Addressing the capex and opex objectives, criteria and factors
May 2014
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1 Background

The National Electricity Rules (the rules) require the AER to make a constituent decision on whether to accept, or reject and substitute, the forecast capital expenditure (capex) and forecast operating expenditure (opex) that Endeavour Energy sets out in its building block proposal for standard control services. To enable the AER to make its constituent decision, Endeavour Energy's building block proposal must include the total forecast capex and forecast opex for the relevant regulatory control period which the Distribution Network Service Provider (DNSP) considers is required in order to achieve the capital and operating expenditure objectives.

The forecast of must also comply with the requirements of any relevant regulatory information instrument. On 7 March 2014, the AER issued a RIN (as amended on 21 March 2014) for our regulatory proposal where it sought the following information:

(a) why the total forecast capex is required for Endeavour Energy to achieve each of the objectives in clause 6.5.7(a) of the NER;
(b) how Endeavour Energy's total forecast capex reasonably reflects each of the criteria in clause 6.5.7(c) of the NER;
(c) how Endeavour Energy's total forecast capex accounts for the factors in clause 6.5.7(e) of the NER.\(^1\)

Similarly, the RIN also request the provision of justification for Endeavour Energy's total forecast opex, including:

a) why the total forecast opex is required for Endeavour Energy to achieve each of the objectives in clause 6.5.6(a) of the NER;
b) how Endeavour Energy's total forecast opex reasonably reflects each of the criteria in clause 6.5.6(c) of the NER; and
c) how Endeavour Energy's total forecast opex amount accounts for the factors in clause 6.5.6(e) of the NER.

This document provides further evidence on why we consider the total forecast capex and forecast opex\(^2\) should be accepted by the AER, with reference to the objectives, criteria and factors in the rules. In doing so, we have also addressed the RIN requirements. We note that the information we have provided is complemented by other supporting documents submitted with the proposal, and that these supporting documents form part of our justification on why the AER should accept our proposed forecast capex and forecast opex.

The document is set out in three parts:

- We outline the AER's decision making framework.
- We identify how Endeavour Energy considers the total forecast capex and forecast opex are required in order to achieve each of the capital and operating expenditure objectives (together the expenditure objectives) under clause 6.5.6(a) and 6.5.7(a) of the rules.
- We identify how Endeavour Energy considers the total forecast capex and forecast opex reasonably reflects each of the capital and operating expenditure criteria (together the expenditure criteria), having regard to the capital and operating expenditure factors (together the expenditure factors).

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\(^1\) Paragraphs 5.1(a)-(c) of schedule 1 of the RIN
\(^2\) We refer to the forecast opex and forecast capex collectively as forecast expenditure in this document.
2 The AER’s decision making framework

The Rules require the AER to make a number of constituent decisions as part of its distribution determination. Clauses 6.12.3 and 6.12.4 relate to the AER’s decisions on the forecast capex and forecast opex proposed by a DNSP in its building block proposal. The AER either:

(i) acting in accordance with clauses 6.5.6(c) and 6.5.7(c), accepts the total of the forecast opex and capex for the regulatory control period that is included in the current building block proposal; or

(ii) acting in accordance with clauses 6.5.6(d) and 6.5.7(d), does not accept the total of the forecast opex and capex for the regulatory control period that is included in the current building block proposal, in which case the AER must set out its reasons for that decision and an estimate of the total of the Distribution Network Service Provider’s required opex and capex for the regulatory control period that the AER is satisfied reasonably reflects the expenditure criteria, taking into account the expenditure factors;

In making its decision, the AER is guided by the objectives, criteria and factors in the rules. In doing so, it must also consider the overall principles of assessment that have been described by the Rule maker, the Australian Energy Market Commission (AEMC) in recent rule determinations. Each of these areas is discussed below.

2.1 The Rules framework

The rules set out a framework such that Endeavour Energy is required to propose total capex and opex that Endeavour Energy considers is needed to produce the outputs or outcomes that are encapsulated in the rules. These outputs/outcomes are specified in clause 6.5.6(a) and 6.5.7(a) of the rules and are termed the operating and capital expenditure objectives (together expenditure objectives).3

Clause 6.5.6(a) and 6.5.7(a) requires Endeavour Energy to include in its building block proposal the total forecast opex and capex for the 2014-19 period4 which Endeavour Energy considers is required into to achieve each of the expenditure objectives. These objectives are:

(1) meet or manage the expected demand for standard control services over that period; (Objective 1)
(2) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services; (Objective 2)
(3) to the extent that there is no applicable regulatory obligation or requirement in relation to: (Objective 3)
  (i) the quality, reliability or security of supply of standard control services; or
  (ii) the reliability or security of the distribution system through the supply of standard control services, to the relevant extent:
  (iii) maintain the quality, reliability and security of supply of standard control services; and
  (iv) maintain the reliability and security of the distribution system through the supply of standard control services; and
(4) maintain the safety of the distribution system through the supply of standard control services. (Objective 4)

The AER is required to make a decision on the total forecast expenditure proposed by Endeavour Energy. The rules provide that the AER must accept the forecast expenditure included in Endeavour Energy’s building block proposal if the AER is satisfied that the total forecast expenditure reasonably reflects the expenditure criteria. These expenditure criteria are:5

(1) the efficient costs of achieving the operating expenditure objectives; and
(2) the costs that a prudent operator would require to achieve the operating expenditure objectives; and
(3) a realistic expectation of the demand forecast and cost inputs required to achieve the operating expenditure objectives.

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3 This is consistent with advice provided by NERA Consulting, “Economic Interpretation of clauses 6.5.6 and 6.5.7 of the National Electricity Rules”, 2008, p9.
4 See clause 11.56.4(b) of the rules.
5 The operating expenditure objectives under clause 6.5.6(a) and the capital expenditure objectives under 6.5.7(a) are the same. These expenditure objectives have been cited once only in this document for brevity.
In deciding whether or not the AER is satisfied that Endeavour Energy’s proposed total forecast expenditure reasonably reflects each of the expenditure criteria, the AER must have regard to the expenditure factors which are:\footnote{7}{Clauses 6.5.6(e) and 6.5.7(e) of the rules.}

1. [Deleted]
2. [Deleted]
3. [Deleted]
4. the most recent annual benchmarking report that has been published under rule 6.27 and the benchmark operating expenditure that would be incurred by an efficient Distribution Network Service Provider over the relevant regulatory control period;
5. the actual and expected operating expenditure of the Distribution Network Service Provider during any preceding regulatory control periods;
5A. the extent to which the operating expenditure forecast includes expenditure to address the concerns of electricity consumers as identified by the Distribution Network Service Provider in the course of its engagement with electricity consumers;
6. the relative prices of operating and capital inputs;
7. the substitution possibilities between operating and capital expenditure;
8. whether the operating expenditure forecast is consistent with any incentive scheme or schemes that apply to the Distribution Network Service Provider under clauses 6.5.8 or 6.6.2 to 6.6.4;
9. the extent the operating expenditure forecast is referable to arrangements with a person other than the Distribution Network Service Provider that, in the opinion of the AER, do not reflect arm’s length terms;
9A. whether the operating expenditure forecast includes an amount relating to a project that should more appropriately be included as a contingent project under clause 6.6A.1(b);
10. the extent the Distribution Network Service Provider has considered, and made provision for, efficient and prudent non-network alternatives; and
11. any relevant final project assessment report (as defined in clause 5.10.2) published under clause 5.17.4(o), (p) or (s);
12. any other factor the AER considers relevant and which the AER has notified the Distribution Network Service Provider in writing, prior to the submission of its revised regulatory proposal under clause 6.10.3, is an operating expenditure factor.

These expenditure factors are effectively the tools assisting the AER in making a decision whether it is satisfied that the proposed forecast expenditure reasonably reflects the expenditure criteria. In sum, the AER is asked to determine if it is satisfied that the proposed forecast expenditure represent the least costs of producing the outputs, and the costs that a prudent operator would need, taking into account the demand forecast and costs of inputs required to produce these outputs. This decision must be informed by the expenditure factors listed in the rules.

2.2 Objectives of the regulatory framework

The consultations undertaken by the AEMC in the National Electricity Market provide an understanding of the overall objective of the rules governing the AER’s assessment of expenditure forecasts. When developing the 2006 rules for transmission, the AEMC noted that its review was guided by the NEM objective in Section 7 of the National Electricity Law (NEL)\footnote{8}{The NEM objective is “to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to a. price, quality, safety, reliability, and security of supply of electricity; and b. the reliability, safety and security of the national electricity system”}
The AEMC noted that:

“\textit{The Commission’s Review has been guided by the NEM objective of promoting an efficient, reliable and safe electricity system.}”

The Australian Competition Tribunal emphasised the economic objective underlying the regulatory framework. The Tribunal considered that the Revenue and Pricing Principles in the NEL provide further guidance on the objective:

“\textit{The national electricity objective provides the overarching economic objective for regulation under the NEL: the promotion of efficient investment and efficient operation and use of, electricity services for the long term interests of consumers. Consumers will benefit in the long run if resources are used efficiently, that is if resources are allocated to the delivery of goods and services in accordance with consumer preferences at least...}”
cost. As reflected in the revenue and pricing principles, this in turn requires prices to reflect the long run cost of supply and to support efficient investment, providing investors with a return which covers the opportunity cost of capital required to deliver the services.”

In undertaking consultations, the AEMC has published determinations which provide further guidance on the objective of the assessment of expenditure forecasts.

"In developing the decision criteria for expenditure forecasts the Commission sought to ensure that the assessment of forecasts encourages efficiency through least cost operations and timely and prudent investment in capital.”

Based on these views, the overall objective of the Rules governing the AER’s decision on expenditure forecasts is to ensure that forecast expenditure is to achieve a reliable and safe supply of standard control services at an efficient cost in the long term.

2.3 Principles of assessment

As part of the 2012 Rule change on Economic Regulation of Network Service Providers, the AEMC provided further clarification of the process that the AER should follow when making its decision on expenditure forecasts. The AEMC emphasised the following key principles underlying the assessment process:

- Assessment process must start with a DNSP proposal - The proposal is necessarily the procedural starting point for the AER to determine a capex or opex allowance. The NSP has the most experience in how a network should be run, as well as holding all of the data on past performance of its network, and is therefore in the best position to make judgments about what expenditure will be required in the future. Indeed, the NSP's proposal will in most cases be the most significant input into the AER's decision.

- The AER must accept a proposal that is ‘reasonable’ - The criteria require that the AER must accept a proposal if it is reasonable. The AEMC noted that the AER is not “at large” in being able to reject the NSP's proposal and replace it with its own. The obligation to accept a reasonable proposal reflects the obligation that all public decision makers have to base their decisions on sound reasoning and all relevant information required to be taken into account.

- Consider the probative value of materials - To the extent the AER places probative value on the NSP's proposal, which is likely given the NSP's knowledge of its own network, then the AER should justify its conclusions by reference to it, in the same way it should regarding any other submission of probative value.

- The AER’s assessment techniques in making its analysis are not limited – While the NSP's proposal will in most cases be the most significant input into the AER's decision. Importantly, though, it should be only one of a number of inputs. Other stakeholders may also be able to provide relevant information, as well as consultants engaged by the AER. In addition, the AER can conduct its own analysis, including using objective evidence drawn from history and the performance and experience of comparable NSPs. The techniques the AER may use to conduct this analysis are not limited, and in particular are not confined to the approach taken by the NSP in its proposal.

- The test of ‘reasonable’ must equally apply to the substitute amount - While the AER must form a view as to whether a NSP's proposal is reasonable, this is not a separate exercise from determining an appropriate substitute in the event the AER decides the proposal is not reasonable. Both the consideration of "reasonable" and the determination of the substitute must be in respect of the total for each of capex or opex. The AER, whenever it determines a substitute for a NSP's proposal, is not constrained by the capex and opex criteria from choosing the best substitute it can determine.

The AEMC's considerations demonstrate that the regime requires the AER to reflectively contemplate the material put before it by the NSP, and assess the probative value of this information relative to other material such as submissions and analysis undertaken by or for the AER. Based on this assessment of materials, the AER must accept the proposal if it is reasonable and based on sound reasoning. The AER's substitute value, if it is not satisfied, must also be based on the same principles, once again with reference to the material before it. This has also been emphasised in decisions by the Australian Competition Tribunal in merits review when it concurred with statements made by DNSP's

9 AEMC, Rule determination: National Electricity Amendment (Economic regulation of transmission services) Rule 2006, number 18, 16 November 2006, p43
"EnergyAustralia is correct to submit that it is not the AER’s role to simply make a decision it considers best. It is also correct for it to say that the AER should be very slow to reject a DNSP’s proposal backed by detailed, relevant independent expert advice because the AER, on an uninformed basis, takes a different view." 11

3 The expenditure objectives

3.1 Interpreting the expenditure objectives

The rules require that Endeavour Energy’s building block proposal must include the total forecast expenditure (i.e. capex and opex) for the relevant regulatory control period which the Distribution Network Service Provider considers is required in order to achieve each of the expenditure objectives. We have been guided by the following sources when seeking to demonstrate how best to satisfy the AER that our total forecast opex and capex meet the expenditure objectives in the rules:

- The AEMC’s determinations on a Rule change on NSP Expenditure Objectives that resulted in amendments to the expenditure objectives in 2013.
- Discussion by the AER on its interpretation of the objectives that were in place prior to the 2013 determination.

