Draft decision

Jemena electricity distribution determination

1 July 2026 – 30 June 2031

Attachment 2 – Capital expenditure

September 2025

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601
Email: aerinquiry@aer.gov.au
Tel: 1300 585 165

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Capital expenditure (capex) refers to the money required to build, maintain or improve the physical assets needed to provide standard control services (SCS).[1] Generally, these assets have long lives, and a distributor will recover capex from customers over several regulatory control periods. A distributor's capex forecast contributes to the return of and return on capital building blocks that form part of its total revenue requirement.

Under the regulatory framework, a distributor must include a total forecast capex that it considers is required to meet or manage expected demand, comply with all applicable regulatory obligations, to maintain the safety, reliability, quality, and security of its network and contribute to achieving targets for reducing Australia's greenhouse gas emissions (the capex objectives).[2]

We must decide whether or not we are satisfied that this forecast reasonably reflects prudent and efficient costs and a realistic expectation of future demand, cost inputs, and other relevant inputs (the capex criteria).[3] We must make our decision in a manner that will, or is likely to, deliver efficient outcomes in terms of the price, quality, safety, reliability and security of supply, and contribute to achieving targets for reducing Australia's greenhouse gas emissions, for the benefit of consumers in the long term, as required under the National Electricity Objective (NEO).[4]

The *AER's capital expenditure assessment outline* explains our and distributors' obligations regarding capex under the National Electricity Law and Rules (NEL and NER) in more detail.[5] It also describes the techniques we use to assess a distributor's capex proposal against the capex criteria and objectives. Where relevant we also assess capex associated with emissions reduction proposals taking into account our Guidance on amended *National Electricity Objectives*.[6]

Total capex framework

We analyse and assess capex drivers, programs, and projects to inform our view on a total capex forecast. However, we do not determine forecasts for individual capex drivers or determine which programs or projects a distributor should or should not undertake. This is consistent with our ex-ante incentive-based regulatory framework.

Once the ex-ante capex forecast is established, there is an incentive for distributors to provide services at the lowest possible cost, because the actual costs of providing services will determine their returns in the short term. If distributors reduce their costs, the savings are shared with consumers in future regulatory control periods. This incentive-based framework

1 These are services that form the basic charge for use of the distribution system.

2 NER, cl. 6.5.7(a).

3 NER, cl. 6.5.7(c).

4 NEL, ss. 7, 16(1)(a).

5 AER, *Capex assessment outline for electricity distribution determinations*, February 2020.

6 AER, *Guidance on amended National Electricity Objectives*, September 2023.

provides distributors with the flexibility to prioritise their capex program given their circumstances and due to changes in information and technology.

Distributors may need to undertake programs or projects that they did not anticipate during the revenue determination. Distributors also may not need to complete some of the programs or projects proposed if circumstances change, these are decisions for the distributor to make. We consider a prudent and efficient distributor would consider the changing environment throughout the regulatory control period and make decisions accordingly.

Importantly, our decision on total capex does not limit a distributor's actual spending. We set the forecast at a level where the distributor has a reasonable opportunity to recover its efficient costs.

Assessment approach

We provide guidance on our assessment approach in several documents, including the following which are of relevance to this decision:

- Expenditure Forecast Assessment Guidelines.[7]
- Regulatory Investment Test for Distribution and Transmission (RIT-D and RIT-T) Guidelines.[8]
- Asset Replacement Industry Note.[9]
- Information and Communication Technologies (ICT) Guidance Note.[10]
- Better Resets Handbook – Towards consumer centric proposals.[11]
- Guidance note on network resilience.[12]
- Interim guidance note on the Value of Emissions Reduction.[13]

Our draft decision has been based on the information before us at this time, which includes:

- the distribution network service provider's (DNSP's) regulatory proposal and accompanying documents and models
- the DNSP's responses to our information requests
- stakeholder comments in response to our Issues Paper
- technical review and advice from our consultant's reports:

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7 AER, *Expenditure Forecast Assessment Guideline for Distribution*, August 2022. The legal requirements of the AER under the NEL and the NER in assessing capex are outlined in section 2.1.

8 AER, *RIT-T and RIT-D application guidelines (minor amendments) 2017,* September 2017.

9 AER, *Industry practice application note for asset replacement planning,* January 2019.

10 AER, *AER publishes guidance on non-network ICT capital expenditure assessment approach*, November 2019.

11 AER, *Better Resets Handbook – Towards consumer-centric network proposals*, December 2021.

12 AER, *Network resilience: A note on key issues*, April 2022.

13 AER, *Guidance note on emissions reduction: Interim Guidance Note*, 16 June 2025.

- we sought technical review and advice from Energy Market Consulting Associates (EMCa) to assist us in reviewing certain aspects of the capex proposal, including replacement, augmentation and information and communication technology expenditure[14]
- demand forecasting advice from Baringa, which including the maximum demand, customer numbers and energy consumption forecasts.[15]

2.1 Draft decision

Our draft decision is to not accept Jemena's proposed total forecast capex of $1,366.3 million ($2025–26) for the 2026–31 period because we are not satisfied that it reasonably reflects the capex criteria (in particular, we are not satisfied that it reasonably reflects the prudent and efficient costs to meet the capex objectives).

Our alternate forecast is $843.3 million, which is 38% below Jemena's forecast. We consider this forecast will provide for a prudent and efficient service provider in Jemena's circumstances to meet the capex objectives.

At this stage, we see our draft decision as a place holder. There may be other information not currently available to us which could mean a more optimal estimate can be achieved. In this regard, we encourage Jemena to respond to the issues we have raised in our draft decision and welcome further supporting information in its revised regulatory proposal.

Jemena's proposed forecast capex and our substitute estimate is set out in Table 2.1.

Table 2.1 AER's draft decision on Jemena's total net capex forecast for 2026–31 ($2025–26, million)

	2026–27	2027–28	2028–29	2029–30	2030–31	Total
Jemena's proposal	306.0	314.2	265.9	256.8	223.4	1,366.3
AER's draft decision	221.3	198.3	145.7	149.6	128.3	843.3
Difference ($)	-84.6	-115.8	-120.2	-107.2	-95.1	-521.4
Difference (%)	-28%	-37%	-45%	-42%	-43%	-38%

Source: Jemena proposal, AER analysis. Numbers may not sum due to rounding.

2.2 Overview of Jemena's proposal

Jemena's forecast includes $1,366.3 million ($2025–26) capex over the 2026–31 period.

Figure 2.1 outlines Jemena's historical capex trend, its proposed forecast for the 2026–31 period, and our draft decision. Consistent with our usual practice, the chart presents a time-series of Jemena's net capex.

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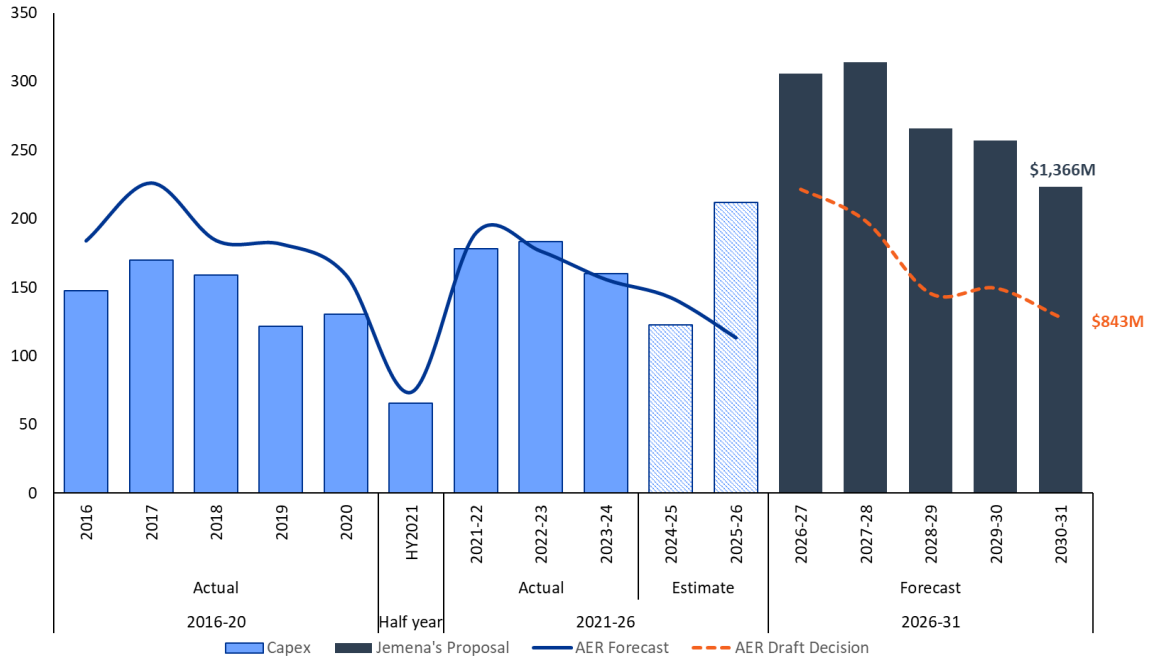
14 EMCa, *Report to AER on Jemena Network related expenditures 2026–31 RP*, August 2025; EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025.

15 Baringa, *Distribution demand forecast assessment: Review of Jemena's 2026–31 regulatory proposal*, July 2025.

Figure 2.1 Jemena's historical and forecast capex ($ million, $2025–26)



Source: Jemena and AER analysis.
Note: Capex is net of asset disposals and capital contributions.

As can be seen in Figure 2.1, Jemena is proposing a material step up in the forecast period relative to the current period. We also observe a material overspend in the current period. The main driver of the overspend in the current period is due to increased data centre investment towards the end of the period.[16]

In October 2024, Jemena applied to reopen its capex forecast for the 2021–26 period in response to the late period uplift in major customer and data centre connections.[17] However, in July 2025, Jemena withdrew its reopener application.[18]

Figure 2.1 also shows that while our draft decision is a large reduction to Jemena's forecast, it is broadly on trend with Jemena's current period actual/estimate of $836.4 million. As noted, our draft decision includes several placeholder values where we are seeking further information from Jemena in its revised proposal.

Table 2.2 provides a breakdown of Jemena's capex proposal. In the forecast period, Jemena proposed a step up in total capex of 63.4% relative to current period actual/estimates. Jemena proposed a step up in the forecast for all capex categories, with the main drivers of the step up in replacement expenditure (repex), connections, and consumer energy resources (CER).

16 Jemena, *2026–31 Electricity Distribution Price Review Regulatory Proposal: Attachment 05-01 Capital expenditure*, 31 January 2024, p 8.

17 Jemena, *Regulatory proposal reopener application*, 15 October 2024.

18 Jemena, *Notice to withdraw Jemena Electricity Networks' application to reopen 2021–26 electricity distribution - July 2025*, July 2025.

Our draft decision has recategorised elements of Jemena's proposed capex to allow greater transparency regarding emerging areas of expenditure. The notes under Table 2.2 and Table 2.4 set out this recategorization.

Table 2.2 Jemena's capex forecast by category compared with actual/estimated capex in 2021–26 period ($ million, $2025–26)

Capex category	Jemena's 2021–26 capex	Jemena's 2026–31 forecast	Change from 2021–26 (%)	Contribution to increase in net capex	Proportion of total capex
Replacement	216.9	376.5	73.6%	30.1%	27.6%
Augmentation[1]	193.4	223.9	15.7%	5.7%	16.4%
Connections	117.5	275.3	134.2%	29.8%	20.1%
ICT	108.1	114.7	6.1%	1.2%	8.4%
Property[2]	5.0	17.4	244.6%	2.3%	1.3%
Fleet[3]	10.2	33.6	230.0%	4.4%	2.5%
CER integration[4]	16.4	84.5	413.9%	12.8%	6.2%
Resilience[5]	-	19.8	0.0%	3.7%	1.4%
Non-network capex – other[6]	1.0	1.4	37.2%	0.1%	0.1%
Capitalised overheads	169.7	222.2	30.9%	9.9%	16.3%
Total capex (excluding capcons)	**838.4**	**1,369.1**	**63.3%**		
Less asset disposals	2.0	2.8	38.9%		
Net capex	**836.4**	**1,366.3**	**63.4%**		

Source: Jemena's regulatory proposal, response to IR002, and AER analysis. Jemena's 2021–26 actual/estimates in this table differ from its RIN data as per its response to IR002, which categorised spending as per our assessment categories.

Notes: Numbers may not sum due to rounding. Our draft decision has recategorised elements of Jemena's proposed capex to allow greater transparency over emerging and of interest areas of expenditure. These are as follows:

[1] Jemena's augmentation proposal contained a $4.4 million innovation fund.
[2] Jemena's proposed property capex was included within other non-network capex.
[3] Jemena's proposed fleet capex was included with other non-network capex.
[4] Jemena's proposed CER integration capex was included in both ICT and augex.
[5] Jemena's proposed resilience capex was spread over replacement and other non-network capex.
[6] Jemena's proposed other non-network capex included proposed fleet, property and resilience capex.

2.3 Reasons for draft decision

We reviewed Jemena's capex drivers, programs and projects to inform our view on a total capex forecast that reasonably reflects the capex criteria. We conducted top-down analysis such as examining trends and forecast costs compared with historical capex, and inter-

relationships between cost categories. To complement this, we conducted a bottom-up analysis of Jemena's major programs and projects.

Our capex assessment focused primarily on the material capex categories that either represented a significant uplift in expenditure, had stakeholder interest, or are new and evolving areas such as data centre connections, CER and resilience. Capex that was relatively small and forecast using established modelling approaches and inputs in line with our expectations, meant that we did not need to undertake a more detailed analysis of the individual programs and projects. Our draft decision is reflective of this approach.

Further, in considering the scope of our review we had regard to how Jemena has performed against the Better Resets Handbook expectations for capex.[19] Our assessment against each expectation is set out in Table 2.3. We consider that Jemena has satisfied the capex expectations related to genuine consumer engagement on its capex proposal, however it has only partly satisfied the remaining expectations. We have therefore undertaken a bottom-up review in most capex categories.

Table 2.3 Jemena's performance against the capex expectations

Capex expectations	AER position
1. Top-down testing of the total capex forecast and at the category level	Jemena has not satisfied this expectation because: • Its proposed total capex forecast is above (63.4%) current period actual/estimates. • It is proposing a step up in the forecast for almost all capex categories, with the largest increase in replacement, augmentation, CER, and connections. • It has overspent in the current period and forecasts a step up in capex for 2026–31 period. • Its trend in system average interruption frequency index (SAIFI) from 2015 to 2024 has remained flat, low and stable. • The repex modelling results indicate that Jemena has higher average unit rates and shorter replacement lives compared to the other 13 NEM DNSPs.
2. Evidence of prudent and efficient decision-making on key projects and programs	Jemena partly satisfied this expectation. It provided quantitative evidence to support the prudent and efficient decision-making such as cost benefit analysis for its projects and programs. However, in some cases where it has provided quantitative evidence, we found over-estimated costs and/or benefits such that we are not satisfied that its preferred option will result in the greatest net benefit to consumers.
3. Evidence of alignment with asset and risk management standards	Jemena has not met this expectation. There has been an absence of information demonstrating the alignment of its proposal with its repex forecast. We were also unable to reconcile Jemena's demand forecast which our consultant, Baringa, considered was lacking in necessary detail.

[19] AER, *Better Resets Handbook – Towards Consumer Centric Network*, December 2021, pp 19–23.

Capex expectations	AER position
4. Genuine consumer engagement on capex proposals	Overall, Jemena has satisfied this expectation. The Consumer Challenge Panel, sub-panel 32 (CCP32) noted the significant engagement undertaken by Jemena with a wide assortment of customer groups and representatives. The CCP submitted that Jemena improved on its already satisfactory 2021–26 engagement process, and it has met and often exceeded expectations. CCP32 submitted that Jemena released a substantial Draft Plan to elicit customer feedback which was included in the regulatory proposal.[20]

Based on the information before us, we have reviewed Jemena's total capex forecast from at top-down and bottom-up perspective.

Our top-down testing of Jemena's forecast capex informed the scope of our bottom-up review. We observe the following about Jemena's forecast capex at the top-down level:

- Its proposed total capex forecast is 63.4% above current period actual/estimates.
- It is proposing a step up in the forecast for almost all capex categories.
- It has overspent in the current period and forecasts a step up.
- Its network performance has indicated a flat trend indicating that performance is stable.
- The repex modelling results indicate that Jemena has higher average unit rates and shorter replacement lives compared to the other 13 NEM DNSPs.

We accepted Jemena's forecast where it has provided sufficient evidence to support prudency and efficiency of its forecast. This is the case for its forecast for property and fleet.

We have not accepted Jemena's forecast in full, reducing it by 38%, because we found that it did not provide sufficient quantitative evidence to support the material step up in the forecast.

In some cases, such as for certain repex programs, Jemena's justification was lacking in detail, not supported by robust business cases, and did not justify a major increase from its historical replacement expenditure. We expect that repex would remain relatively stable period-to-period, and any material increase would be supported by evidence of changed circumstances, such as the major degradation of asset condition and function or changing operating environment. For example, an increased safety or reliability requirement or evidence of a significant increase in cost for that increased replacement would represent an overall positive economic benefit to network users. Jemena's proposal lacked sufficient supporting information, and with some exceptions, did not provide information and analysis in support of the increase.

We are not satisfied with the demand forecast underlying Jemena's demand-driven augex and data centre connections expenditure. Our analysis indicates that Jemena's maximum

[20] CCP32, *CCP32 Advice to the Australian Energy Regulator on the 2026–31 Regulatory Proposal for Jemena Electricity Distribution Network*, May 2025, pp 4–9.

demand forecasts are likely too high and that its modelling required more transparency to test the conclusions drawn from it.

As we are not confident of the demand forecast underlying Jemena's proposed uplift in demand-driven augex and data centre connections, we do not consider the uplift prudent. We seek for Jemena to provide detailed evidence supporting the demand driven expenditure forecast in its revised proposal.

For data centres specifically, our alternative forecast accepts in-flight data centre projects connections and 50% of proposed enquiry to offer projects. We did not include future growth projects, as we consider they have a high level of uncertainty. We seek Jemena to present a standardised approach to data centre connections projects capex in its revised proposal. Jemena should consider providing independent evidence where limited evidence is available on the uptake of data centres in its network.

