farrierswier

Memo: capitalised network overheads for the 2026–31 period

Advice to Jemena Electricity Networks (JEN)

1. OVERVIEW

Jemena Electricity Networks (JEN) has requested advice on whether it is appropriate to continue assuming a 75% fixed and 25% variable split when forecasting capitalised overheads for the 2026–31 regulatory period.

Our analysis suggests that at most 50% of JEN's capitalised network overheads over the 4-year 2021–25 period are fixed, with empirical analysis suggesting that it could be significantly less. This memo describes our analysis underpinning that finding.[1]

2. INTRODUCTION

JEN is preparing its revised regulatory proposal for the 2026–31 regulatory period. This responds to the AER's draft decision on JEN's initial regulatory proposal, which the Australian Energy Regulator (AER) published on 30 September 2025.

A key component of that revised proposal will be JEN's capital expenditure (capex) forecast for the 2026–31 regulatory period, which it is forecasting using the AER's standardised capex model for standard control services (SCS). One assumption to that model is the assumed split between fixed and variable overheads. The AER's default assumption is a 75% fixed and 25% variable split.[2]

JEN has asked for advice on whether that default assumption is appropriate for its revised regulatory proposal. The question arises in light of a significant increase in actual capex over the 2021–26 period and recent examples where some distribution network service providers (DNSPs) have adopted alternative assumptions or forecasting approaches.

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1 Our memo is focused on the relationship between capitalised overheads and capital expenditure that attracts overheads. It does not explore the relationship between capitalised and expensed overheads, or total overheads and total direct costs.

2 The term 'variable' here and throughout the memo refers to the portion of capitalised overheads that varies with capex that attracts capitalised overheads. This may differ from how that term is used in other situations.

3. BACKGROUND

3.1 Standard approach

The AER's standard approach to forecasting capitalised overheads for DNSPs like JEN is to:

- start with a 3- or 4-year average of historical capitalised overheads (rather than say a single base year like that commonly used when forecasting operating expenditure using the base-step-trend approach)
- assume that 75% of these overheads are fixed in real terms
- assume that the remaining 25% varies with capex that attracts overheads (often direct capex), which can be translated into a variable overhead rate, and
- forecast capitalised overheads by combining the fixed overhead amount with the variable overhead rate multiplied by the capex attracting overhead.[3]

This approach is reflected within the AER's standardised capex model for SCS.[4] The AER has adopted this approach in many recent decisions, including Jemena Gas Networks, Power and Water, EvoEnergy, and Energex.[5] It was also adopted by the AER when setting JEN's capex allowance for the 2021–26 regulatory period.

3.2 Basis for the 75 / 25 split

The AER has retained the 75% fixed and 25% variable as its default split of capitalised overheads for many regulatory decisions over many years. We understand that the basis for the assumed split is past empirical analysis;[6] however, we are not aware of any recent analysis that has tested its appropriateness when forecasting capitalised overheads amid present levels of DNSP investment.

At the same time, the AER also recognises that the default split may not be appropriate in all circumstances. The standardised capex model, for instance, explicitly allows DNSPs to vary these assumptions.[7] The AER's recent decision for SA PowerNetworks accepted a proposal to forecast capitalised networks overheads assuming that they varied 100% with capex that attracts network overheads.[8]

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3 Mathematically, this approach can be presented in different ways. We have described this approach here in a way that assists our analysis later in this memo.

4 See: Standardised model for standard control services capital expenditure (standardised SCS capex model) | Australian Energy Regulator (AER).

5 See, for instance: AER, 30 April 2024, *Final decision – Evoenergy distribution determination 2024-29 – SCS capex model*, 'Calc|Overhead Allocation' sheet; AER, 30 April 2024, *Final decision – PWC distribution determination 2024-29 – SCS capex model*, 'Calc| Overhead Allocation' sheet; and AER, *Final decision – Attachment 5 – Capital expenditure*, p.7.

6 Specifically, the AER appears to have based its initial position on fixed versus variable overheads from its determination for the Queensland DNSPs for the 2015–20 determination process. In the decisions for Energex and Ergon Energy, the AER adopted an assumption proposed by Energex that for every $1 million change in direct capex there is a $0.096 million change in capitalised overheads, a 9.6% variable overhead rate. This reflected Energex's advice that 80% of its capitalised overheads would have little or no correlation with changes in direct spend. At the time, adopting the 9.6% variable overhead rate implied an 83% fixed and 17% variable split in the capitalised allowance adopted for Energex for the 2015–20 period. See: AER, April 2015, *Energex – Preliminary decision – 2015–20 – Attachment 6 – Capital expenditure*, pp.90–91; link to document.

