

Operational Expenditure (OPEX) Plan

Routine Inspections

2019-24

Supporting Document 11.3.2

Opex Plan - Routine Inspections

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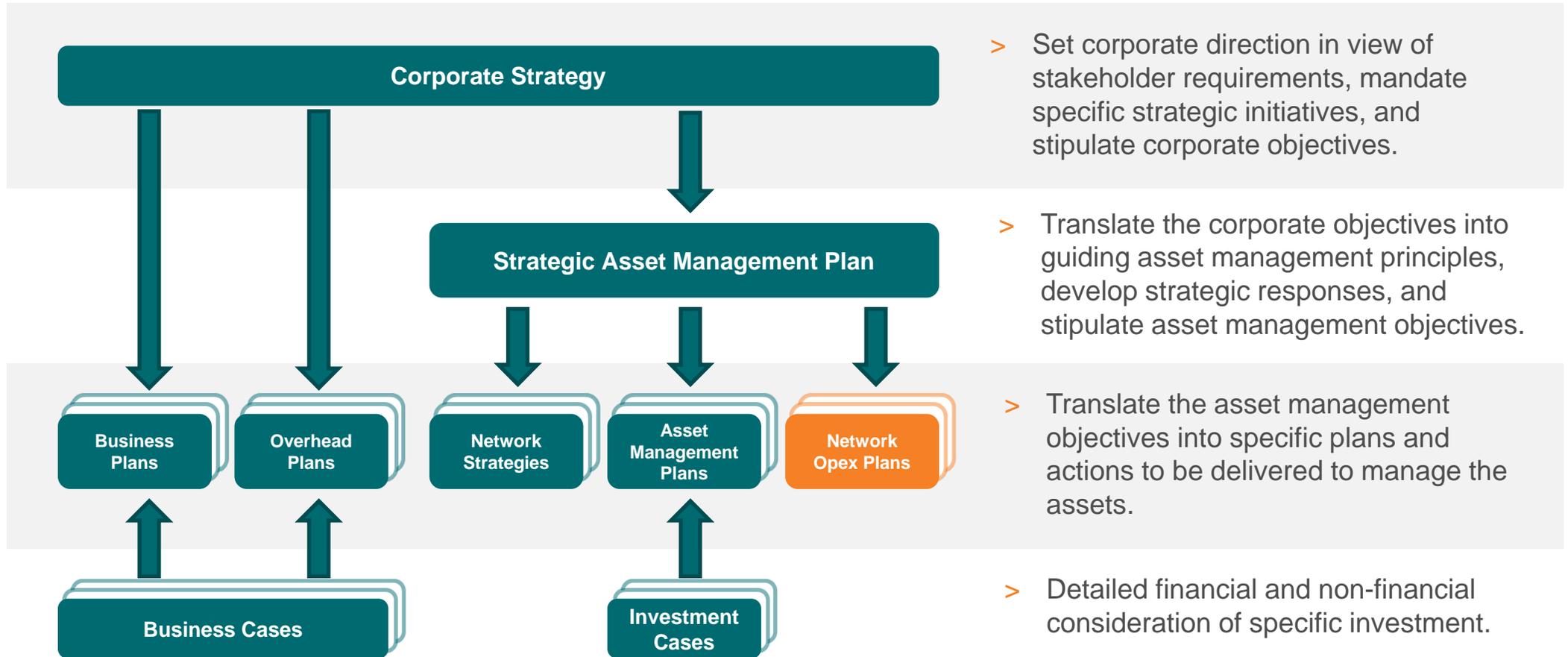
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Document hierarchy and purpose



