transmission network over the distribution network,
2. Foundation metrics (X%), accounting for proponent track record (where project proponents with previous experience are more likely to connect) and connection complexity (where more complex connections are less likely to proceed),
3. Progress metrics (X%), accounting for evidence to date on project progress through a series of stages (e.g., site identification, feasibility assessment, building and planning permits, construction status).

We then multiplied the probability of success for each project against the requested connection capacity to generate probability-weighted capacity.

Model structure

- Probability of project success = $distribution\ connection\ probability \times (foundation\ metrics + foundation\ metric\ residual \times \Sigma(progress\ metrics))$
- Annual energy consumption = $Energy\ consumption \times Hours\ per\ year$
- Energy consumption = $Utilised\ capacity \times PUE$
- Utilised capacity = $Operating\ capacity \times Utlisation\ rate$

Metrics

Metric	Weighting	Description and rationale	Calculation
Distribution connection	Certain = 1 Probable = 0.8	Large data centres are increasingly connecting to the transmission network. Data centres >100MW and that have not signed a SDEC face a 20% chance they will connect directly to the transmission network.[1]	Probability of success is reduced by 20% where proponents request more than 100MW of capacity and have not signed an SDEC.
Proponent track record	Strong = 0.3 Medium = 0.2 Weak = 0.1	Data centres with a strong track record will have a greater likelihood of proceeding regardless of progress due to experience and expertise in navigating regulatory, financial and other challenges.[2, 3]	Track record scores are determined based on the number of previous data centres that proponents have built in Victoria and Australia.
Connection request complexity	Simple = 1 Medium = 0.7 Complex = 0.5	Data centre connection requests where existing networks have limited capacity to expand, or will have complex impacts on surrounding networks, are less likely to proceed.[2, 3]	Connect request complexity is based upon impacts on surrounding network, existing network capacity expansion and other augmentation.
Site identification and feasibility	10% – 30%	Ownership or options on land is a key and significant obstacle facing data centre proponents.[2, 3]	Probabilities are based on proponents' access to land, from no land available to land ownership.
Utility assessment	10% – 30%	Paying for a utility assessment is a clear indication of a proponents' commitment to development.[2, 3]	Probabilities are based on utility assessment progress, from initial enquiry to SDEC signed.
Planning and building permit	15%	Securing a planning and building permit represents the progression through a common hurdle for data centres.[2, 3]	Probabilities are added if proponents have secured planning and building permits.
Grid connection and firm offer	10%	Data centres that have reached to the point of making a firm offer are very likely to proceed.[2, 3]	Probabilities are added if proponents have made a firm offer on grid connection.
In construction	10%	Data centres are very likely, though not guaranteed to proceed once they reach the construction phase.[2, 3]	Probabilities are added if proponents have commenced construction.

Sources: 1 AEMO, 2 CPU expert, 3 CPU pipeline (2025).

Method: Project likelihood weightings are based on project-level data

Metric	Active	CPU category and assessment criteria	Additional criteria
Transmission connection probability	Probable (0.8)	If Utility Assessment = 0.1 or 0.2 AND	Requested capacity > 100 MW and no signed SDEC
	Certain (1)	All other projects	Requested capacity < 100 MW and/or signed SDEC
Proponent track record (based on CPU developer experience/staged development assessments)	Low (0.1)	1. Stand-alone first project	
		2. No Australian development experience	
	Medium (0.2)	3. Previous Australian developments	
	High (0.3)	4. Previous VPN development(s)	
		5. Multiple similar projects; previous experience of similar scale	
Connection request complexity (Based on CPU grid connection complexity assessments**)**	Complex (0.5)	1. Multiple complex impacts on surrounding network; existing network has very limited capacity to expand	Requested capacity > 100 MW
		2. Impact on surrounding network complex; terminal station upgrades	
	Medium (0.7)	3. Other network augmentation	Requested capacity 20 < 100 MW
	Simple (1)	4. Minor augmentation	Requested capacity < 20 MW
		5. Cut in only / straightforward	
Site identification & feasibility (Based on CPU site land status assessments)	Low (0)	1. Land not for sale; no options on land unsure of developer ownership	
		2. Land for sale	
	Medium (0.1)	3. Option on land	
	High (0.3)	4. Land owned by developer	
		5. Planning permit in place	
Utility assessment (Based on CPU connection process stage assessments)	Low (0.1)	1. Initial enquiry	
	Medium (0.2)	2. Feasibility study	
		3. Concept investigation	
	High (0.3)	4. Preliminary design and estimating	
		5. In construction contract	

Method: We forecast the capacity demand not yet in the pipeline using trend-based extrapolation of CPU pipeline data and simulate capacity for validation of analysis

Missing FY31 pipeline capacity (MW)

Approach

We estimated future capacity requests for FY31 not yet in in the pipeline by:

1. Calculating typical annual capacity increase by performing simple linear regression on framework capacity growth from FY26-FY30,
2. Extending forward to estimate what FY31 capacity would be if the pattern continues,
3. Calculating the missing pipeline capacity based on the difference between trend-based and framework capacity estimate.

Model structure

- Trend based capacity$_t = \beta_0 + \beta_1 \times t$, where t = Financial Year (2026-2031), β_0, β_1 = Regression coefficients estimated from FY26-FY30 data, and R^2 = 0.97
- Missing Pipeline Capacity $_{FY31} = Expected\ Capacity^{trend}_{FY31} - Expected\ Capacity^{pipeline}_{FY31}$, where $Expected\ Capacity^{trend}$ = from regression model and $Expected\ Capacity^{pipeline}$ = from current active pipeline projects

Inputs

Input	Source	Notes
Framework capacity over time (FY26-FY30)	CPU pipeline of active projects	As of October 2025.

