Expenditure Forecasting Methodology 2024–2029

As required by clause 6.8.1A of the National Electricity Rules

June 2022

evoenergy

Table of contents

1 Introduction

1.1 Document purpose

The purpose of this document is to outline the methodology that Evoenergy intends to use to forecast capital expenditure (capex) and operating expenditure (opex) for its regulatory proposal, to be submitted to the Australian Energy Regulator (AER) by 30 January 2023, for the 2024/25 – 2028/29 (2024–29) regulatory control period.

1.2 Background

The AER is required to determine the revenue allowance for Evoenergy under the National Electricity Rules (NER) for the 2024–29 regulatory control period. As part of this review process, this document informs the AER of Evoenergy's expenditure forecasting methodology, as required by the NER, which states:

> *A Distribution Network Service Provider (DNSP) must inform the AER of the methodology it proposes to use to prepare the forecasts of operating expenditure and capital expenditure that form part of its regulatory proposal.*[1]

The NER further stipulates that this should occur 24 months before the expiry of a distribution determination that applies to the DNSP.[2] For the 2024–29 regulatory control period, this corresponds to a submission deadline of 30 June 2022.

[1] NER clause 6.8.1A(a).

[2] NER clause 6.8.1A(b)(1).

2 Consumer engagement

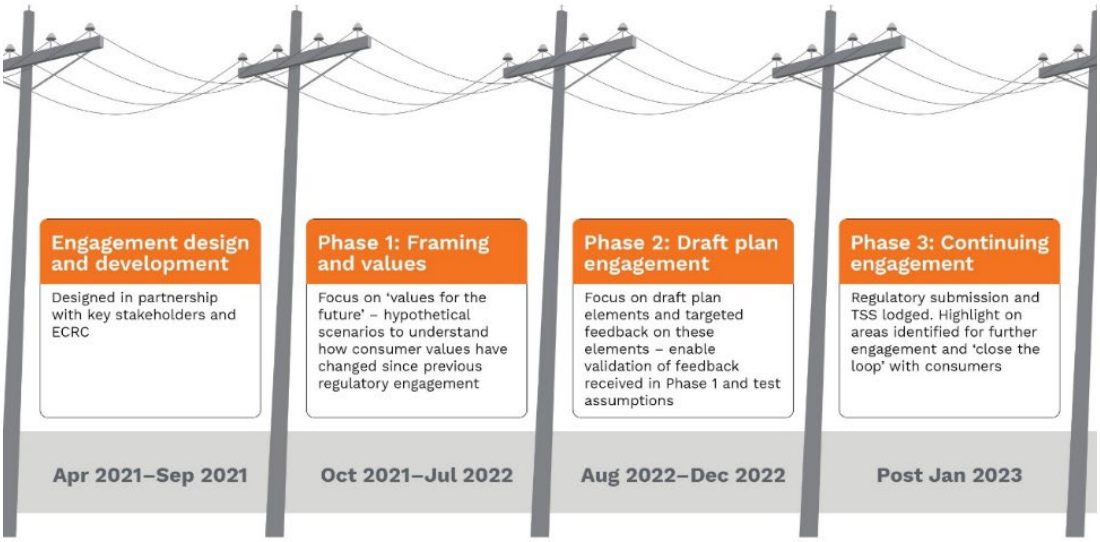
2.1 Overview of engagement approach

Customer and stakeholder inputs are integral to Evoenergy's expenditure planning to ensure the service we provide continues to meet customer needs and expectations and we comply with regulatory requirements. Evoenergy's Consumer Engagement Strategy (the Strategy) provides a roadmap outlining the principles for engagement and engagement activities planned to support the development of the electricity distribution network determination draft plan (draft EN24 plan) and proposal for 2024–29 (see Figure 2-1).

The Strategy was developed in consultation with Evoenergy's Energy Consumer Reference Council (ECRC) and considers lessons learnt from previous engagement work and reflects the unique characteristics of Canberra energy consumers. The engagement objectives are to:

- inform, consult, involve and collaborate with electricity customers, key stakeholders and other members of the Canberra community about the future of the electricity network.
- gather diverse customer input to inform the development of the regulatory proposal and proposed Tariff Structure Statement (TSS).
- enhance customer knowledge of Evoenergy and its business through active engagement from Evoenergy staff during engagement delivery.

Figure 2-1 Engagement phases



2.2 Engagement activities

Consumers are engaged at every stage of the process leading up to the submission of the regulatory proposal and the AER's final decision. This provides consumers and stakeholders

the opportunity to participate and influence forward planning, ensuring that future demands of customers are accurately and sufficiently reflected in Evoenergy's network plans.

Evoenergy engages and seeks input from a diverse range of representatives from all consumer segments as well as targeted engagement with stakeholders such as retailers. Several different engagement activities are planned to inform, involve, and collaborate with consumers as summarised in Figure 2-2, including:

- ECRC meetings and engagement health check
- Community panel meetings
- A dedicated engagement website
- A community roadshow
- Consumer group partnerships
- Energy Matters and future consumer forums
- Tariff and pricing co-design sessions
- Deep dives and consumer surveys, and
- Media and public relations campaigns.

Figure 2-2 Consumer engagement activities

Stakeholder group			Consultation tools and activities										
		ECRC health check	Community Panel	Engagement Website	Community roadshow	Consumer group partnership	One-on-one meetings	Energy Matters	Future consumer forum	Tariff trial engagement	Draft EN24 proposal and TSS	Deep dives	Draft proposal workshop
	Residential	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
	Small-medium business	✓	✓	✓		✓					✓	✓	✓
	Vulnerable communities	✓	✓	✓	✓	✓			✓		✓	✓	✓
	Culturally and Linguistically Diverse (CALD) communities		✓	✓	✓	✓			✓		✓	✓	✓
	Aboriginal and Torres Strait Islander (ATSI) communities		✓	✓	✓	✓			✓		✓	✓	✓
	Young people		✓	✓	✓	✓			✓		✓		✓
	Retailers						✓				✓		✓
	Large customers	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
	ACT Government						✓			✓	✓		✓

2.3 Relevance of engagement to expenditure forecasting

We consider the feedback we receive through engagement, and this informs our expenditure requirements to meet the expectations and preferences of consumers. The process includes testing opex and capex forecasts through the consumer engagement program, and culminates with the release of a draft plan which provides consumers with the opportunity to assess how their priorities for expenditure are proposed to be implemented as well as the overall affordability of the program before the formal regulatory proposal process begins.

The following steps are taken to ensure consumer feedback is addressed in the preparation of the regulatory proposal:

- **Careful and accurate collection of data** – this includes minutes, reports and data analysis of feedback from all interactions with consumers and stakeholder groups.
- **Public release of feedback** – through the web-based release of regular reports on consultation activities and a final consultation report, consumers can review stakeholder feedback and verify accuracy and consistency.
- **Consumer feedback register** – a register of themes and feedback from consumers maintained and used as a checklist to record responses to that feedback as the draft EN24 plan and regulatory proposal are developed.
- **Direct input to management structure** – feedback from consumers regularly reported to the Project Board and team responsible for preparing the regulatory proposal.
- **Demonstrate resulting changes to strategies –** changes resulting from consumer feedback clearly identified in the regulatory proposal. Where consumer feedback differed to the final position in the proposal, the reasons for this difference will be clearly explained.

