Appendix 2.3: Qubist – Independent Review Repex Portfolio

Revised regulatory proposal for the Evoenergy electricity distribution determination 2024 to 2029

Evoenergy – EN24 Revised Proposal

Independent Review – Repex Portfolio

November 2023

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(i)   in accordance with the instructions of Evo energy
(ii)   with the assistance of Evoenergy personnel;
(iii)   on the basis of the Information; and
(iv)   in reliance on the Information as being complete, true and correct at the time the review was carried out,
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1   Introduction

This report summarises the findings of the Qubist review of the replacement capital expenditure adjustments in the Evoenergy draft regulatory determination that was published by the AER on 28 September 2023.

The AER raised several issues with the Evoenergy proposal in relation to the justification and quality of the data provided to support the replacement capital expenditure forecast, the absence of a clear quantitative decision-making framework leading to the presentation of the net benefit (or net cost) for investments to justify the proposed expenditure allowance at either an individual asset or on a whole of asset class basis.

The AER also made several comments regarding areas that Evoenergy would need to improve in order to better support its proposed capex forecast.

Qubist was engaged to review the AER's draft decision, form a view on the reasonableness or otherwise of the AER assessment and identify areas where the Evoenergy proposal and documentation did not reflect typical regulatory expectations or issues were not clearly articulated or explained in a manner that appropriately highlighted the specific circumstances of the ACT commercial and operating environment.

Qubist brings considerable experience from all parts of the regulatory and distribution network landscape, from operational and executive roles in the network business to leading the development of regulatory proposals, working as the AER and ERA (WA) consultant on regulatory determinations across QLD, NSW, WA and SA.

Our people have provided independent expert reports on advanced metering infrastructure program delivery challenges, regulatory depreciation approaches, the limitations, and applications of OPEX benchmarking, network infrastructure cost estimation, and portfolio risk quantification. Many of these are available on the AER's website – with the issues raised frequently quoted by the AER and Industry or used as an agenda for subsequent industry-wide consultations (to refine the application of the AER's regulatory toolkit outside the regulatory cycle)[1].

Whilst this document has not been commissioned as a formal independent expert report, Qubist prides itself on providing independence of advice to all our clients. Quite simply, we practice on the view that telling our clients how we see it rather than what we think they want to hear is better for our clients, our conscience and our reputation. Three things that we do not compromise on.

1.1   Review of Draft Decision and Evoenergy's Revised Position

Evoenergy has accepted the AER's draft decision to align the repex allocation with historical spend for the majority of asset classes for EN24 and total repex with a total repex readjustment of 9% from $142.40M to $130.27M (noting all repex Figures within this document are inclusive of corporate overheads and based on $FY2023/2024). Based on Qubist's review of Evoenergy's failure data and underlying assessment of risk and compliance obligations, this appears a prudent and efficient approach for the majority of asset sub-classes.

However, based on the valuation of risk and proposed repex we recommend Evoenergy prepare a benefit cost analysis of their Pole and Secondary System asset classes which show that additional funding above historical trends is required to maintain network security, reliability and compliance. See Figures 2 and 3 and Tables 2 and 3 below. These asset classes are critical to managing the network risk and opex expenditure with Evoenergy commencing a program to prioritise high risk or economically and technically obsolete assets for renewal and manage them off the network through the next regulatory control period and beyond.

To manage the volume of pole replacement work to a level that Evoenergy can deliver, the program should consider the extent to which the original volume of pole replacement can be reduced within Evoenergy's capability to manage the residual risk of a higher volume of poles remaining on the network longer. This would respond to the AER's Draft Determination position of reducing the repex allowance as well as providing a degree of price relief to customers at a time of high inflationary pressure.

