

- > **Expenditure forecasting approach**
- > **2014–19 Regulatory Proposal**

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# 1. Overview

## 1.1 About Essential Energy

Essential Energy’s electricity distribution network extends across an operating area covering 95 per cent of New South Wales’ land mass, and into parts of Queensland and the Australian Capital Territory. Essential Energy’s network is unique in Australian terms, characterised by medium to very low customer density, and wide variations in topographical and climatic conditions.

The challenging and unique operating factors facing Essential Energy, together with the need to amalgamate the practices and policies of 26 smaller distribution businesses and the introduction of minimum reliability and availability standards, has meant that a significant capital program has been undertaken over the past 10 years.

Essential Energy has established asset management systems and processes consistent with these factors and industry best practice, including:

- > Best practice asset management system based on PAS55 and the NSW Total Asset Management (TAM) system
- > Deployment of appropriate risk management techniques and policies
- > Asset investment and decision analysis tools
- > Implementation of comprehensive asset information and management systems
- > External contracting of non-core business activities through competitive tendering and performance based contracts
- > Governance and business processes for setting and implementing capital and operating budgets
- > Business reporting and general performance management.

Essential Energy’s Asset Management System (AMS) has been developed to align with the general structure of PAS55/ISO55000 and with the NSW’s Governments TAM policy and planning guidelines. A high level overview of Essential Energy’s AMS is shown in Figure 1.

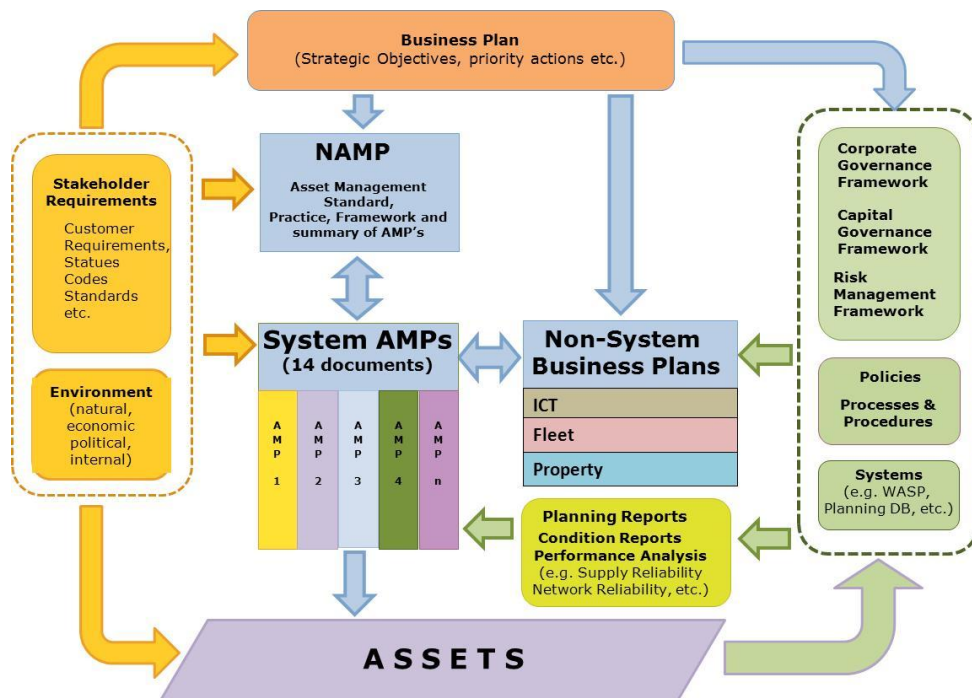


Figure 1 – High level graphic of Essential Energy’s Asset Management System

To ensure that our assets are managed to meet the needs and expectations of our customers, Essential Energy undertakes varied customer and stakeholder engagement activities. Essential Energy's customer engagement research builds on our experience, adding insight to the type of relationship and benefits needed to successfully operate as a network services business. Essential Energy's customer and stakeholder engagement strategy ensures that customers will continue to play an active role in informing network investment opportunities.