AEMC Rule change of 2013

The capex and opex objectives were amended by the AEMC as part of its 2013 Rule change on NSP expenditure objectives. 12 In making its decision, the AEMC provided valuable insight into how it considered the amended objectives should be interpreted by DNSPs when developing their regulatory proposal.

- Expenditure objectives should be considered as a whole – The AEMC noted that when applied, the expenditure objectives should be considered as a whole and not in isolation. The AEMC considered this was relevant to the consideration of support costs. The AEMC did not agree that the rule will lead the AER to automatically exclude consideration of support costs that are incurred necessarily in the delivery of specific objectives, such as IT and transport costs.
- Regulatory obligations must be met – The AEMC noted that where there is a regulatory obligation or requirement associated with reliability, security or quality of supply of regulated services, then the expenditure in the NSP’s regulatory proposal for the relevant aspect of performance must be based on the regulatory obligation or requirement.
- Must maintain performance, where no specified regulation in place - The Commission considers that where there are no regulatory obligations or requirements in relation to reliability, security, quality or safety then the issue of how the existing objectives work together does not arise. This is because there is only one relevant objective for a particular aspect of performance which is covered by the existing expenditure objectives 3 and 4 relating to maintaining performance. That is, in the absence of standards being set by the jurisdiction, the objective will be to maintain previous performance.
- Meeting safety is a broad concept - A broader definition of safety could include issues that are not directly related to the operation of transmission or distribution networks, i.e. public safety issues, and may include many such things as substation fencing; power line to ground clearances; environment issues such as the management of transformer oil leaks and audible noise abatement; and occupational health and safety (OHS) issues.

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12 AEMC 2013, Network Service Provider Expenditure Objectives, Rule Determination, 19 September 2013, Sydney. A key reason for amending the Rules was lack of clarity on how the expenditure objectives worked together. This is because expenditure objective 2 required an NSP’s expenditure in its regulatory proposal to be based on complying with regulatory obligations which may relate to meeting reliability, security, quality and safety. On the other hand expenditure objectives 3 and 4 could be interpreted such that they require this expenditure to be based on maintaining existing levels of reliability, security, quality and safety. In the AEMC’s view, this created a lack of clarity for the NSP when putting together its regulatory proposal and for the AER in determining an NSP’s expenditure allowance in relation to these measures.
AER interpretation in most recent determination

The AER has also interpreted the expenditure objectives in recent determinations. In its most recent decision for Aurora, the AER set out a definition for each of the objectives. This is seen in Table 1 below.

<table>
<thead>
<tr>
<th>Expenditure Objective</th>
<th>AER interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meet or manage the expected demand for standard control services over that period</td>
<td>The network must be able to deliver electricity to its customers, and must build, operate and maintain its network to manage expected changes in the demand for electricity. A DNSP therefore requires demand driven capex and opex so that its network can deliver a reliable supply of electricity when: - The demand for electricity is at its peak. In this respect the AER was also clear that demand management expenditure was related to this objectives - New customers connect to the network - The overall consumption of electricity increases.</td>
</tr>
<tr>
<td>Comply with all applicable regulatory obligations or requirements associated with the provision of standard control services</td>
<td>DNSPs operating in the NEM must comply with a number of statutory obligations at the national and state level including: - Jurisdictional licence compliance - The requirements of the NEL and NER - Safety legislation - Electricity supply industry legislation and guidelines - all relevant state and federal environmental, planning and cultural heritage legislation - all statutory workplace health and safety requirements</td>
</tr>
<tr>
<td>Maintain the quality, reliability and security of supply of standard control services</td>
<td>A DNSP’s network must supply reliable and secure electricity. As the network ages, or demand for electricity increases, a DNSP may not be able to deliver electricity distribution services as required by the NER unless the DNSP appropriately maintains its network. Many of the requirements in this objective overlap with regulatory obligations applying to a DNSP. For example, a DNSP may be subject to power quality and reliability requirements under electricity supply industry legislation. The AER notes that a DNSPs proposal on STPIS is heavily related to this objective.</td>
</tr>
<tr>
<td>Maintaining reliability, safety and security of the system</td>
<td>A distribution system must also be reliable, safe and secure. Elements of this objective overlap with the requirement to maintain quality, reliability and security of supply. But in particular, this objective is to ensure a DNSP’s network does not pose safety risks to either its personnel or the public. Many of the requirements in this objective therefore overlap with regulatory obligations. For example, Aurora a DNSP must comply with electricity industry safety legislation, and workplace safety legislation Among other things, network reliability, safety and security may be affected by: - older or poorer condition assets - unsafe assets; and - environmental factors.</td>
</tr>
</tbody>
</table>

When seeking to demonstrate how our forecast expenditure meets the objectives, we have given weight to the interpretations of the AEMC and the AER. We note however that the AER’s determination for Aurora was undertaken prior to the AEMC’s amendment, and therefore must be considered in this light.13

Drawing it all together, we have been guided by the following interpretations when seeking to show how the forecast expenditure meets the objectives:

Expenditure objectives should be considered as a whole, rather than in isolation. In particular support expenditure in IT, corporate property and fleet are vital for ensuring that we can fulfil our objectives.

Where there are reliability, quality or security or safety standards in place, we must ensure that our forecast capex is directed at meeting those standards for each year of the regulatory period.

Where there are no standards in place for reliability, quality or security or safety we must ensure that the forecast capex is to maintain performance.

Safety is a broad concept and includes safety of the workforce, general public and the environment.

3.2 Functions we provide as a DNSP

To achieve the expenditure objectives stated in the rules, Endeavour Energy would need to have various processes, capabilities and systems and to undertake various activities in order to achieve the expenditure objectives (that is, to produce the required outputs and outcomes). These systems, capabilities and activities are:

- Network systems and assets to meet or manage the expected demand for standard control services.
- Capabilities and systems to monitor the quality, reliability and security of supplies of standard control services.
- Capabilities, personnel and systems to identify business and system maintenance requirements and to carry out these maintenance requirements.
- Capabilities, personnel and systems to identify and comply with all applicable regulatory obligations, including obligations that fall outside the National Electricity Law’s definition of regulatory obligations or requirements.
- Capabilities, systems and personnel to manage customer inquiries, customer connections and customer interface including billing.
- Capabilities, systems and personnel to effectively carry out its role as a State Own Corporation including financial reporting, corporate governance and internal audit.

Therefore, the expenditure objectives effectively define the activities that Endeavour Energy needs to undertake and specify the capabilities, systems and personnel that Endeavour Energy needs to have. Consequentially, achieving the expenditure objectives give rise to expenditure which is either of a capital or operating nature.

3.3 Achieving the capex objectives

The purpose of this section is to demonstrate how Endeavour Energy considers that its proposed forecast capex is required in order to achieve each of the expenditure objectives. We explain how each of our capital plans are to achieve one or more of the capex objectives in the Rules, based on the interpretation we derived in section 3.1.

Our proposed total forecast capex is made up a number of capital plans. We note the following:

- The investment categories do not have a one to one relationship with the capex objectives. For example, replacement is related to meeting our regulatory obligations, maintain reliability of the network, and maintain safety.
- Our capex categories are all related to complying with our regulatory obligations as a DNSP and State Owned Corporation. For example, our Design Reliability and Performance obligations require us to meet performance standards, and to more generally provide a reliable level of supply. Similarly, we have general regulatory obligations to provide a safe network for our customers and workforce.
- Support investment provides the necessary functions to achieve our network objectives. For example, non-system property capex is required to ensure that the offices, depots and learning centres are fit for purpose in housing our staff who perform building activities. Non-system investments also relate directly to complying with our regulatory obligations (Capex Objective 2). We have a series of obligations in our role as a State Owned Corporation to meet planning, monitoring and reporting functions such as financial accounts.

The table below provides a summary of the drivers of investment for each of our capital plans, and how these relate to one or more capex objectives. The section below provides further information on each of these plans. We note that more detailed information on our forecast methods and programs can be found in our forecasting methodology (Attachment 0.08) and our capital expenditure chapter in our main submission.
Table 2: Capital plans and capex objectives.

<table>
<thead>
<tr>
<th>Capital plan</th>
<th>Capex objectives achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission Network Planning Review</td>
<td>1 and 3</td>
</tr>
<tr>
<td>Strategic Asset Renewal Plan</td>
<td>2, 3 and 4</td>
</tr>
<tr>
<td>Distribution Works Program</td>
<td>All</td>
</tr>
<tr>
<td>Reliability Works Program</td>
<td>2 and 3</td>
</tr>
<tr>
<td>Strategic Asset Management Plan</td>
<td>All</td>
</tr>
<tr>
<td>Technology plan</td>
<td>All</td>
</tr>
<tr>
<td>Corporate Property Plan</td>
<td>All</td>
</tr>
<tr>
<td>Fleet and other support plan</td>
<td>All</td>
</tr>
</tbody>
</table>

Transmission Network Planning Review

Every year we review the loading on each element of the sub-transmission network given the forecast demand for each year in the ten-year forecast period. We review 37 areas of our sub-transmission network. Where capacity shortfalls are noted, augmentation projects are proposed with expenditure forecast at a time appropriate to address the network need. The sum of all identified projects forms the ten-year plan for augmentation of the sub transmission network.

The key driver of investment is growth that may impact on the ability of the network to supply the required demand with an appropriate level of supply security. It should be noted that a reduction in supply security may lead to a reduction in reliability levels. This plan therefore achieves the following capex objectives:

- **Objective 1** – Decisions to increase capacity of the sub-transmission network are related to peak demand arising from new connections and increased growth from existing customers.
- **Objective 3** – Decisions to replace and increase capacity are designed at maintaining the reliability, security and quality of supply and through the network conditions.

We note that the removal of Schedule 1 of our Design, Reliability and Performance licence conditions means that we no longer have to meet specific security criteria. In developing our forecast capex we have prudently given consideration to opportunities to defer investment where the resultant decline in security may be prudent and efficient.

Strategic Asset Renewal Plan (SARP)

This plan identifies all replacements of distribution and sub-transmission network assets. The underlying driver of investment is asset condition and fitness for purpose to meet ongoing safety, reliability and environmental obligations. We consider that the replacement of assets is to meet specific safety standards in our reliability obligations, and also to maintain the level of safety from the previous period. As such the plans achieve the following capex objectives:

- **Objective 2** – Decisions to replace assets on the distribution and sub-transmission network are related to our underlying regulatory obligations to provide a network that meets safety and environmental standards.
- **Objective 3** – Decisions to replace assets are designed to maintain the reliability of supply across the network

- **Objective 4** – Decisions to replace assets on the distribution and sub-transmission network are related to maintaining our safety standard based on previous performance.

Distribution Works Program

Every year we review the capability of the 11/22kV distribution network to safely supply the loads connected to it in compliance with network and regulatory standards. Limitations in network capacity, voltage regulation and fault withstand capability are identified and a suite of projects developed to address these. This plan identifies forecast capex for augmentations on the distribution network. The underlying driver of investment is growth and the impacts that it has on the ability of the network to meet expected demand, safety and other regulatory obligations. As such, we consider the plan achieves the following capex objectives:

- **Objective 1** – Decisions to increase capacity of the sub-transmission network are related to peak demand arising from new connections and increased growth from existing customers.
- **Objective 2** – Decisions to increase capacity on the distribution network are related to our underlying regulatory obligations to provide a network that meets mandated technical performance standards.
• Objective 3 – Decisions to replace and increase capacity are designed at maintaining the reliability, security and quality of supply and through the network conditions.
• Objective 4 – Decisions increase capacity on the distribution network are related to maintaining our safety standard based on previous performance.

Reliability Works Program
This plan identifies any additional capex required to maintain levels of reliability in accordance with customer expectations by addressing areas of poor reliability performance and, in particular, meeting reliability performance standards specified in the NSW Reliability and Performance (RP) licence conditions (Schedules 2 and 3 relating to average performance standards and minimum standards for feeders respectively). The underlying driver of investment is maintaining reliability compliance, and therefore ostensibly meets Objective 2, however it is also intended to maintain existing levels of reliability across the network and therefore also meets Objective 3.