For Jemena's CER program, we consider that Jemena has overestimated the benefits of its major programs. For its program to mitigate overvoltage risks, Jemena did not sufficiently substantiate its forecast safety benefits, such that we do not consider the $40.6 million capex prudent. Similarly, we do not consider the Network Analytics Program would not provide new capabilities not already provided by its existing advanced metering infrastructure.

We acknowledge that there is uncertainty when forecasting large capex investments. We also understand that the option of proposing a contingent project gives businesses the assurance of the inclusion of capex into the regulatory period if certain triggers are satisfied. Our draft decision to not accept Jemena's 2 proposed contingent projects because Jemena's proposed trigger events are neither reasonably specific nor capable of objective verification. We invite Jemena to submit revised trigger events in its revised proposal.

Our draft decision sets out reasons for our position including information gaps and/or lack of supporting information. We invite Jemena to address these issues in its revised proposal. We encourage Jemena to continue its high standard of consumer engagement in its revised proposal. We acknowledge the customer engagement that Jemena has undertaken on its capex proposal and would encourage it to continue to ensure that its customers' preferences are considered in its revised proposal.

Bottom-up review

Our bottom-up review found that Jemena provided sufficient evidence to support the forecast for some capex categories, namely in property, fleet, and other non-network. However, for the other areas of capex, Jemena did not demonstrate the prudency and efficiency of its forecast.

Table 2.4 sets out our draft decision for Jemena by capex category.

Table 2.4 Jemena's capex forecast by category compared with actual/estimated capex in 2021–26 ($ million, $2025–26)

Capex category	Jemena's proposal	Jemena's proposal recategorised	AER's draft decision	Difference over capex category ($/%)	
Replacement	395.0	376.5	230.8	-145.7	-39%
Augmentation[1]	269.5	223.9	147.8	-76.1	-34%
Connections	275.3	275.3	157.5	-117.8	-43%
ICT	153.5	114.7	92.7	-22.0	-19%
Property[2]	N/A	17.4	17.4	-	0%
Fleet[3]	N/A	33.6	33.6	-	0%
CER integration[4]	N/A	84.5	17.9	-66.6	-79%
Resilience[5]	N/A	19.8	1.3	-18.4	-93%
Non-network capex – other[6]	53.7	1.4	1.4	-	0%
Capitalised overheads	222.2	222.2	160.3	-61.8	-28%
Total capex (excluding capcons)	**1,369.1**	**1,369.1**	**860.7**	**-508.4**	**-24.4%**
Less asset disposals	2.8	2.8	2.8	0.0	0.0%
Modelling adjustments			-14.6		
Net capex	**1,366.3**	**1,366.3**	**843.3**	**-333.9**	**-27.5%**

Source: Jemena's initial proposal, response to IR002, and AER analysis.
Notes: Numbers may not sum due to rounding. "Jemena's proposal recategorised" reflects our re-categorisation Jemena's proposal to align with how we assessed each capex category.
[1] Jemena's proposed augmentation capex contains a $4.4 million innovation fund.
[2] Jemena's proposed property capex was included within other non-network capex.
[3] Jemena's proposed fleet capex was included with other non-network capex.
[4] Jemena's proposed CER integration capex was included in both ICT and augex.
[5] Jemena's proposed resilience capex was spread over replacement and other non-network capex.
[6] Jemena's proposed other non-network capex included proposed fleet, property and resilience capex.

Table 2.5 summarises our reasons for accepting or not accepting parts of Jemena's forecast by capex driver. The also reasoning of our decision is provided in Appendix A.

Our findings on each capex driver are part of our broader analysis and should not be considered in isolation. We do not approve an amount of forecast expenditure for each individual capex driver or project/program. However, we use our findings on the different capex drivers to assess a regulated business' proposal as a whole and arrive at an alternative estimate for total capex where necessary. Our decision on total capex does not limit a regulated business' actual spending.

Table 2.5 Summary of our findings and reasons, by capex driver

Driver	AER's findings and reasons
Replacement	Our draft decision does not include Jemena's repex forecast of $376.5 million as part of our total capex forecast. Instead, we have included a substitute estimate of $230.8 million, which is $145.7 million (39%) lower than Jemena's forecast. Jemena proposed increases in replacement needs for most repex asset categories. It noted the increase is due to a combination of proposed redevelopment of 3 major zone substations and the replacement of aging pole and pole top structures. Jemena's proposal lacked sufficient information around the proposed increase, and with some exceptions, did not provide information and analysis to justify the increase. Our decision is supported by advice we received from EMCa on the repex proposal, which is further explained in Appendix A.1.
Augmentation[21]	Our draft decision does not include Jemena's augex forecast of $269.5 million as part of our total capex forecast. Instead, we have included a substitute estimate of $147.8 million, which is $76.1 million (34%) lower than Jemena's forecast. This reduction primarily owes to our reductions to demand driven augex reflecting our draft decision on Jemena's proposed demand forecast. Given the issues with Jemena's demand forecast and lack of a robust substitute, we rely on trending forward Jemena's actual/estimated demand driven augex for the current period to determine an alternate estimate for the draft decision. We require Jemena to provide a better supported demand driven forecast capex in its revised proposal. We accept the majority of its non-demand driven augex, namely its East Preston 6.6kV to 22kV conversion program. We consider the project prudent and efficient. We do not accept its communications network upgrade, and we seek for Jemena to provide better supporting information to justify the project benefits. This is further discussed at Appendix A.4.
Innovation[22]	Our draft decision does not include Jemena's innovation forecast of $8.6 million total expenditure ($4.4 million capex, $4.2 million opex) as part of our total capex forecast. Instead, we include a substitute estimate of $2.7 million total expenditure ($1.7 million capex, $1.0 million opex), which is $5.9 million (69%) lower than Jemena's forecast. Our bottom-up review found many of Jemena's proposed projects to not be innovative or expenditure that we would otherwise expect to be a business-as-usual activity. We also do not accept Jemena's proposed CESS exclusions, though we do accept its proposed EBSS exclusion. We accept 3 of Jemena's 15 proposed innovation fund projects.

21 Not including CER-related augex. Further, these totals include Jemena's proposed innovation fund, discussed in more detail below.

22 Jemena categorised the capex portion of the innovation fund as an augex project.

Driver	AER's findings and reasons
	This is further discussed at Appendix A.7.
Connections	Our draft decision does not accept Jemena's connections forecast of $275.3 million as part of our total capex forecast. Instead, we have included a substitute estimate of $157.5 million, which is $117.8 million (43%) lower than Jemena's forecast. We accept Jemena's proposed expenditure on "business as usual" connections. For data centres, we do not accept Jemena's proposal for "future"/currently unknown data centres, and we only accept 50% of the expenditure for data centres just at the "enquiry to offer" stage. For non-data centre, large bespoke connections, we do not accept its future/currently unknown connection program. This is further discussed at Appendix A.3.
ICT[23]	Our draft decision does not include Jemena's ICT total expenditure forecast of $144.8 million ($114.7 million capex, $30.1 million opex) as part of our total expenditure forecast. Instead, we have included a capex alternative estimate of $92.7 million capex, which is $22.0 million (19.2%) lower than Jemena's capex forecast. For our opex decision, refer to Attachment 3. We accept the majority of Jemena's ICT forecast but concur with EMCa's technical assessment and findings which found Jemena did not provide sufficient evidence to demonstrate its total ICT forecast is prudent and efficient. Specifically, we consider that 4 of Jemena's non-recurrent ICT projects require further justification. We also consider Jemena has overestimated its recurrent ICT capex. Regarding cyber security, Jemena noted it is currently not in a position to confirm the extent of the amount of cyber security costs within its recurrent ICT. While businesses are not generally required to itemise recurrent ICT forecasts, we will be seeking Jemena to provide this information to the AER in its revised proposal to provide transparency for assessment of cybersecurity capex for future regulatory periods. This is further discussed at Appendix A.5.
Property	Our draft decision includes Jemena's property forecast of $17.4 million as part of our total capex forecast. This forecast is 245% higher than its actual/estimated expenditure for the 2021–26 period. We note Jemena has had low spending on property in the current period. We tested Jemena's forecast bottom-up level and are satisfied its forecast is prudent and efficient.
Fleet	Our draft decision includes Jemena's fleet forecast of $33.6 million as part of our total capex forecast. This forecast is 230% higher than its actual/estimated expenditure for the 2021–26 period. We consider this increase in fleet capex is in line with long-lived (>10 years) vehicles coming up for replacement and increased unit costs. We are satisfied that Jemena's forecast is reasonable and reflective of the efficient costs of a prudent operator.

[23] Not including CER-related ICT.

Driver	AER's findings and reasons
CER integration	Our draft decision does not include Jemena's forecast of $95.4 million in totex ($84.5 million capex, $10.9 million opex) for CER as part of our total capex forecast. Instead, we have included a capex substitute estimate of $17.9 million capex, which is $66.6 million (78.8%) lower than Jemena's capex forecast. For our opex decision, refer to Attachment 3 on opex. Jemena has proposed 3 programs relating to CER expenditure: voltage and power quality management to mitigate overvoltage risks; grid stability and flexible services, to enable under frequency load-shedding and flexible service capabilities; and data visibility and analytics to enhance its data analytics. Overall, we agree with EMCa's findings on these programs. Jemena's business cases for its voltage and power quality management and data visibility and analytics platform substantially overestimated the programs' benefits. Accounting for this, we do not consider their proposed scope prudent. Regarding grid stability and flexible services, we consider the expenditure to introduce flexible services could be prudent, but benchmarking suggests Jemena could achieve its aims at a significantly lower cost. This is further discussed at Appendix A.6.
Resilience	Our draft decision does not include Jemena's resilience forecast of $27.2 million ($19.7 million capex, $7.5 million opex) as part of our total expenditure forecast. Instead, we have included a substitute estimate of $1.3 million ($1.3 million capex, $0 opex), which is $25.9 million (95%) ($18.4 million capex (93%), $7.5 million opex (100%)) lower than Jemena's forecast. The main driver of this reduction is our draft decision to not accept Jemena's proposed relocation of high-risk flood assets.[24] We requested additional asset information including Jemena's asset risk assessment model, options analysis, historical flood data, climate modelling and a description of synergies with other proposed programs. Jemena did not provide sufficient information in response. Given the lack of evidence to support its forecast, we have not included this program in our alternative forecast. In its revised proposal, we encourage Jemena to review our network resilience guidance note and previous decisions on resilience-related expenditure. This is further discussed at Appendix A.2.
Non-network capex – other	Our draft decision includes Jemena's forecast of $1.4 million for other non-network (i.e., tools and equipment) as part of our total capex forecast. We do not consider this amount material, and it is broadly on trend with current period actual/estimated expenditure of $1.0 million.
Capitalised overheads	We do accept Jemena's method for calculating capitalised overheads, and so we do not accept its proposed overhead amount of $222.2 million. We substitute $160.3 million. Jemena proposed a different method from the AER's standard approach. The standard approach forecasts total overheads partly based on a 3-year average of historical actual overheads. Jemena has instead chosen to use as a base

[24] Jemena categorised this project as repex, but we consider this should be assessed as network resilience.

Driver	AER's findings and reasons
	the single year 2023-24, which results in a higher forecast base yearly overhead amount. Jemena stated that it expects its capex program will increase significantly in the coming period. It submitted that the higher 2023-24 historical overhead figure would better reflect its overhead requirements for the 2026–31 period. We do not consider Jemena has adequately justified this change. We include a substitute estimate of $160.3 million, which is $61.8 million (28%) lower than Jemena's forecast. This is further discussed at Appendix A.8.
Asset disposals	We have included Jemena's asset disposals forecast in its total capex forecast.
Modelling adjustments	Our draft decision includes standard modelling adjustments for updated inputs to inflation and labour real cost escalation. We also included adjustments to internal and contract labour. Given we do not apply real cost escalation to contract labour, we also applied zero real cost escalation for this cost component. Updates to inflation and labour real cost escalation reduces our alternate forecast by a further $14.3 million.

A Reasons for decision on key capex categories

This appendix sets out our assessment of key capex categories and programs/projects within Jemena's total capex forecast. It also sets out the reasons for our decision. This appendix includes:

- Repex (A.1)
- Resilience (A.2)
- Connections (A.3)
- Augex (A.4)
- ICT (A.5)
- CER (A.6)
- Innovation (A.7)
- Capitalised overheads (A.8).

A.1 Repex

We do not accept that Jemena's repex forecast of $376.5 million[25] would form part of a total capex forecast that reasonably reflects the capex criteria. Our draft decision includes $230.8 million in repex, which is $145.7 million (or 38.5%) lower than Jemena's proposal.

A.1.1 Jemena's proposal

Jemena's forecast is 50.3% relative to current period spend. It proposed increases in replacement needs for most repex asset categories. It noted the increase is due to a combination of proposed redevelopment of 3 major zone substations and the replacement of aging pole and pole top structures.[26]

Jemena overspent repex by 19.3% in the current period which Jemena identifies as being driven by replacing primary assets in four of our major zone substations, increase pole reinforcements and replacements, as well as high voltage (HV) and low voltage (LV) crossarm replacements.[27]

To derive its forecasts, Jemena provided a repex model in support of its proposal. Table A1.1 sets out Jemena's forecasts for its repex programs compared to its current period spend.

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25 Excluding capital contributions.

26 Jemena, *Attachment 05-01 Capital expenditure*, p 63.

27 Jemena, *Attachment 05-01 Capital expenditure*, p 8.

Table A1.1 Jemena's 2026–31 repex forecast by program compared with actual/estimated capex in 2021–26 ($ million, $2025–26, including capital contributions)

Program	Jemena's 2021–26 actual/est	Jemena's 2026–31 forecast	Change from 2021–26 (%)	% of total repex
Poles	40.7	57.7	42%	14.1%
Overhead conductors	15.1	12.5	-22%	3.1%
Pole top structures	27.3	44.6	64%	10.9%
Underground cables	17.5	31.8	81%	7.8%
Service lines	18.1	32.5	80%	7.9%
Distribution transformers	20.9	19.8	-5%	4.9%
Switchgears	43.6	85.8	97%	21.0%
Substation transformers	10.5	7.1	-32%	1.7%
SCADA	13.9	51.5	269%	12.6%
Other	64.3	65.5	2%	16.0%
Total repex	**271.9**	**408.8**	**50.3%**	**100%**

Note: Jemena's proposal, AER analysis. Totals do not include the $19.5 million Maribyrnong flood asset relocation program which has been reallocated to resilience expenditure. Values and totals include capital contributions.

Source: 2026–31 forecast repex uses Jemena's capex model and 2021–26 actuals/estimated repex uses its RIN data.

A.1.2 Reasons for our decision

We reviewed the information Jemena provided in support of its repex forecast. We engaged EMCa to review aspects of Jemena's proposed repex. Where required, we sought further information from Jemena through information requests.

We undertook a top-down assessment which informed our bottom-up assessment of Jemena's proposed repex. These assessments assist us to determine how a business' proposal meets the capex criteria by analysing forecast expenditure against the underlying drivers for the replacement activity. This analysis helps us determine if the proposed costs are prudent and efficient. Our draft decision at a program level is set out in Table A1.2.

Table A1.2 Jemena's repex forecast and AER draft decision by program ($ million, $2025–26, including capital contributions)

Program	Jemena's 2021–26 actual/est	Jemena's 2026–31 forecast	AER's draft decision	% change (forecast vs draft decision)
Poles	40.7	57.7	57.5	0%
Overhead conductors	15.1	12.5	11.1	-11%

Program	Jemena's 2021–26 actual/est	Jemena's 2026–31 forecast	AER's draft decision	% change (forecast vs draft decision)
Pole top structures	27.3	44.6	25.9	-42%
Underground cables	17.5	31.8	21.4	-33%
Service lines	18.1	32.5	26.4	-19%
Distribution transformers	20.9	19.8	10.7	-46%
Switchgears	43.6	85.8	0	-100%
Substation transformers	10.5	7.1	0	-100%
SCADA	13.9	51.5	34.3	-33%
Other	64.3	65.5	63.9	-2%
Total repex	**271.9**	**408.8**	**251.4**	**-38.5%**
Less Capital Contributions	**0**	**376.5**	**230.8**	**-38.5%**

Note: Jemena's proposal, AER analysis. Totals do not include the $19.5 million Maribyrnong flood asset relocation program which has been reallocated to resilience expenditure. Values and totals include capital contributions.

Source: 2026–31 forecast repex uses Jemena's capex model and 2021–26 actuals/estimated repex uses its RIN data.

We expect that repex would remain relatively stable period-to-period, and any material increase would be supported by evidence of changed circumstances, such as the major degradation of asset condition and function or changing operating environment. For example, an increased safety or reliability requirement or evidence of a significant increase in cost for that increased replacement would represent an overall positive economic benefit to network users. Jemena's proposal lacked sufficient information to justify the proposed increase, and with some exceptions, did not provide information and analysis in support of the increase. Our decision is supported by advice we received from EMCa on the repex proposal, which is summarised in section A.1.4.

A.1.3 Top-down assessment

Our repex modelling results indicate that Jemena has higher average unit rates and shorter replacement lives compared to the NEM median. As Jemena's modelled repex is 60% of its total repex, the repex model results indicate that a closer review of Jemena's repex forecast is required. Overall, we found:

- Jemena proposed a repex forecast that is 79% above our approved allowance for the current period and 50.4% above its actual and estimated current period expenditure. Jemena referred to declining asset condition as the key driver for the increase in repex in the 2026–31 period, though this is not supported by the material in its proposal.
- Jemena proposed a 50.4% increase in the forecast period compared to actual/expected repex in the current period. As can be seen from Table A1.1, Jemena proposed an

increase in repex for almost all programs. The main driver of the increase is its forecast for its pole replacement and zone substation redevelopment.

- Jemena is expecting to overspend by 19% in the current period. Jemena submitted this is due to increases in zone substation replacement activity and the declining condition of its assets.[28] Consequently, the areas of overspend are spread across its Subtransmission assets, including Supervisory Control and Data Acquisition (SCADA), transformers, switchgear and underground cables.
- Jemena's network performance shows a continuing downward trend including in its asset failure caused outages over time, suggesting that reliability of its network is generally improving.

A.1.3.1 Repex modelling

The repex model is a top-down tool we use to test a DNSP's business-as-usual replacement requirements. We utilise the repex model to produce forecast scenarios, as well as volume and cost metrics to assess the median values for assets across the NEM DNSPs.