7 See: AER, December 2021, *Explanatory Note – AER standardised model for Standard Control Services capital expenditure*, s.34; AER - Standardised SCS capex model - Explanatory Note - 16 December 2021.pdf.

8 See: AER, 30 April 2025, *AER - Final Decision - SA Power Networks - 2025-30 Distribution determination revenue proposal - AER Standardised Capex model*, cells E16:I16, 'Input|Overheads' sheet; link to model.

3.3 Question for analysis

It is logical to assume that capitalised overheads for DNSPs consist of both fixed and variable components, as the AER's standard approach does. Fixed overheads typically relate to costs that do not fluctuate with changes in activity levels, such as ongoing corporate services, which remain broadly consistent regardless of the scale of capex projects. Conversely, variable overheads are those that respond to changes in capex, such as project management resources or site-specific administrative expenses, which increase or decrease in line with the volume of work undertaken.

However, the precise split between fixed and variable capitalised overheads is inherently an empirical matter. Determining the appropriate split requires analysis of actual cost behaviour within the business, rather than relying on theoretical or arbitrary assumptions. Without robust, real-world data examining how capitalised overheads respond to changes in capex that attracts overheads, there is no objective basis for selecting any particular split as a starting point. The appropriate split is also likely to vary across businesses, and time, and will be affected by cost allocation, capitalisation and other accounting practices.

With this in mind, the next section explores whether the assumed 75% fixed and 25% variable split is appropriate for forecasting JEN's capitalised network overheads over the 2026–31 regulatory period.

4. ANALYSIS

4.1 Framing

Although it is reasonable to assume that some costs are fixed and some variable when forecasting capitalised overheads, it is also important to ensure that the assumptions used are appropriate. They should be grounded in evidence and reflect the cost behaviour of the business in question.

Given that the default 75% fixed and 25% variable split has not been subject to recent scrutiny that we are aware of—and has not been specifically tested for JEN in any event—there is a strong case for assessing its suitability. This is what we do in the following sections.

4.2 Starting with logic

A fixed/variable split for capitalised overheads such as 75/25 can only remain constant over time if total capex remains stable. If capex materially increases (or decreases), the dollar value of the fixed component will represent a declining (or increasing) share of total overheads. In other words, maintaining a static fixed portion in $ terms leads to a shift in its proportion of total capitalised overheads as capex fluctuates.

We can illustrate this with a stylised example, as shown in Table 4.1. Suppose capitalised overheads comprise a fixed portion of $75 and a variable portion of $25 over the historical period on capex attracting overheads of $1,000 (i.e., variable overhead rate of 2.5%). If that capex increases by 50%, then variable overheads increase to $37.5, giving total overheads of $112.5—a revised split of 67% fixed and 33% variable. Alternatively, if capex decreases by 50%, then variable overheads decrease to $12.5, leading to total overheads of $87.5—or an 86% fixed and 14% variable split. This example shows that the fixed share diminishes as a % as capex grows and vice versa when capex declines.

Table 4.1: Stylised example

	Historical period	Forecast scenarios	
		50% increase in capex	50% decrease in capex
Capex attracting overheads	$1,000	$1,500	$500
Capitalised overheads			
Fixed	$75	$75	$75
Variable (@ 2.5%)	$25	$37.5	$12.5
Total	**$100**	**$112.5**	**$87.5**
Fixed / variable split	**75 / 25**	**67 / 33**	**86 / 14**

We can apply a similar logic to the AER's capex allowance adopted for JEN for the 2021–26 regulatory period. As noted earlier, the AER adopted a 75% fixed and 25% variable assumption to set the capitalised overhead allowance for SCS for that period. However, as shown in Table 4.2, although that assumption was applied to the historical reference period—in that case, the average over CY16 to CY18—the allowance over the 2021–26 regulatory period implicitly reflected a different assumed split as it was affected by changes in allowed capex attracting overheads.

This implies that even if the 75% fixed and 25% variable assumption was appropriate for the CY16 to CY18 period, it will not hold over the 2021–26 period if there are material changes in capex.