3 Overview of expenditure forecast method

3.1 Capital expenditure

Evoenergy uses a zero-based approach for capex forecasting for its electricity distribution business, except for some non-network capex such as plant and equipment, where the recurrent nature of the expenditure lends itself to a recurrent forecasting approach. Consistent with the AER's guidance on assessing capex,[3] past actual expenditure may not be an appropriate starting point for capex given it is non-recurrent or 'lumpy'.

3.2 Operating expenditure

Evoenergy will use the 'base-step-trend' approach for forecasting opex for the forthcoming regulatory period, consistent with the AER's preferred methodology.[4] The approach involves trending an efficient level of opex forward and accounting for changes in input costs, output growth, and productivity gains. Step changes are then added to the forecast to account for forecast expenditure not included in the base year or the trend. The steps of the 'base-step-trend' approach are set out in Figure 3-1 and detailed in section 7.

Figure 3-1 Operating expenditure forecasting steps

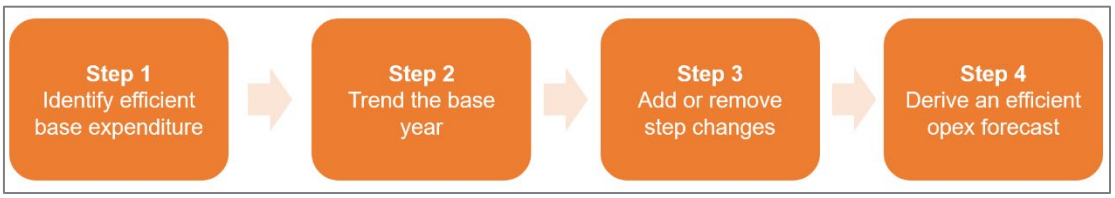
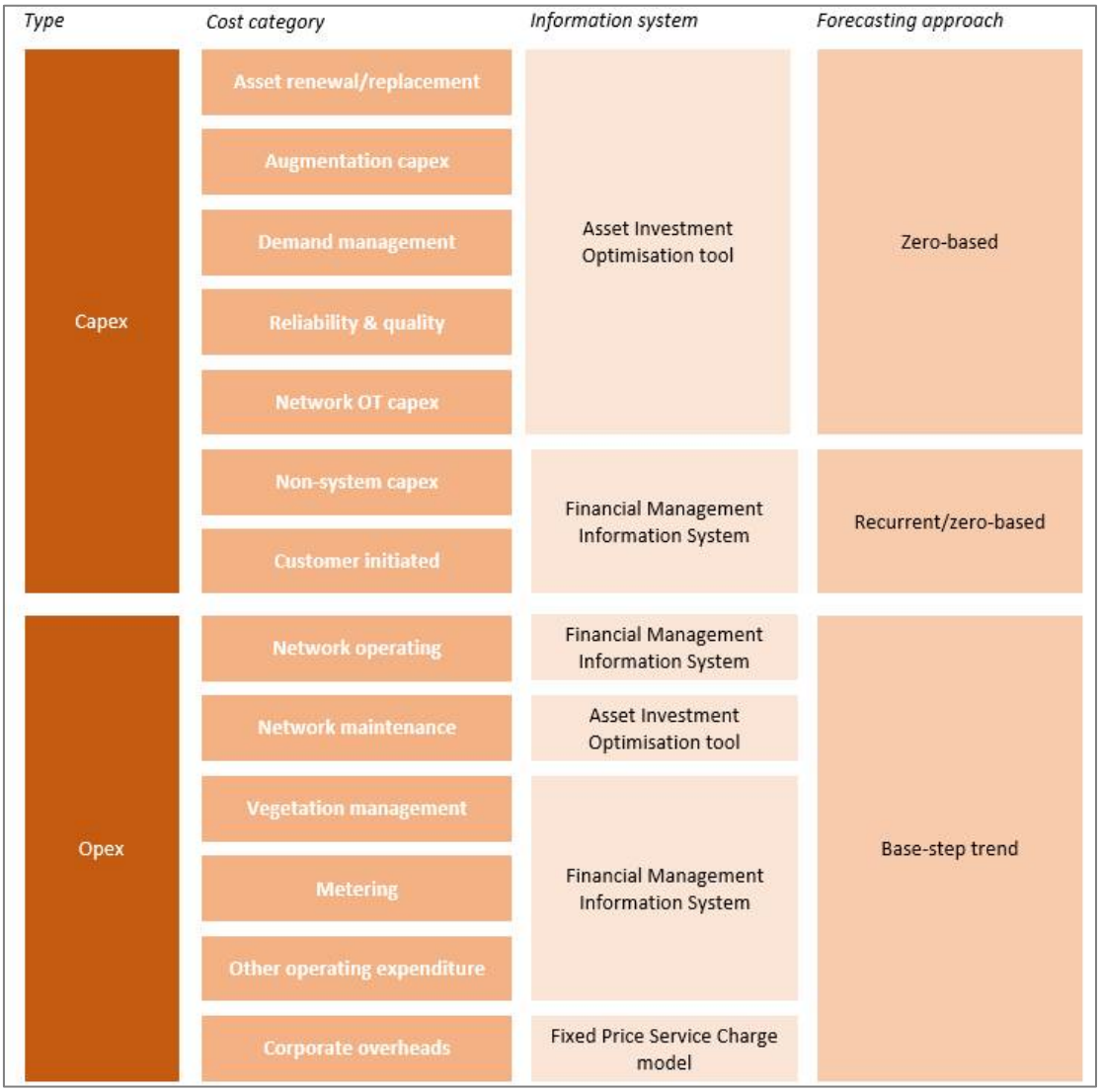


Figure 3-2 summarises Evoenergy's forecasting methodology. The following sections of the report analyse these approaches in more detail.

[3] Section 2.2 of the AER Expenditure Forecast Assessment Guideline for Electricity Distribution.

[4] AER, Better Regulation Expenditure Forecast Assessment Guideline for Electricity Distribution, November 2013; AER, Better Resets Handbook Towards Consumer Centric Network Proposals, December 2021.