The model outputs a forecast replacement volume and cost for each asset class that can be compared to the DNSP's own forecast of repex. As the volumes and unit costs are derived from historical expenditure, we consider the trends revealed by the repex model to be indicative of a DNSP's forward business-as-usual repex. If a DNSP proposes more capex than the repex model result, we would expect further supporting information to demonstrate the prudency and efficiency on some of its key modelled repex categories.

For the 2026–31 period, Jemena proposed a replacement program where its modelled assets make up a comparatively low 60% of total repex (modelling rate). When a large portion or repex is not modelled we cannot use the repex model to reliably infer a repex proposal is efficient. As a result of Jemena's much lower modelling rate in the 2026–31 period, we rely on the individual bottom-up assessment for programs such as Jemena's substation redevelopment projects.

In addition to our version of the repex model, Jemena provided its own version of the repex model which we have considered in arriving at our decision. Jemena submitted that its version of the model resulted in a higher repex compared to its proposed repex. Thus, Jemena considers that its proposed repex forecast is capable of acceptance.

We identified 3 key concerns with Jemena's repex model:

- Errors in units of measurement included in the model, distorting replacement volumes and unit costs, particularly in underground cables and overhead conductors.
- A difference in approach to calculating unit costs from our standard approach that resulted in higher unit costs.
- A difference in approach for asset age profile data that contributes to significant differences in the modelled outcome.

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[28] Jemena, *Attachment 05-01 Capital expenditure*, p 8.

We engaged with Jemena on the above concerns and while Jemena have resubmitted an updated version of its repex model, we continue to observe a material difference between Jemena's repex model results and our repex model results.[29]

Upon further inspection of Jemena's revised repex model, we found data discrepancies between the model inputs and the reset RIN data. While Jemena considered it has used more appropriate data in place of its RIN data, we have no means to objectively verify the quality of this new data, its appropriateness for use in the repex model, and how it reconciles against Jemena's historical audited RIN at the total expenditure level.

Considering these repeated data quality concerns, we place less reliance on the outcomes of the repex model and instead rely more on a bottom-up assessment, given the material step up in proposed repex.

We are of the view that Jemena have exhausted the value of their repex model for its 2026--31 proposal to demonstrate prudency and efficient of its repex investments. We seek Jemena to address these data quality concerns by reauditing and resubmitting its historical RIN information prior to its 2031-36 proposal and support its revised proposal with robust business cases.

A.1.4 Bottom-up assessment

Our bottom-up review found that the majority of Jemena's forecast at the program level were not supported by robust business cases or cost benefit analysis, resulting in us being unable to adequately assess the prudency and efficiency of the proposed programs of work. We engaged with our consultant EMCa to conduct a detailed review of aspects of Jemena's proposal. We make the following overall observations:

- Jemena has relied heavily on the findings of its submitted version of the repex model to justify its forecast expenditure. We found Jemena's submitted repex model contained significant errors, and the results could not be validated.

  Jemena submitted a repex model, with the assistance of its consultant HoustonKemp, to support its forecast expenditure. While the overall methodology undertaken to produce the model and analysis of its outputs appears to be correct, the input data used contains significant errors, and the conclusions cannot be relied on due to these errors.

- Jemena's proposal lacked supporting detail, which hampered our ability to derive an alternative estimate entirely using a bottom-up approach.

  EMCa noted in its report that "The information provided by Jemena was not conducive to a review in accordance with the capex assessment guidelines, as the models and supporting information were either not provided or incomplete. Jemena has placed significant emphasis on the materials included in its asset class strategies (Distribution, Primary plant and Secondary plant) to support the proposed projects and programs, including justification for the scope, timing and efficient cost. Whilst these were useful

[29] HoustonKemp, *JEN - HoustonKemp - Repex modelling report - 16 July 2025 – Public*, July 2025. Provided in response to information request 36.

summaries, they typically lacked the analysis that we would expect to find that justify the forecast expenditure."[30]

- Jemena has largely relied on condition-based methods to determine the scope of its forecast programs.

  EMCa noted that a large proportion of expenditure was not supported by economic analysis, rather relying on inspection- or condition-based methods.[31] They considered the absence of economic analysis did not assist with determining how the prudent and efficient replacement program has been determined.

- Areas of expenditure are largely unexplained.

  EMCa observed that, in some instances, it did not find that the justification documentation provided was robust, and that areas of expenditure were largely unexplained, or not sufficiently supported by evidence of observed performance. EMCa noted that similar matters were raised during the previous determination process, which indicates that these matters have not been adequately addressed.

- Modelling methods applied by Jemena are not consistent with its own documentation or industry practice.

  EMCa found the initial submission material lacking in substantive justification of the proposed expenditure. It did not consider the material provided sufficient evidence of how Jemena has determined the prudent replacement level or undertaken an economic assessment of the proposed program to determine the efficient cost and timing. In response to information requests, Jemena provided a summary of information, referring to information provided with its initial submission and not specific models. The business cases and models that were provided were limited to the 3 major zone substation replacement projects and the transformer bushing program.

- Jemena's cost benefit analysis for its high value, low volume work contains material errors which overstate the benefits.

  Jemena provided sufficient information to conduct a bottom-up review of its proposed substation redevelopment program. EMCa considers the risk models that support the programs to have materially overestimated the risk and associated costs of failure. The risks have not been modelled in accordance with AER guidance or industry practice. Once these errors are adjusted with more reasonable assumptions, many of these proposed projects are not economic in the 2026–31 period.

We discuss our findings on Jemena's forecast repex programs below.

Poles

Jemena proposed $57.7 million for its pole replacement and reinforcement program in 2026–31 period. Our draft decision is to accept Jemena's forecast.

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30 EMCa, *Report to AER on Jemena Network related expenditures 2026–31 RP*, August 2025, item 226, p 38.

31 EMCa, *Report to AER on Jemena Network related expenditures* 2026–31 RP, item 137, p 19.

Although its forecast is 42% higher than 2021–26 period spend, its pole repex program represents no material change to volume compared with the 2021–26 period. However, there is a justified uplift in average intervention cost, which is a result of a shift of focus to replacement of already staked poles. When compared with other DNSPs, Jemena has one of the highest pole staking rates, and also one of the higher average unit costs.

Pole top structures

Jemena proposed $44.6 million for its pole top structures program. Our draft decision is to not accept Jemena's forecast and to include an alternative forecast of $25.9 million, which is 42% lower than Jemena's forecast.

Jemena's forecast replacement volumes have increased substantially from the current period. We are not satisfied that its forecast is prudent and efficient as this increase has not been adequately explained and appears to be based on an extrapolation of historical volumes. Our draft decision is a reduction in forecast repex aligning with actual historical volumes.

Switchgear

Jemena proposed $85.8 million for its switchgear replacement program. This is a 97% increase from its current period actual/estimates. Our draft decision is to not accept Jemena's forecast and to include an alternative forecast of $0 as a placeholder. We were unable to establish that any of the proposed switchgear programs were prudent and efficient. We note that there is likely to be some replacement activity over the period and we are open to Jemena providing further evidence to support this.

Table A1.3 Jemena's proposed switchgear replacement forecast ($ million, $2025–26)

Program	Type	Jemena's 2026–31 forecast
CN zone substation redevelopment	Zone substation redevelopment programs	45.5
Replace CS 22kV switchgear (arc flash risk), 66kV isolators, 66kV CB, earth switch and transformer bushings		17.3
Replace NH 22kV switchgear, 66kV CB, 66kV isolator and earth switch		14.8
Replace BLTS 22kV switchgear	Individual programs	6.3
Replace MAT 66kV busbar and isolator		1.8
Totals		**85.8**

Note: Jemena's proposal, AER analysis. Zone substation redevelopment figures contain transformer and SCADA expenditure. NH – North Heidelberg, CS – Coburg South, CN – Coburg North, BLTS – Brooklyn Terminal Station, MAT – Melbourne Airport

Source: Jemena, *Att 05-10M SCS Capex model – 20250131*, January 2025.

We came to our draft decision having regard to the following findings:

Zone substation redevelopment programs

Jemena is proposing a large increase in switchgear repex which is driven by 3 zone substation redevelopment projects.

Although business cases were provided for these projects, EMCa considers the risk models that support the programs to have overestimated the risk and associated costs of failure.32 EMCa considers the risks have not been modelled in accordance with AER guidance or industry practice.[33]

EMCa considers that Jemena has not provided compelling information to support the identified risk at the substation sites.[34] Jemena provided copies of the original material in response to our requests for further information regarding this program.

Individual programs

Jemena also proposed 2 further switchgear related projects with no supporting business cases or economic models provided.

Transformers

Jemena proposed $26.9 million for its transformer replacement program. Our draft decision is to not accept Jemena's forecast and to include an alternative forecast of $10.7 million, which is 60% lower than Jemena's forecast.

Jemena proposed a large increase in transformer repex which is also primarily driven by the major zone substation redevelopment works. EMCa's analysis of this expenditure is closely related to the switchgear advice above. EMCa noted the same concerns for the transformer replacement including lack of compelling information supporting the repex. As with the switchgear advice, EMCa considers Jemena has not established the zone substation transformer works are necessary.[35]

SCADA

Jemena proposed $51.5 million for its SCADA, protection and control replacement program. Our draft decision is to not accept Jemena's forecast and to include an alternative forecast of $34.3 million, which is 33% lower than Jemena's forecast.

Jemena proposed a large increase in SCADA repex which is also primarily driven by the major zone substation redevelopment works. EMCa's analysis of this expenditure is closely related to the switchgear advice above. EMCa noted the same concerns for the SCADA replacement including lack of compelling information supporting the repex.[36] Jemena stated the costs for secondary equipment are built into the primary plant's business cases.[37] As with

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32 EMCa, *Report to AER on Jemena Network related expenditures* 2026–31 RP, August 2025, item 280, p 46.

33 EMCa, *Report to AER on Jemena Network related expenditures* 2026–31 RP, August 2025, item 115, p 15.

34 EMCa, *Report to AER on Jemena Network related expenditures* 2026–31 RP, August 2025, item 247, p 42.

35 EMCa, *Report to AER on Jemena Network related expenditures* 2026–31 RP, August 2025, item 213, p 37.

36 EMCa, *Report to AER on Jemena Network related expenditures* 2026–31 RP, August 2025, item 298, p 49.

37 Jemena, *JEN - Att 05-01M SCS Capital expenditure – 20250211*, February 2025, p 103.

the switchgear advice, EMCa considers Jemena has not established the zone substation SCADA works are necessary.

A.1.4.1 Alternative estimate

Given the lack of supporting evidence for us to establish a bottom-up alternative estimate, we have opted to apply the AER's repex model results to the modelled assets component of the proposal. This results in the modelled assets component of Jemena's forecast of $229.3 million being reduced to the AER's repex model threshold amount of $171 million.

The remaining program level reviews represent a total of $147.2 million and arrive at an alternative estimate of $59.8 million resulting an overall repex forecast of $230.8 million. This alternative estimate is $2.8 million or 1.2% higher than the current period allowance and $41.1 million or 15.1% lower than Jemena's actual repex in the current period.

Table A1.4 Jemena's alternative forecast build up for draft decision (including capital contributions)

Forecast method	Modelled	Un-modelled	Total
Repex modelled assets	60.9%	39.1%	100%
Jemena's proposal	229.3	147.2	376.5
AER alternative estimate	171.0 (threshold)	59.8	230.8
Total reduction	**58.3 (25.4%)**	**87.4 (59.4%)**	**145.7 (38.5%)**

Note: Jemena's proposal, AER and EMCa analysis.
Source: Jemena, *Att 05-10M SCS Capex model – 20250131*, January 2025.

We encourage Jemena to provide more information in the following areas in its revised proposal:

- Substation redevelopment programs – Investigate the probability of failure underpinning the cost benefit for the overall program of works. These programs represent a significant proportion of the overall unmodelled forecast repex as well as a major proportion of the reduction to Jemena's forecast. Affected asset classes include Substation transformers, Switchgear and SCADA.
- Pole top structures – Reconcile the historical based forecasting methods used against proposed increased volumes.
- Large asset categories – Provide business cases and cost benefit analyses for other asset classes such as overhead conductors, underground cables and service lines.

A.2 Resilience

We do not accept that Jemena's proposed $27.2 million ($19.7 million in capex, $7.5 million in opex) for network resilience capex would form part of a total capex forecast that reasonably reflects the capex criteria, or an opex forecast that reasonably reflects the opex criteria. We have included $1.3 million ($1.3 million in capex, $0 million in opex) in our alternative estimate.

A.2.1 Jemena's proposal

Jemena proposed $27.2 million for resilience total expenditure comprising of 5 programs. Jemena submitted that its resilience investments have been driven by the outcomes from recent Victorian Government reviews as well as recent flood modelling from Melbourne Water.[38] This modelling demonstrates that several Jemena assets are located within a high flood risk area. Table A.2.1 provides a breakdown of these programs.

Table A.2.1 Jemena's 2026–31 climate resilience initial proposal ($2026 real, million)

Project/program	Capex	Opex	Total
Relocating assets in high-flood risk zones	18.4	0.0	18.4
Mobile emergency response vehicles	0.6	0.2	0.8
Mobile generators	0.7	0.2	0.9
Outage preparation and response	0.0	4.5	4.5
Low bushfire risk area hazard trees management program	0.0	2.6	2.6
Total resilience forecast	**19.7**	**7.5**	**27.2**

Of the programs listed above, relocating assets in high-flood risk zones is categorised as network resilience while the other four programs are categorised as community resilience. With respect to its high-flood risk zones program, Jemena provided high level asset management and condition information. For its mobile emergency response vehicles and mobile generators program, Jemena provided a supporting business case.[39]

A.2.2 Reason for our decision

We acknowledge the continual need for investments by networks to better manage extreme weather events and the projected increase in climate related risk. We are also aware that modelling the impact of extreme weather events on networks is a challenging and new area of forecasting.

We have not accepted Jemena's forecast in full. This is because while we found that network investment may be prudent, we were not provided with the sufficient quantitative evidence to demonstrate the prudency and efficiency of the proposed solution.

We have not accepted its community resilience related opex because we do not consider incremental step changes for these minor costs are warranted under our opex forecasting approach. We consider the additional costs have not been demonstrated to be an expansion of the existing costs already incurred by Jemena.

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38 Jemena, *2026–31 Electricity Distribution Price Review Regulatory Proposal Attachment 05-01 Capital Expenditure*, 31 January 2025, p 118.

39 Jemena, *Outage Preparedness and Response – Business Case*, 31 January 2025.

Below we set out our assessment of Jemena's proposal against our resilience guidance note, and our review of Jemena's bottom-up forecast.

A.2.3 Assessment against network resilience guidance note criteria

In assessing the prudency and efficiency of Jemena's climate resilience program, we have had regard to the extent that its proposal satisfies relevant criteria in our guidance note on network resilience.

Overall, we consider Jemena has not fully satisfied the network resilience guidance note criteria. While it engaged well with its People's Panel, we found that it has not provided the sufficient evidence to support its preferred option. While Jemena has demonstrated the potential for prudency of some investment through reference to Melbourne Water's flood modelling, we consider that it has provided insufficient evidence with respect to demonstrating the increased risk and likely impact to its network as well as the efficiency of its proposed investment.

Identified need

We consider that Jemena has not satisfied this criterion.

Jemena provided no quantitative evidence in support of its proposed expenditure. Therefore, we consider that it has not demonstrated the prudency of its forecast.

Testing of the preferred option

We consider that Jemena has not satisfied this criterion.

Jemena provided no quantitative evidence in support of its proposed expenditure. Therefore, we consider that it has not demonstrated the efficiency of its forecast.

Genuine customer engagement

We consider that Jemena has partly satisfied this criterion.

The CCP32 notes that Jemena engaged with its People's Panel seeking feedback on customer preferences for network resilience options, with 3 options presented and a do-nothing option.[40] However, it is unclear whether Jemena sought feedback in other consumer forums other than the People's Panel.

A.2.4 Findings on Jemena's bottom-up forecast

Relocating assets in high-flood risk zones

Jemena proposed to relocate assets in high-flood risk zones based on analysis conducted by Melbourne Water which demonstrated increasing risk of flooding to underground and overheads assets over the coming decades.[41] Jemena stated that it does not consider the current level of risk of a long-duration outage to be tolerable. It submits that this is incompatible with the AER's guidance assessment criteria which it states requires networks

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40 Consumer Challenge Panel, *CCP32 Advice to the Australian Energy Regulator on the 2026–31 Regulatory Proposal for Jemena Electricity Distribution Network*, 14 May 2025, p 20.

41 Jemena, *Attachment 05-01 Capital expenditure*, p 92.

to maintain current service levels in the face of increasing climate risk.[42] As a result, Jemena chose to categorise the expenditure under modelled repex.

We reviewed information provided by Jemena in support of the expenditure as repex. It provided high level asset management and condition documents but no evidence to explain reasons for prudency and efficiency of this specific investment for the relocating of its assets.

We issued an information request seeking clarification to better understand Jemena's proposal and the identified need for the investment. We requested asset information including its asset risk assessment model, options analysis, historical flood data, climate modelling and a description of synergies with other proposed programs.[43] In its response, Jemena did not provide the requested information. Rather, it reiterated its position that it did not consider the risk level tolerable and that this precluded the expenditure from being categorised as resilience. EMCa's assessment of this project supports our conclusion that Jemena has not provided the necessary information to support the prudency and efficiency of this project.[44]

Given the lack of evidence to support its forecast, we have not included this program in our alternative forecast. In its revised proposal, we encourage Jemena to review our network resilience guidance note and previous decisions on resilience-related expenditure.

Mobile emergency response vehicles

Jemena proposed to purchase a single mobile emergency response vehicle (MERV). We have accepted the $0.6 million of capex associated with the MERV program. We have reviewed its business case and consider this sufficiently demonstrates the prudency and efficiency of the investment. We also consider that this program allows Jemena to respond to the recommendations laid out in the Network Outage Review.

For opex, Jemena proposed $0.2 million for the operational costs of the MERV. We have not included these costs in our alternative estimate of total opex. This decision relates to the need to provide for a step change in expenditure under our opex forecasting framework, rather than the prudency and efficiency of the proposed costs themselves.

We consider that the proposed operating expenditure represents an expansion of existing network activities that can readily be managed through the growth in forecast opex provided for by trending forward base opex.

