



ATTACHMENT 5.02

Response to AER decision on augmentation expenditure

Prepared by: Endeavour Energy

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1.0 Overview

1.1 Assessment approach

In attachment 0.03 of our substantive proposal we noted that the 2012 Rule change on Economic Regulation of Network Service Providers provided further clarity 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:¹

- the AER's assessment process must start with a DNSP proposal²;
- the AER must accept a proposal that is 'reasonable'. The test of 'reasonable' must equally apply to the substitute amount; and
- while the AER's assessment techniques in making its analysis are not limited, the AER must consider the probative value of materials before it.

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.

1.2 Augex approach

The AER's capital expenditure forecast assessment guideline outlines that the AER will utilise a combination of top down and bottom up modelling of efficient expenditure.

For augex specifically, in the guideline the AER outlines that augex is required to build or upgrade network assets to address changes in demand or to maintain quality, reliability and security of supply. The approach specified involves the following assessment techniques:

- investigating our capital governance framework and forecasting methodology;
- detailed project reviews;
- augex modelling;
- detailed assessment of demand forecasts; and
- modelling and engineering reviews of projects not triggered by demand.

2.0 Our proposed Augex

In our substantive regulatory proposal we forecast \$314.8million (\$2013-14) of augmentation expenditure for the 2014-19 period, exclusive of expenditure related directly to the connection of new load or capitalised overheads. This expenditure was designed to service significant growth in our greenfield development areas; North-West and South-West Sydney. Therefore, our proposed program was driven by localised growth as opposed to organic, global demand growth that has historically driven augex.

The supporting attachments to our regulatory proposal provided further detail as to our growth servicing strategy and the key business cases related to our augex program.

For further clarity, our augex proposal was driven by the following factors:

- completing a small percentage of 2009-14 projects;

¹ In attachment 0.03 of our substantive proposal, we provide further information on the AEMC's considerations, and provide a reference to the decision.

² This has also been established by the Australian Competition Tribunal's decision. "(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."

- establishing primarily subtransmission/zone substation infrastructure to service greenfield growth;
- augmentation of the high voltage (11/22kV) network to address thermal, voltage and fault level constraints; and
- augmentation of the low voltage network in response to voltage and capacity issues caused by localised demand growth

The table below shows the breakdown of our augex forecast into these categories.

Augmentation factor	2014-19 forecast
Complete 2009-14 projects	\$41.0M
Greenfield development	\$151.5M
High voltage development	\$88.9M
Low voltage development	\$33.4M
Total augex	\$314.8M

In addition, Endeavour Energy has carried out a review of the composition of the balancing item detailed in our RIN and determined that two elements may be appropriately categorised as Augex, although they do not strictly meet the definition of augex provided by the AER. These are detailed below:

- land acquisition - \$5.7million: this relates to the purchase of land on which zone substations to supply greenfield development will be constructed; and
- asset relocation - \$4.3million: these are costs associated with augmenting assets in conjunction with the relocation of the asset funded by a third party. When an asset relocation is required, the party requesting the work funds the cost of a like-for-like relocation. If Endeavour Energy requires an augmented asset to meet an identified or forecast network need, the marginal cost difference is funded from our asset relocation budget.

3.0 AER Decision

3.1 Augex

In its draft determination the AER states that it has rejected Endeavour Energy's proposed augex forecast of \$426.1million (\$2013-14) and substituted an amount \$351.8million (\$2013-14) excluding overheads. The inclusion of a portion of the balancing item in the amount assessed by the AER is not appropriate as the balancing item consists of a number of different costs, most of which are not related to augex. We suggest that the balancing item should be assessed separately and the appropriate augex figure to assess, from the RIN data, is augmentation expenditure of \$314.8million.

Refer to Attachment 5.01 for a review of the AER's capex modelling performed by Ernst & Young.