Strategic Asset Management Plan
This plan brings together the capital works and associated expenditure forecasts of all the other capital expenditure plans. The intention is to ensure that an integrated program is developed that recognises the synergies that exist between the different plans and thereby develop a capex forecast that enables all the identified network needs to be met in the most efficient way. As such we consider that this plan achieves the following objectives:

• Objective 1 – Decisions to increase capacity of the distribution and sub-transmission network are related to peak demand arising from new connections and increased growth from existing customers.
• Objective 2 – Decisions to replace assets and increase capacity on the distribution and sub-transmission network are related to our underlying regulatory obligations to provide a network that meets mandated technical performance standards.
• Objective 3 – Decisions to replace and increase capacity are designed at maintaining the reliability, security and quality of supply and through the network conditions.
• Objective 4 – Decisions replace assets and increase capacity on the distribution network are related to maintaining our safety standard based on previous performance.

Technology
This plan identifies infrastructure, platforms, applications and devices required to support our network and corporate functions. This includes the operational technology required to control and manage our network. Given that the technology plan spans network and support investment, the drivers of investment include growth, asset condition and safety and network support.

Technology provides a necessary supporting activity to enable us to meet our network objectives and to fulfil our corporate obligations. Operational IT Technologies such as SCADA are required to directly operate and monitor network equipment and therefore are linked to maintaining the safety and reliability of the network. Non-system IT assets provide operational support to our staff to perform building activities required to achieve the capex objectives.

In this respect, our forecast capex is to achieve all the capex objectives as a whole, given that they are essential to performing our network activities.

Property
The corporate Property Plan includes capex to support the housing of staff. It includes depots and office accommodation. The underlying driver of investment is to support the network. Corporate property provides a necessary supporting activity by housing our staff in office and field service centre accommodation such that they can perform their network activities in a safe and efficient manner. One specific factor that is considered in this plan is the need for field service centres to be located such that staff are able to respond efficiently to reliability issues. We monitor where customer growth is occurring and develop plans to locate or relocate field service centres close to population centres. In this respect, our forecast capex is to achieve all the capex objectives as a whole, given that they are essential to performing our network activities.

Fleet and other support
These plans identify vehicles and equipment used to provide our network services, and other capex such as plant and equipment. Fleet is used to transport staff to undertake capital works (for example pool cars) or directly used to build assets (such as elevated work platforms). Plant and equipment are used directly by our staff in network activities such as maintenance and construction. In this respect, our forecast capex achieves all the capex objectives as a whole, given that they are essential to performing our network activities.
3.4 Achieving the opex objectives

The purpose of this section is to demonstrate how Endeavour Energy considers that its proposed forecast opex is required in order to achieve each of the expenditure objectives.

Endeavour Energy has included in the building block proposal a total forecast operating expenditure for the 2014-19 period that Endeavour Energy considers is required to carry out to carry out the necessary activities so as to achieve each of the opex objectives listed in clause 6.5.6(a) of the rules. This total forecast opex is made up a number of cost categories. These cost categories represent the costs of undertaking a set of interrelated activities and to operate the various systems necessary to achieve each of the opex objectives. These cost categories are presented in three broad cost groups. Description of these cost groups and the opex objectives they achieve are in table 3.

Table 3: Opex cost groups and opex objectives

<table>
<thead>
<tr>
<th>Opex cost group</th>
<th>Activities</th>
<th>Opex objectives achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Maintenance operating expenditure</td>
<td>Maintenance opex is required to undertake various activities on Endeavour Energy’s electrical network. These activities, hence associated cost, are critical to achieve all four opex objectives.</td>
<td>All opex objectives</td>
</tr>
<tr>
<td>Operations, support and other operating expenditure</td>
<td>Operation expenditure are those costs incurred in undertaking the required activities to directly support the operation of Endeavour Energy’s network system. Support expenditure is those necessary for the normal operation of Endeavour Energy as a business such as management costs, financial reporting or human resources management costs. These costs would be found in any typical business. These costs are essential to the effective running and operation of the network and therefore are required to achieve all of the opex objectives.</td>
<td>All opex objectives</td>
</tr>
</tbody>
</table>

Further description of the activities within each opex cost groups are provided below.

System maintenance activities and costs

**Inspections** – Routine asset inspection and condition monitoring activities include field and aerial inspection of overhead distribution assets (poles, pole top structures, conductors, substation structures, transformers, high and low voltage switchgear, and other distribution electrical equipment); powerline to ground and vegetation clearances; thermography of powerline and substation structures; and non-destructive testing of power transformers and switchgear;

**Maintenance and repair** – This category covers all maintenance and repair activities on network assets. But excludes fault and emergency repairs and restoration of supply for planned and unplanned interruptions which are categorised as emergency response. Components include maintenance and repair of distribution powerline equipment, damaged or inoperable switchgear, distribution and zone substations, and customer service mains;

**Vegetation management** – This work, mainly carried out by external contractors, reduces safety hazards and interruptions to supply on our overhead electricity network. Compliance with this policy is a critical control measure associated with management of bushfire and community safety risk. Vegetation management must be done regularly to ensure a reliable and safe electricity supply. It must also be done in a way that is sensitive to environmental and community issues;

**Emergency response** – This covers fault and emergency repairs and restoration of supply for planned and unplanned interruptions caused by events such as storms, equipment failures, acts of vandalism, and vehicle collisions. When notified of an interruption to customer supply, Endeavour Energy promptly dispatches field employees to deal with the fault; and

**Network maintenance operating cost** – This cost category covers other activities that are required to support the maintenance of the network itself such as: fire mitigation (excluding vegetation management); field training; and any other cost required for the safe operation and maintenance of the distribution network.
Operations and support activities and costs

**Network operations:** This category of costs cover operating costs required to manage the network such as: staffing of the control centre; operational switching personnel; outage planning personnel; and provision of authorised distribution personnel. It also covers support activities directly related to the network such as: demand forecasting; procurement, logistics and stores; information technology (IT) costs directly attributable to distribution operation; and land taxes;

**Information, communication and technology:** costs relating to the operation and maintenance of various IT technologies and telecommunication system required for the effective operation of Endeavour Energy's infrastructure and day to day operations.

**Customer service** – This activity includes call centre and operational activities relating to customer interaction and reporting on issues such as: distribution faults and safety hazards; complaints about the quality and reliability of supply; queries on new connections, disconnections and reconnections; and queries on improving power factor or load factor; and

**Training and development:** costs relating to centralised coordination and delivery of the technical, regulatory and professional development needs for Endeavour Energy's employees and compulsory training related to network access for contractors who work on the network. This also includes the four technical development programs: Apprentices, Engineering Officer Traineeships, Electrical Engineering Cadetships and the Engineering Graduate.

**Finance costs:** costs relating to:

- Corporate accounting and reporting.
- Budgeting, forecasting, commercial services, investment analysis and business support.
- Treasury, taxation and cash management.
- Regulatory reporting and fixed asset management and reporting.

**Other operations and business support costs:** these relate to:

- Fleet and logistics management
- Insurance.
- Human resources management
- Workers compensation, occupational health, well being and safety.
- Regulation and implementation of non-network alternative programs.
- Management including the Board of Directors, Chief Executive Officer, Chief Operating Officer and Networks NSW Group Management.

In addition to the forecast opex that Endeavour Energy proposed, the AER also allows a debt raising cost. The AER has accepted this cost as a legitimate operating expenditure that is required to meet the opex objectives. 14

**Summary**

We have outlined above the components of our proposed total forecast opex for the 2014-19 period and demonstrate how these cost components are required to achieve each of the expenditure objectives listed in clause 6.5.6(a) of the rules. These costs are incurred as the result of having capabilities, personnel and systems and of undertaking the activities necessary to deliver the outcomes specified by each of the expenditure objectives.

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14 For example, see AER’s decision for Aurora for the period 2012-13 to 2016-17.
4 Expenditure criteria and factors

4.1 Interpreting the expenditure criteria and factors

As stated above, the AER must accept Endeavour Energy’s forecast of required expenditure if it is satisfied that the total of the forecast expenditure reasonably reflects each of the expenditure criteria. In making this decision on whether it is satisfied, it must have regard to the expenditure factors.

At the time of our 2009-14 regulatory proposal, we engaged NERA to provide expert economic advice on the interpretation of the opex criteria and on how to demonstrate that the forecast opex reasonably reflects these criteria. Whilst the expenditure criteria may have been amended by the recent AEMC’s rule change, notably the removal of the reference to the circumstances of the relevant DNSP, we consider aspects of NERA’s advice is still of relevance for our current regulatory proposal:

- The terms of efficiency, prudence and realistic expectations have no observable measures but rather are principles that guide the AER’s decision on the proposed expenditure forecast.
- Efficiency cannot be directly observed. There is no external measure of where the efficiency frontier lies. Efficiency is typically measured relative to other firms and must take into account the differences in characteristics, circumstances and operating environment of each firm.
- Prudent refers to the idea of ‘carefully considering consequences’ and ‘carefully managing resources’.

NERA considered that the forecast capex must reasonably reflect all three capex criteria. That is, the AER, having regard to the capex factors, must be satisfied that the proposed forecast capex reasonably reflects the efficient costs that a prudent DNSP would expect to incur, based on a realistic expectation of demand forecast and cost inputs to achieve the capex objectives in the 2014 to 2019 period.\(^\text{15}\)

4.2 Applying the expenditure criteria and factors when making a decision

One of the expenditure criteria is that the forecast expenditure reasonably reflects the costs that a prudent operator would need to achieve the expenditure objectives. Whilst efficiency does not have direct observable measures, an important aspect of prudence is the process that is followed and the reasoning that is applied by the DNSP in developing its expenditure forecast. In this context, NERA considered that a practical demonstration that the forecast expenditure reasonably reflects the expenditure criteria can be achieved by:

1. Demonstrating that the process the DNSP employed in developing its forecast expenditure is efficient and prudent.
2. Using indicators to assess the reasonableness of the result and to inform a decision on whether the resulting forecast expenditure (from applying a prudent forecasting approach) reasonably reflects the efficient cost. This can be done by:
   - Using partial benchmark indicators to assess and demonstrate the efficiency of specific items included within the total expenditure forecast, notwithstanding that there are no objective, external factors that can be used to demonstrate the total forecast expenditure is efficient and the limited usefulness of benchmarking. The use of these partial indicators can add further credibility to the process and method used to derive the total forecast expenditure.
   - Compare and explain significant variations between historical expenditure and forecast expenditure.

The above approach is analogous to the approach the AER undertook in its recent decisions on forecast opex. The AER places emphasis on the methodology employed by the DNSP to develop the proposed forecast opex. In assessing Aurora’s forecast opex, the AER stated that:

“In this circumstance, the AER is concerned Aurora’s forecasting methodology may not produce a total forecast opex that reflects the criteria. Aurora’s forecasting methodology involves a significant number of individual forecasts… When aggregated, the AER is concerned that these forecasts may not account for the economies of scale and scope a DNSP of Aurora’s size would be expected to achieve…Therefore, to assess the extent to which the total forecast opex proposed by Aurora reasonably reflects the opex criteria, the AER has compared Aurora’s total forecast opex to a forecast developed using a base year approach.”\(^\text{16}\)

In other words, the AER considers the forecast method that a DNSP employs is an important factor in its assessment of the proposed forecast expenditure. The AER rejected both Aurora and United Energy’s proposed forecasting method and

\(^{15}\) AER, Final Victorian Decision, p 313.
\(^{16}\) AER, draft decision for Aurora, p157.
replaced them with the base year method.\textsuperscript{17} The AER considers that its own base year forecasting method would produce a forecast opex that reflects the opex criteria and ensures the achievement of the national electricity objective and revenue and pricing principles.

**Role of the expenditure factors**

NERA’s practical approach to demonstrating that the expenditure criteria has been met is borne out in the expenditure factors that the AER must consider in deciding whether it is satisfied that the forecast expenditure reasonably reflects the expenditure criteria.

1. The methodology employed by the DNSP to derive the forecast expenditure and the factors that the DNSP took into account the developing the forecast expenditure. These factors are:
   - Substitution possibilities between operating and capital expenditure (expenditure factor 7). The NER also requires the DNSP to identify and explain any significant interactions between the forecast capex and forecast opex programs.\textsuperscript{18}
   - The extent to which Endeavour Energy has considered and made provision for efficient non network alternatives (expenditure factor 10).
   - Relative prices of capital and operating inputs (expenditure factor 6).
   - The extent to which the expenditure forecast includes expenditure to address the concerns of electricity consumers as identified by the DNSP in the course of its engagement with electricity customers. (expenditure factor 5A)

2. Indicators that aid in the assessment of the efficient level of forecast opex by considering:
   - The benchmark expenditure that would be incurred by an efficient DNSP (albeit the efficient frontier cannot be observed) (expenditure factor 4)
   - The actual and expected opex of the DNSP during any preceding regulatory control period (expenditure factor 5)
   - The extent to which forecast expenditure is referable to arrangements with other persons that do not reflect arm’s length transactions (expenditure factor 9).

Alternatively, from the DNSP’s perspective, developing a forecast expenditure that reasonably reflects the expenditure criteria requires the adoption a forecasting approach and appropriate methods that take into account all the relevant factors that would have an impact on the quantum of the costs in the future. Some of these factors could be ‘standard’ or ‘common’ factors that would always be incorporated into a forecast, e.g. future price of cost inputs, substitution possibilities between forecast capex and forecast opex. These factors are always present in any forecast.