Mobile generators

Jemena proposed to purchase 2 mobile generators. We have accepted the proposed capex of $0.7 million associated with Jemena's mobile generator program. We have reviewed its supporting material and consider that Jemena has demonstrated the prudency and efficiency

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42 Jemena, *2026–31 Electricity Distribution Price Review Regulatory Proposal Attachment 05-01 Capital Expenditure*, 31 Jan 2025, p 118.

43 Jemena, *Response to information request IR – 019*, 16 May 2025, p 2.

44 EMCa, *Jemena Services 2026 – 2031, Review of Certain Aspect of Proposed Network Related Expenditure*, 30 June 2025, p 26.

of the investment. Further, we consider this program allows Jemena to better respond to the recommendations made in the Network Outage Review.

For opex, Jemena proposed $0.2 million relating to the labour and fuel costs of the generators. We have not included these costs in our alternative estimate of total forecast opex as consider these small costs to be already included in the rate of change component of our opex forecasting approach.

Outage preparation and response step change

Jemena proposed $4.5 million to onboard 3 full time equivalents (FTEs) and for costs to increase its customer and stakeholder engagement, planning and resilience training activities.

Jemena stated this initiative is based on recommendations from the 2024 Network Outage Review. Jemena also noted this is an outcome from consumer engagement, which included strong endorsement from customers to take a 'balanced' approach to resilience, focusing on reduced impact of outages and its duration.

Jemena has materially underspent opex relative to its forecast allowance in the current period, on average by $33.1 million (–35%) for each year of the 2021–26 period. This compares to the proposed opex of $4.5 million over 5 years. Given Jemena's underspend, we do not consider resource constraints to be a reason for not undertaking the proposed activities in the current period. We consider Jemena has already had the opportunity and capacity to prudently address the identified need for this step change in the current period.

We note this initiative represents 0.7% of forecast opex, compared to Jemena's proposed rate of change growth forecast of 10.8% of forecast opex. We consider there is sufficient allowance from our forecast to undertake the actions in this step change without additional opex from the step change.

For the reasons discussed above, we have not included this step change in our alternative estimate of total forecast opex in our draft decision.

Low bushfire risk area hazard trees management program step change

A key element in the plan involves moving from its current 'reactive management approach' for managing hazard trees in its low bushfire risk areas (i.e. based on notification through ad-hoc vegetation assessors and public reporting) to a more proactive approach. This would involve hiring a dedicated arborist to develop a 2-year proactive assessment cycle and cutting or removing identified hazard trees.

EMCa has reviewed Jemena's business case provided in support of the proposed step change. Jemena stated that its preferred option offers a high NPV, however it did not provide us its NPV analysis.[45] Based on a review of the business case and subsequent information

[45] EMCa, *Jemena 2026–31 Regulatory Proposal – Review of aspects of proposed network related expenditures*, August 2025, p 81.

provided in response to information requests, we agree with EMCa that the proposed expenditure has not been justified.[46]

Our other concern is the program represents 0.4% of forecast opex, compared to Jemena's proposed rate of change growth forecast of 10.8% of forecast opex. We consider that the allowance from the rate of change growth forecast will account for the relatively minor step up in costs.

Therefore, while we consider this step change may be prudent, we are not including it in our alternative estimate of total forecast opex for the draft decision. For our full reasoning on opex, refer to Attachment 3

A.3 Connections

We do not accept that Jemena's net connections capex forecast of $275.3 million and capital contributions of $827.4 million would form part of a total capex forecast that reasonably reflects the capex criteria. Our draft decision includes $157.5 million in net connections capex and $418.2 million in capital contributions attached to connections. When compared to Jemena's proposal, this is a decrease of $117.8 million (42.8%) in net connections and $409.1 million (49.5%) in capital contributions.

A.3.1 Jemena's proposal

Jemena proposed $275.3 million in net connections capex. Jemena's net connections capex forecast represents a 134.2% increase in expenditure compared to the current period actual/estimates of $117.5 million. Jemena has attributed this uplift to the global surge in data centre investment.[47] Jemena also proposed $827.4 million in capital contributions (Type 1) attached to connections, which is a 63.6% increase from the current period of $505.8 million.[48] This in part owes to data centres being heavily funded via capital contributions (~80%)

Table A.3.1 summarises the changes in total net connections and capital contributions from the current period to the forecast period.

Table A.3.1 Jemena's connections proposal ($ million, $2025–26)

Jemena's proposal	Current period	Forecast period	% change
Net Connections	117.5	275.3	134.2%
Capital Contributions	505.8	827.4	63.6%

Jemena proposed $129.2 million in net business-as-usual connections (or $269.5 million gross capex). These are residential, commercial and industrial, subdivision and embedded

46 EMCa, *Jemena 2026–31 Regulatory Proposal – Review of aspects of proposed network related expenditures [SOCI protected]*, August 2025, pp 81–82.

47 Jemena, *Attachment 05-01 Capital expenditure*, p 13.

48 Jemena, *JEN - Att 05-10M SCS Capex model – 20250131*, 31 January 2025.

generation connection types. Accompanying these connections, Jemena proposed $140.3 million type 1 capital contributions.[49]

Jemena used a third-party provider's model to support its forecast modelling approach for connections capex. The third-party provider's customer number forecast is based on the Victoria in Future 2023 population forecast, adjusted for known connections.[50]

Jemena proposed 24 data centre projects and associated works totalling $709 million in gross capex and net capex of $195.9 million. Jemena forecast a 73% capital contribution rate (to gross capex, and excluding allocated overheads for type 1 capital contributions) for data centres.

Jemena's forecast is comprised of 3 levels of project maturity:

- Data Centre Growth Projects – Connection component [Future Major Customers Projects]: Projects that are based on expectations of potential customer inquiries during the 2026–31 period. Gross capex $314.8 million, net capex $85.3 million
- Enquiry to offer stages of maturity: Gross capex $322 million, net capex $87.3 million
- "In-flight" – signed committed works agreement (CWA) and under construction: Gross capex $72.2 million, net capex $23.3 million

Jemena proposed 8 non-data centre block load projects totalling $129.1 million gross capex, or $19.0 net capex. The majority of Jemena's net connections capex on block loads comes from its future, or "currently unknown", major customers program, which is $7.2 million net capex, or 38.4% of total non-data centre block load net capex.[51] Jemena's forecast of future major customers based on the average incremental load of known customer load over a 10-year period.[52]

A.3.2 Reasons for our decision

For the analysis of Jemena's connections, we have divided the capex into 2 distinct categories namely:

- "Business as usual" (BAU) connections which consists of residential, commercial and industrial, subdivision and embedded generation connection types and
- "Large bespoke connections" which include data centres.

A.3.2.1 Business As Usual Connections

In forming our draft decision for BAU connections, we have undertaken a top-down assessment of Jemena's connection volumes, unit rates and its associated methodology.

Our draft decision includes $124.2 million in BAU net connections capex and $145.3 million in capital contributions, which is $5.0 million (3.9%) and $5.0 million (3.6%) higher than

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49 Jemena, *JEN - Att 05-10M SCS Capex model – 20250131*, 31 January 2025; AER analysis.

50 Jemena, *Attachment 05-01 Capital expenditure*, pp 20, 36.

51 Jemena, *JEN – RIN – Support – Future Major Projects Forecast Model – 20250131*, January 2025; Jemena, *JEN - Att 05-10M SCS Capex model – 20250131*, January 2025.

52 Jemena, *JEN – RIN – Support – Major Customers – Forecast Methodology – 20250131*, January 2025, p 15.

Jemena's proposal respectively. We note that we have included the entirety of Jemena's gross BAU connections in our alternate estimate. The $5.0 million difference between our net connections forecast and Jemena's owes to the $5.0 million increase in capital contributions. This increase in capital contributions is a result of how capital contributions are modelled, and we have accepted Jemena's methodology.

For both residential and business connections, Jemena forecasts expenditure using a 3-year average of historical revealed costs. Jemena notes that a 3-year average might have a downward bias. Those 3 years contain 2021–22 and 2022–23 where the COVID pandemic caused a temporary decrease in connections that does not reflect the long-term trend. Nevertheless, Jemena submits it has maintained its 3-year average approach.[53]

We engaged Baringa to assess Jemena's demand forecast, which includes its BAU residential and business customer numbers forecast. While Baringa had some concern with Jemena's customer numbers forecast, it considered the impact on Jemena's residential and business customer volume forecast would be neutral. Residential customers grow with population growth rate and business numbers align with gross state product forecasts.[54] We consider this approach reasonable.

For our final decision, we would incorporate any new information that would materially affect the forecast. This could include:

- actual capex from 2024–25
- updated economic and demographic statistics that will materially change forecast assumptions
- policy changes.

A.3.2.2 Data centres

We are not satisfied Jemena's data centre capex forecast is prudent and efficient because Jemena has provided insufficient evidence to demonstrate that its forecast is prudent and efficient. We provide further detail below.

We substitute an alternative net capex forecast of $66.9 million, reducing the gross and net amounts, with further adjustments for overheads and risk reducing this amount to $56.9 million.

In coming to our draft decision, we had regard to submissions. We received 1 submission specifically regarding data centre connections. The Jemena Energy Reference Group (ERG) acknowledged that while Jemena's connection forecast anticipates benefits, it was uncertain about the accuracy of the forecast. It was concerned that projected energy demand may not materialise as expected, potentially placing upward pressure on network tariffs under the current revenue cap framework. Further, the ERG stated while around 80% of data centre connections will be covered by the proponents, the remaining 20% is risk born by the customer. The ERG has not formed a view on the efficiency of this spending. The ERG

53 Jemena, *Attachment 05-01 Capital expenditure*, pp 16–22.

54 Baringa, *Distribution demand forecast assessment: Review of Jemena's 2026–31 regulatory proposal*, July 2025, p 6.

suggests Jemena be consistently transparent regarding data centre connection progress, and engagement with developers.[55]

We have identified several issues with the information underpinning Jemena's forecast.

We engaged Baringa to examine Victorian distributors' demand forecasts. Baringa also sought evidence to support Jemena's likelihood assumptions including information on land acquisition, feasibility studies and financial approvals. Baringa considered Jemena's response did not provide sufficient evidence to support its forecast data centre capex. Baringa recommended a reduction to Jemena's forecast.[56]

Baringa acknowledged the difficulty in providing a 5+ years forecast but noted that Jemena's forecast lacked strong reasoning, in particular the likelihood of the data centres proceeding was difficult to reproduce using the information provided by Jemena.[57]

Baringa considered that the data centre future growth projects should not be included, and that only committed, publicly announced and high likelihood projects should be included.[58] This results in all the inflight data centres and approximately half of the enquiry to offer stage data centres included in an alternative estimate.

We also undertook a bottom-up analysis and found that there was insufficient evidence to support the DC growth projects. The likelihood analysis provided by Jemena did not appear to be based on actual probabilities, and we consider Jemena's analysis was difficult to replicate. We invite Jemena to refine this model in the revised proposal.[59]

For the enquiry to offer stage of maturity, we found Jemena did not have sufficient supporting information on the probability of unique applications progressing. This is because the enquiries are highly speculative. For example, we found that 6 of the projects in this category totalling $198.5 million have identical proposed gross capex. This raises the possibility these are not separate data centres but rather multiple enquiries for the same data centre market opportunity. Although, Jemena noted that these enquiries reflect different customers at different locations. We consider it likely there is significant overlap, particularly in a highly competitive race to market which may involve several identical applications for a single data centre.

Although we do not agree with the weights applied by Jemena in its application, we note that Jemena included another set of percentages in its Future Major Projects Forecast Model.[60] These alternate percentages appeared to be more reflective of the probability of the projects going ahead and we have taken these percentages into account. By applying the weights from these percentages, we have arrived at a similar adjustment to Baringa's

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55 Jemena Energy Reference Group, *Jemena Energy Reference Group - Submission - Jemena electricity distribution proposal 2026–31 - May 2025*, May 2025

56 Baringa, *AER Victorian Distribution Demand – Jemena,* August 2025, pp 6, 8, 54.

57 Baringa, *AER Victorian Distribution Demand – Jemena,* August 2025, p 6.

58 Baringa, *AER Victorian Distribution Demand – Jemena,* August 2025, p 6.

59 Jemena, *JEN – RIN – Support – Future Major Projects Forecast Model – 20250131 – Public,* January 2025.

60 Jemena, *JEN – RIN – Support – Future Major Projects Forecast Model – 20250131 – Public,* January 2025.

recommendation. We note that these percentages may be subject to change as connection applications will have progressed since the initial proposal.

For the third type of costs which relate to 'in flight' projects which have a committed contract we are satisfied that these projects will be required in the forecast period.

The acceptance of 100% of in-flight projects and 50% of enquiry to offer data centre projects results in a reduction of net capex to $66.9 million.

In the next section, we provide guidance to Jemena on the type of information we require to assess the data centre capex forecast.

Guidance on information needed for data centre capex forecasts

We also note that Jemena has included additional corporate overheads (15.4%) and risk allocation costs (8.6%). We describe our assessment of these costs below.

We acknowledge that demand for data centres is likely to increase in the forecast period relative to the current period. However, we must be satisfied that the forecasts accurately reflect the likely demand for data centre connections in the forecast period.

We acknowledge that Jemena broadly identified 3 categories of data centre connection projects with differing levels of information to support them in its proposal. This section is broadly consistent with Jemena's proposal but provides guidance on additional information that we require. We encourage Jemena to again provide information to support the following projects in its revised proposal:

- Committed in-flight projects
- Projects that are between the connection enquiry to connection offer stage
- Future project which are anticipated but enquiries have not yet been received.

Given that data centres is a relatively new type of connection we have provided this guidance to assist Jemena with its revised proposal acknowledging that Jemena has substantially taken this approach in its proposal. We do not consider this guidance to be comprehensive and we expect there to be adjustments to factor in the information that is available to Jemena.

For committed 'in-flight' connections, we consider these to be data centre connections where committed works agreements (CWAs) have been signed. If Jemena provides evidence of these CWAs for connections to be constructed in the forecast period, this would likely demonstrate the capex is prudent and efficient.

For projects that are at the enquiry to CWA stage, we would require cost build ups for projects at the feasibility and offer stages. This should be based on actual unit rates from historical projects. Where this unit rate is not available, it should be based on a comparable unit rate multiplied by the MVA. These projects should then be weighted against the probabilities of them progressing within the forecast period. These weights should be supported by evidence of how often projects at their respective stages of maturity at the time of the revised proposal are likely to progress to the CWA stage in the forecast period.

For projects that have not advanced to the enquiry stage, we acknowledge that it may be difficult for Jemena to forecast based on actual enquiries. Where available, we expect Jemena to provide evidence of the volume of interest it has received for data centre connections. For example, if a connection applicant has paid any fees, or there has been public announcements or scoping and drawing documents. We note that data centres may have significant lead time so we expect that any data centres to be constructed in the forecast period should already have evidence available.

However, we acknowledge that there could be data centres constructed towards the latter years of the forecast period where direct evidence is not currently available. If Jemena intends to include a forecast for data centres where limited evidence is available, then we expect Jemena to provide independent evidence that there will be continued uptake in data centres in its network.

Jemena will also have to demonstrate that holistically its forecast is in line with the expectations of other organisations such as AEMO. Jemena will also need to demonstrate why it considers the uptake in data centres will likely occur in its network area rather than in another Victorian network. We also consider Jemena must also factor in that applicants may apply to multiple DNSPs and that some may be more speculative in nature more typical connection applications.

Overheads and risk

Jemena included a customer capital contribution (excluding overhead) of 73% of the gross (excluding overhead) capex for data centre connections.[61] Jemena has charged or will charge customers a capital contribution (including overhead) a higher percentage of the gross (excluding overhead) capex.

We acknowledge that it is reasonable for Jemena to charge an overhead to the connection applicant in the capital contribution. However, we consider overheads have been double counted in the capex model. This is because the capex model applies capital overheads to direct network capex. We have removed the double counting by directly reducing the overheads included in the gross capex. This retains the standard overheads added in the capex model to each project. This results in a $6.3 million adjustment after acceptance of 100% of in-flight projects and 50% of enquiry to offer stage projects.

Jemena has also charged a risk allocation to data centre customers.[62] We consider that it is reasonable for Jemena to negotiate a risk allowance with its connection applicants. However, we consider that Jemena's non-data centre customer base, the majority of which are residential customers, should not bear this cost. This is because we consider risk in this case is symmetrical and we do not include risk contingencies for these types of projects. Further, we acknowledge that there may be a risk of variation in large projects but the number of data centre projects proposed introduces a portfolio effect as some projects may overspend while others may underspend. This results in a $3.8 million adjustment after acceptance of 100% of in-flight projects and 50% of enquiry to offer stage projects. This further reduces our alternative estimate of net capex to $56.9 million.

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61 Jemena, *JEN - Att 05-10M SCS Capex model - 20250131 - Public*.

62 Jemena, *JEN - IR013 - Initial Proposal Q&A Response - Question 1 - Cost Build Ups*, June 2025.

Jemena reopener

We note that Jemena withdrew its reopener on 21 July 2025. We understand that his may result in updates to the revised proposal involving rescheduled and/or rescoped data centre projects. Further it is understood that in its regulatory proposal Jemena assumed that the reopener would be approved, therefore we anticipate changes to be included in the revised proposal.

Jemena throughput

The adjustments made to data centre capital expenditure forecasts included in our alternative forecast are matched with a revised alternative demand forecast due to changed block loading. Accordingly, we have also adjusted the throughput input to the PTRM.

A.3.2.3 Other major connections

Jemena proposed 8 non-data centre block load projects totalling $129.1 million gross capex, or $19.0 net capex. The majority of Jemena's net connections capex on block loads comes from its future, or "currently unknown", major customers program, which is $7.2 million net capex, or 38.4% of total non-data centre block load net capex.[63] Jemena's forecast of future major customers based on the average incremental load of known customer load over a 10-year period.[64]

We accept 7 of Jemena's proposed large non-data centre connections projects based on the established forecasting methodology and noting that these are offset by substantial capital contributions. In some cases, these projects are 100% capital contribution funded.

We do not accept Jemena's future, or "currently unknown", major customer forecast. We do not consider it prudent to include an allowance for major customer connections that are currently unknown but may occur in the next regulatory period. Proponents of major customer connections generally plan their connections applications well in advance. If a proponent were to connect to Jemena's network within the 2026–31 period, it seems likely that Jemena should already be aware of it. We have not included this $41 million gross capex, or $7.3 million net capex, in our alternate estimate, and have not accepted the associated capital contributions.