Based on the AER's analysis and substitute figure this represents a 17.4% reduction. The breakdown and the key reasons provided by the AER in making this reduction are as follows:

- *“reduced Endeavour Energy’s augex forecast by approximately 2.86 per cent to account for updated spatial demand forecasts provided by Endeavour Energy during the determination process;*
- *applied a further 15 per cent reduction in light of independent engineering advice that suggests Endeavour Energy's forecast augex did not take account efficiencies that could be achieve; and*
- *through risk based cost benefit analysis assessment techniques in the context of the revisions to its licence conditions.*

These reductions take into account the observed trend in augex that shows that there is excess capacity in Endeavour Energy's network that remains to be more efficiently utilised.³

In forming this view, the AER's assessment approach was outlined as follows:

- *“trend analysis, comparing the proposed augex with historic expenditure levels, taking into account changes in demand, network capacity and design and planning standards to assess whether the forecast is within a reasonable range to allow Endeavour Energy to meet expected demand, and comply with relevant regulatory obligations;*
- *an engineering review undertaken by WorleyParsons of Endeavour Energy's forecasting processes and methodology to assess whether Endeavour Energy's proposal reflects the efficient costs that a prudent operator would require to achieve the capex objectives; and*
- *the augex model to generate trends in asset utilisation, to assess Endeavour Energy's need for network augmentation (as noted below, this was only used to a limited extent in this assessment).⁴*

Endeavour Energy disagrees with both the AER's assessment approach and findings in relation to our augex proposal. In particular, with regard to comments made by the AER concerning reduced utilisation and excess capacity, the requirements to achieve licence conditions compliance with respect to the N-1 Network security obligations explicitly required additional capacity to be installed within Endeavour Energy's network. It is, however, illogical and technically infeasible to suggest that the additional security capability of a brownfield site can meet the obligations to supply new greenfield developments in spatially isolated locations. Therefore, while acknowledging also the decrease in global demand growth, Endeavour Energy believes that this should have no bearing on the assessment of the augex required to supply the growth in new customers in the North West and South West growth areas.

As such, Endeavour Energy does not accept the cuts made by the AER in relation to augex. Our concerns are detailed in the following sections.

4.0 Augex response and revisions

The AER's assessment has erred in both rejecting our proposed augex forecast and developing a substitute amount. Endeavour Energy proposed an augex forecast that was both prudent and efficient utilising probabilistic planning and reliable forecasting. We consider our forecast was a realistic estimate of the costs involved in servicing the significant greenfield and localised growth within our network area.

Endeavour Energy has not revised its proposal to adopt the AER's draft decision as we do not consider it will contribute to the achievement of the capex objectives. This is because Endeavour Energy will have an insufficient allowance to service demand growth and meet its obligations to supply these customers. In addressing the matters raised by the AER, Endeavour Energy has made reductions to its overall capital program which will include minor reductions to the augex forecast. Our revised forecast reflects the most up to date information and expectations to ensure our program is efficient in the circumstances.

At a fundamental level it appears the AER has failed to engage with our regulatory proposal and relied on a misconception of our proposed augex. Specifically, the AER states the following:

“Growth driven capex is typically triggered by a need to build or upgrade a network to address changes in demand or to comply with quality, reliability and security of supply requirements. Hence, the main driver of growth-related capex is maximum demand and its effect on network utilisation and reliability. Growth-driven capex includes augmentations and new connections.⁵”

³ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, 27 November 2014, pg 51

⁴ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 32-33

⁵ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 32

As articulated in our substantive regulatory proposal, the main driver of Endeavour Energy's growth-related capex is customer growth, particularly in greenfield areas. At a high level we consider there is a disconnect between the assessment approach outlined by the AER and their findings. It is not clear how the approach aligns to that prescribed by the guideline, in particular the trend analysis appears to have formed an integral part of the AER's assessment but is not included as an augex assessment tool in the AER's guideline. It should be clearly demonstrated how the AER have satisfied themselves that the approach used adheres to the guideline in its final determination or if not, why a departure is justified.

Irrespective of these issues, it appears the AER have formed their view that a 17.4% reduction is justified on the basis of reductions in maximum demand, changes in licence conditions, low levels of network utilisation and the need for increased use of probabilistic planning. We address these issues in more detail below.

4.1 Trend analysis

The trend analysis applied by the AER appears to be a mixture of benchmarking and consideration of macro factors such as licence conditions and capacity utilisation. Endeavour Energy developed a forecast utilising a bottom up method which accounted for our operating environment and obligations. We tested our program against top down measures such as the AER's augex model. This analysis confirmed the prudence of our forecast which was well below that indicated by the top down model. As such, we do not consider reductions are required to our augex forecast in response to the AER's trend analysis.