The Proposed EN24 REPEX budget compared to historical trends have been presented in Figure 1 below. It should be noted that a 9% increase from the EN19 Repex budget has been proposed for the revised proposal. This is largely driven by the need to address a range of failed, poor performing, obsolete and end of service assets which will be managed off the network within the 2024-29 regulatory period.
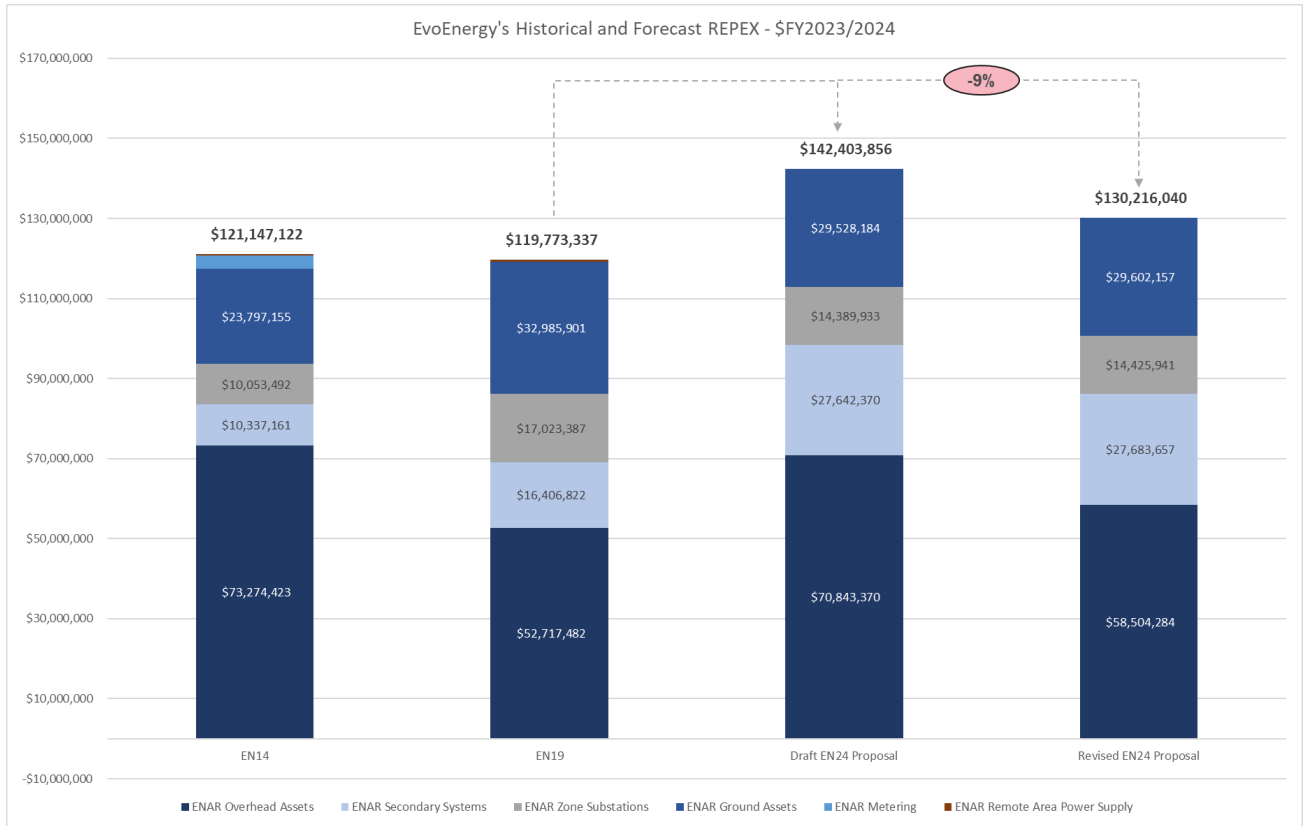
Figure 1: Historical and forecast repex spend