Figure 3-2 Expenditure forecasting methodology



4 Asset Management System

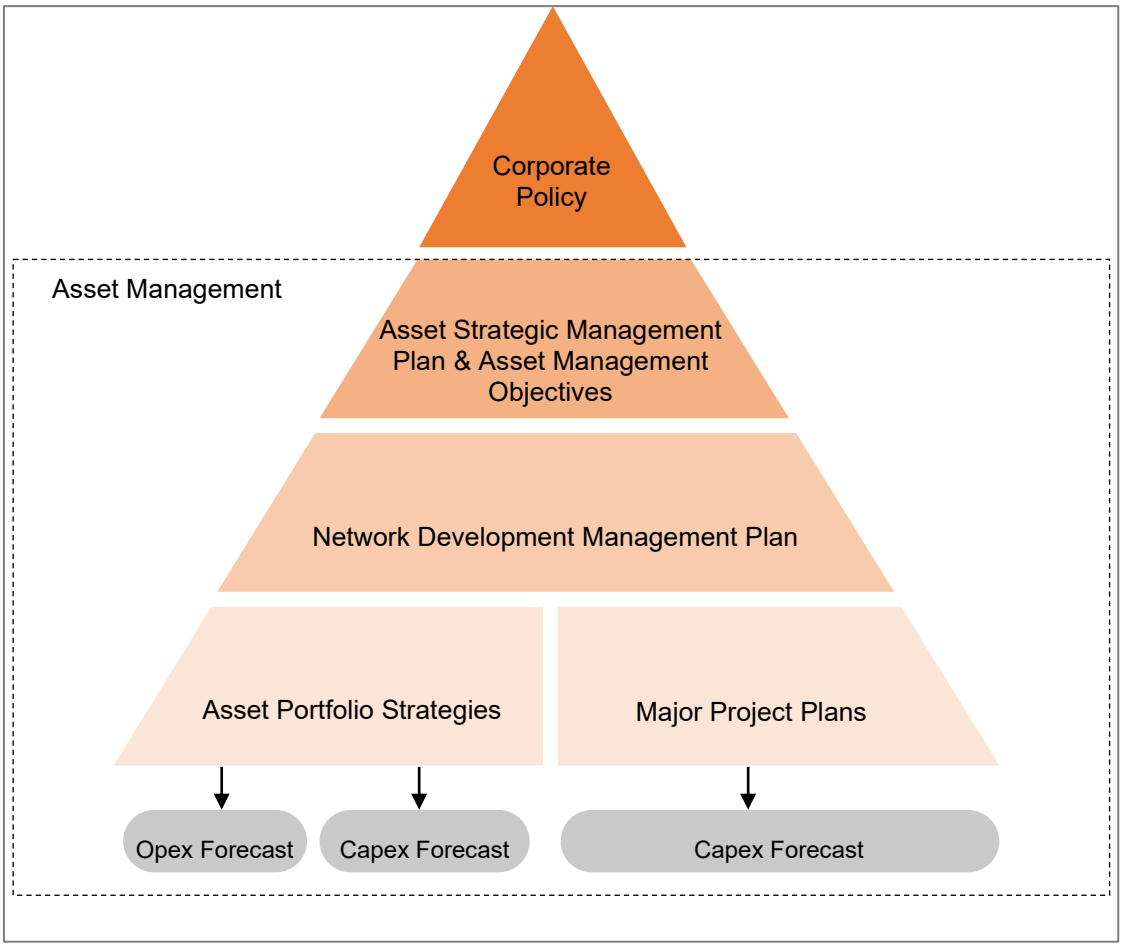
4.1 Overview

The Asset Management System (AMS) is a collection of functionally related elements working together to effectively and efficiently manage Evoenergy's core assets (see Figure 4-1). The goal of the AMS is to implement Evoenergy's strategic objectives and corporate mission, which is to offer customers the safe, reliable and sustainable energy solutions they want.

The Asset Strategic Management Plan is the central document identifying activities to be performed and the objectives of our asset management system. Our asset management objectives are implemented by both our asset portfolio strategies and major project plans. The asset portfolio strategies provide the strategy for each asset class within their respective portfolio to meet our asset management objectives while the major project plans pertain to network augmentation business cases.

Evoenergy is certified to the ISO 55001 asset management standard and we undergo annual external audits to maintain our certification.

Figure 4-1 Asset Management System



4.2 Asset portfolio strategies

Asset portfolio strategies provide organisation of asset groups into higher level portfolios for overhead assets, ground assets, zone substation assets, secondary system assets and vegetation management. The asset portfolio strategies contain a description of the assets they cover; portfolio specific asset management objectives; population and age profiles; current condition and performance; risks and opportunities; asset management strategy and optimal program of work.

The asset portfolio strategies individually, and in concert with each other, provide the plans which will inform:

- A detailed Program of Work (PoW) for all Evoenergy assets
- A forecast of capital and operating expenditures
- A budget for planned and unplanned maintenance, condition monitoring and refurbishment
- Health of assets and risk of asset failure
- Assurance of transparency and alignment from boardroom to workshop. Senior managers can be confident that corporate policy is being implemented and frontline workers can be confident that they are empowered with the resources and information to meet corporate requirements
- Assurance that alternatives and priorities on asset management have been set to best meet corporate goals
- Feedback on the effectiveness of the asset management plan on achieving targets, and
- Asset class strategy options analysis.

The key to successfully building the asset portfolio strategies is drawing on the Asset Information System and using the Asset Management Asset Investment Optimisation (AIO) tool to provide risk optimised strategies and optimised program of work. Additionally, the AIO tool provides the asset portfolio strategies with consistency and balanced investment across asset portfolios.

4.3 Augmentation business cases

Business cases for augmentation capex are prepared to request approval to fund customer-driven demand to grow, add density capacity or security to the network, or to address constraints on the network by installing new assets or upgrading existing assets that will result in an improvement in service capacity, security or reliability. Business cases go through a rigorous internal approvals process, with significant business cases going to the ActewAGL Chief Executive Officer or Board for approval.

5 Asset investment optimisation

Balancing cost and risk is a complex business challenge. Evoenergy's AIO tool supports decision making: aligning investment with organisation and asset management objectives.

5.1 Overview

Evoenergy's AIO tool supports strategic decision making and development of significant capex and opex forecasts. This system has been in use since the 2014/15 financial year to create investment plans that are submitted annually to executive management for endorsement. Since then, the AIO system has evolved to ensure planning methodologies are prudent and efficient, including adopting principles from the AER industry practice application note '*Asset Replacement Planning 2019*'.

The AIO tool is integrated with Evoenergy's operational technology (OT) to enable data-driven forecasting processes. The asset register is sourced from the asset database and Geospatial Information System forming the foundation of the bottom-up forecast. Asset lifecycle models are applied to the assets to create Asset Specific Plans (ASPs) which detail required capex and opex forecasts, a PoW and projected future asset health and risk.

Network augmentation investments are also registered in the AIO tool. This allows for optimised and prioritised investments while facilitating integrated planning processes where asset replacement and maintenance plans are accessible and visible to network capacity planners.

Ultimately, this tool develops and consolidates investment plans for 30 years including the current and upcoming regulatory control periods. With this information, capex and opex forecasts are identified for each asset and network investment categories.

5.2 Key elements

The AIO process is data-driven, utilising the key elements set out in Table 5-1 to develop capex and opex forecasts.