To this end, the outcomes of this research have been assessed and adopted throughout Essential Energy's 2014-19 regulatory proposal where appropriate, incorporating what we have learnt from customers into what we need to achieve as a business.

The six customer value themes that emerged from our research, and how they relate to operational priorities, are shown in Figure 2. Value themes add an extra dimension to our regulatory approach by combining a ground up 'customer' approach with a top down 'standards' approach, giving rise to what Essential Energy believes is a more robust assessment framework that sensibly balances customers, compliance and prudent investments.



Figure 2: Areas of engagement and corresponding priorities

## 1.2 Background to this statement

Clause 6.8.1A of the National Electricity Rules (NER) requires Essential Energy to inform the AER of the methodology Essential Energy proposes to use to prepare the forecasts of operating expenditure and capital expenditure that form part of Essential Energy's regulatory proposal for the regulatory control period 1 July 2015 to 30 June 2019<sup>1</sup>. Essential Energy is required to provide this 'forecast methodology statement' to the AER 19 months before the expiry of the transitional regulatory control period, which is November 2013<sup>2</sup>.

<sup>1</sup> This is the indicative regulatory control period which will be confirmed in Essential Energy's regulatory proposal to be submitted in May 2014.

<sup>2</sup> Clause 6.8.1A as modified by clause 11.56.4(o) for Essential Energy. Normally, a DNSP is required to submit this statement 24 months before the expiry of a distribution determination.

Essential Energy understands that the purpose of providing this forecast methodology statement is to provide a starting point in the early engagement between Essential Energy and the AER on the forecast methodology Essential Energy proposes to use, so as to assist the AER in its assessment of Essential Energy's proposed forecast operating expenditure and capital expenditure<sup>3</sup>.

Nevertheless, given that the regulatory proposal for the subsequent regulatory control period is not required until May 2014, not all elements or details of forecast operating expenditure and capital expenditure can be finalised at the time of lodging this statement.

Therefore, by necessity, this statement can only provide an overview of the methodologies Essential Energy proposes to adopt in forecasting operating capital expenditures in the regulatory proposal to be submitted in May 2014. Full details of these methodologies, including key variables and key assumptions, will be included in the regulatory proposal, as required by clauses S6.1.1 and S6.1.2 of the NER.

It might be possible, though unlikely, that Essential Energy may have to amend the proposed approach and forecasting methodology to cater for changes in circumstances from the time of lodging this statement and the lodgement of the regulatory proposal. However, these changes, if required, are not anticipated to be significant. The forecast methodology for operating and capital expenditures are outlined below in chapters 2 and 3 respectively.

### **1.3 Feedback**

Customer feedback is an important input into the process that determines Essential Energy's revenues. Written submissions can be provided to Essential Energy at PO Box 5730, Port Macquarie NSW 2444. If you would like to provide brief comments please refer to the Facebook page - Your Power, Your Say.

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<sup>3</sup> AEMC 2012, Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper, 29 November 2012, Sydney, page 110.

## 2. Forecasting Approach – Operating Expenditure

### 2.1 Approach to forecasting operating expenditure

Essential Energy intends to adopt a fit for purpose approach to forecasting operating expenditure ('opex') for the forthcoming regulatory control period. This approach is as follows:

1. Disaggregate Essential Energy's total opex into various cost categories. These cost categories represent the costs of undertaking a set of related activities to provide standard control services and to achieve the opex objectives. Cost categories include inspections, maintenance, fault and emergency, and vegetation management.
2. Assess the nature of each cost category and determine the appropriate forecasting method that would result in a forecast cost that reasonably reflects the efficient cost that a prudent operator would need to achieve the opex objectives, based on a realistic expectation of demand forecast and cost inputs for that particular cost category.