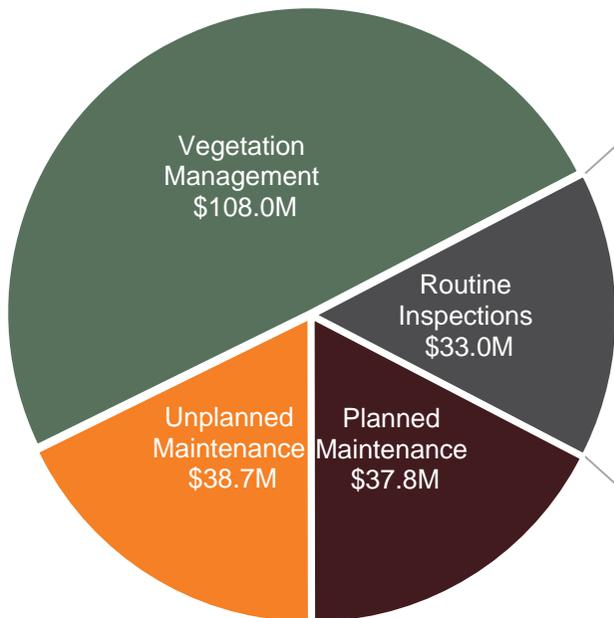
Executive Summary – Routine Inspections

Routine (preventative) Inspections ensure that assets remain serviceable over their lifespan, and their condition is understood. The Routine Inspection approach varies for different assets, typically:

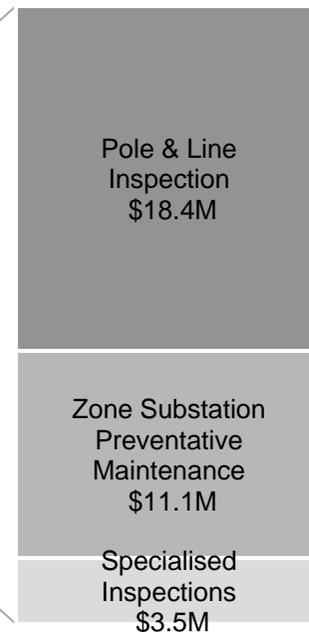
- > **High-volume / low-value assets without moving parts** are managed via **inspections** to identify asset condition and detect defects (defects are then addressed through Planned Maintenance);
- > **High-value assets** are managed through **preventative maintenance**;
- > **Assets requiring specific skills or equipment**, or where the inspection requirements are unique, have their own **specialised inspection** programs.

	REGULATORY PERIOD	
	2014-19	2019-24
Avg. Spend	\$32.5M	\$33M
Avg. Hours	265,678	268,141

ALL DIRECT OPEX (\$FY19)
Average \$217.5M per year



THIS PLAN COVERS
15% (\$33M per year)



ROUTINE INSPECTION TYPES INCLUDE:

- > **Pole & Line Inspection**
Standard Routine inspections: An asset inspector periodically performs a ground-based patrol of the overhead pole and line assets.
- > **Zone Substation Preventative Maintenance**
The preventative maintenance programs is limited to zone substation assets (e.g. switchgear and power transformers), where assets are periodically taken out of service for intrusive testing, maintenance of mechanical parts, and change of components and oil etc.
- > **Specialised Inspections**
More frequent targeted inspections for high-risk assets e.g. those in bushfire zones or supplying critical infrastructure such as hospitals, etc, or for those assets that require specific skills, equipment, or unique inspection methods.

How does this affect customers?

> Our proposed operating programs for routine inspections have been informed by the direct engagement we carried out with customers and we have adapted or maintained them where possible to reflect our customer's feedback. Specifically, our customers told us they wanted our services to be affordable and that reliability should be maintained. Our forecast seeks to minimise costs whilst maintaining current network performance levels.

> How?

Routine Inspection

These programs directly impact network performance levels and, in line with feedback received through engagement with our customers, **we propose to maintain current network performance levels** through continuous improvement of our existing routine inspection programs.

Routine inspection is a key asset management technique used to gauge asset health and is carried out through cyclic inspection programs. Inspection frequency is adapted to address specific risks associated with asset type and location.

Preventative Maintenance

We **propose to maintain current network performance levels** in line with feedback from our customers by continuing the current level of preventative maintenance programs.