Table 5-1 Key elements to develop expenditure forecasts

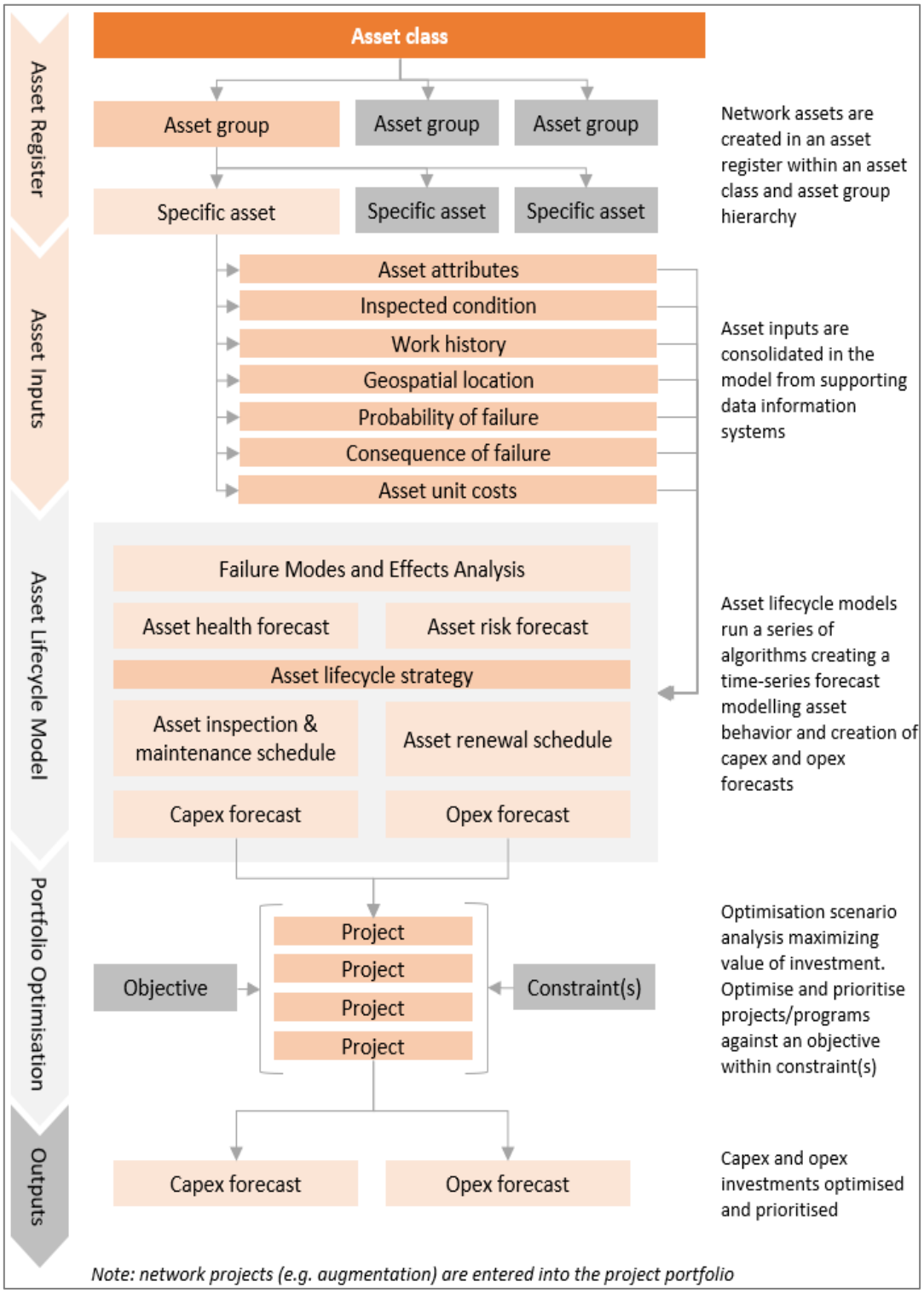
Element	Description
Asset Register	A register of electricity network assets including asset attribute information such as asset type, location, make, model, rating, serial number etc.
Asset History	A record of works undertaken for assets including inspection, maintenance and refurbishment. This information ensures future projections are based on relevant and up to date information.
Asset unit cost	A library of estimated unit costs to inspect, maintain, refurbish and replace assets. Costs are periodically reviewed to maintain accuracy.

Element	Description
Asset FMEA	Study asset type Failure Modes and Effects Analysis (FMEA) to assist developing inspection, maintenance and renewal strategies and inform asset risk models (asset health and criticality). Teams of cross-functional subject matter experts review historical records of asset performance to study assets FMEA capturing emerging trends to treat needs through inspection, maintenance or renewal.
Asset Health	An Asset Health Index (AHI) representing an assets health from asset inspection and performance information. AHI is determined at the start of the planning period and future asset health is forecast forward. The asset health assessment is a repeatable process outlined in the Asset Health Framework.
Asset Risk	A monetised risk assessment as a function of likelihood and consequence. For asset failure risk this is Probability of Failure (PoF), Likelihood of Consequence and Cost of Consequence. Asset risk is estimated at the beginning of the planning period and forecast to future years in-line with increasing asset PoF and adjusted (reduced) for asset interventions including refurbishment and replacement.
Asset Lifecycle Strategy	A software algorithm to model future asset lifecycle behaviour and forecast management tasks (inspect, maintain refurbish, replace, decommission). The asset lifecycle model predicts future asset health, PoF, risk and useful life. These algorithms forecast investment based on asset needs and/or opportunities identified by asset lifecycle strategies. Asset lifecycle strategies are developed by asset managers applying industry best practice to identify needs and/or opportunities for assets. This is generally done by evaluating an asset's: **Required Service Level –** definition of asset function and required service level to meet asset management objectives **Performance Capability –** evaluation of the asset's capability to continue meeting required service levels Development of asset lifecycle strategies is supported by the AMS, specifically: • Asset management objectives • Asset management strategy • Operational strategies • FMEA studies • Asset Health Framework • Asset Risk Value Framework

Element	Description
Portfolio Optimisation	The optimisation process effectively allocates investment to projects and programs to maximise value from finite resources. It optimises/prioritises projects and programs which have been created by identifying a need or opportunity against an objective within defined constraint(s). The output is a multi-year investment portfolio with optimal ranking against the objective and planned within defined constraint(s). Portfolio optimisation allows investment across different asset classes to be effectively allocated giving priority to investment which delivers the greatest benefit (risk mitigation). In addition to optimising investment programs, portfolio optimisation also has capability to undertake 'what if' analysis for testing investment scenarios. For example, what is the impact to network risk if funding is reduced or increased? Lastly, bottom-up planning does not always result in investment programs that are achievable to deliver (fund and resource). Where these multi-year investment plans (across one or more regulatory determinations) have years where investment peaks, portfolio optimisation can smooth investment needs and prioritise investment with the greatest benefit.
ASPs & Reports	A document describing the asset management plan for an asset class. This includes asset class functions, identified needs and/or opportunities, failure modes, lifecycle strategy and forecast asset health, risk and capex and opex budgets. The AIO tool also provides ease of generating reports which are convenient and accurate including up to date detailed forecast of activities and expenditure.

Key elements of AIO are represented in Figure 5-1.

Figure 5-1 Asset Investment Optimisation key elements



5.3 Prioritisation process

The method by which Evoenergy prioritises asset renewal/replacement and maintenance activities is a critical function of investment planning. This is achieved by modelling asset health and criticality, providing the capability to prioritise by:

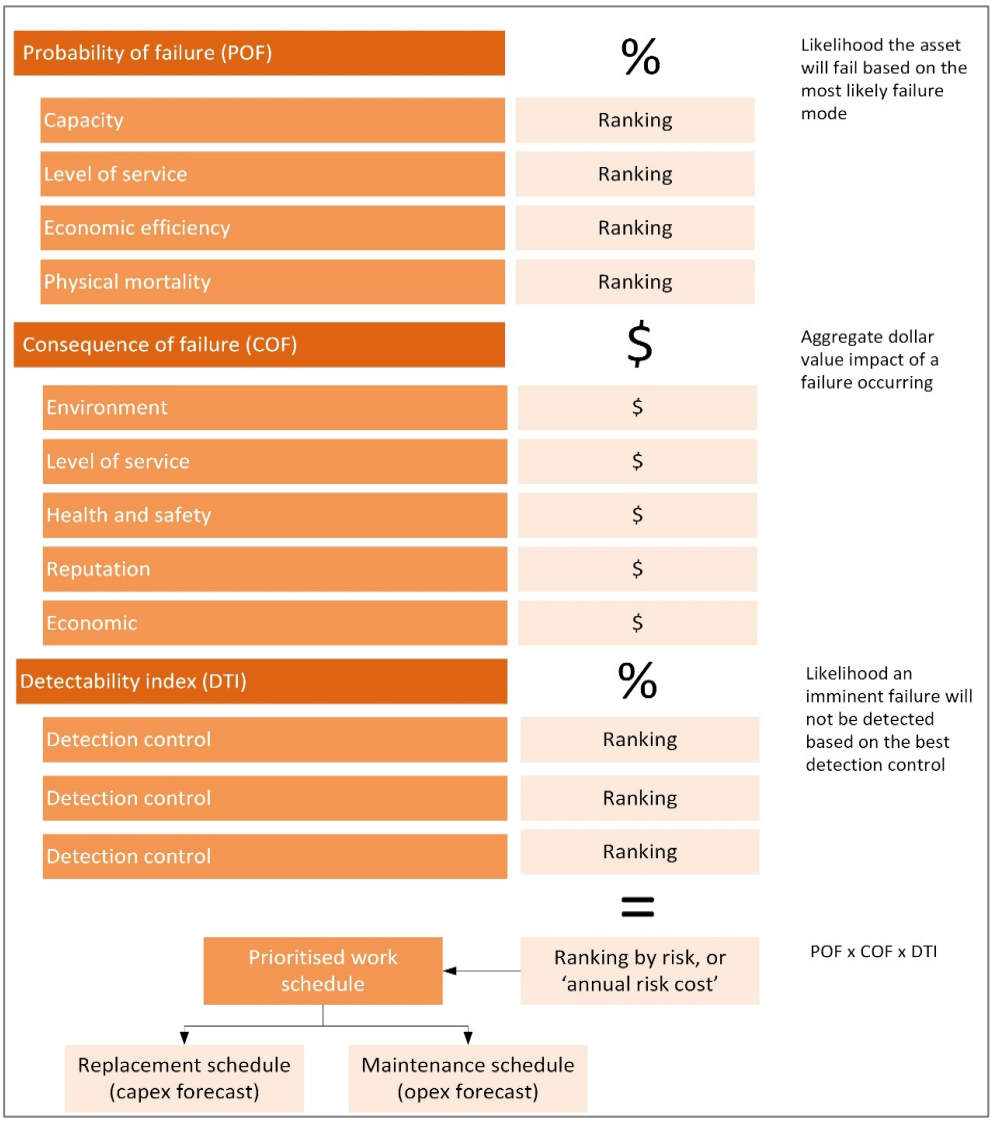
- Asset failure risk – assets ranked from highest to lowest risk
- Investment benefit – investments ranked from largest to smallest benefit

Prioritisation by these methods forms the basis for investment programs and PoW on which capex and opex forecasts are based. Typically, inspection and maintenance is prioritised by asset failure risk and asset replacement and refurbishment is prioritised by investment benefit in the portfolio optimisation process.

Another form of prioritisation in developing asset lifecycle models is asset failure modes. The FMEA process assessing asset failure modes evaluates the Risk Priority Number as a function of likelihood, severity, and detection. This provides a priority ranking of highest to lowest criticality failure modes.

Evoenergy planning and forecasting of expenditure for future investment accounts for changes associated with territory government policy, for example, the Australian Capital Territory (ACT) Government's net zero by 2045 goal. The 2024–29 regulatory control period aligns with the progress of infrastructure and other investment towards that goal and it creates an extra level of complexity with forecasting expenditure as policy development remains in high flux.

Figure 5-2 Prioritisation of capital and maintenance expenditure

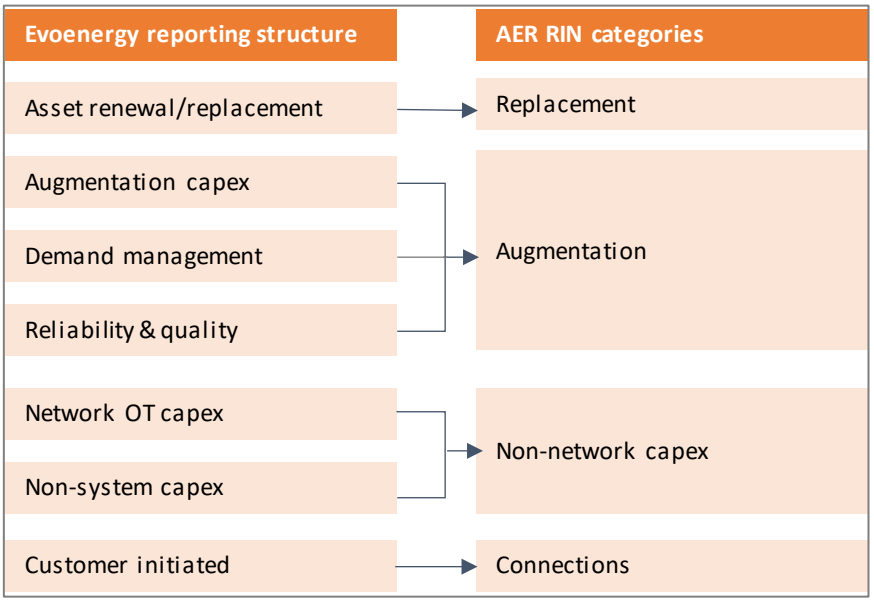


6 Capital expenditure forecasting

6.1 Categories mapping

The capex reporting categories used by Evoenergy are consistent with the categories used in the AER Guidelines, supporting the methodology documentation process. The forecasting method for each reporting category is unique and is as shown in Figure 6-1.

Figure 6-1 Capex reporting categories mapped to AER regulatory information notice categories



Evoenergy will also identify which projects are distributed energy resources (DER) related. Examples of DER include rooftop solar, behind the meter batteries, electric vehicles (EVs) and energy management systems. More detail on DER projects is captured in section 6.6. From a reporting perspective, DER projects may cut across a range of different regulatory information notice (RIN) categories, such as augmentation, non-network capex and connections. For this reason, Evoenergy has chosen not to report DER as a standalone category, however, it will flag which projects are DER so that separate reporting on these projects is possible.

6.2 Asset renewal, including pole replacement

Asset renewal/replacement includes the costs of replacing the following asset types:

- Zone substations
- Secondary systems
    - Communications
    - Protection
    - Supervisory Control and Data Acquisition
- Distribution Underground

- Distribution Overhead
- Transmission Overhead
- Transmission Underground

Asset renewal, including pole replacement expenditure, is forecast using a zero-based approach utilising the asset management software (as described in section 5).

Key drivers of asset renewal include asset age, reliability, functionality and maintenance expense. Each asset is analysed and prioritised for replacement based on the input of a series of condition reports and risk ratings, generating a work schedule for the replacement of assets by financial year and the associated capex cashflow.

6.3 Augmentation

Augmentation capex includes the addition of assets that grow the network (for example, 11 kilovolt feeders, distribution substations, zone substations) to provide additional capacity or security to customers as well as the upgrade of existing assets. Augmentation assets are built into Evoenergy's AIO tool and future investment is forecast taking into consideration load forecasts, customer-initiated requests, density, and other growth projections. It is zero-based and therefore changes year-to-year, based on the number of projects.

Key drivers for augmentation projects include local demand growth, network performance and reliability standards, network security supply standards, quality of supply standards, connection of embedded generation and net market benefits. One of the key ways of forecasting demand, density capacity and other growth projections is to use data from the Environment, Planning and Sustainable Development Directorate (EPSDD). EPSDD is responsible for the release and development of government-owned land for residential, commercial, industrial and community purposes and publishes its land release and development on its website. Inputs are also taken from engagement with non-government developers, and industrial customers and generators.