In the main, it is proposed to use the '**base year**' method to prepare the forecast opex that forms part of the regulatory proposal for the forthcoming regulatory control period. This method is applied to most cost categories.

However, there may be instances where it is considered the base year method is not the most appropriate method to derive future expenditure requirements, and it is therefore proposed to use the '**bottom up**' or 'zero base' method, or another method as appropriate.

The opex forecasts will be reflective of network efficiency programs and reforms. These efficiency programs and reforms have identified operational improvements across a number of business processes within Essential Energy that result in one-off or ongoing savings, and deferred or avoided costs.

### 2.2 Base year method

Essential Energy's base year forecast methodology involves:

- > selecting an efficient base year - for the forthcoming period Essential Energy proposes using the 2012/13 financial year as the base year;
- > removing one-off costs;
- > running a 'bottom up' forecasting model to identify quantity variations;
- > applying efficiency factors designed to mitigate the financial impact on our customers of unavoidable upward pressures on our future operating expenditure requirements;
- > applying escalation for growth in wages and non-labour costs. It is proposed to apply forecast real cost escalation to labour, materials, contracted services and other cost types that make up the total cost of each cost category. This is to reflect the future price of cost inputs;
- > applying forecast labour costs consistent with the NSW Government's wages policy that require all wage increases above 2.5 per cent to be offset by labour productivity savings; and
- > assessing change factors which are essentially factors that trigger a change in costs from the current amount required to provide standard control services. The base year opex for the relevant cost categories therefore must be adjusted to account for these changes which could be increases or reductions to the base opex.

These change factors include, but are not limited to:

1. New obligations or increases in the scope/standard of current obligations.
2. Changes in Essential Energy's operating environment.
3. The interaction between forecast capital expenditure and operating expenditure.

### **2.3 'Bottom up' method**

Whilst the base year method is the main method proposed to be used, there may be instances where the base year method is not the most appropriate method to derive the future requirements of a particular cost category. In this case, Essential Energy is likely to adopt the 'bottom up' (or 'zero based') method to derive the opex forecast. The bottom up method essentially derives the total forecast opex by taking into account all the inputs and factors relevant to the activities being performed (for example, number of tasks, the cost types required to perform each task such as labour and materials and the price of these cost inputs).

### **2.4 Forecast of debt raising costs**

In addition, our total forecast opex also comprises an amount for debt raising costs. Essential Energy intends to adopt the method that the AER has been using to derive this cost. That is, debt raising costs are calculated by applying a benchmark debt raising unit rate to the debt portion of our regulated asset values.

### 3. Forecasting Approach – Capital Expenditure

#### 3.1 Approach to forecasting capital expenditure

The capital investment program is identified through a business planning process and the selection of cost effective solutions that reflect corporate strategy objectives, underlying network characteristics, condition and performance of Essential Energy’s assets, demand forecasts, service targets and compliance obligations. Essential Energy’s capital expenditure forecasts are formed through the development of a range of planning reports, strategic plans, asset management plans, business plans and investment cases. The asset management framework used by Essential Energy is shown in figure 3 below.