Table 4.2: JEN SCS allowance for the 2021–26 regulatory period ($million, Real$2021)

	Historical period (CY16–CY18 avg)	2021–26 allowance				
		2021-22	2022-23	2023-24	2024-25	2025-26
Capex attracting overheads	$90.4	$125.1	$132.3	$111.8	$104.5	$93.9
Capitalised network overheads						
Fixed	$12.7	$12.8	$12.9	$12.9	$12.9	$12.9
Variable (@ 4.7%)	$4.2	$5.9	$6.2	$5.2	$4.9	$4.4
Total	$16.9	$18.7	$19.1	$18.1	$17.8	$17.3
Fixed / variable split	**75 / 25**	**69 / 31**	**68 / 32**	**71 / 29**	**73 / 27**	**75 / 25**

Source: AER[9], fixed overheads increased slightly to reflect real input cost escalation.

9 See: AER, 30 April 2021, *Final decision – Jemena distribution determination – 2021-26 – Capex model*, rows 38:74, 'Calc|OH' sheet; see link to model.

We can extend this logic further by applying it to JEN's *actual* capex and capitalised overheads over the 2021–26 period (where available), which we have illustrated in Table 4.3. If we assume that the 75% fixed and 25% variable assumption was correct for the CY16 to CY18 period,[10] then the significant increase in actual capitalised network overheads implies a significant increase in the variable component from 25% up to 63% in 2024-25, with a corresponding reduction in the fixed portion. The average split over the 4-year 2021–25 period for which we have actual data is 46% fixed and 54% variable.[11]

Table 4.3: JEN SCS actuals for the 2021–26 regulatory period ($million, Real$2021)

	Historical period (CY16–CY18 avg)	2021–25 actuals				
		2021-22	2022-23	2023-24	2024-25	Average
Capex attracting overheads	$90.4	$143.5	$176.6	$176.0	$228.52	$181.1
Capitalised network overheads						
Fixed (as per allowance)	$12.7	$12.8	$12.9	$12.9	$12.9	$12.9
Variable (implied)	$4.2	$8.3	$12.5	$16.9	$22.1	$14.9
Total	$16.9	$21.1	$25.4	$29.8	$35.0	$27.8
Fixed / variable split	**75 / 25**	**61 / 39**	**51 / 49**	**43 / 57**	**37 / 63**	**46 / 54**

Source: AER for fixed overheads (as per Table 4.2), JEN for actual capex and capitalised network overheads, which were converted from $nominal to Real$2021 to be consistent with the 2021–26 allowances.

Based on the analysis above, it appears inappropriate to assume that the 75/25 split applies equally to both the CY16 to CY18 and 2021–26 periods. If the 75/25 split accurately reflected cost structures during CY16 to CY18, then by the same logic, it cannot also be correct for the 2021–26 period. The substantial increase in actual capex and capitalised network overheads for JEN during 2021–26 demonstrates that the default assumption cannot be valid for both periods simultaneously.

4.3 A look at the data

Logic alone may be insufficient to conclude that the 75% fixed and 25% variable assumption is inappropriate for the 2021–25 period. It could be, for instance, that it is the right assumption for that period, but was the wrong assumption for the CY16 to CY18 period. With this in mind, we have also looked at JEN's actual data to better understand the relationship between its capitalised network overheads and the capex attracting those overheads.

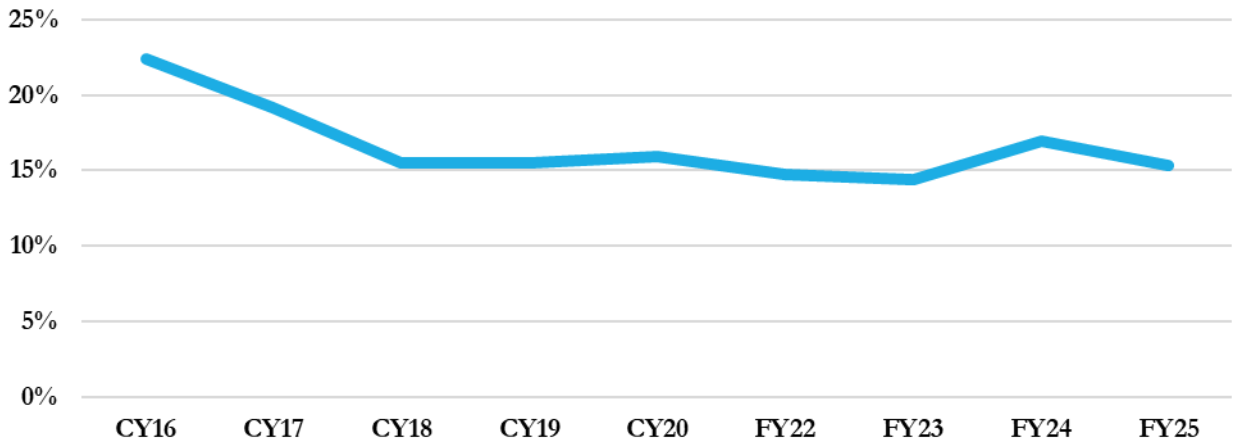
For instance, as shown in Figure 4.1, the ratio of JEN's capitalised networks overheads to direct capex attracting overheads has remained relatively steady, at just over 15%. The stability of this ratio across