Simulated data centre capacity (MW)

Approach

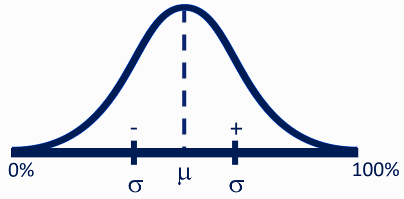
We modelled the uncertainty surrounding the likelihood assessments by simulating a large number of scenarios using Monte Carlo simulation to provide probability-adjusted estimates rather than single point estimates.
100,000 scenarios were modelled where each project's probability was sampled from a Normal distribution centred on its framework probability, using a constant standard deviation observed across all pipeline projects.

Model structure

Probability is sampled from a Normal (μ, σ) distribution, where:

- μ = Framework probability of project success
- σ = Observed standard deviation across all projects from CPU pipeline (= 0.24, calculated from the observed variance in probability assessments across all active (excluding "Speculative" pipeline projects. Projects with unknown energise dates have been excluded)
- Probabilities censored between 0% and 100%

Model outputs the annual simulated capacities and 80% prediction interval (P10-P90)



Inputs

Input	Source	Notes
Capacity (MW)	CPU pipeline of active projects	As of October 2025.
Energise date	CPU pipeline of active projects	As of October 2025.
Probability of project success	Project likelihood analysis	

Note: Regression equation shows Expected Capacity = -1,383,991 + 683.194 × Year. Only "Active" pipeline projects with known energise dates included.
Source: CPU pipeline (2025), Mandala analysis.

Method: We convert AEMO demand forecasts to projected installed capacity required by CPUs network to allow for like for like comparison

Top-down installed capacity based on AEMO demand forecasts (MW)

Approach

We modelled the projected installed capacity required to service AEMO's projected data centre demand by disaggregating on factors such as CPU's market share and capacity adjustment factors (e.g. load factor). This allows for like for like comparison between AEMO forecasts and CPU pipeline.

Model structure

- Victorian data centre demand (MW) = $Victorian\ data\ centre\ demand \times 1{,}000{,}000 \div (365\ x\ 24)$
- Demand attributable to CPUs network (MW) = $(Victorian\ data\ centre\ demand\ (MW) - Demand\ attributed\ to\ transmission\ networks) \times CPU's\ Victorian\ market\ share$
- Capacity attributable to existing data centres = $Requested\ capacity\ (MW) x\ MIN(1, ((future\ year - 0.5) - energise\ year) \div average\ ramp\ period\ for\ relevant\ data\ centre\ type$
- Projected installed capacity = $(Demand\ attributable\ to\ CPUs\ network \div Weighted\ mature\ load\ realisation\ factor\ \div Weighted\ ramp\ factor\ \div Weighted\ Load\ factor) - Capacity\ attributable\ to\ existing\ data\ centre$

Inputs

Input	Value	Source	Notes
Victorian data centre demand	533.99 TWh in FY31	AEMO 2025 Input and Assumptions Workbook	Model inputs were drawn from the Step Change scenario.
Demand from transmission network	32%	Oxford Economics	Accurate data was limited so a uniform percentage was applied although likely an overestimate. Powercor also have a transmission license and many large (>100MW) DCs connect through their 'distribution' network, rather than the assumed transmission network which would be included in reality.
CPU's market share	85%	Data Centre Map	Market share was calculated as a proportion of operational data centres in CPU's catchment out of total operational data centres Victoria. Data centres were identified via postcode analysis, which was verified using spatial analysis of available latitude and longitude values. Edge cases were verified via address.
Weighted mature load realisation factor	57%	Mandala bottom-up analysis; Oxford Economics	Mature load realisation factors for hyperscalers (68%), colocators (55%), and edge/telco/other (56%) were weighted based on the proportion of each data centre type in CPU's catchment area in FY31 from Mandala's bottom-up analysis.
Weighted ramp factor	29%	Mandala bottom-up analysis; Oxford Economics	Accurate data on energise dates was limited so a uniform ramp factor was applied to all years. This was based on the probability weighted average age of each data centre type in CPU's catchment at FY31 divided by their average full ramp period, being hyperscaler (14), colocation (11), other (10). A uniform application also reflects the new entry of data centres which lowers the average ramp factor.
Weighted load factor	81%	Mandala bottom-up analysis; Oxford Economics	A uniform load factor was applied to all years, based on the probability weighted average age of each data centre type in CPU's catchment at FY31 divided by their average full ramp period.
Capacity from existing data centres	762MW in FY31	CPU pipeline of operational projects; CPU data on committed projects; Data Center Map; Oxford Economics; IBM	Calculated for operational projects in CPU's pipeline and edge/telco/other data centres identified in Data Center Map. Where no MW capacity or energise year was available for edge/telco/other data centres, 5MW and the average energise year (1999) was used. Capacity for committed projects was directly inputted from CPU projections.
Capacity from new project enquiries	1679MW in FY31	CPU pipeline; Mandala bottom-up analysis	Probability adjusted capacity (MW) for project enquiries submitted after November 2024 was added to FY31 capacity to account enquiries after AEMO's assessment period.

MANDALA