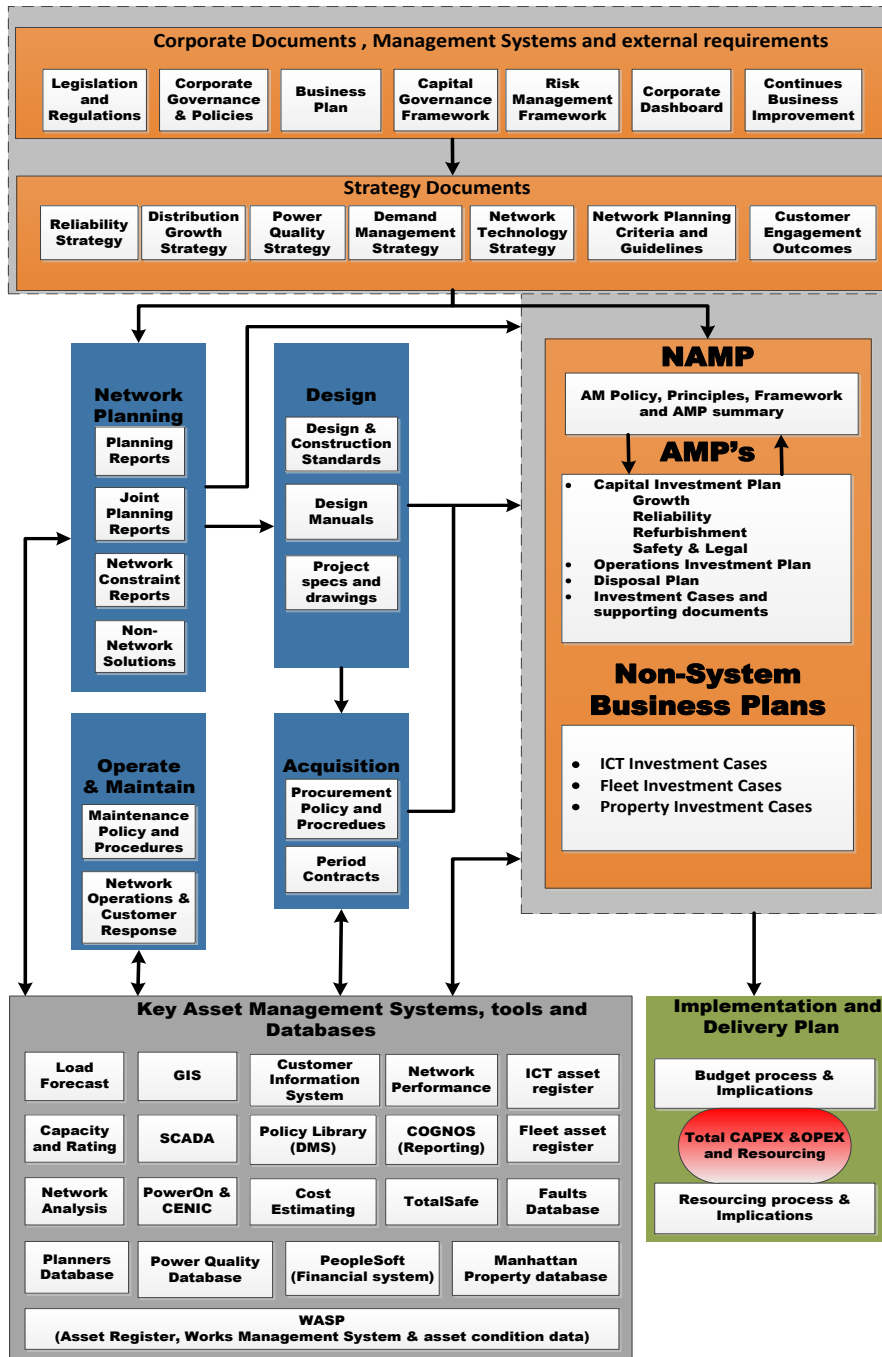


Figure 3 - Essential Energy’s Asset management Framework



### 3.1.1 System Assets

System related capital investment covers all system assets comprising the network. Capital investment is undertaken where the asset strategy indicates a need for asset acquisition, construction, renewal, or capacity augmentation. In line with these requirements, capital expenditure can be broken down into a number of categories. Key components of the strategic planning process for each category are set out in the individual asset management plans.

Essential Energy's intended capital expenditure program for the next regulatory control period and key network asset management strategies are contained within Essential Energy's Asset Management Plans (AMPs).