10 Adopting this assumption implies that fixed overheads will remain at the values shown in Table 4.2.

11 A simple average of the annual ratios gives 48% fixed and 52% variable.

years suggests that most of those overheads are variable, tracking movements in direct capex, rather than being predominantly fixed. A similar observation underpinned SA PowerNetwork's proposal to assume that 100% of its capitalised overheads were variable,[12] which the AER ultimately adopted in its draft and final decisions.[13]

Figure 4.1: Ratio of capitalised overheads to capex attracting overheads (%)



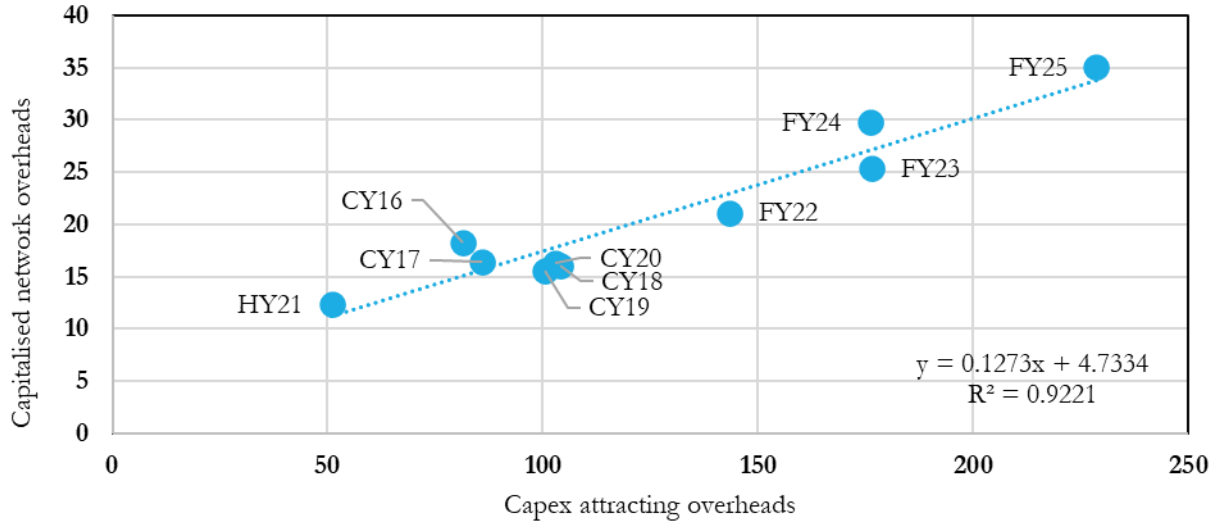
Source: Farrierswier analysis, JEN for actual capex and capitalised network overheads, the half year from January to June 2021 was excluded due to it only being a partial year between the change in regulatory years from calendar year (CY) to Australian financial year (FY).

We can also assess the stability of this relationship statistically. Regressing JEN's actual capitalised overheads (dependent variable) against direct capex (independent variable) yields a statistically significant fit, as illustrated in Figure 4.2. The line of best fit (the dotted blue line) provides a close fit to the observed data points (with an R^2 of 0.92) and implies that only around $4.7 million (Real$2021) of capitalised overheads are fixed per year, with the remaining overheads varying with capex (i.e., a variable overhead rate of 13% on capex attracting overheads). Appendix A sets out further outputs from our regression analysis as well as limitations with it.

12 See: SA PowerNetworks, January 2024, *Attachment 5 – Capital Expenditure – 2025–30 Regulatory Proposal*, p.80; link to document.

13 See: AER, September 2024, *Draft Decision Attachment 5 – Capital expenditure – SA Power Networks – 2025–30 Distribution revenue proposal*, p. 12; link to document; and AER, April 2025, *Final Decision Attachment 5 – Capital expenditure – SA Power Networks – 2025–30 Distribution revenue proposal*, p.9; link to document.

Figure 4.2: Comparison of capitalised network overheads to capex attracting overheads ($million, Real$2021)



Source: Farrierswier analysis, JEN for actual capex and capitalised network overheads. Regression statistics are included in Appendix A.