In addition, there are also other factors that may or may not be present in a regulatory control period and therefore may or may not have an impact on the forecast of future costs of a particular period. These factors include potential changes to present regulatory obligations or changes in the current operating environment that would result in a permanent ’step change’ to the current costs. Cost reduction programs or initiative for operational improvements for the forthcoming period is also a factor.

This prudent process would more likely than not to result in a forecast expenditure that reasonably reflects the expenditure criteria, i.e. efficient and prudent costs and reflecting a realistic expectation of forecast demand and cost inputs. However, as an additional check or a ‘sanity’/reasonable check of the result from a prudent forecasting process, a comparison is made between the forecast expenditure and historical result, explain and verify the increase so as to provide further supporting evidence that the forecast expenditure indeed reflects the efficient and prudent amount and also is consistent with the National Electricity Objective and Revenue and Pricing Principles, particularly giving the DNSP a reasonable opportunity to recover at least the efficient costs. This reasonableness check can be corroborated by benchmarking the result with other comparable peers. However, benchmarking result should be read with caution given its limited usefulness.

In sum, the expenditure factors is not important only for the AER’s assessment of the DNSP’s proposed forecast expenditure but are also important factors that a prudent forecasting approach would have taken into account in order to demonstrate that the resulting forecast expenditure reasonably reflects the expenditure criteria. Consideration of the expenditure factors (as well as other factors) gives both the DNSP and the AER confidence that the total forecast expenditure indeed reasonably reflects the efficient and prudent costs that a DNSP would need to achieve the expenditure objectives, based on a realistic expectation of demand forecast and cost inputs.

\textsuperscript{17} AER, Draft decision, Victorian electricity distribution network service provider, Distribution determination, June 2010, pp227- 235;
\textsuperscript{18} NER, cl. S6.1.3(1).
The role of the expenditure factors in the DNSP’s establishment of an efficient and prudent forecast opex and the AER’s assessment of this forecast is illustrated in the figure X below. The diagram shows that both our proposal, and the AER’s assessment is focused on the capex criteria and factors.

4.3 How we have addressed the expenditure criteria and factors

In sections 5 and 6 we address the criteria and factors in relation to the prudency of our forecast method for forecast capex and opex, and the Indicators that aid in the assessment of the efficient levels of these forecasts. In doing so, we demonstrate how we have met each expenditure factor relevant to these considerations as identified in table 4. In turn, we use this to illustrate that our proposed forecast capex and forecast opex reasonably reflects the expenditure criteria and is consistent with the NEO and RPP.

We do not set out a mathematical or mechanistic formula to identify the weight that should be placed on each factor. We do note however instances where the weight ascribed to a factor should be minimal.

Table 4 – Relevance of expenditure factors

<table>
<thead>
<tr>
<th>Expenditure Factor</th>
<th>Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1), (2) (3)</td>
<td>Deleted from Rules</td>
</tr>
<tr>
<td>(4) the most recent annual benchmarking report that has been published under rule 6.27 and the benchmark capital expenditure that would be incurred by an efficient Distribution Network Service Provider over the relevant regulatory control period;</td>
<td>Indicator</td>
</tr>
<tr>
<td>(5) the actual and expected capital expenditure of the Distribution Network Service Provider during any preceding regulatory control periods;</td>
<td>Indicator</td>
</tr>
<tr>
<td>(5A) the extent to which the capital expenditure forecast includes expenditure to address the concerns of electricity consumers as identified by the Distribution Network Service Provider in the course of its engagement with electricity consumers;</td>
<td>Forecast Method</td>
</tr>
<tr>
<td>(6) the relative prices of operating and capital inputs;</td>
<td>Forecast Method</td>
</tr>
<tr>
<td>(7) the substitution possibilities between operating and capital expenditure;</td>
<td>Forecast Method</td>
</tr>
<tr>
<td>(8) whether the capital expenditure forecast is consistent with any incentive scheme or schemes that apply to the Distribution Network Service Provider under clauses 6.5.8 or 6.6.2 to 6.6.4;</td>
<td>Indicator</td>
</tr>
<tr>
<td>(9) the extent the capital expenditure forecast is referable to arrangements with a person other than the Distribution Network Service Provider that, in the opinion of the AER, do not reflect arm’s length terms;</td>
<td>Forecast Method</td>
</tr>
<tr>
<td>(9A) whether the capital expenditure forecast includes an amount relating to a project that should more appropriately be included as a contingent project under clause 6.6A.1(b);</td>
<td>Forecast Method</td>
</tr>
<tr>
<td>(10) the extent the Distribution Network Service Provider has considered, and made provision for, efficient and prudent non-network alternatives; and</td>
<td>Forecast Method</td>
</tr>
<tr>
<td>(11) any relevant final project assessment report (as defined in clause 5.10.2) published under clause 5.17.4(o), (p) or (s);</td>
<td>Forecast Method</td>
</tr>
<tr>
<td>(12) any other factor the AER considers relevant and which the AER has notified the Distribution Network Service Provider in writing, prior to the submission of its revised regulatory proposal under clause 6.10.3, is an operating expenditure factor.</td>
<td>Will only be relevant to our revised proposal, if the AER raised an additional factor in it</td>
</tr>
</tbody>
</table>
Forecasting approach and methods

Apply methods

Result of method = Forecast Opex

Check result

‘Sanity’ check of result

Expenditure factors 4, 5 & 8

Consider

Significant variations between historical and forecast expenditure

Consider

Other factors: i.e. operating environment, legislative changes etc

Consider

Consider

Expenditure factors 5A, 6, 7, 9-11

Propose forecast expenditure in regulatory proposal and provide evidence supporting the methods (i.e. inputs etc) and evidence supporting the ‘sanity check

AER to consider and analyse evidence in light of NEO and RPP

Make decision on whether it is satisfied

Inform AER’s decision

Inform further division

Consider stakeholders’ submission

Accept?

Analyse

Consider and analyse

Expenditure factors 4 - 12

Consider

Cl. 6.11.1(b)(1), (3)

Cl. 6.11.1(b)(2)
The purpose of this section is to demonstrate that our process to derive our proposed total capex forecasts for 2014-19 period was prudent. In doing so we consider the key elements of a prudent forecasting process, and then address the capex factors that have direct relevance to the forecast process. We have structured this section as follows:

- We set out the reasons why the AER’s starting point should be the consideration of our detailed proposal, taking into account our detailed knowledge of network assets and functions we have to perform. In this respect we provide information to establish that we have sound business processes for developing efficient and prudent expenditure forecasts.

- We describe the key features of our forecasting approach for capex, identifying why this approach is fit for purpose for our network, and results in an efficient and prudent forecast for the 2014-19 period.

- Similarly, we demonstrate why our approach for forecasting opex is fit for purpose, and results in an efficient and prudent forecast for the 2014-19 period.

- We identify how the forecasting approach for both capex and opex provides a realistic expectation of demand and costs.

- We address each capex and opex factor that relates to an aspect of our forecasting approach.

5.1 Prudency of overall approach to expenditure forecasts

Our expenditure forecasting process are based on meeting our regulatory obligations as a DNSP, and draws on our expert understanding of our network and the functions we have to perform. As noted in Section 1, we consider that this is an extremely relevant consideration in the AER’s decision on whether to accept or reject the expenditure proposed by Endeavour Energy. We consider that the underlying governance framework and policies and strategies provide key markers of whether a DNSP’s expenditure proposals will be accurate and based on meeting our obligations in the least cost manner.

In our submissions to the AER’s Forecast Expenditure Assessment Guidelines, we noted deep concerns with statements that suggested the AER would be overly relying on high level tools to guide its decision making. For instance, we noted concern with the AER’s use of a base-step-trend method to develop an alternative forecast. We also noted concern with over-reliance on high level tools developed by the AER such as benchmarking and the repex model. Our view was that the AER should first examine the basis of our proposal, as such tools and methods could never substitute for the detailed planning and expert judgments that sit behind a DNSP’s proposal. As noted in Section 1, this is a key staple of the regulatory framework as evidenced in decisions by the Australian Competition Tribunal when it stated:

“EnergyAustralia is correct to submit that it is not the AER’s role to simply make a decision it considers best. It is also correct for it to say that the AER should be very slow to reject a DNSP’s proposal backed by detailed, relevant independent expert advice because the AER, on an uninformed basis, takes a different view.”

In the following section, we provide further information on why our approach to expenditure forecasting is credible. We show that our expenditure forecasts are based on meeting our underlying regulatory obligations as a DNSP. We then demonstrate that we have effective policies and procedures to inform our expenditure decisions and our planning processes. Finally, we show that our governance processes ensure that expenditure decisions are appropriately delegated and have effective financial controls.

Regulatory obligations

Regulatory obligations influence when we need to incur expenditure and the costs of doing so. As an electricity provider, we are subject to a range of industry specific obligations regulations that set out the manner in which we supply electricity in the Australian National Electricity Market. These regulations include the Electricity Supply Act 1995 (NSW), and the National Electricity Law and Rules. For example:

The Electricity Supply Act sets out mandatory obligations to connect customers, meet prescribed levels of reliability performance under licence conditions, carry out electricity works and the protection of works, and meet standards relating to proper customer installations, public electrical safety and bushfire mitigation.

The NEL and Rules regulate Endeavour Energy's participation in the National Electricity Market as a Distribution Network Service Provider and cover a range of matters including system and network reliability and security, network planning, connections procedures, and system and network standards.

Endeavour Energy is also subject to general obligations which direct the way we design and operate the network. These obligations are mainly concerned with environmental protection, and public and worker safety. These influence our drivers of investment, for example, we may replace an asset if the safety consequences to our workforce or the general public cannot be appropriately mitigated through maintenance. The standards also influence our construction and designs, for instance by adhering to environmental, planning and heritage legislation.

In addition to our key role of providing electricity services, we are also required to meet our obligations as a body corporate in respect of governance and financial accountability. These can drive the need for investment in IT and financial systems, and non-system property to house staff performing these functions. Further, as a state owned corporation, we are subject to specific legislation in respect of performing our functions. An example is the NSW State Records Act (1998) requirement to maintain records, which necessitates IT systems that record and maintain information.

As a prudent DNSP, Endeavour Energy also adheres to codes and guidelines that provide direction on how to perform our functions in accordance with good electricity industry practices. For example, under our Network Management Plan we adhere to guidelines on safety clearances, working in enclosed spaces, and network configuration on high bushfire risk days. Often these programs will influence our decisions to invest in replacing an asset, or on the construction standard that we apply.

Policies, procedures and strategies

Template 7.1 of the regulatory RIN templates identify each of the policies, procedures and strategies that we have at Endeavour Energy. These strategies influence planning approaches and expenditure decisions we make at Endeavour Energy, and have been pivotal to the manner in which we have developed our capex and opex forecasts for the 2014-19 period.

Corporate planning documents

Endeavour Energy has a number of corporate planning documents that provide vision and objectives on how to meet our regulatory obligations in an efficient and prudent manner. Under industry reform, the NSW DNSPs now have a common set of corporate strategy documents to ensure that our capital and operating forecasts meet our primary corporate objectives of safety, affordability and reliability. These strategies are summarised in the document, “Delivering efficiencies for our customers.” and include:

- The customer value plan – Sets a vision for future engagement with customers to ensure best value for money for the services we provide. The strategy has impacted the development of our proposal in 2 fundamental ways. It has focused our programs on identifying efficiencies in our costs so as to meet our goal of affordability, and has re-focused the business on engaging with our customers on issues such as levels of reliability and safety that we should strive for.

- The safety strategic plan – The objective is to protect the safety of the public, our employees, our contractors and those who are influenced by our business undertakings. Our long term business success depends on our ability to continually improve the quality of our services while protecting people and the environment. The safety plan is a key influence on our asset replacement programs where we have sought to find efficient ways to maintain the safety of the network despite deterioration in asset condition on the network.

- Asset Management Strategic Plan – Effective asset management is the key to being able to safely and efficiently deliver a reliable and sustainable electricity network, while continuing to promote customer affordability. The plan has focused on ways to prudently defer replacement of assets in the period, through activities such as the prioritisation process.

- The Risk Management Strategic Plan - Aims to embed a common Risk Management Framework across the Network companies, and accordingly provide a common basis for making decisions such as levels of investment to mitigate risk.

- Technology Strategic Plan – The objective is to leverage technology, enable the business' transition to a more efficient business model, and to facilitate delivery of the new business model's objectives. The plan’s scope
includes information technology and telecommunications, as well as operational and grid technologies. This plan has enabled us to deliver significant reductions in our technology costs over the next period.

- The Human Resources Strategic Plan – This sets a blueprint on how to transition to efficient workplace change and structural reform introduced under industry reform, and to promote efficient leadership and performance across the business. This plan has been instrumental in shaping our expected expenditure related to implementing efficiency reforms such as the Network Reform Program and the prioritisation process.