#### ***Asset Management Plans***

Essential Energy's capital investment program ensures:

- > Long term sustainability of network condition, asset utilisation, supply security, and network performance;
- > Adequate capacity for customer connections and peak demand growth, achieved through either capacity augmentation of existing assets or the construction of new assets;
- > Timely replacement or refurbishment of ageing and obsolete assets that have become unserviceable, frequently fail in service, have deteriorated to an unsafe or risky condition, or where the present value cost of maintaining the asset exceeds the cost of replacement;
- > Maintaining reliability and quality of supply to meet customer expectations;
- > Environmental, safety, infrastructure security and legal responsibilities are met;
- > Acquisitions of property and easements for future network development; and
- > Availability of a number of miscellaneous corporate and non-system items for the continued efficient management and support of the electricity distribution business such as information technology systems, motor vehicles and plant, and other non-system assets.

The capital investment program that will be proposed by Essential Energy is consistent with the delivery of the above outcomes.

The AMPs are strategic business plans, used to manage the network assets and deliver service levels to meet stakeholder requirements. Essential Energy has developed 14 AMPs which cover all Essential Energy network assets. Each AMP defines the life cycle of a specific group of assets and covers the major drivers of expenditure. The groupings have been chosen to ensure that existing synergies between assets can be maintained, and to allow the best mix between operating and capital expenditures.

Each AMP defines the service levels applicable to the asset group, based on stakeholder requirements, and then compares asset capability and current performance to determine if there is a gap. Targets are defined based on the asset capability and service gap and strategies are developed to achieve the targets. These AMPs are supported by a set of strategic plans and individual investment cases.

To ensure that our assets are managed to meet the needs and expectations of our customers, Essential Energy has carried out customer value workshops. This customer engagement research builds on Essential Energy's experience, adding insight to the type of relationship and benefits needed to successfully operate as a network services business. Essential Energy's research is quite clear in affirming the active role customers continue to play in informing network investment opportunities.

#### ***Regional Planning Reports***

Network augmentation focuses on the provision of electricity network services to meet network growth in the medium to long term. A series of plans has been prepared that identify areas of network constraint.

The plans encompass forward projections of peak demand and customer growth, and they identify the items on the network that are projected to exceed their limits and the sub-transmission and distribution network development projects required.

This aspect of planning also incorporates Essential Energy's demand side management activities aimed at containing or reducing the customer load presented to the network and also involves specific developments to maintain security of supply. Essential Energy engages in market based development of options for electricity system support, evaluating them at the same time and in the same manner as network investments. These processes involve significant consultation as described in the Demand Management Strategic Plan.

### ***Demand Management Strategic Plan***

The decision to apply demand management or to augment the network always remains an issue of economic efficiency, technical feasibility, timing, service preferences, application of sound industry commercial practice, and determining the optimum means of providing supply capacity to customers. These processes involve significant consultation. An annual Electricity System Development Review (ESDR) report is prepared and published.

This document provides historical and forecast peak load data and capacity information for all zone substations and discloses where a network constraint is forecast to occur within 5 years. The information allows customers and energy service providers to consider whether they may be able to assist in addressing the network constraint through the implementation of demand management. This approach actively seeks to minimise barriers and disincentives to the adoption of particular demand management options.

### ***Reliability Strategic Plan and the Quality of Supply Strategic Plan***

The Reliability and Quality of Supply Strategic Plans address the supply reliability, quality and security aspects of Essential Energy's electricity distribution network business. They detail the specific asset management strategies, commitments, actions, and the level of expenditure aimed at ensuring that supply reliability, quality and security complies with the minimum reliability standard, and to address identified customer requirements.

### ***Network Technology Strategic Plan***

While Essential Energy has for many years utilised targeted automation schemes to improve network service performance, Intelligent Network concepts increasingly offer a greater capability to understand, meet and shape the changing needs of customers and their regional economies.

In response to our changing environment, Essential Energy is seeking to capture the benefits of Intelligent Network concepts through a whole of business/whole of network approach that will promote efficient investment in, and the efficient operation and use of our network services for the long-term interests of our customers across regional NSW.

The planning process produces a detailed annual capital expenditure program and sets priorities for capacity augmentation, and the security, quality and reliability of supply over the investment horizon to 2018-19.