Moreover, the $4.7 million (Real$2021) fixed overhead estimate is significantly lower than the $12.9 million (Real$2021) average reflected in the 2021–26 capex allowance. Applied to the CY16 to CY18 actual costs, this regression result implies that only 28% are fixed ($4.7 million / $16.9 million), with 72% variable. This reduces to 17% if applied to actual costs over the 2021–25 period ($4.7 million / $27.8 million), with 83% variable.

Consistent with our observations based on logic, this empirical analysis suggests that significantly more of JEN's capitalised network overheads vary with capex than the 25% default assumption commonly adopted by the AER. The reasons for this observation are not immediately clear to us. It could be that a larger portion of total overheads (both expensed and capitalised) are variable than the 25% adopted when forecasting capitalised overheads for the 2021–26 period. Or it could be that, even if largely fixed, the observed relationship simply reflects the reality that overheads are capitalised in proportion to direct expenditure,[14] such that an increase in direct capex relative to direct operating expenditure leads to an increase in capitalised overheads (and vice versa). We do not attempt to explore the reasons further.

What matters when forecasting JEN's capitalised overheads over the 2026–31 period using the AER's standard approach is whether it is appropriate to assume that only 25% of those overheads vary with capex that attracts overheads. The observations above suggest not.

Importantly, however, these observations do not suggest that the 75% fixed and 25% variable assumption is incorrect for other DNSPs. Our results are specific to JEN and the particular time period assessed. Results may differ for other DNSPs or for JEN itself if examined over a different time period; so, care should be taken before generalising these observations beyond the scope of our analysis.

[14] JEN's cost allocation method was approved by the AER in May 2019. Section 3.3.1.2 explains that network support costs are allocated on a causal basis in proportion to direct costs for each service allocation, which means that they are allocated across capitalised and expensed direct costs in proportion to their relative scale. See: Jemena Electricity Networks, 29 March 2019, *Cost Allocation Methodology*; link to document.

5. IMPLICATIONS

Our analysis suggests that a 75% fixed and 25% variable assumption may not be appropriate when forecasting JEN's capitalised overheads for the 2026–31 regulatory period.

Even if that assumption were appropriate when determining allowed capitalised overheads for the 2021–26 regulatory period, the significant growth in JEN's capex over that period implies that the 75% fixed portion is now significantly less and no more than 50%.[15] Empirical analysis reinforces this logic, with regression results suggesting that the component is materially lower than previously assumed, with only around $4.7 million (Real$2021) of overheads being fixed each year—or just 17–28% of capitalised network overheads, depending on the period considered.

Given this, we suggest that JEN assume that no more than 50% of its actual capitalised overheads over the 4-year period from 1 July 2020 to 30 June 2025 are fixed. Our empirical analysis may support a value that is even lower than that.

15 The 50% is based on the 46% value-weighted average over the 4-year 2021–25 period shown in Table 4.3 (i.e., the 46% rounded up to the nearest 5%). The simple average over that period is 48%.

APPENDIX A. REGRESSION

A.1 Regression outputs

Table A.1 sets out the statistics from fitting a linear regression of capitalised network overheads (the dependent variable) against capex that attracts network overheads (the independent variable). The regression results suggest that fixed overheads are $4.7 million (Real$2021) per year, and variable overheads are 13% of capex that attracts network overheads.

Table A.1: Regression statistics

Constants	Slope	Intercept
Coefficient	0.1273	4.7334 ($million, Real$2021)
Standard error	0.0131	1.7695
P-value	0.000010	0.028141
Statistical significance	>99%	>95%
Model	**Statistic**	
Coefficient of determination (R^2)	0.9221	
Standard error of y estimate	2.406	
F statistic	94.6434	
Degrees of freedom	8	
Regression sum of squares	433.6873	
Residual sum of squares	36.6586	

A.2 Limitations

Our analysis may suffer from limitations. For instance, we have assumed that the historical capitalised overhead and capex attracting overheads data provided by JEN are free from error and reflect a consistent application of JEN's cost allocation, capitalisation and other accounting practices. But we have not validated that assumption.

We have also assumed that it is appropriate to use the AER's standard approach to forecasting capitalised overheads at the same time as using a base-step-trend approach to forecast operating expenditure, including expensed overheads, even though they may be applied to different starting points.[16] It goes beyond the scope of this memo to consider any interactions with other components of JEN's expenditure forecasts for the 2026–31 period.

[16] That is, the AER typically forecasts capitalised overheads from an historical period over several years, while applying the base-step-trend approach to single base year.