6.4 Connections and customer-initiated works

Customer-initiated capex relates to where a customer requests either a network extension, other network augmentation or connection assets required to enable the new connection or connection alteration to be made. This also follows a zero-based approach, with forecast developments based on the following key drivers:

- Direct customer/developer enquiries;
- Major public and private development initiatives identified through public/media announcements;
- Future development activity identified through the ACT Government planning, preliminary assessment and agency liaison/consultation processes;
- Future development activity identified through ACT Government land release programs;
- Historical expenditure in the various customer-initiated work categories adjusted to reflect the anticipated short-term broader economic environment; and
- Connection of embedded generation, e.g. solar farms.

6.5 Non-network capex

Non-network capex includes spending on OT systems, buildings, land, property, plant and equipment and non-system assets. Non-network capex forecasts are primarily derived using a zero-based approach. This is the case for network OT, building, land and property and motor vehicles.

Expenditure forecasts for plant and equipment and some non-system capital are typically based on historical levels and reflect a provisional estimate.

6.6 Distributed Energy Resources – Solar Enablement Initiatives

The AER has developed guidance for investments intended to increase DER hosting capacity. Investments related to DER are those which help to facilitate two-way energy flows, such as integrating small-scale solar and batteries, into the grid. For example, augmentation of the low-voltage network may be required to accommodate increases in solar photovoltaics to maintain voltage compliance.

Additionally, the Australian Energy Market Commission (AEMC) has made a new rule called *Access, Pricing and Incentive Arrangements for DER*. This recognises exports as a distribution service with implications for all aspects of DNSP planning and regulation.

Transitional arrangements in the rule change require DNSPs to offer a free basic export service level at no charge for two regulatory periods (that is, 10 years). The AER and DNSPs will need to determine the basic export service level, with a presumption that this reflects minimal or no additional investment to support forecast export use of the network.

Evoenergy will be required to invest in capability that facilitates the two-way flows of energy from customers' DER while also ensuring the quality of supply for these customers are not adversely affected. Evoenergy is expected to spend capex (and opex) in the next regulatory period to comply with this new rule change.

Evoenergy will incur capex for information technology (IT) and OT related capabilities to enable two-way flows of energy from customer assets associated with a suite of DER in residential and commercial precincts including EV chargers and bi-directional EV chargers in the upcoming regulatory cycle.

Evoenergy anticipates expenditure will be primarily forecast using a zero-based approach.

6.7 Input cost escalation

In developing its capex forecasts, Evoenergy will apply price escalation factors to various projects. The AER's standardised standard control services (SCS) capex model has three different cost components: internal labour, contract labour and non-labour. For each project, base costs are broken down into these cost components and then scaled into escalated costs using the separate cost escalators for internal labour, contract labour and non-labour.

Evoenergy may utilise different material-related forecasts to derive a 'non-labour' cost escalation factor to be used in the AER standardised SCS capex model.

7 Operating expenditure forecasting

Opex includes a range of non-capital costs incurred by Evoenergy to service our customers, such as vegetation management, maintenance, emergency response, network support, and corporate overheads.

Evoenergy will use the top-down 'base-step-trend' approach to forecast our opex consistent with the AER's preferred approach and taking into consideration stakeholder expectations as set out in the Expenditure Forecast Assessment Guideline and the Better Resets Handbook.[5] Evoenergy will use a bottom-up forecasting approach for other costs, including debt raising costs.

This chapter describes Evoenergy's opex categories for SCS and alternative control services (ACS) and details our forecasting approach for the forthcoming regulatory period.

7.1 Operating expenditure categories

Evoenergy's financial management structure adopts opex categories in our management reports and forecasting approach, as shown in Table 7-1.

Table 7-1 Opex categories for standard and alternative control services

Category	Description	SCS	ACS
Network operating expenditure	System Control	■	
	Fault Call Centre	■	
	Strategy and Planning of the Network	■	
	Network Analysis and Planning	■	
	Future Networks	■	
	Electrical Standards	■	
	Regulatory Operations (Networks)	■	
	National Electricity Market Operations	■	
	Training Apprenticeships and Engineers	■	
	Customer Service	■	
	IT Support	■	
	Demand Management Incentive Scheme	■	
Network maintenance expenditure	Zone Substations	■	
	Secondary Systems	■	
	Distribution	■	
	Transmission	■	
	Network Asset Property	■	

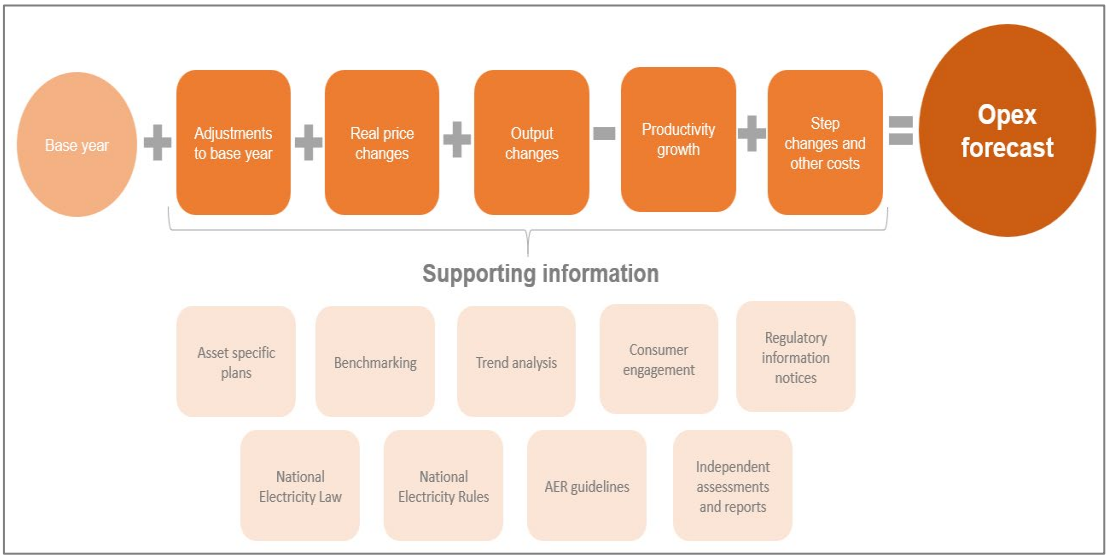
[5] AER, Better Regulation Expenditure Forecast Assessment Guideline for Electricity Distribution, November 2013; AER, Better Resets Handbook Towards Consumer Centric Network Proposals, December 2021.

Category	Description	SCS	ACS
Vegetation management[6]	Vegetation management includes tree cutting, undergrowth control and waste disposal connected to line clearing, including coordination and supervision of vegetation control work, as required under ACT law.	■	
Other opex	Network specific marketing.	■	
	Business Overheads include insurance, audit fees, bad and doubtful debts, performance share, and other miscellaneous corporate business expenditures.	■	
	Fee-Based Services include expenditure relating to re-energise or de-energise a site, Temporary Connections and other services in connection with the use of the electricity system.		■
	Quoted Services involves work on assets owned by the network business like damage to its assets, relocations and removals, which are not capital in nature.		■
Metering	All opex incurred in the carrying out of meter reading, testing and maintenance activities.		■

7.2 Opex forecasting method – Standard Control Services

Evoenergy's 'base-step-trend' forecasting approach involves trending an efficient base year to account for changes in real price growth, output growth, and productivity gains. Evoenergy will add category-specific forecasts and step changes that are not captured in the base year or rate of change required for the forecast in order to meet the opex objectives. The approach is shown in Figure 7-1 and outlined in the following sections.

Figure 7-1 Opex forecasting approach



[6] The *Utilities (Technical Regulation) Act 2014* (ACT) and utilities associated regulations regulates vegetation management in the ACT.