Preventative maintenance involves maintaining the condition and performance of assets to prevent their failure. These programs form part of our asset management strategy and are closely linked to network performance and customer service levels.

Inspection of Specialised and High Risk Assets

By identifying these high risk and specialised assets and applying tailored inspection techniques to them, **we plan to continue delivering the level of service expected by our customers.** This approach of maintaining service levels was supported through our customer consultation process.

Assets that supply large numbers of customers can have a greater impact upon failure. Other assets require specialist skills, equipment or inspection techniques, so specific inspection activities are undertaken for these assets.

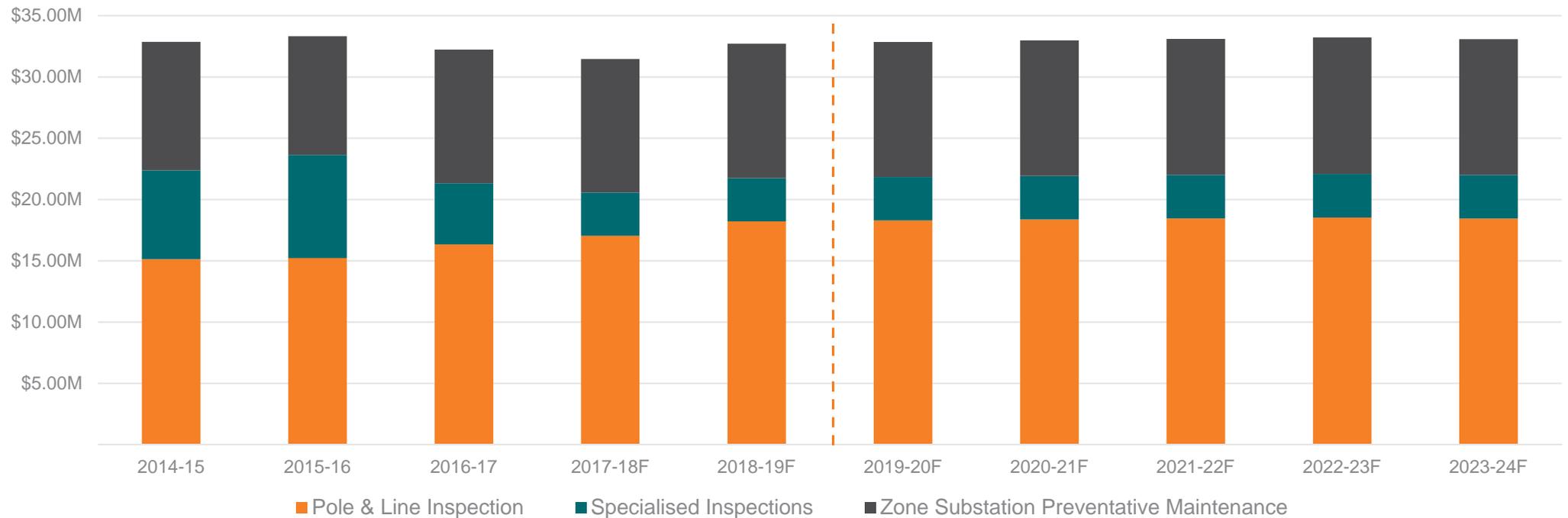
Routine Inspection program details

- > Routine inspection programs are the primary method for assessing the health of the bulk of Essential Energy's distribution and sub transmission assets.