A.4 Augex

We do not accept that Jemena's augex forecast of $223.9 million would form part of a total capex forecast that reasonably reflects the capex criteria. Our draft decision includes $147.8 million in augex, which is $76.1 million (or 34%) lower than Jemena's proposal.

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63 Jemena, *JEN – RIN – Support – Future Major Projects Forecast Model – 20250131*, January 2025; Jemena, *JEN - Att 05-10M SCS Capex model – 20250131*, January 2025.

64 Jemena, *JEN – RIN – Support – Major Customers – Forecast Methodology – 20250131*, January 2025, p 15.

A.4.1 Jemena's proposal

Jemena has proposed $223.9 million for augmentation expenditure. We consider $4.4 million of proposed augex is network innovation and have assessed this as such in section A.7. Jemena expects to overspend its augex in the current period by 24%.[65]

Jemena's forecast is a step up (15.7%) relative to its current period spend. It notes that the increase is primarily driven by an increase in its demand forecast and demand driven capex as a result.[66] Jemena has proposed $164.6 million for demand driven and $59.2 million for non-demand driven augex.[67] The key drivers of demand driven augex for Jemena are increasing peak demand, population growth, increased data centre investment. While Jemena foresees demand growth from the electrification of gas and transport, Jemena does not forecast a material increase in augmentation expenditure from these sources.[68]

A.4.2 Reasons for our decision

We have reviewed the information Jemena provided in support of its augex forecast. We engaged EMCa to review aspects of Jemena's proposed augex and Baringa to review Jemena's demand forecast. When assessing Jemena's proposal for augex, we had regard to major project business cases, key assumptions, identification of need, historical comparison, options and cost benefit analysis. Where required, we have sought further information from Jemena through information requests.

In coming to our draft decision, we had regard to submissions on the topic. Origin Energy encourages the AER to critically assess demand forecasts to ensure they are consistent with available policy information and reflect realistic and achievable outcomes.[69] It considers that the AER should adopt a conservative approach with a focus on maintaining affordability for customers. It also considers that the AER should rely on the use of cost pass-through and contingent projects as a means of addressing future uncertainty.

A.4.2.1 Top-down assessment

Our top-down assessment revealed that Jemena's proposed step up in augex of 16% in the forecast period relative to current period spend required a more in-depth assessment. In particular, our top-down assessment found:

- Jemena's demand forecasting model requires a full review to justify the large increases in demand. In particular, the workings of its model must be more transparent.
- Jemena is proposing an increase in augex relative to the current period in particular in its demand driven augex. The key drivers of demand driven augex for Jemena are increasing peak demand, population growth and data centre investment.

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65 Jemena, *Response to IR02*, March 2025; AER Analysis. Jemena's proposal calls its spending "consistent" with its forecast (Jemena, *Attachment 05-01 Capital expenditure*, p 8). This is because Jemena's proposal incorporated its reopener application for its 2021–26 forecast, which proposed a higher augmentation forecast for 2021–26. Jemena has since withdrawn its application.

66 Jemena, *Attachment 05-01 Capital expenditure*, pp 31–33.

67 Or $54.8 million for non-demand driven augex when we separate out innovation.

68 Jemena, *Attachment 05-01 Capital expenditure*, p 31.

69 Origin Energy, *Origin Energy - Submission - Victorian electricity distribution proposals 2026–31 - May 2025*, May 2025.

A.4.2.2 Bottom-up assessment

Demand driven augmentation

Jemena has proposed $164.6 million for demand driven augex. Our draft decision is to not accept Jemena's forecast and to include an alternative forecast of $100.1 million which is $64.5 million lower than Jemena's forecast. Our alternate estimate is intentionally equivalent to Jemena's actual and estimated demand driven augex for 2021–26.[70]

The prudency of demand driven augex depends on the reliability of Jemena's demand forecast. We have concerns with Jemena's demand forecast, and hence with its demand driven augex.

We came to our view of Jemena's demand forecast having regard to the following findings identified by Baringa:[71]

- Baringa had significant concerns with Jemena's forecast of maximum demand and consider the impact of this is that the forecast is likely to be overstated. Baringa considered transparency to be a key issue with the information provided by Jemena. The original documentation provided by Jemena was brief and lacked sufficient explanation. Jemena's native demand forecasting approach remained unclear even after multiple information requests.
- Jemena engaged a third-party provider for its system-level demand forecast, and prepared its own spatial-level forecast. Baringa found there to be a lack of clarity around the reconciliation process between the third-party provider and Jemena's forecasts, which involves scaling Jemena's spatial-level forecast to reconcile with the third-party provider's system-level forecast. Baringa considered this raised concerns around the validity of these forecasts. Baringa also noted that Jemena does not model CER uptake at the spatial-level, obscuring a factor which may provide for a more even distribution of demand.
- Baringa found the approach toward forecasting native demand (that is, demand before large block loads and other factors are added in) was not well documented and uses algorithms that require further data and justification to be validated. Baringa found the approach taken by Jemena was the most complicated of the Victorian service providers, the rationale for applying the third-party provider's methodology was unclear, the description of data choices was obscured and the use of third-party algorithms was difficult to validate. In total, Baringa considered Jemena's demand forecast was the least transparent of the 5 Victorian service providers.
- Baringa noted that the significant investment of data centres is a new phenomenon and recognised the challenges in trying to forecast uptake of this new major technology over a 5-year period. However, it noted Jemena's approach to forecasting block loads and data centres lacks strong reasoning particularly with the likelihood of the connection proceeding, making it difficult to reproduce. The approach to spatial allocation of block loads was subjective and difficult to reproduce.

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70 Jemena, *Response to IR004*, March 2025; AER Analysis.

71 Baringa, *Distribution demand forecast assessment: Review of Jemena's 2026–31 regulatory proposal*, July 2025.

We note that demand driven augex is primarily aimed at addressing issues identified by the spatial demand forecast. That is, augex is predominantly aimed at addressing new or emerging constraints in geographically specific segments of a network, and these are identified with the spatial forecast, rather than the total forecast for Jemena's network. Consequently, the validity of the spatial forecast is the primary concern when assessing the need for new capex to address network constraints.

We share Baringa's concerns regarding Jemena's demand forecast. Jemena has proposed a major uplift in augex based on its projections of demand growth. However, its demand forecast is opaque, difficult to replicate and not well evidenced. We also consider, at the project level, that Jemena has not included coherent forecasts of demand that would allow proper analysis of the costs and benefits of the proposal.

Jemena has not provided compelling evidence for an uplift in demand, and we are not convinced in the prudence of its demand-driven augex. This is a systematic rather than project-based issue. At this stage we do not have a reasonable basis to either accept Jemena's forecast of maximum demand, nor use its approach with corrected inputs or forecasting techniques to construct a more robust forecast. On this basis, we must treat all Jemena's proposed demand-driven augex with some caution. It is not a simple case of determining some projects are prudent while others are not.

We note that Victorian system level maximum demand is projected to increase.[72] It is reasonable to consider some of this increase will occur on growth segments of Jemena's distribution network, triggering the need for augmentation. We acknowledge it is not reasonable to give a zero-dollar substitute for Jemena's demand-driven augex.

Lacking a better demand forecast, we consider it appropriate to substitute Jemena's forecast of $164.6 million with a forecast based on its augex in the current regulatory period. We recommend a substitute amount of $100.1 million be included in our alternative estimate. This amount is equivalent to Jemena's actual and estimated expenditure on demand driven augex in the 2016–24 period, which we consider an appropriate placeholder.[73] We consider Jemena would need to address the issues around its demand forecast in its revised proposal for us to be confident in projects and programs justified by increased demand.

We note that EMCa assessed a selection of Jemena's proposed demand driven augex projects. Of those projects EMCa assessed, EMCa was broadly satisfied that Jemena's business cases present a reasonable range of options to respond to generally well-articulated needs. However, EMCa does note that the cost benefit analysis models provided were not fully transparent, containing hard-coded data at an aggregated level. Further, while Jemena's sensitivity analyses were generally satisfactory, in a few cases the sensitivity analyses did not encompass changes to the optimal timing. [74]

We note that EMCa's analysis takes Jemena's demand forecast as a given. Jemena's projects could be prudent and efficient responses to demand, but we do not have confidence in Jemena's demand forecast. As noted by EMCa, the options and cost-benefit analysis put

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72 AEMO, *2024 Electricity Statement of Opportunities*, 29 August 2024.

73 AER analysis; Jemena, *Response to IR04*, March 2025.

74 EMCa, *Report to AER on network-related expenditure 2026–31 RP*, August 2025, pp 72–74.

forward for the projects it reviewed are reasonable and, provided we are confident in the demand forecasts, likely to be acceptable.

For its revised proposal, we encourage Jemena update its demand forecast to address Baringa's concerns.

Non-demand driven augmentation

Jemena has proposed $59.2 million for non-demand driven augex. Our draft decision is to not accept Jemena's forecast and to include an alternative forecast of $47.7 million which is $11.5 million lower than Jemena's forecast.

Jemena's non-demand driven augmentation programs are:

- The final 2 stages of its East Preston 6.6kV to 22kV conversion program ($46.0 million)
- Expansion and Strengthening of Communications Network to Meet Demand ($8.8 million)
- Network Innovation Fund ($4.4 million, see section A.7 for more detail).

Our alternative forecast includes expenditure for the final 2 stages of Jemena's East Preston conversion program. We do not include its communications network upgrade. We have substituted Jemena's network innovation fund proposal of $4.4 million with $1.7.

East Preston Conversion Program

Jemena proposed $46.0 million to conduct the final 2 stages of its East Preston Conversion program. The program began in 2008 and will convert this 6.6kV network to 22kV. The lower 6.6kV voltage impedes emergency feeder load transfer during outage conditions, and generally limits transfer capacity.[75] Jemena further submitted that "*due to the condition of the equipment at these zone substations, there is a high probability of failure and high safety risks due to step and touch potentials*."[76] We have accepted previous stages of this program in previous decisions.

We include this $46.0 million program in our alternate estimate.

We came to our draft decision having regard to the following findings regarding Stage 7 identified by EMCa:[77]

- Stages 1 to 5 of this program have already been completed, and stage 6 is currently underway following a RIT-D and is scheduled to be completed in 2025.
- Jemena's Stage 7 conversion strategy uses updated inputs based on: 2024 demand forecasts; cost estimates informed by previous stages of the conversion program; a revised options analysis; lessons regarding non-network options incorporated from the Stage 6 RIT-D process. These updates are prudent and increase confidence in Jemena's recommended option.

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75 Jemena, *Attachment 05-01 Capital expenditure*, pp 52–53; Jemena, *JEN – RIN – Support – East Preston Area Network Development Strategy – 20250131*, 31 January 2025, pp 8–9.

76 Jemena, *Attachment 05-01 Capital expenditure*, p 52.

77 EMCa, *Report to AER on network-related expenditure 2026–31 RP*, August 2025, pp 72–74.

- The needs Jemena submits this program would serve are reasonable and substantiated: limited transfer capacity under contingency conditions; reliability and safety risks from deteriorating assets; lower transfer capacity of 6.6kV feeders compared to 22kV ones; higher electrical losses from 6.6kV distribution compared to 22kV distribution.
- Jemena's option analysis identifies 5 reasonable responses to its identified needs in addition to "do nothing", and it reasonably substantiates that the proposed option would respond to those needs quicker and at a lower cost.
- Jemena's cost estimates have a range of +/- 30%, but the estimates reasonable and likely to become more certain in the revised proposal because of insights from Jemena's RIT-D process.

We agree with EMCa's findings and consider Stage 7 of the East Preston Conversion program prudent and efficient.

EMCa only assessed Stage 7 of the East Preston Conversion and not the final Stage 8. However, we consider EMCa's comments broadly applicable to Stage 8. We consider Stage 8 also prudent and efficient. We include the $46.0 million Jemena forecasts for these programs in our alternative estimate.

Expansion and Strengthening of Communications Network to Meet Demand

Jemena proposed $8.8 million to expand and strengthen its communications network for remote control pole top devices, converting them from radio backhaul links to fibre optic cables.[78]

We have not included this $8.8 million program in our alternate estimate, and substitute $0 as a placeholder.

In response to an information request, Jemena clarified that this project is not contingent on future installations of remote pole top devices. While future installations will exacerbate constraints, Jemena submits that its communications network is already constrained. Jemena submits that its "*focus is on addressing the constraints on the existing devices that do not have remote communications enabled at the present time which renders them to operate in manual mode and prohibits the safety and security benefits of the Control Room having visibility over the devices' current status. Any additional devices that are to be installed in future will also need to be placed in manual mode until this project is completed, resulting in further risks*."[79]

We acknowledge this is a valid need, and this project could be prudent. However, we are not satisfied with Jemena's net present value (NPV) analysis, particularly the derivation of the Value of Customer Reliability (VCR) and the probability of adverse events occurring in the absence of the investment. We sought further information, but we still consider Jemena has not justified this project either through its use of VCR or probabilities. The NPV analysis is sensitive to adverse event probabilities, and Jemena's only source for these probabilities is "control room advice". We determine a placeholder of $0 and encourage Jemena to provide further information in its revised proposal.

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78 Jemena, *JEN – RIN – Support – Operational Technology Communications Network Upgrade – Business Case – 20250131*, 31 January 2025, pp iii–vi.

79 Jemena, *Response to IR037*, July 2025.

We came to our draft decision having regard to the following:

- We are not satisfied with Jemena's NPV analysis, particularly the derivation of the VCR and the probability of adverse events occurring in the absence of the investment.
- Jemena should update is VCR figures. Jemena states it used the AER's 2019 VCR figure, as the AER's Final report on values of customer reliability 2024 was not available at the time of drafting. Jemena further submits that it does "*not expect the ranking of options to change given the updated VCR values will apply equally to the two options considered*".[80]
- We are more concerned about Jemena's forecast of probability of adverse event inputs. Jemena's only source for its probabilities is "control room advice". We acknowledge there is uncertainty regarding the probabilities for such events. Nevertheless, the NPV analysis is sensitive to changes in these probabilities, with higher probabilities leading to lower NPVs for each option. Combing a higher event probability with a potentially lower VCR figure, the NPV analysis could lead to both options being negative, preferring the status quo. We except Jemena to further justify its choices of event probabilities and/or sensitivity test its NPV analysis by using different probabilities.

A.5 ICT

We do not accept that Jemena's information and communication technologies (ICT) total expenditure forecast of $144.8 million ($114.7 million capex, $30.1 million opex) would form part of a total expenditure forecast that reasonably reflects the capex and opex criteria. Our draft decision includes $92.7 million capex, which is $22.0 million (19.2%) lower than Jemena's capex proposal. For our reasoning on opex, refer to Attachment 3.

In this section, we set out our assessment of the proposed ICT forecast. This excludes CER related expenditure, which we have assessed separately.

A.5.1 Jemena's proposal

In addition to $34.4 million recurrent ICT capex, Jemena has proposed 13 non-recurrent ICT capex projects in 3 broad categories:

- Maintain existing services – $40.7 million totex ($34.4 million capex, $6.3 million opex), the most notable project being its digitising network switching program ($12.5 million capex)
- New or expanded capabilities – $27.2 million totex ($21.8 million capex, $5.4 million opex), the most notable project being its dynamic network planning with automation ($11.2 million capex)
- New/altered regulations – $31.3 million totex ($24.1 million capex, $7.1 million opex), the most notable project being its Market Interface Technology Enhancement ($17.5 million capex).

Jemena submitted business cases and supporting information for each project.

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[80] Jemena, *Response to IR37 – Question 3*, July 2025.

A.5.2 Reasons for our decision

We have reviewed the information Jemena provided in support of its ICT forecast, including business cases and cost-benefit models. We also engaged EMCa to review the entirety of Jemena's ICT proposal. Where required, we have sought further information from Jemena through information requests.

Jemena's ICT forecast of $114.7 million (excluding CER) is higher than its actual/estimated current period capex of $108.1 million ($6.5 million, or 6.1% higher).

Our assessment of Jemena's forecast involved undertaking a top-down assessment and bottom-up review, consistent with the expectations described in our ICT Guidance Note.[81]

Based on our assessment, we are not satisfied that Jemena's ICT forecast reasonably reflects the capex and opex criteria.[82] In coming to our draft decision, we had regard to the technical advice and expertise from EMCa in forming views on the prudency and efficiency of Jemena's forecast by considering the business cases, cost-benefit analysis and options analysis.

We discuss our findings on Jemena's forecast for the ICT projects that were material, or which informed our decision.

A.5.3 Recurrent ICT

Recurrent ICT relates to expenditure that usually occurs once per regulatory period, such as hardware replacement.

Jemena proposed $34.4 million for its recurrent ICT capex. Jemena submits it has used the AER's preferred approach to forecasting recurrent ICT capex by using a 5-year average of actual and estimated recurrent expenditure.[83]

Our draft decision is not to accept Jemena's forecast and include an alternative forecast of $29.7 million. We consider it reasonable to use observations of actual capex when forecasting future recurrent ICT requirements. Recurrent capex, by its nature, is capex that is repeated over time, and should be based on past performance, rather than future estimates.

In coming to our decision, we had regard to EMCa's advice on Jemena's recurrent ICT capex proposal.[84] EMCa considers taking the average of the previous 5 years is a reasonable approach. However, EMCa notes Jemena's 5-year average includes the estimate years 2024-25 and 2025-26. It considers this problematic, as the estimate years are outliers, being significantly higher than the previous years of actual spending. We concur with EMCa that an alternative forecast derived using the past 4.5 years of actual data presents a better forecast of recurrent capex.[85]

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81 AER, *Guidance Note for non-network ICT capex assessment approach*, November 2019.

82 NER, cl. 6.5.7(c); NER, cl. 6.5.6(c)-(e).

83 Jemena, *Attachment 05-01 Capital expenditure*, p 125.

84 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 15–17.

85 4.5 years because Jemena's regulatory years switched from calendar years to financial years: between calendar year 2020 and financial year 2021–22 was the half-year period of January to June 2021.