7.3 Opex forecasting method – Alternative Control Services

7.3.1 Metering

Metering includes both meter reading and testing services, both of which are forecast using a base-step-trend approach. Evoenergy is responsible for maintenance of its existing type 5 and 6 meters and identifying meters for replacement by energy retailers. Meter testing is largely consistent year to year, with actual metering costs determined using a statistical sampling requirement mandated by Australian Standard AS1284, Part 13. This standard determines the number of meters that require testing.

As the number of active type 5 and 6 meters reduces, there is potential for diseconomies of scale to impact the per-unit-cost of servicing each meter. This may also be impacted by the outcome of the AEMCs metering framework review which could accelerate the retirement of these meters.

7.3.2 Ancillary services (fee based and quoted services)

Ancillary services opex mainly involves labour inputs and is determined by a cost build-up based on the amount of time taken, as well as the type of labour used, to fully recover costs to deliver these services. Forecasts account for real labour cost growth, as discussed in section 7.5.

7.4 Opex base year

Evoenergy will determine an opex base year from which to forecast opex over the forthcoming regulatory period. The base year will reflect typical recurrent expenditure for operating our business within our operating environment. Evoenergy will propose a recent year in the current regulatory period, representing revealed costs to trend opex and will normalise the base year, removing any non-recurrent expenditure incurred during that year. We will also use benchmarking analysis and other assessment tools to test the efficiency of our base year opex.

The base year will be adjusted to account for the efficient incremental remaining regulatory year/s of the current regulatory control period to provide an appropriate base level of costs for the forthcoming regulatory control period.

7.5 Trend

The trend or ‘rate of change’ accounts for forecast output changes (e.g., customer numbers, circuit length, and demand), real price growth for labour and non-labour inputs, and industry productivity improvements.

7.5.1 Price growth

Real price growth impacts the input costs to maintain and operate our network and reflects movements in prices that are expected to deviate from inflation. In developing our opex forecast, Evoenergy will apply labour and non-labour price escalation factors for inputs that contribute significantly to opex but for which escalation by the consumer price index is not appropriate. The cost escalators will be consistent across both opex and capex.

Labour forecasts will consider historical trends in utilities wages relative to other industries, the outlook for the ACT economy, forecast capex in the utilities sector, and broad labour supply

issues, including the tightness of the labour market. The forecasts will be weighted based on the AER's input price weights as set out in the latest Annual Benchmarking report.

7.5.2 Output growth

Output growth represents changes in the type and volume of services Evoenergy provides to meet our customers' expectations and regulatory obligations. It is reasonable to expect that a material increase in output in the future will require an adjustment to the operating expenditure to deliver this change in output, such as for the uptake of EVs. Specifically, in forecasting output growth escalation, Evoenergy will consider:

- Forecast output growth (e.g., changes in customer numbers, the size of our distribution network, and forecast growth in energy demanded); and
- Output weights derived from econometric cost function modelling in the AER's Annual Benchmarking report.

7.5.3 Productivity growth

Productivity measures how well a business utilises its inputs to produce outputs. An increase in productivity represents an increase in outputs for a given level of inputs or a decrease in inputs for a given level of outputs. Over time, societal and technological changes affect the productivity of the distribution industry.

Evoenergy will assess the appropriateness of an efficiency adjustment to account for changes in productivity over time in preparing its opex forecast. In doing so, we will have regard to such considerations as forecast output growth, expected changes in specific business and market conditions, forecast technological change, historical productivity performance, and the recent AER reviews into productivity.[7]

7.6 Step changes and category specific forecasts

Step changes are added to or subtracted from the opex forecast for costs that are not compensated by base opex and the rate of change. Evoenergy may propose a step change for a new regulatory obligation, a substitution between capex and opex, or other expected changes in revenue driven by an external factor outside of our control. Evoenergy will assess the prudency and efficiency of our proposed step changes, ensuring that costs are not double-counted in the base year or the rate of change.

Our opex forecast will also add other costs, including any category-specific forecasts, such as debt raising costs.

[7] For example, AER, *Final decision paper Forecasting productivity growth for electricity distributors*, March 2019.

8 Links between capital and operating expenditure forecasts

8.1 Overview

Evoenergy will undertake capex-opex trade-off evaluation in preparing its forecasts for the 2024–2029 regulatory proposal. The efficient use of assets is key to Evoenergy's prudent and efficient asset management practice and central to the assessment of options for expenditure. The benefits that flow from capex include additional modern assets with increased performance and lower maintenance costs. These benefits (and associated costs) are assessed against opex, where substitution between capex and opex is possible.

Trade-off analysis will be undertaken with respect to refurbishment and replacement of ageing and potentially unreliable equipment, where the ongoing maintenance, repair, and fault costs (including loss of supply) can be compared with the capital cost of refurbishment and replacement. An example is the replacement or upgrade of assets which reduce the amount of maintenance required by internal labour or prolonging the life of existing assets through higher levels of maintenance. A decision to invest in new capex as opposed to maintain existing assets can reduce life cycle costs of maintenance of those assets. Most capex-opex trade-off evaluations are assessed on an asset class basis rather than a project by project basis.

In addition to efficiency trade-offs, Evoenergy will also consider trade-offs relating to the National Electricity Objective (NEO), including trade-offs relating to:

- Quality
- Safety
- Reliability and security of supply, and
- Security of the national electricity system.

8.2 Potential trade-off impacts

A regulatory decision requires trade-offs between competing objectives. A decision to force substantial price decreases may decrease short term costs but has the potential to risk sustainable operations and investment plans in the long term. The NEO provides guidance on how these trade-offs should be resolved in specifying that the interests of consumers with which it is concerned are their interests in the 'long term'. A description of potential trade-off impacts and their consequences is provided in Table 8-1.

Table 8-1 Potential trade-off impacts

Trade-off impact	Enhanced risk areas
Higher than optimal long-term costs	• Higher than optimal intervention costs (unplanned replacement generally comes at a higher cost than when planned). • Higher maintenance costs (a higher rate of inspections, more frequent temporary repairs, and costs associated with repairs and other interventions that would not have been necessary if the assets were renewed at the optimal time).

Trade-off impact	Enhanced risk areas
	• Increased costs to customers (and Evoenergy) of service interruptions. • Increase in the cost of interruptions for Evoenergy and its customers, and reduced level of service it can deliver.
Lower level of service	• Increased response time which would induce increased total customer minutes of service interruption and a reduction in level of service. • Reductions in Evoenergy's ability to carry out planned maintenance. • A cycle of increasing numbers of unplanned faults as planned maintenance is not carried out, causing further increases to response times. • Reductions in renewal and operational budgets leading to aging assets failing more frequently, an inability to carry out planned maintenance, and steadily worsening response times. The cumulative impact will be a drastically lower level of service for customers.
Reduction in safety levels	• Failure of pole-top hardware and cross-arms is the most common form of failure on the overhead distribution system, causing overhead conductors to sag excessively or fall to the ground. The risk to public and worker safety can be significant in such an event. • Replacement of deteriorating cross-arms and pole-top hardware, and installation of vibration dampers, armour rods, and preformed distribution ties on rural high voltage overhead lines located in high bushfire risk areas is required to minimise the role that these assets can play in starting bushfires which are a significant threat to life and property.