#### **3.1.2 Non-System Assets**

These assets provide critical business support to meet network and corporate objectives. There are three business plans for support assets including the ICT, Corporate Property and Fleet plans.

Non-system expenditure will ensure the continued efficient management and support of the electricity distribution business through expenditure related to information systems, telecommunications systems, motor vehicles and heavy plant, land, building and property works, and smaller related expenses.

Section 3.2 describes the capex categories underpinning proposed investment plans. Section 3.3 identifies the particular method used to develop each investment plan.

### 3.2 Categories underpinning capital plans

Essential Energy invests to meet the regulatory obligation to provide a safe and reliable network. The table below describes the key categories of capex and the drivers of investment.

Categories	Drivers of investment
Compliance	There are a number of regulatory obligations that drive investment including public safety, workplace safety, and environmental legislation.
Refurbishment	Essential Energy undertakes renewal/replacement to ensure compliant infrastructure and maintain the networks reliability.  The key driver of refurbishment capex is degradation in the condition of assets on the network, generally as a result of the asset exceeding its useful life.
Growth	Essential Energy augments the network to connect new customers, and to address imbalances in supply and demand. There are two drivers of investment: <ul style="list-style-type: none"> <li>&gt; New customer connection – This is where a new customer connection necessitates augmentation of the shared network.</li> <li>&gt; Reinforcement – This is where the aggregate demand from new and existing customers in an area necessitates augmentation of the shared network.</li> </ul>
Reliability compliance	Essential Energy invests to ensure compliance with the reliability performance targets of the NSW Reliability Licence conditions. The key driver of investment is when a gap in meeting our performance targets is forecast, taking into account the reliability impact from other investment programs.
Non-System Assets	Essential Energy invests in supporting assets to meet network and corporate functions. The key drivers of investment include: <ul style="list-style-type: none"> <li>&gt; The condition of existing asset is inadequate to perform its function;</li> <li>&gt; A new compliance obligation necessitates investment in a supporting asset;</li> <li>&gt; Improved safety outcomes for our employees, contractors, suppliers and the public; and</li> <li>&gt; A supporting asset will result in an efficiency benefit, resulting in long term benefit to our customers.</li> </ul>

### 3.3 Forecast methods for capital plans

This section provides a summary of the approaches used to derive Essential Energy's capital expenditure forecasts:

- > A 'base year top down' cost approach for specific asset classes;
- > A 'bottom up' cost approach is used for individual projects;
- > Removal of one-off costs;
- > A 'bottom up' forecasting model to identify quantity variations; and
- > Applying efficiency factors designed to mitigate the financial impact on our customers of unavoidable upward pressures on our future capital expenditure requirements.

Expenditure at the distribution network level is generally assessed using a 'top down' approach that considers the necessary aggregate investment requirement across broad network asset classes and for different drivers.

Essential Energy has applied a 'bottom up' approach to the analysis of major projects, typically at the subtransmission network and zone substation level, and for some areas, at a high voltage distribution feeder level, using the best available information, detailed planning and the application of risk management techniques.

These are then drawn together and any synergies identified where a particular investment might meet a number of identified needs.

As part of the Networks NSW reform program, a new Investment Governance Process has been instituted to review and rationalise our forecast program. A prioritisation model is being used for all network projects and programs. This model uses an algorithm based on an assessment of risks and provides a ranking outcome for the proposed capex projects. This prioritisation is used to finalise the capital works program for each year based on an acceptable level of risk. This process ensures that the capex program is efficient and prudent, and meets our objective of keeping prices as low as possible.

The capex forecasts will be reflective of network efficiency programs and reforms. These efficiency programs and reforms have identified improvements across a number of business processes within Essential Energy that result in one-off or ongoing savings, and deferred or avoided costs.

The forecasts are also prepared on the basis that current technical standards and accepted sound industry practice will continue to apply during the next regulatory control period.