Table 1: Historical and forecast repex spend by Asset group

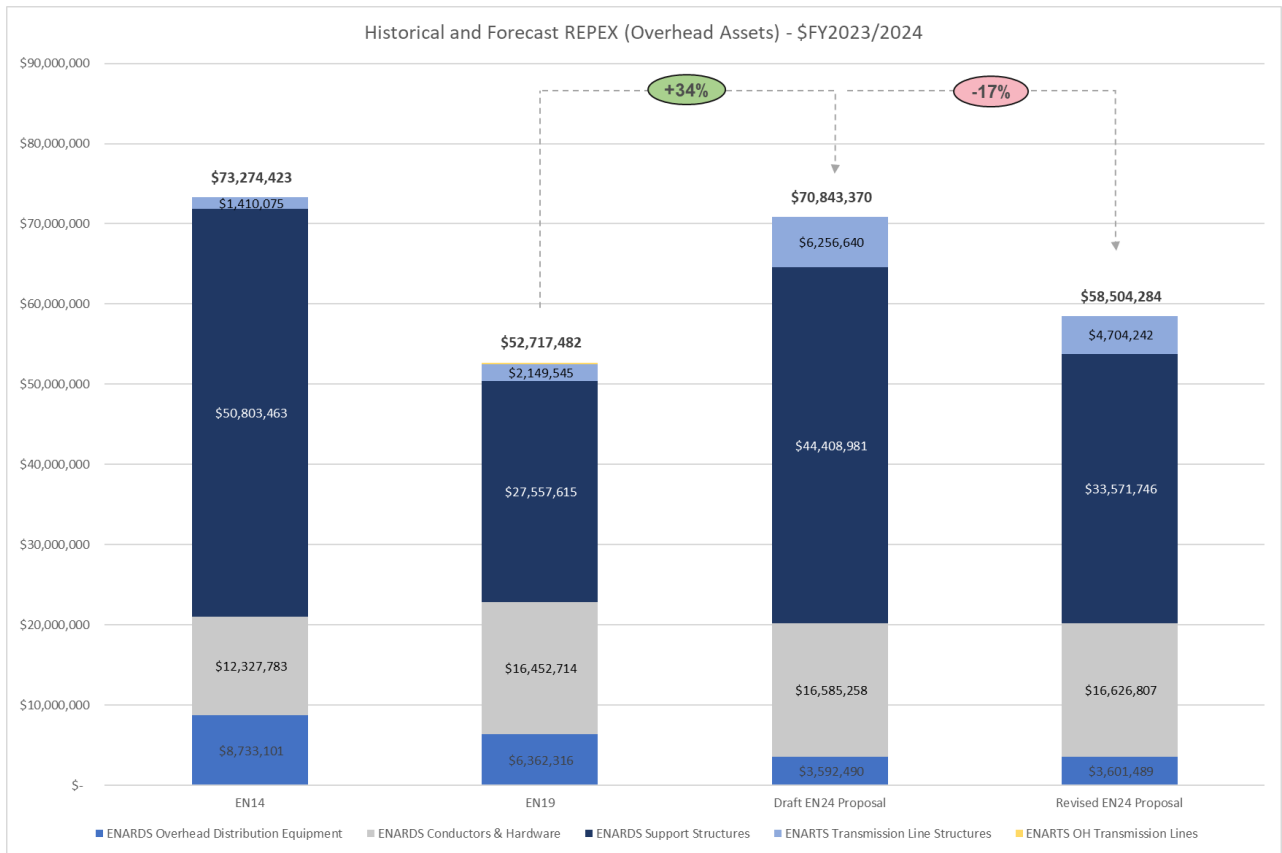| Asset Group	EN14 ($FY23/24M)	EN19 ($FY23/24M)	Initial EN24 proposal ($FY23/24M)	Revised EN24 proposal ($FY23/24M)
ENAR Overhead Assets	$73.27	$52.72	$70.84	$58.50
ENAR Secondary Systems	$10.34	$16.41	$27.64	$27.68
ENAR Zone Substations	$10.05	$17.02	$14.39	$14.43
ENAR Ground Assets	$23.80	$32.99	$29.53	$29.60
ENAR Metering	$3.22	$0.00	$-	$-
ENAR Remote Area Power Supply	$0.47	$0.64	$-	$-
Grand Total ($FY23/24M)	**$121.15**	**$119.77**	**$142.40**	**$130.22**