- The Finance Strategic Plan – The objective is to manage the financial health of the three NSW distribution networks in a manner that protects financial value and delivers balanced outcomes for both customers and the shareholder. This has influenced our decisions on levels of capex, and on proposing a rate of return that is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk.

**Asset Management**

Endeavour Energy’s strategic plans and Network Asset Management Strategy has significantly shaped the decisions underlying Endeavour Energy’s proposed augmentation, replacement and maintenance expenditure for the 2014-19 period. These strategies provide an overall view of the approach Endeavour Energy takes to manage its asset portfolio to achieve business objectives. They describe the key business objectives, and relate them to the key target outcomes of the asset management processes. They describe the nature of the Endeavour Energy’s asset base at a high level and the policy level approach to asset management. They describe the key processes in the asset management framework by reference to the appropriate policy, standard and procedural documents.

**Network planning and standards**

Our network planning documents have been a crucial influence on the development of our capex and opex forecasts for the 2014-19 period. They influence our decisions on when to invest, and the most efficient option to address the need taking into account safe working practices and meeting good electricity industry practice in design and construction.

Endeavour Energy has a series of policy documents that set out our principles for investing on the network. For example, our network capital expenditure planning policy defines the principles and approach by which Endeavour Energy decides to invest in its electricity system. The document identifies the legislative requirements and investment objectives, decision making processes and criteria, and processes to ensure these decisions are made in a consistent and transparent manner. Endeavour Energy also has a specific policy document relating to the principles and objectives of reliability of supply.

Our investment standards and investment evaluation manual provide more detail on key aspects of our policy documents. This includes:

- The process we use to derive the programs and programs underlying each of our capital plans.
- Spatial demand forecast process.
- Ratings and impedance standards for planning the capacity of our assets when making investment decisions.
- Configurations of network designs.

We also have a series of design and construction standards that underlie the cost structure of all work that occurs on the network.

**Other policies, procedures and strategies**

Template 7.1 also requests information on specific categories of procedures and strategies that impact our expenditure. In the section below we provide a brief summary of how these strategies have influenced the derivation of the total capex forecast for the 2014-19 period.

- Demand management - This policy provides an overview Endeavour Energy’s approach to the investigation and implementation of demand management solutions. This includes pilots and trials under the DM Innovation Allowance, targeted DM projects to defer specific network augmentation capital projects, and broad-based DM programs to reduce peak demand in broader network areas. This has been a key framework for developing forecasts of DM expenditure and the consequent reductions in capex as part of our 2014-19 forecasts.

- Asset security and disaster recovery – These policies ensure that Endeavour Energy keeps its assets safe from sabotage and can continue to provide services in the event of disasters. In the absence of these policies, Endeavour Energy’s capex could be of a far higher magnitude over the 2014-19 period.

- Accounting and procurement policies –These provide assurance that we capture and record costs we incur on the network in accordance with accounting standards. These have been instrumental in ensuring that our forecasts have allocated costs properly to standard control services, and that the cost relates to a capex rather
than opex activity. For example, our capitalisation policy provides clear guidance on what constitutes expenditure of a capital and operating nature.

- **Procurement policy and manual** – This document sets out minimum standards for the procurement of goods, stores, materials, equipment, works and services as well as the disposal of obsolete or surplus goods, stores, materials and equipment. It ensures that Endeavour Energy seeks all opportunities to efficiently reduce the capital costs we incur in providing services, through practices such as securing the lowest rates on electrical equipment.

- **IT policies** – IT policies provide guidance on the systems that are required to ensure that we continue to provide support to meet our network and corporate functions in an efficient manner. For instance, the IT capital approval process defines the process for all projects so as to utilise maximum benefits and ensure budgetary control. In recent times we have introduced other policies such as the Benefits Management Framework that set out a clear process for realising the benefits of IT projects that were implemented to achieve efficiencies in the business.

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## Governance frameworks

Endeavour Energy has a well-documented investment governance framework which sets out the process by which network capital investments are made and implemented within Endeavour Energy. The governance process ensures that projects planned through the network planning process continue to represent an optimal investment solution in light of current circumstances.

In this respect we note that our capex forecasts have been through appropriate checks and balance as part of this governance framework, and provide a level of assurance that programs and programs will proceed in the next period in an efficient and prudent manner. Key documents which demonstrate our governance frameworks include:

- **Board Policy Governance Policy** – This provides a robust system of governance addressing, but not limited to: integrity and efficiency of support to the Board in its roles and functioning and in its relationship with relevant Ministers; integrity and efficiency of support to the Board Committees in their roles and functioning; a risk management and compliance with statutory requirements; disclosure, transparency and liaison with shareholders and stakeholders; and implementation of the company’s strategy and directions through the company and business planning, resourcing processes, business systems, policies, procedures and performance monitoring.

- **Board Policy Delegation of Authority** - This Delegations Policy sets the framework for managing delegated authority throughout the company by the board of directors to support effective decision making. The delegations framework consists of: the Delegations Policy (this document); the Instrument of Delegation of Authority to the CEO (A Deed which documents the written authority of the CEO granted by the board under this Policy); the Sub-delegations Policy and Schedules (a document under which CEO sub-delegates to employees within the company); and board approved Power of Attorney.

- **Executive Leadership Team Charter** - The Endeavour Energy Executive Leadership Team (ELT) Committee provides a forum for the ELT to review and endorse strategic and operational decisions on important matters that affect the Company.

Endeavour Energy's capex approval processes also demonstrate that we have an effective governance process underlying our investment decisions. The network project approval process record delegated authority for projects and sub-programs. Projects and programs proceed through the planning to delivery stage with appropriate checks and balances on costing scope and delivery. For example, the network investment options report is an business case issued by the Chief Engineer which sets out options analysis and justification of the preferred option to seek approval from the Board or relevant delegated authority to commence implementation of a project and is supplemented with information on critical dates, costs and technical details.

### 5.2 Approach to forecasting capex

In chapter 5 of our regulatory proposal document, we described the process we used to derive the total forecast capex for each year of the 2014-19 period. The plans were based on meeting one or more driver of capex including growth in peak demand, asset condition and safety, reliability investment and network support drivers.

We consider there are a number of reasons why our process results in an efficient and prudent total forecast of capex over the 2014-19 period. This includes:

- We have a ‘fit for purpose’ method to forecast capex requirements for the 2014-19 period.
Our forecast method for each capital plan is based on a prudent assessment of needs and selection of the efficient option. Importantly, in identifying our needs for the 2014-19 period, we have taken into account the circumstances driving investment over the period.

### Fit for purpose forecasting approach

Our capital plans are an effective way of developing accurate forecasts of capex requirements for the 2014-19 period. Capex is lumpy in nature and therefore previous expenditure levels cannot be used as a precise guide for forecasting, as is the case for opex. For this reason, each of the capital plans relies on a methodology which provides a 'zero base' approach to deriving expenditure, which draws on historical data in addition to other factors driving capex.

Endeavour Energy only invests in capital when an appropriate driver exists to enable us to meet our regulatory obligations to provide an efficient, safe and reliable network. The plans relate to a specific network element or support asset type, and a specific driver of investment for that asset. This is represented in the diagram below.

<table>
<thead>
<tr>
<th>Capital plans</th>
<th>Key forecasting methods these are not methods, they are areas of investment?</th>
<th>Key plan drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sub-transmission</td>
<td>Distribution</td>
</tr>
<tr>
<td>Transmission Network Planning Review</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Strategic Asset Management Plan</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Distribution Works Program</td>
<td></td>
<td>×</td>
</tr>
<tr>
<td>Reliability Works Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT investment plan</td>
<td></td>
<td></td>
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<tr>
<td>Field service centre strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleet and other support plans</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Integration of plans

Our planning approach recognises that the network is an integrated system and that it is not possible to make decisions that affect one part of the network without considering the implications for other parts of the network. For example, a capacity constraint on a particular element of the subtransmission network may be most efficiently overcome by investing in a distribution augmentation that enables load to be transferred to another less heavily loaded element. Similarly, asset replacement decisions cannot be taken in isolation without considering network loading and the capacity requirements of the assets to be replaced.

While each of our investment plans nominally relates to a particular network segment or investment driver our planning approach recognises the need to integrate all of these plans to ensure that network needs are being met in the most efficient way and that there is no gap or overlap in our expenditure requirements.

Every year Endeavour Energy produces a Strategic Asset Management Plan (SAMP) that details how company objectives will be implemented through network investment (capex and opex) programs. It takes an asset view of investment to bring together programs from each of the other investment plans and prioritises individual projects and programs according to network risk.

Our support plans address are based on addressing the needs for a particular type of supporting asset such as technology, corporate property, fleet and plant and tools. This allows us to undertake granular planning of assets within a population, and in these cases there is little expected synergies with other assets.

### Individually tailored planning methods

20 The forecast includes an number of initiatives to support productivity savings in the network business.
21 Fleet forecast capex includes the benefits from initiatives to reduce fleet cost. These initiatives involve extension of replacement cycle, fleet standardisation and improved buying power to realise maximum value.
When developing our individual plans, we have considered the most appropriate and cost effective way to estimate our requirements. For the majority of plans, Endeavour Energy has used a ‘bottom up’ (‘zero based’) method to derive the forecast capex in its capital plans. In other cases, Endeavour Energy has used top down approaches to derive its forecasts. This generally involves a modelling approach to estimate future capex based on ‘fit for purpose’ considerations such as historical expenditure, and future drivers including changes in number of connections. This is represented in the following table:

<table>
<thead>
<tr>
<th>Capital plans</th>
<th>Key forecasting methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bottom up</td>
</tr>
<tr>
<td>Transmission Network Planning Review</td>
<td></td>
</tr>
<tr>
<td>Strategic Asset Renewal Plan</td>
<td>x</td>
</tr>
<tr>
<td>Distribution Works Program</td>
<td></td>
</tr>
<tr>
<td>Reliability Works Program</td>
<td>x</td>
</tr>
<tr>
<td>ICT investment plan</td>
<td></td>
</tr>
<tr>
<td>Field service centre strategy</td>
<td>x</td>
</tr>
<tr>
<td>Fleet plan</td>
<td></td>
</tr>
<tr>
<td>Other Support plan</td>
<td>x</td>
</tr>
</tbody>
</table>

Our approach recognises that it is not cost-effective to undertake in-depth engineering assessments (“bottom up”) planning on all assets on our network. We also understand that the level of information on the driver of an individual asset will vary.

For this reason, Endeavour Energy uses detailed ‘bottom up’ planning to identify need where the asset is material in nature. For example, on our sub-transmission network we will assess the condition of major assets such as sub-transmission substations and cables, and will also forecast how the network will be able to withstand increases in demand.

For lower value assets, Endeavour Energy uses information on the asset population to forecast needs in advance. For example, Endeavour Energy records very specific information on the condition of a power transformers and uses this information to forecast replacement need and timing for the population of assets. However, it is difficult to identify the particular assets that will be overloaded on the low voltage network. For this reason, Endeavour Energy uses high level models to predict the volume of works based on drivers such as historical projections, customer connections, or peak demand growth.

**Prudent identification of circumstances, needs and options**

A key element of a prudent forecasting process is a consistent and appropriate method for identifying investment need, and a rigorous approach to selecting of the most efficient option to address the need. Further information on our process for identifying needs and selecting efficient options can be found in each of the overviews for our capital plans. The application of this forecast approach is provided in the underlying plans and business cases in the supporting documents for the capital plan.

**Identifying our circumstances for the 2014-19 period**

In developing the capex forecast, our process for identifying needs has been able to incorporate our strategic environment and circumstances in the 2014-19 period.

- **Focus on affordability - Industry reform has focused Endeavour Energy on achieving affordability for our customers. Accordingly our planning processes have been refined to consider the ability to avoid or defer investment where risks can be tolerated. Our forecasts have also incorporated prioritisation of the capex program based on an understanding of network risk, which has identified opportunities to further defer capital programs to meet our goal of affordability.**

- **Condition of assets on the network – Our proposal recognises the need to replace assets to avoid a decline in safety and reliability performance. Our analysis shows that investment in the 2009-14 period has started to**
arrest the decline in the average age of our network asset, with investment in the 2014-19 period intended to stabilise the average age at a sustainable level.

- Pockets of growth on network – While growth in system peak demand has slowed significantly, capacity investment is still required to meet pockets of growth on the network. Endeavour Energy’s network area contains the greenfield development areas of Sydney’s North West and South West growth centres and investment in infrastructure to service these areas is a key component of our capex forecast.

- NSW licence conditions - We note that the removal of Schedule 1 of our Design, Reliability and Performance licence conditions means that we no longer have to meet specific security criteria. In developing our forecast capex we have prudently given consideration to opportunities to defer investment where the resultant decline in security may be prudent and efficient.