8.3 Role of the AIO tool in trade-off evaluation

Evoenergy uses its AIO tool to optimise its asset renewal and replacement capex program and to make capex-opex trade-off evaluations. In particular, the tool considers the failure effect and risk (likelihood and consequence) of each investment decision. Failure effect can include impacts on safety of personnel and public, impact on environment, cascading failure on other equipment, operational consequences (unserved energy), and risk to reputation.

Based on the determined failure effect for each asset under consideration, one of the following replacement strategies is adopted and an optimal time for replacement or monitoring is identified:

- run to failure;
- condition monitoring; or
- age and condition-based replacement.

In setting Evoenergy's maintenance program, the selection of a run to failure, replace on condition or replace on age or usage strategy will be dependent on the safety implications of each and which strategy has the lowest overall expected cost. Generally, replace on condition is the most relevant to capex-opex trade-off decisions and is most commonly employed where the Consequence of Failure (CoF) is very high, for example, pole failures. Where the CoF is low such as assets with standby capacity, the run to failure strategy is often the least cost option.

Most distribution transformers have adjacent units which can take up the load in event of failure, so it is common to run these units to failure. The run to failure strategy has the advantage of delivering the maximum life from an asset, however once failure has occurred, replacement or repair is no longer discretionary. Age or usage-based replacement is used where inspections are costly, and/or the asset cannot be allowed to run to failure because of safety reasons.

9 Corporate governance

9.1 ActewAGL Board

The ActewAGL joint venture is made up of two partnerships: ActewAGL Distribution[8] (owned 50 per cent each by Icon Water Limited and Jemena Ltd via subsidiary companies) and ActewAGL Retail (owned 50 per cent each by Icon Water Limited and AGL Energy Ltd via subsidiary companies). It is governed by a single Partnerships Board comprised of six members, of which three members are appointed by Icon Water and three are appointed jointly by AGL and Jemena. The Board monitors business performance through progress reports on key projects and divisional progress against budgets and activity plans. It also sets performance targets and makes decisions related to business strategy. The board approves expenditure and is responsible for the release of funds based on business cases for both capital and operating projects of a significant value (in line with the responsibilities, requirements, values (e.g. greater than $5m in signing contracts) and approval conditions outlined in the Delegation of Authority Schedule).

9.2 Financial planning process

The Commercial Risk Framework provides the framework and direction for Evoenergy in relation to the following business deliverables (in line with the governance framework, including risk management principles and requirements):

- Long-Term Business Planning
- Annual Budgeting and Program Administration, and
- Detailed Project Planning, Estimating and Approvals.

The board approves long-term electricity distribution capital investment and asset maintenance plans. These plans form the basis of all financial and regulatory capital and maintenance expenditure budgets and forecasts and are the key underlying documents in the expenditure approval processes. These plans guide annual program expenditure and budgets, which are prepared and approved on an annual basis and are categorised into the four distinct categories:

- System capex
- Non-system capex
- System opex, and
- Non-system opex.

9.3 Expenditure governance

All expenditure made on electricity network capital projects, non-systems capital projects or unregulated business projects requires formal approval. Opex is approved at a program expenditure level, with additional governance and reporting in place to ensure appropriate

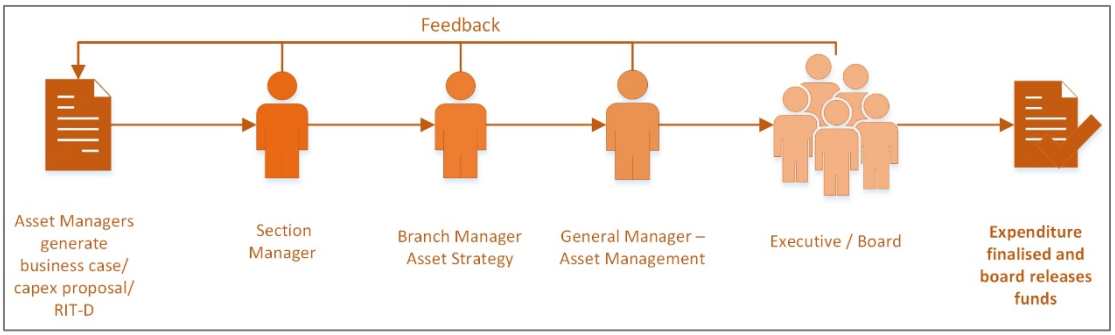
[8] 'Evoenergy' is the trading name of the network operations of ActewAGL Distribution.

controls in respect of opex. Approval must be sought from the appropriate level of delegated authority, with project approval, where required, consisting of the following elements:

- Financial Authorisation (Budget Recognition and Alignment)
- Technical Network Approval, and
- Financial and Commercial Approval.

Capex proposals are generated by asset managers and coordinated through an asset management systems group before being advanced through the General Manager Evoenergy for consideration by the executive. Broad adjustments as directed by the executive are provided to asset managers for further refinement. The process is repeated until an acceptable solution is arrived at. Figure 9-1 illustrates the capital investment governance process.

Figure 9-1 Overview of capital investment governance process



At each stage, the proposal is rigorously assessed and scrutinised to ensure compliance with regulatory requirements, expenditure is justified through a 'needs' assessment, and options analyses are thorough and accurate. This process validates that the expenditure is efficient and necessary for the organisation to achieve its objectives.

Evoenergy ensures the following prior to committing to any large investment:

- Investments are cost effective and consider whole-of-life costs associated with a new asset, are efficient and represent value for money.
- Determine whether the investment (capex, and any associated operating expenditure) can be funded in line with the approved organisational budget (and any reforecasts performed) considering whole-of-life costs.
- Timing of the new investment meets the requirement of the need when it reaches the point that the need cannot otherwise be met.
- Appropriate investment procedures are followed, including business case and Board approval, and execution of Regulatory Investment Test for Distribution (RIT-D) if required.
- All relevant risks are assessed, and a determination is made whether residual risks can be effectively mitigated and accepted in line with the risk management framework (and risk assessment tables).

- Consideration of any capital contributions (i.e. revenue to be recognised when criteria is met in line with the Australian Accounting Standards, generally for the un-economical portion of costs incurred) and any income tax implications.
- Works are timed to ensure smooth capital and replacement cash flows, and availability of resources.
- Works are coordinated as required with other utilities and/or network service providers, and to meet customer needs.

9.4 Regulatory Investment Test

In line with the requirements of the NER,[9] if the cost of an augmentation proposal exceeds $5 million, Evoenergy undertakes a RIT-D before an investment decision is made. This provides opportunities for parties external to Evoenergy to propose alternative solutions including non-network options. Evoenergy is obliged to consider any options on a non-discriminatory basis as part of the RIT-D process.

[9] NER clause 5.17.

Glossary

ACS	Alternative control services
ACT	Australian Capital Territory
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
AHI	Asset Health Index
AIO	Asset Investment Optimisation
AMS	Asset Management System
ASP	Asset specific plan
Capex	Capital expenditure
CoF	Consequence of Failure
DER	Distributed energy resources
DNSP	Distribution network service provider
DTI	Detectability index
ECRC	Energy Consumer Reference Council
EPSDD	Environment, Planning and Sustainable Development Directorate
EV	Electric vehicle
FMEA	Failure Modes and Effects Analysis
IT	Information technology
NEO	National Electricity Objective
NER	National Electricity Rules
Opex	Operating expenditure
OT	Operational technology
PoF	Probability of Failure
PoW	Program of Work
RIN	Regulatory information notice
RIT-D	Regulatory Investment Test for Distribution
SCS	Standard control services
TSS	Tariff Structure Statement