Figure 2: Historical and forecast repex spend (Overhead Assets)

Table 2: Historical and forecast repex spend within Overhead Asset Class

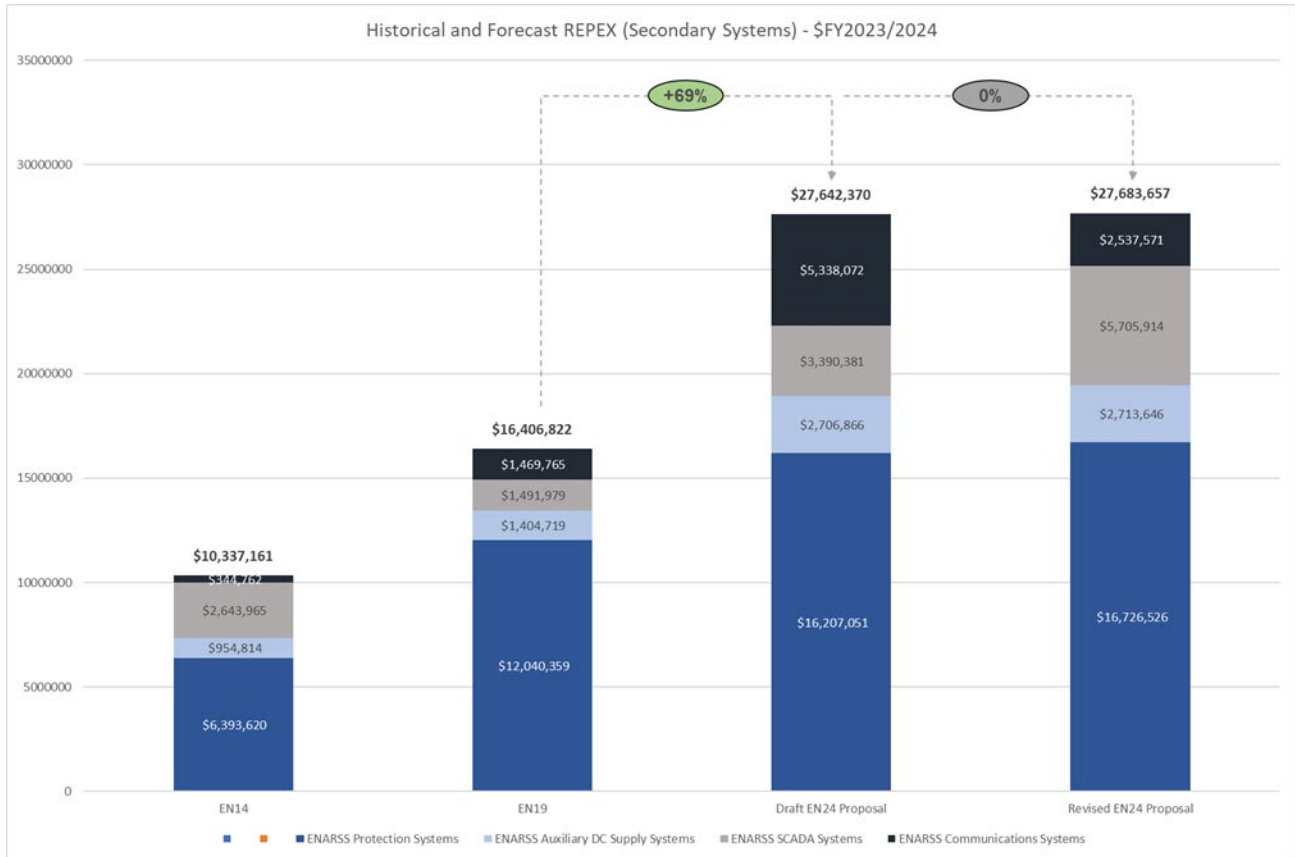| Asset Group	EN14 ($FY23/24M)	EN19 ($FY23/24M)	Initial EN24 proposal ($FY23/24M)	Revised EN24 proposal ($FY23/24M)
ENARDS Overhead Distribution Equipment	$8.73	$6.36	$3.59	$3.60
ENARDS Conductors & Hardware	$12.33	$16.45	$16.59	$16.63
ENARDS Support Structures	$50.80	$27.56	$44.41	$33.57
ENARTS Transmission Line Structures	$1.41	$2.15	$6.26	$4.70
ENARTS OH Transmission Lines	$-	$0.20	$-	$-
Grand Total ($FY23/24M)	**$73.27**	**$52.72**	**$70.84**	**$58.50**