**Identifying needs**

Our planning processes allow us to identify the point at which we need to invest. Our decisions to invest are based on our underlying regulatory obligations to provide a safe and reliable network. The basis on which we invest to meet drivers of investment is set out below.

<table>
<thead>
<tr>
<th>Capex category</th>
<th>Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td>We will upgrade or invest in new system assets if we forecast that the thermal capacity (rating) of each asset will be insufficient to meet the actual load. We will also invest if we forecast that the network design will not meet specified security standards. A further reason is where we forecast that we will not be able to meet the network and voltage standards under the NER.</td>
</tr>
<tr>
<td>Asset condition and safety</td>
<td>We replace assets when the condition does not enable us to comply with our general regulatory obligations with respect to safety and reliability of network assets, or maintain the inherent reliability and security of the network. In most cases, our obligations do not specify a measurable standard to achieve. We undertake therefore undertakes a risk consequence/ cost analysis to inform our decision on the appropriate risk tolerance.</td>
</tr>
<tr>
<td>Reliability performance compliance</td>
<td>We will make reliability-related investments where we forecast that we will not be able to achieve the performance requirements of Schedule 2 or 3 of our DRP licence conditions.</td>
</tr>
<tr>
<td>Network support</td>
<td>We replace supporting assets when the condition no longer enables us to provide a necessary supporting activity. We also invest in new assets to meet a new regulatory obligation. We may also invest in efficiency initiatives where the benefits outweigh the costs.</td>
</tr>
</tbody>
</table>

**Options assessment**

Our investment plans are directed at identifying the most efficient option to address the need. NERA considered that a prudent process would consider alternative options, consider efficiency in the long term, and consider the efficiency of the total forecast, including consideration of synergies in delivery.

The business cases underlying our investment plans demonstrate how Endeavour Energy identified alternative feasible options to address the need. This includes opex substitution possibilities as part of identifying feasible options. For example, we consider whether a safety risk on an asset can be mitigated through a targeted maintenance program. A further example is consideration of non-network alternatives such as demand management to meet the demand of new and existing customers.

In respect of long term efficiency, Endeavour Energy identifies the option that is most efficient in the long term by undertaking net present value (NPV) analysis on feasible options. NPV analysis takes into account the time value of money of different options. The option which is least cost is the selected option and ensures efficiency in the long term. For projects that are driven by efficiency, Endeavour Energy conducts a market benefits test to identify the option that maximises the long term benefit to customers.

Finally we note that our capital planning approach is specifically designed to ensure that potential synergies at time of delivery are taken into account. For example, our area plans look at multiple drivers on the sub-transmission network,
which allows us to identify if there are efficiencies that may arise at time of delivery. Our plans for the distribution network also consider whether there is likely to be any synergies at time of delivery.

5.3 Approach to forecasting opex

In respect of forecast opex, in chapter 6 of our regulatory proposal, we outline our performance in the current regulatory period and the drivers impacting on our forecast opex requirement for the 2014-19 period. Taking these into account, we described the process we undertook in deriving the total forecast opex for the 2014-19 period.

We have adopted a ‘fit for purpose’ approach to forecasting our operating expenditure for the forthcoming regulatory control period. This approach is as follows:

- Disaggregate Endeavour 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 (for example, maintenance opex, system control, finance, human resources etc).
- 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 general we apply the ‘base, step, trend’ modelling approach to most operating expenditure categories.

We consider that this ‘fit for purpose’ forecasting approach ensures that the nature of each cost category and its relevant underlying drivers are appropriately accounted for, such that the resulting forecast opex is reflective of the efficient costs that a prudent operator would require to achieve the opex objectives. This process gives us confidence that our total forecast opex would reasonably reflect the opex criteria and ensures that the National Electricity Objectives and the Revenue and Pricing Principles are met, especially that we are afforded a reasonable opportunity to recover at least the efficient cost we expect to incur in the 2014-19 period.

This approach to forecasting total opex that selects the most appropriate methods for the relevant cost categories would be expected to be the approach that DNSP would undertake to ensure that the resulting forecast expenditure reasonably reflects the opex criteria. Throughout this process, as well as considering the nature and drivers of each particular cost category, likely legislative changes, changes to our operating environment as well as scope for efficiency savings, we also have had regard to the opex factors in the rules that the AER must consider in deciding whether it is satisfied that our total forecast opex reasonably reflects the opex criteria. Consideration of the above factors in forecasting future expenditure requirements is a prudent course of action and would be expected if the total forecast opex is to reasonably reflect the opex criteria.

As mentioned above, the capex and opex criteria and factors mirror each other and as such, we consider these criteria and factors in the context of forecast capex and opex together in the sections below.

5.4 Realistic expectation of demand forecasts and cost inputs

One of the capex criteria is a realistic expectation of the demand forecast and cost inputs required to achieve the capital expenditure objectives.

Demand forecasts

Endeavour Energy’s planning process has incorporated accurate and up to date peak demand forecasts as part of the key inputs into developing capital plans. Endeavour Energy records peak demand at each of its 159 zone areas, and this provides an indication of trends in demand growth at different points in the network. Importantly, Endeavour Energy’s forecast process is capable of excluding spot loads from trend growth, considering new connections in the short term, and weather correcting.

Further information on our demand forecast methodology and outcomes can be found in Chapter 5 of our regulatory proposal and in supporting documents. The supporting documents in the capital plans provide more information on the application of demand forecasts in deriving the proposed capex for the 2014-19 period.

In relation to forecast opex, our approach also takes into account the demand on our expenditure requirements for the 2014-19. The need for increase in our forecast opex requirement in the 2014-19 (over and above the base year opex which represents the recurrent expenditure needed each year to achieve the opex objectives) stems from a number of factors that we expect to encounter in the next period. These factors have been outlined in chapter 6 of the regulatory proposal.

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22 Clause S6.1.2(1) requires Endeavour Energy to identify the forecast opex by reference to well accepted categories.
**Input costs**

The use of realistic cost inputs are a key element of our forecasting methodologies. When developing our estimate of efficient capital and operating costs we have been mindful of understanding the inherent drivers of these costs in our network; one of which is the cost inputs.

In relation to forecast capex, the methodologies used to develop the unit costs vary between capital plans, and in some cases even between projects and programs within them. At all times, we have used methodologies that are fit for purpose with consideration to historical experience, nature of project or program of work and data availability.

In general, three types of costing methodologies were used to estimate the input costs:

- **Bottom-up estimates** - The bottom-up approach uses cost components to estimate projects through an aggregation process, based on the scope of work. The estimating systems are in-line with industry best practice, and they rely on data that is constantly validated and updated.

- **Historical models** - The use of historical estimating models has been justified where past costs were proven to be efficient. The capital plans in this category contained some of the following elements: a higher proportion of fixed costs; high (recurring) volumes; minimal historic cost changes (limited scope variation); and stable cost trends over time.

- **Top-down forecasting** – Our asset replacement forecasts use a model based on asset age (similar to the AER’s repex model) to develop a top down forecast of the appropriate level of expenditure in this area, which is used to validate our bottom up, asset specific forecast.

A key feature of our process to derive capex for the 2009-14 period was the focus on incorporating efficiencies of the past, and considering potential efficiencies in delivering projects in the period. This provides further demonstration that the input costs used in the process to develop our capex forecasts are realistic and efficient.

In relation to forecast opex, we have adopted the base year forecasting approach which escalate the base year opex by the relevant real cost escalators to ensure that forecast expenditure reasonably reflect a realistic expectation of cost inputs.

We have jointly with Ausgrid and Essential Energy commissioned a report from CEG and Independent Economics on the appropriate and likely movement in the cost of these inputs in the 2014-19 period.

To ensure that the changes in labour costs appropriately reflect the skills required and the market factors driving the demand and supply of labour, Independent Economics had provided expected changes in labour costs for the utilities sector. We have used the utilities sector real labour cost increase to forecast the likely labour costs we would need to undertake activities that require engineering and electrical technical skills which are essential in undertaking work on our electrical system and assets. For non-engineering related labour costs, we considered that labour cost changes in the general labour sector best reflect the efficient labour costs in the forthcoming regulatory control period.

Further, we do not expect any real price changes to other non labour related cost inputs. We consider the forecast changes in the consumer price index (CPI) reasonably reflect the likely changes in the costs of these inputs in the 2014-19 period, given the significant efficiency savings we are pursuing.

The above approach of incorporating real cost escalators is applicable to both forecast capex and opex.

### 5.5 Addressing expenditure factors that are specific to the forecast method

A number of the expenditure factors in the rules provide specific checks on aspects of the forecast method employed by a DNSP to derive total forecast expenditure (i.e. both capex and opex). In the sections below, we address each expenditure factor that is relevant to the forecast method.

**Substitution possibilities between operating and capital expenditure (expenditure factor 7)**

We have considered the substitution possibilities between operating and capital expenditure in developing our forecast opex. This factor is common to both forecast capex and forecast opex and we consider this factor below in the context of these forecasts. As demonstrated in our capex chapter, our capital investment framework involves the identification and selection of the most efficient option to address the need identified. In this process we consider the substitution possibilities between operating and capital expenditure. For example, in forecasting replacement capex, our assessment processes identify whether the risks could be mitigated through maintenance program (opex).\(^{23}\)

\(^{23}\) Refer to capex chapter.
A key step in this process is to consider the full range of alternative options, including areas where there may be opex solutions. In respect of our drivers of investment, our planning processes explicitly considered the following opex substitution:

- **Growth** – The primary opex substitute for customer and demand driven capex is demand management (non-network alternatives). Our processes directly consider whether there is a specific demand management opportunity, or whether historical experience indicates that demand management may cost effectively address the issues. Further, we consider and make provision for broad based demand management which is based on managing demand before it arises, and thereby cost effectively reducing demand driven capex in the long term. Further detail is described in the section below pertaining to non-network alternatives.

  Chapter 5 of the NER details the framework in which distribution planning decisions are made and specify the augmentation projects in which demand management must be considered as an option. Assuming that demand management is considered to be a viable alternative on a technical basis, the financial evaluation considers the “avoided distribution cost” (ADC), which is the present value of the augmentation capex deferred / avoided by implementing a demand management program.

  Where the ADC is large enough, Endeavour Energy will invest opex up to the value of the ADC in preference to investing in augmenting the network. It should be noted that a significant component of Endeavour Energy’s growth-related capex in the forthcoming regulatory control period is associated with greenfield development in Sydney’s North West and South West growth centres. This investment is required to provide infrastructure to support new development in areas where there is very little existing infrastructure or demand for electricity. Opportunities for demand management are therefore limited. Notwithstanding this, Endeavour Energy’ proposal includes $13 million of mainly opex (excluding any expenditure allowed by the AER as part of the Demand Management Innovation Allowance) on a range of demand management initiatives to defer or avoid capital expenditure. The impact of this is reflected in the reduced growth capex forecast for the forthcoming regulatory control period.

- **Replacement capex** – The primary opex substitute for replacement capex is network maintenance. Our process for deriving the timing and need for replacement considers whether there is a less costly maintenance option. These options are based on our current maintenance activities and condition information.

  Endeavour Energy’s experience is that a reduction in asset renewal expenditure tends to lead to an increase in fault and emergency expenditure of approximately 6% of the reduced renewal capex. The forecast asset renewal / refurbishment expenditure has been cut in order to achieve the objective of reducing costs to our customers. An associated increase in maintenance costs has been added to our opex forecast in line with our historic experience.

- **Reliability performance capex** – A means of remedying reliability may be for an opex solution such as corrective maintenance. We have considered these alternative options when developing our reliability compliance plan.

- **Network support** – Opex substitutions are a key consideration in our process for deriving replacement and new non-system capex. For example when deciding whether to replace an IT asset, we may consider if the issue can be resolved through maintenance or vendor servicing options. Our strategies also consider whether more generally whether it is better to maintain an existing function through capex or opex. For example, we periodically review decisions to lease rather than own property.

Our forecasting process also considers the consequential impact of efficient capital investment on our future opex requirements. We considered the interaction between forecast capex and forecast opex and the substitution possibility between the two for the following cost categories:

- **Maintenance expenditure** – the impact of a reduced capital program on our maintenance expenditure requirement
- **Property expenditure** – the impact of property capital investment on our property operating expenditure.
- **IT expenditure** – the impact of IT capital investment on IT operating expenditure

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24 This includes expenditure that may relate to reinforcements that are deemed opex in accordance with our accounting policies. The key point however is that
The extent the DNSP has considered and made provision for efficient and prudent non-network alternatives (expenditure objective 10)

Similar to expenditure factor 10, this expenditure factor is common to both forecast capex and forecast opex and we consider this factor below in the context of these forecasts.

The purpose of this expenditure factor is to ensure that DNSP’s specifically consider efficient non-network alternatives such as demand management. These provide opportunities to efficiently defer investment, and pass the savings onto customers. In some cases, those benefits also extend to savings in the transmission and generation sectors, which multiply the benefits to customers.