A.5.3.1 Cybersecurity

In a meeting on 23 May 2025, Jemena noted it is currently not in a position to confirm the extent of the amount of cyber security costs within its recurrent ICT. It did not quantify the amount in its initial proposal, however, because it forecast its recurrent capex on a base-step-trend basis, for which it is not usually required to itemise expenditure.[86] We acknowledge that Jemena is not generally required to itemise recurrent expenditure. However, for transparency for our assessment of cybersecurity capex for future regulatory periods, we seek for Jemena to disclose to the AER any cybersecurity recurrent ICT capex in its revised proposal.

A.5.4 Non-recurrent projects

Non-recurrent ICT is any ICT expenditure that is not "recurrent" as per the definition above. This includes:

- expenditure to maintain existing services, functionalities, capability and/or market benefits that does not recur every five years;
- any costs incurred as a result of a change in regulatory requirements/obligations
- the acquisition of new or expanded ICT functionality or capability.

A.5.4.1 Maintain existing services

Digitising network switching

Jemena proposed $12.8 million in capex ($4.4 million opex) for its digitising network switching project. Our decision is to accept Jemena's proposed capex for this project.

Jemena submitted that its current methods of altering power flows through its grid are manual and resource-intensive, involving lengthy lead times and repeated manual data entry across systems. These processes depend on an unsupported custom application, increasing the risk of errors that could lead to staff and customer safety concerns and unintended interruptions in electricity supply. This program aims to digitise its switching processes for field staff.[87]

In coming to our draft decision, we had regard to EMCa's advice, particularly:[88]

- Jemena has identified risks in its current switching system which imply there is a solid case for exploring enhancements to its switching system.
- Jemena's options analysis of 2 options, and "do nothing", are similar in that they both digitise network switching. Both options have a higher NPV to the status quo.
- Jemena has reasonably derived the costs for its proposed options based on internal subject matter experts and other methods.

We agree with EMCa's advice. We consider the project is prudent and efficient.

For our alternate estimate on opex, refer to Attachment 3.

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86 *JEN & AER - Discussion re cyber security queries*, meeting on 23 May 2025.

87 Jemena, *JEN – RIN – Support – ICT Investment Brief - Digitising Network Switching – 20250131*, 31 January 2025, p 4.

88 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 19–22.

End user computing

Jemena proposed $3.0 million capex for its end user computing project. Our decision is not to accept Jemena's forecast and to substitute $0 in our alternative estimate.

Jemena submitted that this project would undertake lifecycle replacement of field mobility devices (primarily tablets with some mobile phones that are used for business applications) and collaboration equipment (e.g., room conferencing and audiovisual equipment) that have not been replaced during the current regulatory period.[89]

In coming to our draft decision, we had regard to EMCa's advice, particularly:[90]

- Jemena's case for non-recurrent capex allowance for these hardware replacements is not compelling. While it is reasonable that Jemena would need to replace the specified hardware, it is unclear why this would not be included in Jemena's recurrent ICT capex.
- Jemena's business case lacks a thorough options analysis and cost estimates. Jemena only considers 1 option other than "do nothing". An options analysis should ideally evaluate multiple valid approaches to a problem. Further, its cost estimates are not sufficiently justified.

We agree with EMCa's advice. We consider the project is not prudent, and we do not include it in our alternate estimate.

Geographic information system lifecycle enhancement

We accept Jemena's proposed $4.1 million capex for the geographic information system (GIS) lifecycle enhancement. This is an investment to upgrade its GIS to ensure ongoing system availability and reliability.[91] Based on advice from EMCa, we consider Jemena has demonstrated it would be prudent to make the proposed upgrade to its GIS system, and that it is doing so at a reasonable price.[92]

We consider this project prudent and efficient and include it in our alternate estimate.

Market System Interface replacement

We accept Jemena's proposed $1.6 million capex for Market System Interface (MSI) platform replacement. This is an investment to replace its MSI platform to maintain ongoing system availability and reliability, which directly impacts critical processes such as life support and remote de-energisation / re-energisation.[93] Based on advice from EMCa, we consider Jemena has demonstrated that it would be prudent to replace this system, and Jemena's cost estimates are reasonably derived from similar projects.[94]

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89 Jemena, *Attachment 05-01 Capital expenditure*, p 128; Jemena, *JEN – RIN – Support – ICT Investment Brief - End user computing – 20250131*, 31 January 2025.

90 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 23–25.

91 Jemena, *JEN – RIN – Support – ICT Investment Brief - GIS lifecycle upgrade – 20250131*, January 2025, p 4.

92 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 25–26.

93 Jemena, *JEN – RIN – Support – ICT Investment Brief – MSI replacement – 20250211*, February 2025, p 4.

94 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 26–28.

We consider this project prudent and efficient and include it in our alternate estimate.

Network operations geospatial enhancement

We accept the $3.7 million capex portion of Jemena's proposed network operations geospatial enhancement (also proposed $0.7 million opex). This project aims to deliver enhancements to its geospatial system suite of applications to improve the asset data and supporting processes these systems underpin.[95] Based on advice from EMCa, we consider that while Jemena has not adequately quantified the benefits of this project, it is likely if Jemena did quantify the benefits the economic benefit would be positive.[96] We encourage Jemena to quantify the benefits of the project more thoroughly in its revised proposal.

We consider the capex portion of this project prudent and efficient and include it in our alternate estimate. For our alternate estimate on opex, refer to Attachment 3.

Emergency backstop lifecycle

We accept Jemena's proposed emergency backstop project. This project intends to upgrade its low voltage distributed energy management system to ensure ongoing compliance with the Victorian Government mandated Victorian Emergency Backstop Mechanism.[97] Based on advice from EMCa, we consider Jemena has demonstrated this project is required to maintain compliance, and the basis for its cost estimate is reasonable.[98]

We consider this project prudent and efficient and include it in our alternate estimate.

Customer systems

We accept the $3.0 million capex portion of Jemena's proposed customer systems project (also proposed $1.2 million opex). This project intends to maintain its customer systems operational and regulatory obligations to ensure customers have timely access to information.[99] Based on advice from EMCa, we consider Jemena has demonstrated this project is necessary to provide a customer experience that meets customer expectations, as well as maintaining regulatory compliance. Further, the basis for its ICT cost estimate is reasonable as it is based on similar work it has undertaken.[100]

We consider the capex portion of this project prudent and efficient and include it in our alternate estimate. For our alternate estimate on opex, refer to Attachment 3.

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95 Jemena, *JEN – RIN – Support – ICT Investment Brief - Network Operations Geospatial enhancements – 20250131*, February 2025, p 4.

96 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 28–31.

97 Jemena, *JEN – RIN – Support – ICT Investment Brief - Emergency Backstop Lifecycle – 20250131*, January 2025, p 4.

98 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 22–23.

99 Jemena, *JEN – RIN – Support – ICT Investment Brief - Customer systems – 20250131*, January 2025, p 4.

100 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 17–19.

A.5.4.2 New or expanded capabilities

Dynamic network planning with automation

Jemena proposed $11.2 million capex ($2.2 million opex) for its dynamic network planning with automation project. Our decision is to accept Jemena's capex forecast and to include it in our alternative estimate.

Jemena submitted that its current methods of altering power flows through its grid are to digitise the process of managing network drawings by removing the manual keying of as-designed and as-built paper and electronic drawings into Jemena's GIS. Jemena's current method introduces inaccuracies in GIS data because of manual data transfer and differing data structures between the systems. Further, the current manual method causes delays and increased operational costs.[101]

In coming to our draft decision, we had regard to EMCa's advice, particularly:[102]

- Jemena's option analysis suggests 2 valid solutions to the identified risk, in addition to "do nothing". As per the AER's guideline on new or expanded ICT capabilities, Jemena demonstrates that its preferred option both addresses the stated risk and that it has the highest NPV which is positive.
- Jemena's cost estimates are reasonably based. Jemena undertook a successful pilot program which formed the basis of its cost estimate.
- Jemena potentially underestimates the benefits of the program. It is plausible that the benefit streams Jemena identifies would continue beyond the point where Jemena forecasts they will plateau. Further, Jemena might also avoid costs associated with data quality issues and data availability issues such as those impacting outage planning and network instruction errors.

We agree with EMCa's advice. We consider the capex portion of the project prudent and efficient and include it the $11.2 million in our alternate estimate. For our alternate estimate on opex, refer to Attachment 3.

Customer education

Jemena proposed $4.8 million in capex for its customer education project.

Jemena submitted that this project would "*deliver integrated customer education programs that: builds energy literacy; builds customer capability to prepare for the energy transition; enhances customer experience and the accessibility of information for everyone; supports customers to take a more active role in energy generation and management*." [103]

In principle, we support customer education initiatives, but only if they provide a net benefit or are otherwise required to meet the capex criteria. However, having considered the information Jemena provided and analysis provided by EMCa for this project, it is not clear

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101 Jemena, *JEN – RIN – Support – ICT Investment Brief - Dynamic Network planning with automation – 20250131*, 31 January 2025, p 4.

102 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 34–36.

103 Jemena, *Attachment 05-01 Capital expenditure*, p 129; Jemena, *JEN – RIN – Support – ICT Investment Brief - Customer education – 20250131*, 31 January 2025.

the positive economic benefits are as high as Jemena has suggested. Further, this type of customer education may be better suited for energy retailers to provide, rather than distributors.

As such, we do not include this project in our alternate estimate as we found it was not prudent.

EMCa found that most of Jemena's claimed benefits come from what Jemena describe as "the Value of Customer Education".[104] The specific benefits comprising this value being: satisfaction from improvements to processes/automation for solar and EV connections; savings in time and money from increased energy literacy.[105] However, Jemena has not sufficiently undertaken sensitivity testing in the NPV analysis. It has currently undertaken a sensitivity test with 10% lower benefits, but these benefits could plausibly be 30% lower. A key assumption Jemena's business case makes is that customers make imperfect choices in the retail electricity market. However, it is unclear how a customer education program would lead to customers making more informed decisions. We have taken with EMCa's advice into consideration in forming our decision.

We received one submission on this project from CCP32, which expressed concern that Jemena's customers would be paying aspects of an education program that merely duplicates information available elsewhere.[106] We agree with this concern.

3D digital twin

We accept the $5.9 million capex portion of Jemena's proposed 3D digital twin project (also proposed $0.2 million opex). This project aims to introduce Light Detection and Ranging, aerial photography, and a "digital twin" network model to improve operational efficiencies.[107] Based on advice from EMCa, we consider that Jemena has reasonably identified and quantified operational benefits, and has demonstrated its proposed option has the highest NPV of those considered. Jemena's cost estimates are reasonably derived from a bottom-up build based on a pilot project.

We consider the capex portion of this project prudent and efficient and include it in our alternate estimate. For our alternate estimate on opex, refer to Attachment 3.

A.5.4.3 New/altered regulations

Flexible trading arrangements

Jemena proposed $4.4 million capex for flexible trading arrangements (also proposed $5.4 million opex). Our decision is to not accept Jemena's forecast and to include a capex alternative estimate of $0 as a placeholder.

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104 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 31–34.

105 Jemena, response to IR009, April 2025.

106 CCP32, *CCP32 - Submission - Jemena electricity distribution proposal 2026–31 - May 2025*, May 2025, p 20.

107 Jemena, *JEN - RIN - Support - Digital Twin Investment Brief - 20250131*, February 2025, p 4.

In August 2024, the AEMC released its final determination on unlocking consumer energy resources through flexible trading arrangements. All 5 Victorian DNSPs have proposed expenditure in response to this rule change.

We agree with Jemena that it is required to undertake this project, as it is compliance-driven. We also agree with EMCa that Jemena's basis for estimating the project's costs is reasonable, however the forecast is uncertain as the rule change requirements are yet to be finalised.[108] Based on the information submitted by the 5 Victorian businesses, EMCa found that with Jemena's proposal, it remains uncertain whether this expenditure should classified as standard control services or ancillary control services.[109] Costs associated with alternative control services are related to ancillary network services and public lighting; this is in contrast to standard control services where costs are spread across the general customer base. We consider that the allocation to SCS expenditure requires further justification, and we substitute the expenditure with a placeholder of $0. We await further regulatory certainty regarding the classification of this expenditure, and stakeholder feedback.

We encourage Jemena to provide updated cost estimates, if applicable, in its revised proposals. For our alternate estimate on opex, refer to Attachment 3.

Market interface technology enhancements

Jemena proposed $17.5 million capex for market interface technology enhancements (MITE) (also proposed $0.4 million opex). Our draft decision is to not accept Jemena's capex forecast and to include an alternative estimate of $12.5 million capex.

In August 2022, AEMO identified the MITE that are required as a prerequisite to the wider NEM reform implementation program. The reform has 3 core components including identity and access management, industry data exchange, and portal consolidation.[110] We agree with Jemena that these enhancements represent a new regulatory obligation that it must comply with.

While we are satisfied that Jemena provided sufficient evidence to demonstrate prudency, we are not satisfied that its capex forecast is efficient. EMCa's benchmark analysis of MITE costs proposed by the 5 Victorian businesses found Jemena cost estimates for Jemena to be likely over estimated.[111] Jemena's proposed cost is 70% higher than the similar-sized CitiPower. While CitiPower benefits from synergies with United Energy and Powercor, this would not explain the 70% difference. We agree with EMCa that while benchmarking results are not definitive, we consider it is a strong indicator that Jemena's costs are over estimated. We agree with EMCa's advice.

We consider this project prudent but not efficient. We substitute a lower figure of $12.5 million ($5 million lower). This figure is more in line with the similarly-sized CitiPower ($10.3 million). It is slightly higher than CitiPower's to account for CitiPower's synergies with

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108 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 45–46.

109 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 53–54.

110 Jemena, *JEN – RIN – Support – ICT Investment Brief - Reform - Market Interface Technology – 20250131*, January 2025, p 4.

111 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 42–44.

United Energy and Powercor that Jemena lacks. For our reasoning on opex, refer to Attachment 3.

Outage preparedness and response

We accept Jemena's proposed $2.2 million capex for outage preparedness and response project (allow proposed $1.5 million opex). This project intends to ensure compliance regarding outage communication obligations towards customers.[112] Based on advice from EMCa, we consider Jemena has demonstrated this project is needed to prepare and provide timely updates to customers regarding planned outages. Further, we agree with EMCa that Jemena has reasonably estimated the project costs based on 2 similar projects.[113]

We consider this project prudent and efficient and include it in our alternate estimate. For our reasoning on opex, refer to Attachment 3.

A.6 CER

Consumer energy resources (CER) include rooftop solar, energy storage devices, electric vehicles and other consumer appliances that can respond to demand or pricing signals. For distribution networks, CER integration expenditure is primarily for the purpose of accommodating the connection of additional rooftop solar to the network and maintaining the export service for rooftop solar customers.

We do not accept that Jemena's CER forecast of $95.4 million in totex ($84.5 million capex, $10.9 million opex) would form part of a total capex forecast that reasonably reflects the capex criteria. Our draft decision includes $17.9 million capex, which is $66.6 million (78.8%) lower than Jemena's capex proposal.[114] For our opex decision, refer to Attachment 3.

A.6.1 Jemena's proposal

Jemena has proposed 3 programs relating to CER-related ICT and augmentation expenditure. Jemena proposed totex of $95.4 million for CER-related expenditure in the next period which comprises of $84.5 million capex and $10.9 million opex.

Jemena proposed the following activities in its CER integration strategy:

- Grid Stability and Flexible Services - $36.7 million totex ($33.3.m capex and $3.5m opex):[115]
  - Flexible export and import offerings - $29.5 million totex ($26.0m capex and $3.5m opex): This would address increasing curtailment of exports which are primarily driven by CER and, arising over the period, potentially constrained import capacity driven by electrification.
  - Under Frequency Load Shedding (UFLS) – $7.3 million totex ($7.3m capex and $0m opex): This would put 60% of its network under control of an Under Frequency Load

112 Jemena, *JEN – RIN – Support – ICT Investment Brief - Outage Preparedness and Response – 20250131*, January 2025, p 4.

113 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 39–42.

114 Direct escalated costs ($ June 2026). Totals may not sum due to rounding.

115 Jemena, *JEN – RIN – Support – Grid Stability and Flexible Services Program – 20250131*, 31 January 2025, pp 8–11; Jemena, *JEN - Att 05-10M SCS Capex model – 20250131*, 31 January 2025.

Shedding (UFLS) scheme. Jemena submitted this is '*a scheme that disconnects load to mitigate power system collapse from a sudden drop in system frequency (triggered by a loss-of-generation event), becoming ineffective due to the presence of reverse power flows from DPV*.'[116] Jemena submitted this is a regulatory requirement done in consultation with AEMO.[117]

- Voltage and Power Quality Management (V&PQM) - $44.9 million totex ($40.6 million capex, $4.3 million opex)
  - Jemena proposed to implement dynamic voltage and power quality management to its network. Jemena proposed this would let it maintain customer voltages within acceptable limits even with the proliferation of two-way power-flows from CER. Jemena submits that it will '*achieve near real-time optimised control of network voltage and reactive power flow to maintain compliance with Electricity Distribution Code of Practice (EDCoP) standards and reduce CER curtailment*.'[118]
- Data Visibility and Analytics - $13.8 million totex, ($10.7 million capex, $3.2 million opex):
  - Strategic Network Analytics Program (SNAP) – $3.2 million totex (1.5m capex, $1.7m opex): Jemena proposed to implement a SNAP to create common, non-siloed platform for many of its CER and other initiatives.[119]
  - Network analytics program – $10.6 million ($9.1m capex, $1.5m opex): Jemena proposed to implement a network analytics program '*to improve operational efficiency and effectiveness, improve safety, and respond to emerging customer and regulatory needs over the next 10 years and beyond*'.[120]

A.6.2 Reasons for our decision

We reviewed Jemena's CER integration strategy as well as its supporting NPV analysis. Our assessment was informed by both our CER strategy and DER integration expenditure guidance note.[121] Our decision was informed by analysis from our consultant EMCa, who looked at key components of each of the 3 programs.

Overall, we agree with EMCa's findings on CER capex that:[122]

- Jemena's V&PQM program ($40.6 million) is not prudent in its current form, and that its NPV incorrectly quantifies the benefits of the program.
- Jemena's flexible services program ($25.6 million) could be justified only at a much lower capex forecast, one that benchmarked better with similarly sized businesses, like CitiPower.

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116 Jemena, *JEN – RIN – Support – Grid Stability and Flexible Services Program – 20250131*, 31 January 2025, p 8.

117 Jemena, JEN – RIN – Support – Grid Stability and Flexible Services Program – 20250131, 31 January 2025, p 37; Jemena, *Response to IR032*, June 2025.