Figure 3: Historical and forecast repex spend (Secondary System Assets)

Table 3: Historical and forecast repex spend within Secondary Systems Asset Class

Asset Group	EN14 ($FY23/24M)	EN19 ($FY23/24M)	Initial EN24 proposal ($FY23/24M)	Revised EN24 proposal ($FY23/24M)
ENARSS Protection Systems	$6.39	$12.04	$16.21	$16.73
ENARSS Auxiliary DC Supply Systems	$0.95	$1.40	$2.71	$2.71
ENARSS SCADA Systems	$2.64	$1.49	$3.39	$5.71
ENARSS Communications Systems	$0.34	$1.47	$5.34	$2.54
Grand Total ($FY23/24M)	**$10.34**	**$16.41**	**$27.64**	**$27.68**

2   The Replacement Capex Portfolio

The AER was not able to apply the cost and quantity information that was provided by Evoenergy in its Repex Model and concluded that Evoenergy's forecasting approach was largely age based and likely to overstate replacement needs. The AER made an alternative determination that was approximately $20m less than the repex allowance that was sought by Evoenergy. This was based on the total historical repex spend over the prior five-year period.

Based on Qubist's review of Evoenergy's asset management system, it was found that internal confidence in PowerPlan as a single point portfolio planning and assessment tool is relatively low at this stage. Primarily this is due to outputs being driven by asset age profiles, not yet calibrated to field expertise and condition assessment. Many of these observations were made by the AER in its review. However, the extent of top-down curtailment supported by the condition assessment information as part of Evoenergy's asset replacement planning process appears to be overlooked or under appreciated.

In practice, Evoenergy's hybrid forecasting approach is much more sophisticated than the AER gives credit. However, the linkages between systems and the interaction of processes are poorly articulated. Nonetheless, Evoenergy's replacement planning process incorporates the elements of the AER's guidelines and responds to the concerns voiced by the regulator.

Importantly, the smaller scale, differing network topology, relative geographical isolation and limited shared management/ownership benefits mean that the Evoenergy submission is difficult to compare on an 'apples-for-apples' basis to other Australian DNSPs. These differences are explored in some depth relating to the development of opex Operating Environment Factors in the Advisian review that formed Appendix C3 to Evoenergy's 2014-19 Revised Proposal.

There are other factors that should be taken into account for repex, however we note that the AER's preference is to set repex allowances at a total level – and not by individual line item. With this in mind, we highlight the following areas where Evoenergy may be disadvantaged by the AER's standard assessment approaches in relation to repex.

2.1   AER Adjustment – Practical Considerations

When assessing Evoenergy's repex allowance, Qubist noted that it is important to recognise that other networks typically include a greater volume of 'unmodelled' repex beyond the total that can be modelled in the AER's repex model. Evoenergy has not claimed significant 'unmodelled' repex in its original or revised proposals – instead, the draft decision implies that it must be met within the top-down alternative forecast that has been based on Evoenergy's historical expenditure.