As noted above, Endeavour Energy has considered all feasible options to address need, and has selected the most efficient option. In doing so, we have considered and made provision for efficient and prudent non network alternatives. Endeavour Energy has well defined demand management strategies and processes, and a track record in implementing demand management initiatives.

Demand management is an effective way to manage load factors and curtail investment in network capacity by reducing demand at peak times. Our demand management strategy focuses on implementing non-network alternatives where trials of the intended systems or technology have proven their benefit and cost-effectiveness. The strategy is comprised of three components:

- Pilots and trials – During the 2014-19 regulatory period, our pilot programs are to be funded via the demand management innovation allowance (DMIA). The objective of these programs is to test technologies and concepts which will provide long term network efficiency gains to energy users and reduce network costs. The focus will be on improving our understanding of the application of air-conditioning control, energy storage and power factor correction to residential customers.

- Targeted constraint driven initiatives – Over the 2014-19 regulatory period, our targeted programs involve business-as-usual approaches to implementing non-network options. These are programs that seek to reduce peak demand in order to remove a specific network limitation and defer network augmentation. The economic evaluation for these projects is based on the deferred value of the preferred network augmentation (avoided distribution cost).

- Broad based initiatives – Demand management initiatives are also targeted more broadly to improve the utilisation of the network and extend the time before demand growth causes constraints to occur. The broad based initiatives that will be undertaken over the 2014-19 period focus on converting hot water systems and pool pumps to off-peak tariffs (controlled load) and installing power factor correction devices for commercial customers. These initiatives will be implemented in areas where there are existing capacity constraints or where load growth means that constraints are likely to occur in the short to medium term.

Additional information on our demand management strategy is contained in Appendix xx.

The relative prices of operating and capital inputs (expenditure factor 6)

The purpose of this factor is to provide an additional check that the forecast method has adequately accounted for the relative price of capex and opex inputs when we undertake analysis to select the least cost option to address the need.

In the section above we described how the capex forecasting method includes a process to derive a realistic expectation of cost inputs. Similarly, the costs of opex options were derived from methodologies that provide a realistic expectation of future costs. Implicit in our cost estimating methods was a common approach for applying real cost escalation. In combination, this allows for a fair comparison of capex and opex options with relation to the underlying input costs.

The extent to which the capital/operating expenditure forecast includes expenditure to address the concerns of electricity consumers identified by the DNSP in the course of its engagement with electricity consumers (expenditure factor 5A)

The purpose of this factor is to ensure that the DNSP has effectively engaged with customers in developing its forecasts. The AEMC’s final determination on the 2012 Rule change noted that:

“The final rules do not attempt to address perceived problems of engagement of consumers generally…. More conceptually though, this issue is fundamentally about how NSPs and the AER interact with consumers. While the final rules in some areas, such as the expenditure forecasting assessment guidelines, require engagement to occur in a certain way, the rules should provide for the outcomes of engagement, not the engagement itself. Forcing parties to interact is unlikely to be successful in most cases. What is needed is a cultural shift towards greater engagement, and this can only come from the parties themselves. What the final rules provide for in terms of engagement should be seen as a minimum. However, importantly the final rules provide the AER with the ability to have regard to the nature of consumer engagement undertaken by NSPs when evaluating their regulatory proposals.”
The AEMC’s deliberations are important in understanding the purpose of this factor, as it suggests that it requires the AER to examine the nature of the engagement, rather than specifically demonstrating how each concern has been incorporated into our forecasts. This is an important distinction, as ultimately we have regulatory obligations to provide a safe, secure and reliable network, and our decisions to invest draw on our expert knowledge on how to meet these areas. Engagement can nevertheless provide opportunities to test whether our risk tolerance levels, reliability targets and service standards are appropriate.

Our regulatory proposal, and the underlying supporting documents show the activities we undertook in engaging customers on a range of issues including reliability, price, construction and design standards, metering technology, demand management and energy efficiency, support for vulnerable households, and communication and engagement. Our research findings can be found in supporting attachment to Chapter 2 of our proposal. The findings in some of these areas support the basis of our proposed total capex:

- **Reliability** – Customers were generally satisfied with the reliability of their service, in fact, many felt it had improved over recent years. There was little willingness to pay more for a higher level of reliability. Our proposal has sought to maintain the reliability performance standards of our licence conditions, and has not sought funding for additional reliability. Further information can be found in the capex objectives in section

- **Pricing** – a significant number of our customers had seen increases in their electricity bills over the past few years. Customers understood the need to spend money to maintain the electricity network. However, there was a clear preference that if prices needed to increase, they should do so in a steady manner over a number of years rather than a one-off “bill shock”. Our capex proposal has sought all available opportunities to prudently defer expenditure and incorporate efficiencies.

- **Construction and design standards** – Customers ranked price as the major factor that should be taken into account by Endeavour Energy when making decisions around new construction/design standards. While price was seen as the most important, customers thought that safety standards should not be compromised. These views confirmed that our current standards are appropriate given that they ensure we meet safety standards. We also note that our decision confirms our current views on underground cabling construction decisions.

- **Safety** – Customers expected that electricity was supplied in a safe manner and believed that this should be taken into account when constructing and operating the network. In this respect, our replacement program continues to remove assets that deteriorate the safety of services we currently provide.

In particular, recognising the concerns of customers regarding the impact of electricity prices, Endeavour Energy has embedded within the forecast opex efficiency benefits from a range of measures we intend to implement to limit the impact of necessary increases in opex requirements for the next period

**Contingent projects (expenditure factor 9)**

The purpose of this factor is to identify projects that are highly dependent on a clearly defined trigger event occurring, and which are of a very material nature. These projects are excluded from the total forecast capex allowance for standard control services, and instead are identified as ‘contingent’ with an appropriate allowance if the defined trigger event occurs. The ostensible purpose of a contingent project is to ensure that large and uncertain events are accounted for separately if and when the event occurs, rather than included in the allowance.

Endeavour Energy’s forecast method considered whether any projects or programs of expenditure should be identified as contingent projects, and therefore excluded from the total forecast capex for standard control services. We found that no project met the criteria in contingent projects in 6.6A.1 of the Rules. In this respect, the only projects that may meet some of the criteria of a contingent project are large uncertain connections that we have considered as part of our total subtransmission growth capex identified in our Transmission Network Planning Review. However, the total capex for these projects does not meet the materiality threshold of a contingent project. We note that for these uncertain projects, we have derived a probabilistic estimate of expenditure which reflects the likelihood of the event occurring.

Furthermore, it is noted that the demand forecasting process is imperfect and does not identify all new major connections that may occur during the forecast period. To the extent that any such connections were not identified at the time of preparing our last peak demand forecast, no expenditure has been included for associated connection works in our forecast capex. An example of such a potential connection arises from the Federal Government’s recent announcement of the establishment of a second Sydney Airport at Badgery’s Creek, within the Endeavour Energy network area. At this stage it is unknown what impact this will have on our network or the timing of any works and accordingly we have not been able to make any allowance in our capex forecast or for a contingent project for the necessary connection works.

**Any relevant final project assessment report (expenditure factor 11)**

This factor was inserted into the rules by the AEMC at the time of making its Rule change on distribution network planning and expansion framework. The final project assessment report is the final step in the regulatory investment test for distribution (RIT-D) under Chapter 5 of the rules. The RIT-D replaced the current regulatory test, establishing the processes and criteria to be applied by DNSPs in order to identify investment options which best address the needs of...
the network. The RIT-D will be applicable in circumstances where a network problem exists and the estimated capital cost of the most expensive potential credible option to address the identified need is more than $5 million.

The AEMC amended the expenditure factors in chapter 6 of the rules when implementing the rule based on the views of the proponent. The proponent had noted that one of the benefits of the Rule change was that economic justification of distribution investments may also assist the AER in its determination of DNSPs' revenues under Chapter 6 of the rules which should result in more efficient network charges.

We note that there have been no final project assessment reports published at the time of submitting this proposal.
6 Partial indicators that forecast expenditure is efficient

The process that a DNSP employed and the factors that it takes into account in developing a total forecast expenditure is an important indication that the resulting total forecast are indeed prudent and reasonably reflects efficient costs.

Whilst there is no external, observable measure that can be relied upon to demonstrate and/or conclude that the total forecast expenditure is efficient, there are nevertheless partial indicators and other factors that would assist in confirming the efficient level of the forecast expenditure that was derived from a prudent approach. These factors are stated in the rules and are intended to assist the AER in making a decision on whether the total forecast expenditure reasonably reflects the expenditure criteria. We address these factors for forecast capex and opex separately below. In relation to the expenditure factor 4 (benchmarking) and expenditure factor 9 (non arm’s length transaction); we address these jointly for forecast capex and opex as our considerations of these factors are applicable equally to both.

6.1 Previous expenditure

The rules require the AER to have regard to the actual and expected capital and operating expenditure respectively of the Distribution Network Service Provider during any preceding regulatory control periods. The NER requires Endeavour Energy to provide actual and expected capex and opex for the previous and current regulatory period as well as explain any significant variation in forecast capex from historical capex and opex.25

Further information on our performance in the 2009-14 period can be found in chapter 5 of our regulatory proposal.

Forecast capex

In the sections below, we note that previous expenditure can provide a partial indicator on the efficiency and accuracy of the capex forecast for 2014-19 in a number of ways:

• It can identify whether a DNSP’s expenditure is deviating from trends, and whether this can be explained with reference to previous and future circumstances and drivers.

• It can provide insight into the forecasting accuracy of a DNSP in the past, and whether variations to forecast have been identified and taken into account in developing forecasts for the 2014-19 regulatory control period.

• It can provide insight into whether a DNSP has responded to incentives in the last period. As this relates to a separate capex factor

In terms of trend analysis, as can be seen in the figure below, our forecast capex is 37 per cent lower than actual capex for 2009-14. This reflects that we achieved considerable improvements in the security of the network in the 2009-14 period under the licence conditions, and that we can return to more steady state levels of investment in this period. The lower proposed amount also reflects the efficiencies achieved under industry reform, with a primary focus on affordability through striving to contain average increases in our share of customers’ electricity bills at or below CPI.

25 See clauses S6.1.1(6) and S6.1.1(7).
Chapter 5 of our proposal provides a summary of the reasons underlying the trend from past to future. We observed that the large investment program in the early years of the period was in response to significant under-investment in the past. Endeavour Energy’s assets were aging at a rapid rate as a result of low replacement allowances, and utilisation levels on our assets were too high to maintain an adequate and secure level of supply. In response to these conditions, the NSW Government required us to meet new licence conditions relating to security standards and reliability performance.

The reduced expenditure in 2009-14 reflected significant variance between expected and actual demand, changes to economic conditions, delivery efficiencies and the strategic re-orientation of the business as a result of industry reform, with a greater emphasis on affordability of prices for customers.

The capex forecast for 2015-19 seeks to maintain the downward step change in capex as a result of the capital reduction strategy implemented in the latter two years of the current regulatory period. Chapter 5 of our proposal identifies the drivers of expenditure that are driving the trend of capex in the 2014-19 period including:

- We are proactively responding to the hardship faced by our customers by identifying opportunities to defer capex and implement efficiencies. This continues the reforms introduced in the current regulatory period where we tried to find efficiencies to reduce the price paid by customers in the next period.

- Asset age and condition is key into our investment decisions and capital forecast. We have undertaken a substantial replacement program throughout the current regulatory control period, with the main thrust of the program directed at transmission and zone substation equipment. Our strategy seeks to achieve a more consistent and sustainable level of expenditure in the long term, rather than create a ‘boom-bust’ investment cycle.

- A key feature of our network is that localised growth and customer connections resulting in the need to invest in capacity on certain parts of our network. The change in the NSW Design, Reliability and Performance Licence conditions to apply from the start of the 2014-19 period which has provided opportunities to prudently defer investment. Despite this, opportunities are limited given that we still need to maintain reliability performance standards, and that greenfield development, particularly in Sydney’s North West and South West Growth centres, rather than organic growth are driving capacity investment.

Comparison of actual to forecast expenditure in the previous period can provide insight into whether a DNSP’s forecasts in the next period have accounted for known drivers of variance in the last period.26

Endeavour Energy spent a total of $2.8 billion ($2013-14) in the 2009-14 period, approximately 12 per cent lower than the capex allowed by the AER for the 2009-14 determination. The diagram below shows that we spent the capex allowance for most years of the regulatory period, except for significant under-spends in the first 2 years of the period.

Figure 13: Actual vs. allowed capital expenditure ($m, nominal)

Chapter 5 of our proposal provides key reasons for variations compared to last period. This includes:

- Demand growth was lower than forecast in the 2009-14 period. A consequence was that we spent less capex to meet increased demand from new and existing customers. In some part, the reduction in peak demand growth was lower than forecast in the 2009-14 period. A consequence was that we spent less capex to meet increased demand from new and existing customers. In some part, the reduction in peak
demand from forecast related to the impact of economic conditions including the Global Financial Crisis. Our method to forecast demand in the 2014-19 period has carefully considered how these factors will impact demand in the 2014-19 period and incorporated these factors into our forecasts. This is to ensure that our demand forecasts are a realistic expectation to base our investment decisions. We have also considered ways to minimise the investment necessary to make initial supply available to greenfield development areas to mitigate the risk that demand in these areas will not grow at the expected rates.