	Pole and Line Inspection	Zone Substation Preventative Maintenance	Specialised Inspections
Activity	Routine ground-based inspection of poles, pole mounted equipment, and overhead lines.	Routine inspection and preventative maintenance for high voltage substations.	Specialised Inspections covers a number of small quantity, high risk, or complex asset inspection activities, including;
Objective	To assess asset condition, identify asset defects, and perform minor maintenance tasks.	To assess asset condition, identify asset defects, and perform minor maintenance tasks.	<ul style="list-style-type: none"> • Critical Equipment Inspection • Earth Testing Overhead Equipment • Operational Equipment Inspection • Pit and Pillar Inspection • Secondary Systems Preventative Maintenance • Subtransmission Radial Live Line Inspection • Thermovision Inspection • Tower Inspection • Underground Asset Inspection • Visual Aerial Patrol
Frequency	Varies, average once every 4.5 years	Major maintenance intervals from 3-6 years, minor maintenance from 1-12 months.	
Efficiency Gains	Essential Energy is currently delivering one of the lowest cost per pole inspected outcome in the NEM. The weighted average inspection frequency has changed in FY17 from every 4 years to every 4.5 years based on region and asset specific risk analysis.	Zone Substation maintenance is reviewed periodically to analyse conditional and functional failure data. This data has recently justified a reduction in the frequency of some routine maintenance delivering improved efficiency without impacting risk.	

Routine Inspection Expenditure Profile

		Pole and Line Inspection	Zone Substation Preventative Maintenance	Specialised Inspections	TOTAL Planned Maintenance
% Direct OPEX Spend		8.5%	5.1%	1.6%	15%
% Routine Inspection Spend		56%	33%	11%	100%
Average spend per year	(2019-24) (2014-19)	\$18.42M \$16.39M	\$11.06M \$10.58M	\$3.52M \$5.53M	\$33.0M \$32.5M
Average hours per year	(2019-24) (2014-19)	157,209 152,490	92,739 87,283	18,192 25,906	377,194 413,632



Supporting documents

OPEX Plan Documents

Document	Relevance to this document
OPEX Model - Direct Standard Control	Forecasting model based on historical performance and planned changes to opex activities.
OPEX Plan – Routine Inspections	Details the drivers behind the direct operational expenditure for each expenditure category.
OPEX Plan – Planned Maintenance	
OPEX Plan – Unplanned Maintenance	
OPEX Plan – Vegetation Management	
OPEX Plan – Indirect Expenditure	Outlines the drivers behind indirect expenditure
OPEX Approach	Summary of OPEX forecasting methodology and planned efficiency initiatives.

Strategy Documents

Document	Relevance to this document
Strategic Asset Management Plan	Defines the general asset management principles and objectives which drive our network strategies.
CEOP8010 – Asset Inspection and Routine Maintenance	Provides an overview of each routine inspection program (except Zone Substation programs).
CEOP8011 – Technical Maintenance Plan Substations	Overview of Zone Substation maintenance programs.

Supporting documents

Key Legislative and Procedural Documents

Document	Relevance to this document
National Electricity Rules	Directs the development of operating expenditure forecasts and compliance with relevant obligations
CEOP4304.11 – Legislative & Obligations Register	List of legislative requirements and operational procedures.
National Electricity (New South Wales) Act 1997 (NSW)	An Act to make provision for the operation of a national electricity market, to consequentially amend certain other Acts; and for other purposes. Applies the National Electricity Law and National Electricity Rules.
Electricity Supply Act 1995 (NSW)	(a) to promote the efficient and environmentally responsible production and use of electricity and to deliver a safe and reliable supply of electricity, and (b) to confer on network operators such powers as are necessary to enable them to construct, operate, repair and maintain their electricity works, and (d) to promote and encourage the safety of persons and property in relation to the generation, transmission, distribution and use of electricity, and (e) to ensure that any significant disruption to the supply of electricity in an emergency is managed effectively.
National Energy Retail Law (Adoption) Act 2012 (NSW)	An Act to establish a national energy customer framework for the regulation of the retail supply of energy to customers; to make provision for the relationship between the distributors of energy and the consumers of energy; and for other purposes.
Work Health and Safety Act 2011 (NSW)	An Act to secure the health, safety and welfare of persons at work; to repeal the Occupational Health and Safety Act 2000 ; and for other purposes.
Essential Services Act 1988 (NSW)	An Act to protect the community from disruption to essential services; and for related purposes.

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