Risk of double counting in the AER adjustment

We highlight that compliance driven expenditure that falls outside the 'modelled' repex allowance is assessed in addition to the base allowance. Where the AER's allowance includes compliance or other 'unmodelled' repex, it penalises Evoenergy twice because:

a)   The unmodelled component should be removed from the modelled total; and
b)   The modelled total should remain the same – allowing 'backfill' of the equivalent volume of recurrent repex that had previously been displaced.

Noting that Evoenergy's proposed repex allowance also fell below the results in the Cutler Merz populated AER repex model (which has historically represented the AER's reasonable limit for top-down evaluation) we note that the change in regulatory practice in relation to the use of the Repex model may create a regulatory precedent for other businesses to argue for a diversion from the AER's historical practices and guidelines.

Potential evidence of limitations of the 'regulatory toolbox' models and data for small networks

Similarly, the AER's assertion that the repex model could not be populated for the draft determination is at odds with the historical population of the model and the CutlerMerz population using Evoenergy's RIN data – that has been submitted for around a decade and prepared in accordance with the AER's definitions and reporting requirements.

At face value, this could suggest that the Repex model does not adequately adjust for smaller networks or that there are unresolved issues in the quality, classification or comparability of the AER's RIN data set. Otherwise, we recognise that Evoenergy's systems and forecasting approach do exhibit high year on year volatility in unit prices due to the focus on different asset types within an asset class from year to year[1]. In either case, it is concerning that the AER was unable to populate its own top-down Repex model from its own mature and third party audited RIN data set.

We encourage the AER and the industry to remain open minded about improvements to the regulatory toolbox to ensure that the regulatory framework continues to work in the long-term interests of customers.

2.1.1   The AER Repex Model

The repex model is used by the AER to undertake a top-down evaluation of replacement expenditure by considering historical costs and replacement lives, and then benchmarking these against peer DNSP. To assist in the evaluation of Evoenergy's

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[1] In the case of secondary systems, average relay costs vary in a 10x range from $20k to $200k per unit depending on the mix of relays targeted in any year. Larger networks typically have more diversified asset populations that allow for a relatively constant unit rate over time and between years. As a small network, Evoenergy is statistically more sensitive to small changes and less equipped in terms of resources, systems and market support to thoroughly review, assess and respond to AER queries in this regard.

replacement investment portfolio, they have used the repex model as part of our top-down evaluation. See Appendix 1.9 for CutlerMerz's repex model for the top-down challenge.

The repex model is a statistical model developed for the AER by Nuttal Consulting in the 2010 Victorian Price Reviews. The model provides an age-based forecast of replacement needs, which is calibrated against the revealed replacement history and implied unit costs provided by the businesses. The model has received significant critique in relation to its mathematical form and underlying assumptions but has generally been accepted as appropriate for indicative regulatory forecasts over the 5-7 year outlook period of a regulatory submission.

This is because the model is heavily weighted towards recent costs and quantities and does not cope well with discontinuities in programs (such as changing replacement focus from one asset type in one period to another asset type in the forecast). It is also vulnerable to distortion based on asset categorisations and different technologies (such as protection system changes over the past 40 years) mixed in one asset category. Notwithstanding this, the repex model produces an overall forecast that, along with the AER's sensitivity analysis to test industry unit rates and lives against the individual business equivalent, generally provides a historically acceptable basis for testing the reasonableness or otherwise of a proposed repex program.

The AER was unable to apply its repex model to the Evoenergy proposal data. We note that unit cost data was volatile from year to year for protection relays due to the differing composition of the replacement program in each year. With unit costs ranging in the order of $30k to $200k per unit, we can understand how this may have caused difficulty in interpretation. Similar issues should be expected for poles where the technology change from wood poles to composite, steel or concrete poles, the unique access issues in the ACT, the longer expected lives and the opex-capex trade-off between the higher capital cost vs the reduced maintenance requirements will complicate comparisons with DNSPs conducting like-for-like replacement of wood poles from the street.