- Delivery issues - The substantial investment program in the 2009-14 period placed delivery pressures on Endeavour Energy in the early years of the period. We responded these programs through outsourcing and blended delivery models, but in some cases our ability to plan and deliver the program fell behind schedule. We consider these delivery issues will not arise in the 2014-19 period due to developing better processes, and reduced workload from a smaller capital program.

- Better methods to “right size” programs – In conjunction with Ausgrid and Essential Energy, Endeavour Energy prioritised its program based on a common understanding of network risk across the three NSW DNSPs Only projects and programs that address commonly agreed and understood risks have been included in our forecast. This is supported by improved governance processes for the approval of proposed works, to ensure that only those projects and programs that address the agreed criteria are approved for implementation. As explained below, industry reform resulted in a strategic re-orientation of the business towards meeting the goal of customer affordability. This new, common prioritisation and governance framework is a key result of this and has been a key feature in developing our regulatory proposal for the 2014-19 period. This means that the variation related to prioritisation of the program in the 2009-14 period has been addressed in our capex forecasts.

- Industry reform - We recognise that the investment program in the 2009-14 period resulted in price shocks for our customers. We focused on efficiencies and deferrals to reduce the price pressures faced by customers when transitioning to the 2014-19 period. A key catalyst was the NSW Government reform of the electricity distribution industry which has focused on ways of reducing the price burden of customers.

Forecast opex

Endeavour Energy expect to spend $1.5 billion ($2013/14) for the 2009-14 period compared to an allowance of $1.8 billion ($2013/14) approved by the AER. The table below shows the comparison for each year.

<table>
<thead>
<tr>
<th>$m; Real 2013/14</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>2012-13</th>
<th>2013-14</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowance</td>
<td>337.1</td>
<td>339.6</td>
<td>344.5</td>
<td>348.7</td>
<td>347.1</td>
<td>1,717.0</td>
</tr>
<tr>
<td>Actual / forecast</td>
<td>282.3</td>
<td>297.3</td>
<td>303.8</td>
<td>276.4</td>
<td>320.5</td>
<td>1,480.3</td>
</tr>
<tr>
<td>Difference</td>
<td>(54.7)</td>
<td>(42.3)</td>
<td>(40.7)</td>
<td>(72.3)</td>
<td>(26.7)</td>
<td>(236.8)</td>
</tr>
<tr>
<td>% Variance</td>
<td>(16%)</td>
<td>(12%)</td>
<td>(12%)</td>
<td>(21%)</td>
<td>(8%)</td>
<td>(14%)</td>
</tr>
</tbody>
</table>

As outlined in Our performance in the 2009-14 period section of Chapter 6 of the regulatory proposal, Endeavour Energy has responded to the incentives in the regulatory framework to be as efficient as possible. This is demonstrated by the comparison of our actual opex performance against the efficient benchmark set by the AER. This performance was achieved by the implementation of a number of cost saving initiatives. It has set a solid platform for Endeavour Energy in ensuring that the forecast opex for the 2014-19 reasonably reflects the efficient costs that a prudent operator would need to achieve the opex objectives, taking into account a realistic expectation of demand forecasts and cost inputs.

In chapter 6 of Endeavour Energy’s regulatory proposal we outlined the methods used to develop the operating expenditure forecast. The bulk of Endeavour Energy’s forecast opex is derived using the base year approach under which the actual operating expenditure of the regulatory year 2012-13 is used as the opening starting point upon which ‘change factors’ are applied to derive the future opex requirements for the 2014-19 period.
These change factors are the ‘variations’ to the base year opex and therefore provide explanations of the ‘bridge’ between historical operating expenditure and forecast operating expenditure. These ‘change factors’ or variations are:

- Cost escalation
- Impact of retail sale
- Implementation costs of saving initiatives
- Vegetation management
- Capital prioritisation costs

The details of the above change factors are provided in chapter 6 and in attachments and supporting documents to chapter 6.

6.2 Incentive schemes (Capex and opex factor 8)

The rules include a capex factor which requires Endeavour Energy to consider whether the forecast is consistent with any incentive scheme or schemes that apply to the Distribution Network Service Provider under clauses 6.5.8A or 6.6.2 to 6.6.4. These provisions relate to the capital expenditure sharing scheme (CESS), the Service Target Performance Incentive Scheme (STPIS) and the Small Scale Incentive Scheme respectively.

We consider that this factor is to test whether the total forecast capex is reasonable in reference to relevant incentives that applied in the past, and the application of future incentives.

Forecast capex

In the previous period, Endeavour Energy was under an incentive regime for capex, which provided financial incentives to incur less capex than allowed by the AER. While there was no explicit Capital Expenditure Sharing Scheme in place under clause 6.5.8A, we were subject to the ex ante incentive inherent in the regulatory framework. Under this framework, a DNSP is limited in its ability to ‘clawback’ revenue for over-spends, and can retain a proportion of the revenue it receives when it underspends capex.

At the time of the 2009-14 determination, the AER put in place a high powered ex ante incentive, by requiring that actual capex be rolled into the regulatory asset base at the end of the regulatory period. In effect, this meant that we could retain the return on and return of income we received through revenues, when our capital expenditure was lower than forecast. Customers share in the benefit of the under-spend as a result of a lower RAB in the next period, resulting in a smaller price change than would have been the case.

The regime is directed at incentivising a DNSP to find efficient ways to reduce its capex program either through prudent deferrals and cost efficiencies. In turn, this promotes improved planning decisions and cost effectiveness which is incorporated into forecast capex in the next period. The AER can therefore have greater certainty that the forecast provided by the DNSP have ‘revealed’ efficient costs.

As noted in the section relating to previous expenditure, Endeavour Energy spent a total of $2.8 billion ($2013-14) in the 2009-14 period, approximately 12 per cent lower than the capex allowed by the AER for the 2009-14 determination. We consider that the underspend was not directly correlated with a strategy to make a financial benefit under the incentive regime.

Our key motivation was to improve customer affordability in future periods, noting that the ex ante regime provides customers with ongoing price benefits if the RAB is reduced. Further, by maintaining the reductions in capex in the 2014-19 period, we have continued the benefits to our customers.

For these reasons, we consider that the incentive regime has been an important element of the speed of our reform process, including re-orientation of strategies and planning processes towards meeting our goal of customer affordability. In this way, the AER can place weight on the efficiency of the forecasts for the 2014-19 period.

Consistency with incentives in the future

We will be subject to a new capital expenditure sharing scheme (CESS), and Service Target Performance Incentive Scheme in the next regulatory period. This capex factor requires the AER to consider the relevance of these incentives to the development of our forecasts, and if so, how these provide checks on the efficiency of our proposed capex. In this respect we note:

- CESS– We consider that this incentive is designed to ensure that a DNSP does not spend above the AER’s allowance. In this light, we consider that it is important that the AER’s decision reflects the most accurate estimate of capex, rather than applying stretch targets which are unachievable and result in high penalties.
STPIS – We note that our forecast capex is to maintain existing levels of reliability across the network and achieve our licence conditions, and that our targets are reflective of this. Refer to Attachment 0.14 for our STPIS proposal.

Forecast opex

Clause 6.5.6(8) of the rules asks whether the operating expenditure forecast is consistent with any incentive scheme or schemes that apply to the DNSP under clauses 6.5.8 or 6.6.2 or 6.6.4, namely, the efficiency benefit sharing scheme (EBSS), service target performance incentive scheme (STPIS) or small scale incentive scheme.

As outlined in chapter 6, Endeavour Energy is subject to the efficiency benefit sharing scheme (EBSS) for the current 2009-14 period. The EBSS provides incentives for business to pursue efficiency improvements in opex and to share efficiency gains with customers. We have responded to the incentive of the EBSS during the period and our expected opex for the current period is within the efficient benchmark set by the AER. We have used the outcome from the operation of the EBSS to derive the forecast opex requirement for the next period (i.e. the actual base year opex of the 2012-13 regulatory year). In that context, our forecast opex is consistent with the EBSS that the AER has applied to Endeavour Energy for the current period.

The AER also proposes to apply the EBSS to us for the next period. As explained by the AER, this scheme is to incentives business to improve efficiency in operating expenditure, with efficiency being measure by comparing the actual opex outcome against the opex allowance determined by the AER. In this context, we consider that it is important that the AER’s decision reasonably reflects the efficient costs that a prudent operator would need, based on a realistic expectation of demand forecast and cost inputs, rather than the decision reflecting the application of stretch targets that are unachievable. We note that any ‘loss in efficiency’ resulting from the setting of an unrealistic stretch target would be shared with customers under the operation of the EBSS.

We note that our forecast opex is to achieve licence conditions and maintain the quality, reliability and security of our network and this is consistent with the STPIS. Further, we note that the AER has not developed a small scale incentive scheme and therefore has not stated a proposed approach to its application. Consequently, there is no impact on Endeavour Energy’s proposed forecast opex.

6.3 Benchmarking (expenditure factor 4)

The expenditure factor 4 requires that the AER must consider the most recent annual benchmarking report that has been published under rule 6.27 and the benchmark capital / operating expenditure that would be incurred by an efficient Distribution Network Service Provider over the relevant regulatory control period.

The purpose of this factor is for the AER to consider whether available benchmarking information can provide a partial indicator of the efficiency of the forecast expenditure, and if so the investigations and weight that should be ascribed to that data. The AER will be releasing its first benchmarking report in September 2014, and therefore we are not provided with an opportunity to demonstrate or make representations on this report at the time of submitting our regulatory proposal.

Benchmarking is an undefined term in the NER and could encompass many dimensions. The Productivity Commission noted that regulatory benchmarking encompasses any method for comparing a firm to other businesses, to itself over time (or between its various divisions) or to an ideal firm. We note that some of the measures of benchmarking to ourselves have been outlined in our responses to other factors. For example, we consider one of the most important benchmarks is how we have performed in previous periods compared to the AER. We note that this is part of the expenditure factors relating to previous performance and consistency with incentives, and therefore have been separately addressed. Benchmarking may also relate to comparing forecast assumptions on demand forecasts and labour cost escalation to the opinions of experts in that field. These have been addressed as part of our section on realistic estimates of input costs and demand forecasts. For this reason, our response to this factor is narrowly focused on comparative data with industry peers, and trend data of ourselves over time. Endeavour Energy has developed a comprehensive report, Attachment 0.12 to our regulatory proposal.

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The report examines the inherent limitations of benchmarking Australian DNSPs, and the role that benchmarking should play as a partial indicator of efficiency. Our analysis identified that benchmarking has inherent limitations such as inability to conduct ‘like for like’ analysis across peer firms, data inconsistency and inaccuracy, and failure to meet statistic principles. We think that appropriate benchmarking does have a role in guiding the regulator to areas requiring further granular analysis. It should not be used to reject a DNSP’s proposal, or as a basis to substitute the forecast given the inherent limitations as a tool.

We have then sought to assess the relative weight that should be applied to each of the benchmarking tools identified by the AER in its Forecast Expenditure Assessment Guidelines including economic analysis, aggregated category analysis, and cost category data including the augex and repex models. When deciding if a benchmark is appropriate, we have been guided by the Productivity Commission’s review in 2013 which set out 6 criteria for when a benchmarking tool could be used in the process. This includes validity, accuracy and reliability, robustness, simplicity, not subject to manipulation and fitness for purpose. To complement this analysis, we have also sought to understand the available data that can be used for benchmarking and reported on these outcomes. This was based on a Huegin Consulting study of 7 DNSPs in Australia.

Based on this approach, we have placed limited weight on benchmarking analysis as a valid test of the efficiency of our forecast and consider that the AER should do likewise in its assessment. In all cases, the AER’s techniques do not meet all the criteria specified by the Productivity Commission. In some cases, such as economic analysis we consider the method may actually provide misleading results and should not be used by a business or the AER to test efficiency. In other cases, the model may provide some insight into the efficiency of a DNSP’s forecasts, for instance when the data quality is sound. In these cases, we have considered the underlying data and provided commentary on any observed differences in light of our circumstances and drivers of expenditure.

Our analysis of benchmarking tools suggests that trends in a DNSP’s results over time is of more value, that relative efficiencies between DNSPs at a point in time. In this respect the data provided does demonstrate that Endeavour Energy’s growth rates in expenditure are among the lowest out of the peer group studies. Once again, however we draw caution on such results as they cannot capture the reasons for observed differences between DNSPs.

6.4 Non arms’ length transactions (Expenditure factor 9)

Our forecast capex and opex for 2014-19 does not include any arrangement with any other person that do not reflect arm’s length terms