118 Jemena, *JEN – RIN – Support – Voltage and PQ Management Program – 20250131*, 31 January 2025, pp 8–11; Jemena, *Attachment 05-01 Capital expenditure*, p 59.

119 Jemena, JEN – RIN – Support – Data Visibility and Analytics Program – 20250131, 31 January 2025, p 6.

120 Jemena, JEN – RIN – Support – Data Visibility and Analytics Program – 20250131, 31 January 2025, p 6.

121 AER, *Consumer energy resources strategy*, April 2023; AER, *Distributed energy resources integration expenditure guidance note*, June 2022.

122 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 72–86.

- Jemena's Network Analytics Program ($9.1 million) is not prudent, as Jemena has not substantiated that its Network Analytics Program would provide any benefit not already provided by its advanced metering infrastructure.
- Jemena's SNAP program ($1.5 million) is prudent and efficient given it is almost completed.

EMCa did not assess the augmentation component of Jemena's UFLS program ($5.2 million), but it did assess the complementary ICT component ($2.1 million). EMCa considers the ICT component cost estimates reasonably derived.[123]

In arriving at our determination, we considered whether Jemena reasonably estimated the costs and benefits to consumers.

We also took account of stakeholder submissions on Jemena's proposal.

- The Victorian Greenhouse Alliance (VGA) submitted that there should be a common set of benchmarks and metrics for CER to facilitate meaningful consumer engagement. The approach should clearly demonstrate the allocation of benefits and when these fall to the community or back to the networks. Establish clear and consistent methodologies for assessing CER expenditure that clearly demonstrate the allocation of costs and benefits, using metrics and benchmarks that are meaningful to consumers.[124]
- Hon Lily D'Ambrosio MP drew attention to the fact that Jemena proposed expenditure for its dynamic voltage management system in the 2021–26 period, for which it committed to a full network rollout by 2025. The Minister submitted that the AER must satisfy itself that Jemena has delivered on its commitments for this 2021–26 spending and that its newly proposed expenditure is not double counting.[125]

Grid Stability and Flexible Services - $36.7 million totex ($33.3m capex and $3.5m opex)

Under Frequency Load Shedding

Jemena proposed that 60% of its network be under control of a UFLS scheme. This scheme is designed to disconnect loads to mitigate power system collapse from a sudden drop in system frequency becoming ineffective due to reverse power flows from DPV.

Our draft decision is to accept Jemena's totex forecast. Overall Jemena have provided adequate justification for its proposed development and deployment of UFLS capabilities at 7 terminal substations, as well as its supporting ICT program.

We consider Jemena has a regulatory obligation that is best managed by undertaking these works. NER S5.1.10.1 requires service providers to ensure sufficient load is under control

123 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 69–70.

124 VGA, *Victorian Greenhouse Alliances - Submission - Victorian electricity distribution proposals 2026–31 - May 2025*, May 2025

125 Hon Lily D'Ambrosio MP, H*on Lily D'Ambrosio MP - Submission - Victorian electricity distribution proposals 2026–31 - June 2025*, June 2025.

using under-frequency relays and other technologies in consultation with AEMO.[126] We consider these 7 UFLS projects prudent for compliance reasons.

To assess their efficiency, we requested Jemena provide cost breakdowns of the highest cost installations, which Jemena provided.[127] We consider its cost estimates are reasonable for such projects. Further, EMCa assessed the ICT portion of this program ($2.1 million), and considers its bottom-up cost estimate preliminary but reasonable.[128]

We consider Jemena's UFLS program of $7.3 million prudent and efficient and include it in our capex alternate estimate.

Flexible services

Jemena proposed to deploy flexible service offerings to address increasing curtailment of exports (driven by CER) and, arising over the period, potentially constrained import capacity.

Our draft decision is not to accept Jemena's forecast as it has not provided adequate justification for its proposed development and deployment of flexible services.

Based on advice from our consultant EMCa, we consider that a flexible services program could be justified, but only at a much lower totex forecast. In coming to our position, we had regard to the following EMCa findings:[129]

- Jemena's CBA is unfavourable when we consider costs not included and the long analysis period – Jemena's preferred option only narrowly has a positive NPV. Further, Jemena does not seem to have accounted for all costs that would transpire over the assessment time horizon (to 2050). The CBA does not account for ICT refresh over the 2027-30 period.
- Deferring the project by 2 years (into the 2031-36 period) might be optimal – EMCa sensitivity tested the CBA results by deferring the preferred option another 2 years, into 2032. EMCa determined this new option which defers the project to the 2031-36 period would have an even higher NPV than Jemena's preferred option. EMCa note this modelling result is not decisive.
- Jemena's cost estimates do not benchmark well against a similarly-sized business – CitiPower is a similarly sized business which is also proposing a flexible services program. Despite being similar sizes, Jemena's flexible services program is $25.9 million while CitiPower's is $9.1 million. There are differences between the business, such as CitiPower having synergies with United Energy and Powercor. However, those differences would not explain this size of difference.
- Jemena's proposed capex is high relative to other DNSP's, especially for flexible imports – As stated above, Jemena's cost estimates benchmark poorly against the similarly-sized CitiPower. Further, for CitiPower, United Energy and Powercor cost estimates for flexible

126 Jemena, *JEN – RIN – Support – Grid Stability and Flexible Services Program – 20250131 – Confidential*, 31 January 2025, p 37.

127 Jemena, *Response to IR032*, June 2025.

128 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 69–70.

129 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 72–75.

imports are a fraction of flexible exports, while Jemena's flexible import estimate ($10.8 million) is 71% of its flexible exports estimate ($15.2 million). In developing flexible imports, CitiPower, United Energy and Powercor appears to leverage capabilities already developed for flexible exports. Jemena appears to cost its export and import programs in a stand-alone manner, rather than leveraging common capabilities.

We agree with EMCa's assessment.

Jemena's flexible services program could be justified at a much lower cost. In place of its proposed $25.6 million, we substitute $9.1 million as a placeholder, in line with the similarly sized CitiPower. For our opex decision, refer to Attachment 3.

Voltage and Power Quality Management - $44.9 million totex ($40.6 million capex, $4.3 million opex)

Jemena proposed to implement dynamic voltage and power quality management to its network. Jemena intends that this would let them maintain custom voltages within acceptable limits even with the proliferation of two-way power-flows from CER. Jemena submitted that it will '*achieve near real-time optimised control of network voltage and reactive power flow to maintain compliance with Electricity Distribution Code of Practice (EDCoP) standards and reduce CER curtailment*.'[130]

Our draft decision is to not accept Jemena's total V&PQM program forecast, and we include a placeholder of $0 in our alternate estimate. Jemena's cost-benefit analysis has overestimated the benefits of this program. While we consider a more limited version of this program could be prudent and efficient, we do not accept the version of the project Jemena have proposed.

We had regard to EMCa's findings in coming to this position, noting that:[131]

- Jemena is currently compliant with its statutory over- and under-voltage performance obligations – Jemena does not appear to be at risk of non-compliance in the absence of this program. Jemena's over-voltage performance over the period 2022-2024 has been well within the statutory 5% limit and Jemena has not provided any updated information to confirm that its performance has deteriorated markedly since. Its under-voltage performance is similarly well within statutory limits.
- Benefit estimates appear to be overestimated and adjusting leads to negative NPVs for all options – Jemena identified 2 benefits: DER enablement; and regulatory compliance. The majority of the estimated benefits come from the latter. Jemena values regulatory compliance by valuing the increased consumption of customer compliances due to over-voltage, and then multiplying that value by a safety disproportionality factor of 6 to account for the associated safety risk of those appliances overheating and catching on fire. This value would generally imply human life is at risk. However, Jemena has not provided information substantiating this. Jemena's documentation cannot currently justify

130 Jemena, *JEN – RIN – Support – Voltage and PQ Management Program – 20250131*, 31 January 2025, pp 8–11; Jemena, *Attachment 05-01 Capital expenditure*, p 59.

131 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 78–85.

a safety disproportionality factor above 1 (neutral). When the disproportionality factor is adjusted, the net present value of all options becomes negative.

- A more targeted program to maintain voltage compliance might be prudent and efficient – While Jemena's network is not significantly at risk of over-voltage events, certain areas are at risk. A program that would maintain over-voltage compliance by targeting these specific areas could be justified, provided it limited itself to implementing variable voltage control and ongoing 'reactive' response to voltage complaints.

We have taken EMCa's advice into consideration in forming our draft decision. While we acknowledge the importance of mitigating over- voltage events, Jemena itself stated it has been compliant with the relevant over-voltage standards, both currently and historically.[132] As this suggests that there is likely to be little risk of non-compliance, we are hesitant to accept a project with a negative NPV. We do not currently consider this program prudent.

We recommend Jemena consider a more targeted project to maintain voltage compliance. Such a limited program could restrict itself to just those areas with elevated over-voltage risk, and it could also limit itself to dynamic voltage control capabilities, rather than the full suite of reactor and capacitor bank expenditure.

We substitute Jemena's proposed $40.6 million capex forecast with a placeholder of $0. For our opex decision, refer to Attachment 3.

Data Visibility and Analytics - $13.8 million totex, ($10.7 million capex, $3.2 million opex)

Strategic Network Analytics Program

Jemena proposed to implement a SNAP to create common, non-siloed platform for many of its CER and other initiatives.

Our draft decision is to accept Jemena's SNAP forecast because Jemena provided sufficient information to support the need for the investment and provided quantitative evidence to demonstrate prudency and efficiency of its forecast.

In coming to this position, we had regard to EMCa's observations where it found:[133]

- *Jemena's model confirms the extent of sunk expenditure on SNAP* – The majority of Jemena's SNAP expenditure (90%) is being conducted in the current period. The $1.5 million remainder proposed for the first year of the 2026–31 period will be the final expenditure on this program. Completion of this hub appears to represent a significant milestone which we expect to achieve the objectives that Jemena states for this program.
- We agree with EMCa's assessment. We include the $1.5 million for SNAP in our alternate estimate.

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132 JEN, *JEN – RIN – Support – Voltage and PQ Management Program – 20250131 – Confidential*, 31 January 2025, p 12.

133 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 65–66.

Network Analytics Program

Jemena proposed to implement a network analytics program 'to improve operational efficiency and effectiveness, improve safety, and respond to emerging customer and regulatory needs over the next 10 years and beyond'

Our draft decision is to not accept Jemena's network analytics program forecast because Jemena did not provide sufficient information to support the need for the investment and did not provide quantitative evidence to demonstrate prudency and efficiency of its forecast.

In coming to this position, we had regard to EMCa's observations where it found:[134]

- The main benefits Jemena attributes to this program are not valid – An IR response clarified Jemena's estimated benefits for the program in an updated CBA.[135] Jemena cites as benefits:
  - avoided cost of Neutral Supply Tests and operational activities – This accounts for the majority of the programs claimed benefit. The benefit of avoided costs from Neutral Supply tests and operational activities is doubtful. Jemena, along with the other Victorian DNSPs, has had the capability to utilise advanced metering infrastructure for these purposes. There is no indication in Jemena's business case that it would lose the ability to do so without the proposed investment. These benefits are not valid.
  - cost avoidance for needing to build and operate different analytics programs for other proposed ICT projects – While this could be a valid benefit, Jemena's information does not make clear whether those proposed ICT projects contain an allowance for separate data analytics platforms. If Jemena can confirm there is no data analytics platform cost components for these projects, then this could be a legitimate benefit

We agree with EMCa's assessment. Jemena has not substantiated the major claimed benefit of this program. We substitute its proposal of $9.1 million with $0 in our alternative estimate. For our opex decision, refer to Attachment 3.

We also acknowledge that the AEMC is considering Energy Consumers Australia's "Integrated distribution system planning" (IDSP) rule change request, which would reform the current distribution annual planning process and require DNSPs to publish new types of network data.[136] We support the IDSP rule change proposal as a pathway to provide the market with low-voltage network data. However, until there is clarity on the status of this proposal, including the potential for new data collection and reporting obligations, there is a risk that DNSPs may implement bespoke network visibility solutions that require subsequent standardisation.[137]

134 EMCa, *Report to AER on Jemena ICT and CER 2026–31 RP*, August 2025, pp 64–65.

135 Jemena, *response to IR009*, May 2025.

136 AEMC, Integrated distribution system planning, accessed 14 August 2025.

137 The AEMC is required to publish its draft determination on the IDSP rule change proposal by 19 March 2026.

A.7 Innovation

This section sets out our draft decision on Jemena's proposed innovation expenditure.

Our draft decision is not to accept that Jemena's total expenditure forecast of $8.6 million ($4.4 million capex and $4.2 million opex) for network innovation would form part of a total expenditure forecast that reasonably reflects the expenditure criteria. We have included $2.7 million totex ($1.7 million capex, $1.0 million opex) in our alternative estimate.

For further details on our opex decision, refer Attachment 3

A.7.1 Jemena's Proposal

Jemena has proposed 15 innovation projects across 3 focus areas:

- Electrification ($2.7 million totex, $1.3 capex, $1.4 million opex)
- Energy storage ($3.6 million totex, $1.9 million capex, $1.7 million opex)
- Electrification & energy storage ($2.4 million totex, $1.3 million capex, $1.1 million opex)

Jemena proposed an aggregate of $8.6 million totex for the 2026–31 period ($4.4 million capex and $4.2 million opex).[138] Jemena proposed to recover 30% of the total program across both capex and opex ($8.6 million) with the remaining 70% to be co-funded by external sources, such as grants.[139] Jemena also proposed to exclude innovation expenditure from Capital Expenditure Sharing Scheme (CESS) and Efficiency Benefit Sharing Scheme (EBSS) calculations.[140]

Jemena proposed a governance committee for its innovation fund to respond to unknown future challenges, which aims to let Jemena flexible start and end projects in response to changing circumstances. Deviations project plans would require the agreement of its Customer Council. This committee would also delivery approved business cases and ensure that outcomes and learnings are widely shared.[141]

A.7.2 Reasons for our decision

We recognise the importance of innovation investment in supporting the energy transition and protecting customers. There is a need for trials and pilots to test and explore new ideas, concepts and technology before committing to implementation of solutions and rolling these into business-as-usual activities. We also recognise Jemena's customer engagement on innovation-related expenditure.

We do not accept Jemena's forecast in full. Our alternative forecast is $2.7 million totex ($1.7 million capex, $1.0 million opex). We found most projects did not satisfy the ex-ante

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138 Jemena, *JEN - Att 03-02 Innovation Fund Proposal – 20250131*, 31 January 2025; AER analysis.

139 Jemena, *JEN - Att 03-02 Innovation Fund Proposal – 20250131,* 31 January 2025, p 14; Jemena, *response to IR023,* May 2025.

140 Jemena, *JEN - Att 07-01 Incentive mechanisms - 20250131*, 31 January 2025, p 2; Jemena, *response to IR012,* May 2025. Jemena did not initially explicitly propose excluding its innovation allowance from the CESS. It clarified that it was proposing to exclude it from the CESS in an email on 29 April 2025.

141 Jemena, *JEN - Att 03-02 Innovation Fund Proposal – 20250131*, 31 January 2025, pp 1, 8–9, A0–A1.

innovation criteria; especially the criteria that the project be innovative. For further details on our opex decision, refer to Attachment 3

However, we accept the forecast for some projects as we found that these projects align with the criteria for ex-ante innovative projects. In particular, we accept forecasts for the following projects as placeholders:

- Managed charging integration with dynamic operation (electrification) – $0.3 million totex ($0.1 million capex, $0.2 million opex)
- Customer interface with flexible markets (energy storage) – $1.1 million totex ($0.8 million capex, $0.2 million opex)
- Vehicle-to-x (electrification & energy storage)[142] – $1.3 million totex ($0.7 million capex, $0.6 million opex).

These are placeholders pending Jemena providing evidence in support of the quantitative benefits of its proposed programs in its revised proposal.[143]

We acknowledge the inherent uncertainty associated with forecasting ex-ante innovation expenditure, especially with respect to benefit quantification. However, we note that in previous determinations, other businesses have forecast, and we have assessed, a full suite of innovation projects with a quantified cost-benefit analysis.[144] To address uncertainty with its ex-ante innovation proposal, businesses have also used different techniques such as an 'investment safety margin' or uncertainty factor in their estimates. As a result, we consider that Jemena has not provided the sufficient evidence in support of the efficiency of its forecast. Our inclusion of these projects is contingent on Jemena providing the relevant evidence of the quantitative benefits of these programs in its revised proposal.

We have concerns about Jemena's integrated charging and Battery Energy System Storage (BESS) trial. While it broadly satisfies the 5 of the ex-ante innovation criteria outlined below, we require further supporting information as the proposal lacks detail on how integration would occur or deliver new network benefits. While we acknowledge integrating EV charging with BESS could present efficiencies, both technologies are still in transition and remain unproven in this specific combination.

In coming to our draft decision, we had regard to stakeholder submissions. VGA stated that across the Victorian DNSPs, innovation is an insignificant proportion of spending.[145] VGA encourages us to accept innovation expenditure where there is a clear pathway to business-as-usual funding and delivery.

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142 The project is named vehicle-to-x because it aims to include vehicle-to-grid, vehicle-to-home, vehicle-to-business, vehicle-to-load capabilities.

143 In response to an IR, Jemena submitted an outline of costs and benefits for each project, but it did not quantify the economic value for the majority of these benefits.

144 AER, *Draft Decision, SA Power Networks Electricity Distribution Determination 2025 to 2030, Attachment 5 Capital Expenditure*, September 2024, pp 37–38; AER, *Final Decision, Ausgrid Electricity Distribution Determination 2024 to 2029, Attachment 5 Capital Expenditure*, April 2024, p 37.

145 VGA*, Victorian Greenhouse Alliances - Submission - Victorian electricity distribution proposals 2026–31 - May 2025*, May 2025.

While we acknowledge the potential benefits of ex-ante innovation expenditure, we are also conscious of the more cautious support among some consumer groups in previous processes. Some issues raised include whether innovation proposals could already be funded through the regulatory allowance and other regulatory mechanisms. We therefore appreciate the need for transparency about the ex-ante innovation expenditure to ensure that the proposed trials and pilots are likely to result in net benefits to consumers.

Our position is to not exclude Jemena's innovation program from CESS. For more information regarding our decision, refer to Attachment 6. Our position is to exclude the program from EBSS. For more information regarding our decision, refer to Attachment 5.