We recognise that the repex model may be difficult to populate and interpret for Evoenergy but also note that this should be expected for smaller DNSPs with less ability to diversify replacement across larger populations to report stable year to year replacement programs.

2.1.2   Limited Use of Unmodelled Repex

In interpreting the repex forecast and suitability of the historical expenditure to serve as a reasonable proxy for the upcoming regulatory control period, Qubist observes that Evoenergy makes very little use of the 'unmodelled' repex component that allows for more non-routine or non-time based deterioration to be addressed by replacement capex.

To the extent that the historical expenditure does not include replacements that are driven by non-time based deterioration modes (such as compliance and economic obsolescence) these will also be excluded from the substitute forecast that has been applied in the Draft Decision. This is particularly material given that the intent of the 'modelled' repex allowance is to allow for the recurring level of replacement capital expenditure associated with operating a complex network. As a result, the removal of any 'unmodelled' component from Evoenergy's replacement program to a separate category does not reduce the total value needed to address the baseline 'recurrent' replacement capex needs.

Where items are included in the Evoenergy replacement capex portfolio that are better characterised according to the 'unmodelled repex' definitions used by other businesses, the total allowance should be increased by that amount over and above the total modelled repex allowance to ensure that Evoenergy has the allowance to complete its recurrent replacement work alongside the additional non-time based deterioration replacement works.

Evoenergy's analysis showing that its original proposal for repex fell below the Cutler Merz repex model ranges as well as the AER's draft determination setting a level that was further below the expected repex model results challenges the AER's previous use of the repex model as an upper bound indicator for and efficient total repex forecast.

Qubist considers that deeper engagement on the repex outcome and approach would be beneficial to both the AER and Evoenergy as part of the consideration of the revised proposal.

Conclusion

Qubist has reviewed the information provided to the AER, the Evoenergy systems and manual processes to rationalise age driven replacement capex information in the development of its original regulatory submission.

Original proposal

To develop its original proposal, the business used a combination of:

a) PowerPlan output as an age based screening of replacement needs that has not yet been calibrated to field experience
b) An engineering and management review to challenge the larger program and align the forecast quantities with resource capability and customer price impacts.
c) Co-ordination across the total regulatory capex portfolio to target individual assets and asset types based on condition, obsolescence, performance and security vulnerabilities in accordance with its obligations for reliability, safety and security as the ACT electricity distribution network.

Qubist highlights that this process was not well articulated and the AER appears to have interpreted the process of developing the replacement forecast as being comprised mainly of an inherently overstated age based system (as the Powerplan system currently is).

The AER rejected the Evoenergy proposed repex capital forecast and substituted an amount that is equal to a 5 year historical average repex in place of the Evoenergy program.

Qubist review

Qubist recognises the logic for reaching the AER's position without the full appreciation of the scale of curtailment of expenditure that has been applied in the engineering and management review and the targeting of replacement programs against specific asset types, each with observable type, performance, security or condition vulnerabilities that need to be addressed over the next regulatory control period.

Throughout our review we have made recommendations to Evoenergy for areas where the process can be improved and areas that should have been better articulated for the regulator. Evoenergy has commenced an initiative to calibrate the PowerPlan data to its field experience with the intent of reducing reliance of age and better assessing actual asset failure profiles across the asset base. This will reduce the reliance on the more 'manual' processes that are currently relied upon to rationalise the original PowerPlan forecast for the regulatory proposal.

Revised proposal

Our review has identified that Evoenergy can largely accept the repex forecast that was applied in the AER's draft determination. However, the Poles and Secondary Systems asset classes require greater levels of replacement over the upcoming period than historical experience and accordingly detailed business cases should be developed by Evoenergy justifying an uplift in investment in the EV24 period.

Whilst we acknowledge that further refinement of the granularity and underlying assumptions in the analysis could improve the accuracy of the outcome, our intentionally conservative assumptions and sensitivity testing provide confidence that these improvements would not change our recommendation or the total repex requirement.

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