Below we set out our assessment against our innovation program criteria and how we have derived our alternative forecast.

A.7.2.1 Criteria to assess Jemena's Innovation Fund

Consistent with our recent determinations, we use the following criteria to assess innovation programs:

- the proposed projects in the program must be "innovative"
- the justification for the proposed projects must be linked to the expenditure objectives
- the business has explained how the existing incentive schemes, allowances, government grants and regulatory sandboxing have been considered and genuinely exhausted before considering innovation expenditure
- the proposed projects must be prudent from a scale perspective for a trial/pilot phase. There is also a framework setting out the pathway from trial/pilot to business-as-usual (BAU) phase, including success factors/criteria applied to trials/pilots to assess whether it proceeds to BAU phase
- there is stakeholder support for the innovation expenditure.

The projects must be "innovative"

We consider that innovative projects should have the following characteristics:[146]

- Involve a new concept or technology/technique or activity - Where these have been already tested on another network, the business must provide justification that an innovation project is required to address implementation risk for this proven concept, technology/technique or activity.
- Not be a BAU activity - A BAU activity would have enough information available to be proposed as expenditure in a business' regulatory proposal.
- Have an unproven business case - As an untested activity, we would not necessarily expect a net positive outcome for an innovation project. In particular, a net positive outcome would indicate that a business should invest as a BAU activity, beyond a trial or pilot. However, we would expect that a business could demonstrate the potential benefits to consumers in the event the activity is successful.

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146 For example, see: AER, *AER - Final Decision Attachment 5 - Capital expenditure - Ausgrid - 2024–29 Distribution revenue proposal - April 2024*, April 2024, pp 37-41.

- Be untested at scale - Deployment/volume should reflect trial/pilot phase of the testing.

We found that Jemena broadly did not satisfy this criterion. We do not accept 11 of the 15 projects as either not being innovative, or not having their innovativeness sufficiently demonstrated.

One example of this is the opex-only EV tariff analysis project. This project involves undertaking modelling, analysis and stakeholder engagement to explore the scope and viability of an effective EV tariff. In our view, analysis of new tariff categories is a core regulatory and operational function of a DNSP and does not demonstrate innovation. Jemena has not provided evidence of novel methodologies, pricing structures, or approaches.

In addition to the EV tariff analysis project, we also do not accept the following 10 projects because Jemena has not sufficiently demonstrated they would be innovative.

Electrification

- Customer experience including shared charging: Despite a request for further information, Jemena only provided a simple benefit-cost statement with no substantive detail on the proposed innovation. The project lacks clear differentiation from standard customer engagement or service improvement processes, and no novel technological or process-based elements were evident.
- Public charging maps (install and charging): The activity appears to involve making existing Geographic Information System data more accessible, which is not by itself innovative.
- Pole mounted EV charging: Jemena's supporting information lacks clarity regarding what is being trialled and how the initiative departs from existing solutions. It is unclear whether new technology is being deployed, tested, or adapted to local network conditions. This could be innovative, but Jemena would need to provide better supporting information to that effect.
- Residential electrification in growth areas: Jemena has made no compelling case for how the initiative departs from BAU expenditure. We expect that electrification in growth areas is part of long-term BAU planning activities. This could be innovative, but Jemena would need to provide better supporting information to that effect.
- Research and development for sustainable technologies: The supporting documentation links this to Environmental, Social and Governance (ESG) goals, which are now standard practice for large energy businesses. Jemena identified no specific research and development (R&D) focus areas that demonstrated a departure from BAU.
- Industry trials for innovative business models: Jemena's proposal is too vague to assess whether it is innovative. We requested Jemena provide more information, but Jemena only provided a cost-benefit statement without sufficient project definition or explanation of what business models are being trialled.

Energy storage

- Large scale battery project: Large-scale battery deployments are becoming established across the sector. This proposal appears to support routine feasibility studies and capital

co-contributions. Jemena has not outlined any novel technologies, commercial models, or deployment strategies, and as such we cannot consider this innovative.

- Incentivise Behind the Meter battery storage: This opex-only project promotes an existing technology and is poorly defined in terms of network benefits. With the introduction of the Commonwealth "Cheaper Home Batteries Program" from 1 July, additional DNSP-led incentives must clearly articulate unique value to the network, which Jemena has not demonstrated.
- Standardisation of battery connections: This is an opex-only project. We consider developing or updating technical standards for battery connections falls within the routine responsibilities of network planning and asset management teams. The proposal does not contain any new concepts or approaches beyond standard process improvements.
- Flexible export trials: we consider this emerging BAU, though there may be merit if Jemena demonstrates dynamic operating envelopes or other integration technologies. This could be innovative, but Jemena would need to provide better supporting information to that effect.

The justification for the proposed project must be linked to the expenditure objectives

We consider that Jemena has partially satisfied this criterion.

We consider that a DNSP should explain how its proposed projects are linked to the expenditure objectives because these objectives are the service outcomes that are in the long-term interests of consumers. Jemena's initial proposal did not satisfy this criterion. However, in response to an information requesting project-by-project cost and benefit breakdowns, Jemena indirectly refers to the expenditure objectives for each project.[147] We note there is no direct linkage to which of the objectives each project satisfies. For future innovation proposals, we would expect Jemena to explicitly link each project to the expenditure objectives.

The proposed projects cannot be funded elsewhere

We consider that Jemena has broadly satisfied this criterion.

We consider that our ex-ante regime and other mechanisms are available to incentivise (for instance, the Customer Service Incentive Scheme or CSIS) as well as directly fund innovation solutions (for instance, the Demand Management Incentive Scheme or Demand Management Incentive Allowance Mechanism (DMIAM)). We acknowledge that our regulatory framework may not necessarily capture the benefits from trials and pilots at the localised/community level. We expect a business to provide supporting information to demonstrate that it has considered other existing funding mechanisms prior to requesting for explicit innovation funding.

Jemena's proposal described the alternative sources of innovation funding that it has used in the current period, including the DMIAM. In addition, Jemena stated that the DMIAM will continue to operate separately from the innovation allowance and that all innovation would remain in the DMIAM where the project is within scope of the DMIAM (i.e., it is related to demand management). Jemena seeks grant funding for these projects, and it notes that

147 Jemena, *Response to IR023*, May 2025.

grant providers like ARENA and DEECA generally require co-funding from the grant recipient. Jemena proposed that 70% of its innovation allowance will likely be funded via external sources.[148]

For its revised proposal, we are seeking further information on the alternative funding sought for:

- Customer Experience including shared charging
- EV tariff analysis
- Pole mounted EV charging
- Public charging maps (install and charging)
- Incentivise Behind the Meter (BTM) battery storage

Although we have accepted Jemena's forecast for its Vehicle-to-x, as placeholder, pending further quantification of costs and benefits, we are also seeking further information on how Jemena exhausted alternative funding sources.

The proposed projects must be prudent – deployed at a scale consistent with a trial/pilot

We consider that Jemena has partly satisfied this criterion.

We consider that when testing an unproven or new activity on a business' network, it would be prudent to limit rollout/deployment to a level that is consistent with a trial/pilot phase. There is a threshold where these innovative activities could then become business-as-usual activities.

The majority of Jemena's projects satisfy this criterion. For the remaining 6, we consider they could satisfy the criteria, but we seek further supporting information for:

- EV tariff analysis
- Public charging maps (install and charging)
- Residential electrification in growth areas
- Research and development for sustainable technologies
- Large scale batter project
- Incentivise Behind the Meter battery storage.

There is stakeholder support for the innovation expenditure

We consider that Jemena has satisfied this criterion.

Jemena's consumer engagement group supported Jemena's innovation fund "innovation with impact" approach. This is intended to be a proactive but cost-conscious approach to

[148] Jemena, *Response to IR023*, May 2025; Jemena, *JEN - Att 03-02 Innovation Fund Proposal – 20250131*, January 2025, p 14.

innovation. The customer supported Jemena's reliance on third-party fundings, as reduced the financial burden on consumers.[149]

The VGA recommends the acceptance of all DNSP's proposed additional expenditure on innovation where evidence of a clear pathway to business-as-usual funding and delivery is provided.[150] It also recommends that the AER develops a new innovation allowance scheme over the next regulatory period that permits distributors to invest in innovation up to an agreed portion of capex (%) that is commensurate with other industrialised businesses. The VGA would also require all networks to establish innovation advisory committees using AusNet's innovation advisory committee governance model plus ongoing cross-network information sharing mechanisms.

We note that Jemena proposed to have its innovation fund on a "use it or lose it" basis, where any unspent portion of the fund would be returned to customers. It is our understanding that support from its consumer engagement group for the innovation fund was partly based on this "use it or lose it" mechanism. However, we do not consider that there is a means within the limits of the NER requirements by which unspent funds could be returned to customers.

For further detail on our opex decision, refer to Attachment 3.

A.8 Capitalised overheads

Overheads are costs that are not directly attributable to the output of distribution businesses but are necessary to support its operations. Examples of overhead costs include network planning, procurement, and human resources.

A.8.1 Jemena's Proposal

Jemena proposed $222.2 million in capitalised overheads, a $52.4 million (31%) increase from the current period's actual/estimated $169.7 million.

Jemena proposed a different method to forecast capitalised overheads from the AER's standard approach. The standard approach forecasts total overheads partly based on a 3-year average of historical actual overheads. Jemena has used a single year (2023–24), which results in a higher forecast yearly overhead amount. Jemena stated that it expects its capex program will increase significantly in the coming period. It submitted that the higher 2023–24 historical overhead figure would better reflect its overhead requirements for the 2026–31 period.[151]

A.8.2 Reasons for our decision

We do not accept Jemena's proposed methodology for forecasting capitalised overheads. We use the AER's standard approach to forecasting capitalised overheads. We substitute $160.3 million, which is $61.8 million (28%) lower than Jemena's proposal. Our alternative

149 Jemena, JEN - Att 03-02 Innovation Fund Proposal – 20250131, January 2025, pp 5–7.

150 Victorian Greenhouse Alliances, *Submission to the Australian Energy Regulator (AER), Local Government response to the Victorian Electricity Distribution Price Review (EDPR) 2026–31,* May 2025, p 18.

151 Jemena, *Attachment 05-01 Capital expenditure*, p 146.

estimate is more on trend with Jemena's historical, being only $9.4 million (6%) lower than the actual/estimated capitalised overheads for the 2021–26 period of $169.7 million.

We do not consider Jemena has adequately justified not using the AER's standard forecasting method. Our alternative estimate is more in line with Jemena's actual/estimated historical expenditure, we consider the lower 3-year average reflective of the coming period.

B Contingent projects

Contingent projects are usually significant network augmentation projects that are reasonably required to be undertaken to achieve the capital expenditure (capex) objectives. However, unlike other proposed capex projects, the need for the project within the regulatory control period and the associated costs are not sufficiently certain. Consequently, expenditure for such projects does not form a part of the total forecast capex that we approve in this determination. Such projects are linked to unique investment drivers and are triggered by defined 'trigger events'. The occurrence of the trigger event must be probable during the relevant regulatory control period.[152] The cost of the projects may ultimately be recovered from customers in the future if certain predefined conditions (trigger events) are met.

If, during the regulatory control period, Jemena considers that the trigger event for an approved contingent project has occurred, then it may apply to us. At that time, we will assess whether the trigger event has occurred, and the project meets the threshold. If satisfied of both, we would determine the efficient incremental revenue which is likely to be required in each remaining year of the regulatory control period as a result of the contingent project, and amend the revenue determination accordingly.

This appendix details our assessment of Jemena's proposed Tullamarine cluster and Heidelberg contingent projects as part of its regulatory proposal for the 2026–31 regulatory control period.

B.1 AER decision

Our decision is to not accept Jemena's proposed Tullamarine cluster and Heidelberg contingent projects for the 2026–31 period. We consider Jemena's contingent projects do not meet the requirements in the NER to be included as contingent projects.

B.2 Jemena's proposal

Jemena proposed $75.1 million for 2 contingent projects for the 2026–31 regulatory control period.[153] Jemena submits the proposed projects are probable or plausible to occur by 2031.

The 2 proposed contingent projects are:

- Tullamarine Cluster contingent project ($35.6 million)
- Heidelberg Cluster contingent project ($39.5 million)

Jemena submits that the proposed contingent projects would be reasonably required to accommodate the new load driving capacity constraints on specific parts of its network and in turn uneconomic levels of unserved energy.[154]

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152 NER, cl. 6.6A.1(c)(5).

153 Jemena, *Attachment 05-01 Capital expenditure,* pp D1–D4.

154 Jemena, *Attachment 05-01 Capital expenditure,* p D1.

B.3 Reasons for decision

B.3.1 Assessment approach

We reviewed each of Jemena's proposed contingent projects against the assessment criteria in the NER.[155] We considered whether:

- the proposed contingent project is reasonably required to be undertaken in order to achieve any of the capex objectives[156]
- the proposed contingent project capital expenditure is not otherwise provided for in the capex proposal[157]
- the proposed contingent project capital expenditure reasonably reflects the capex criteria, taking into account the capex factors[158]
- the proposed contingent project capital expenditure exceeds the defined threshold[159] and
- the trigger events in relation to the proposed contingent project are appropriate.[160]
- Jemena's revenue proposal included details for each proposed contingent project.[161]
- Jemena's revenue proposal included a description of each contingent project, proposed trigger events, project requirement, proposed capex and demonstration of rules compliance.

We considered whether the proposed trigger events for each project are appropriate. This includes having regard to the need for the trigger event:

- to be reasonably specific and capable of objective verification[162]
- to be a condition or event which, if it occurs, makes the project reasonably necessary in order to achieve any of the capex objectives[163]
- to be a condition or event that generates increased costs or categories of costs that relate to a specific location rather than a condition or event that affects the distribution network as a whole[164]
- to be described in such terms that it is all that is required for the revenue determination to be amended[165] and

155 NER, cl. 6.6A.1 (a)
156 NER, cl. 6.6A.1(b)(1).
157 NER, cl. 6.6A.1(b)(2)(i).
158 NER, cl. 6.6A.1(b)(2)(ii).
159 NER, cl. 6.6A.1(b)(2)(iii).
160 NER, cl. 6.6A.1(b)(4).
161 Jemena, *Attachment 05-01 Capital expenditure,* February 2025, pp D1–D4.
162 NER, cl. 6.6A.1(c)(1).
163 NER, cl. 6.6A.1(c)(2).
164 NER, cl. 6.6A.1(c)(3).
165 NER, cl. 6.6A.1(c)(4).

- to be a condition or event, the occurrence of which is probable during the 2029–31 regulatory control period but the inclusion of capex in relation to it (in the total forecast capex) is not appropriate because either:
  - it is not sufficiently certain that the event or condition will occur during the regulatory control period or if it may occur after that period or not at all, or
  - assuming it meets the materiality threshold, the costs associated with the event or condition are not sufficiently certain.[166]

B.3.2 Concerns with trigger events

Jemena proposed similar trigger events for each of its contingent projects. This section details our overall concerns with Jemena's proposed trigger events. Specifically, we had concerns about trigger 1 for both projects. Jemena's proposed trigger events are neither reasonably specific nor capable of objective verification. On 23 May 2025, we verbally explained our concerns to Jemena. Jemena has since provided updated trigger events. Table B.1 reproduces the trigger wording we have concerns about, both Jemena's original wording and its revised wording.

Table B.1 Jemena's trigger 1 for its contingent projects

Contingent project	Original trigger wording	Revised trigger wording
Tullamarine Cluster ($35.6 million)	Jemena Electricity Networks receives a connection application or applications for loads in Tullamarine that cannot be supplied from the existing Tullamarine Cluster of our sub-transmission network.	Jemena Electricity Networks receives a connection application or applications for loads in the Tullamarine area that cannot be supplied from the existing KTS-AW-NDT-PV-KTS 66 kV loop, requiring the establishment of a new KTS-ADT-VDT 66 kV line and combining the KTS-TMA-MAT-KTS and KTS-AW-NDT-PV-KTS loops together in the Tullamarine Cluster.
Heidelberg ($39.5 million)	Jemena Electricity Networks receives a connection application or applications for loads in Heidelberg that cannot be supplied from the existing East Preston and North Heidelberg Zone Substations.	Jemena Electricity Networks receives a connection application or applications for loads in Heidelberg that cannot be supplied from the existing East Preston and North Heidelberg Zone Substations, requiring the installing a new 66 kV underground cable from KTS West to the new ATK zone substation.

Source: Jemena, *JEN - Att 05-01 Capital expenditure - 20250211*, February 2025; Jemena, *Proposed amended contingent project definitions*, received via email 4 June 2025.

We do not consider the revised wording meets the requirements of NER 6.6A.1(c). In particular, the triggers were not specific enough and were not for an event that, if that event occurred, would make the undertaking of the proposed contingent project necessary.

166 NER, cl. 6.6A.1(c)(5).

Additionally, we consider the triggers were not objectively verifiable as the findings of the business case were not factually objective. We considered the triggers did not accord with the requirements of clauses 6.6A.1(c)(1). Further, we consider Jemena's revised triggers do not accord with the requirements of clauses 6.6A1(c)(2) and (4). As the trigger event is not sufficiently defined, we cannot assess whether undertaking the contingent project in response would achieve any of the capital expenditure objectives, nor do we consider Jemena could effectively substantiate the occurrence of the trigger event in its contingent project application.

We consider Jemena's revised triggers are not sufficient. Jemena does not specify the relevant ratings and loads necessary to verify the trigger has been met. Until Jemena provides acceptable trigger events, we cannot assess whether the contingent project would address the trigger event. We also cannot assess the likelihood of the contingent projects being required in the forecast period, and hence whether they should be included in Jemena's augex proposal.

Shortened forms

Term	Definition
AER	Australian Energy Regulator
ACS	alternative control services
augex	augmentation expenditure
capex	capital expenditure
CBRM	condition-based risk model
CER	consumer energy resources
DNSP	distribution network service providers
EMCa	Energy Market Consulting associates
ICT	information and communications technology
MITE	market interface technology enhancement
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Energy Objectives
NER	National Electricity Rules
opex	operating expenditure
RIT-D	Regulatory Investment Test for distribution network service providers
RIT-T	Regulatory Investment Test for transmission network service providers
SAIFI	system average interruption frequency index
SCS	standard control services
VCR	value of customer reliability
ZSS	zone substation