4.1.1 Benchmarking

The AER utilises benchmarking analysis in assessing the overall capital program, using the results of this to inform their views and guide more detailed assessment of the capex program by driver. Specifically:

"While these results are not a direct input into our alternative estimate of Endeavour Energy's capex forecast, they inform us of Endeavour Energy relative capital efficiency and whether efficient reductions to its capex forecast is achievable.⁶"

Endeavour Energy considers benchmarking is a relevant assessment tool, however its reliability and accuracy at this stage confines it to a high level test which may direct more detailed engagement. The AER's benchmarking analysis provides mixed results for Endeavour Energy:

"Figure 6-3 shows that Endeavour Energy performs similar on MTFP. MTFP measures how efficient a business is in terms of its inputs (costs) and outputs (energy delivered, customer numbers, ratcheted maximum demand, reliability and circuit line length). Across all of these measures, Endeavour Energy outperformed the NSW and ACT DNSPs; however the majority of the Victorian and South Australian DNSPs outperformed Endeavour Energy.⁷"

and

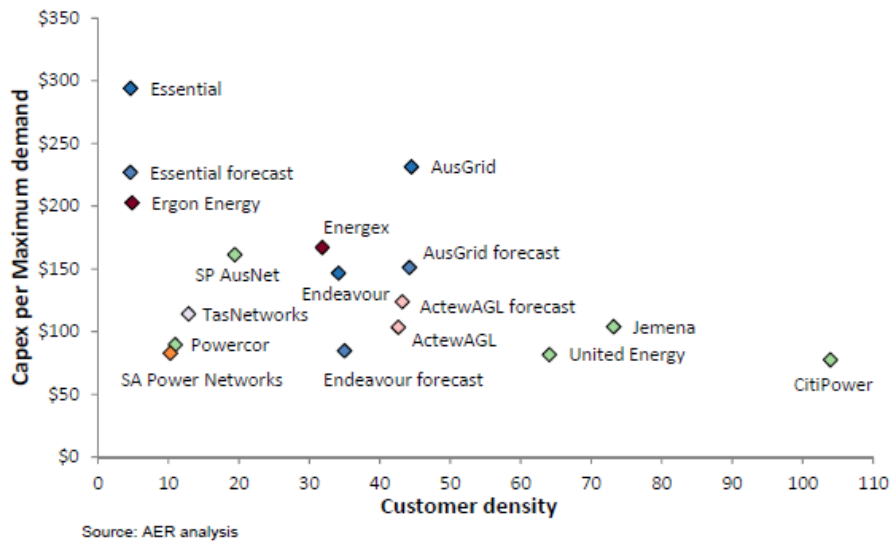
"Capex per maximum demand is forecast to reduce for Endeavour Energy in the next period but is still among the highest levels in the NEM. This reduction brings Endeavour Energy's capex per customer to a similar level as the Victorian and South Australian DNSPs, and significantly below the other NSW DNSPs.⁸"

⁶ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 21

⁷ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 21-22

⁸ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 24

Figure 6-5 Capex per maximum demand (000s, \$2013-14), against customer density



Endeavour Energy does not consider this analysis indicates material inefficiencies exist at a high level. This is due to the limitations of these measures and issues in relying on regulatory constructs such as the RAB. Irrespective of the accuracy and validity of the measures it is not clear that Endeavour’s forecast capex is categorically poor performing. Endeavour Energy has therefore not relied on this analysis to inform the revised capex forecast.

4.1.2 Licence conditions

In its draft decision the AER considers that the removal of Schedule 1 of the Licence Conditions provides further evidence that Endeavour Energy can achieve the reductions made to the augex forecast. Endeavour Energy has not revised its forecast augex to address this matter as it was sufficiently address in our original forecast.

The effect of the need to comply with Schedule 1 by June 2014 and the subsequent removal of this need on our augex forecast is twofold: we now have adequate capacity across the majority of our network to cater for expected growth in demand in existing areas, resulting in little forecast expenditure in these areas. Secondly where we have a need to establish new infrastructure to service greenfield development, we are now able to take more risk and reduce expenditure by not applying the supply security levels specified in Schedule 1 until actual, as opposed to forecast demand warrants it. In this respect we do note that, for residential customers, which is the majority load type to be serviced in greenfield developments, the latest AEMO VCR has increased to \$26.53/kWhr from \$21.19/kWhr in 2007. This also represents an increase on the \$19.75/kWhr determined in the AEMC’s 2012 study for Endeavour Energy residential customers. Given this trend, it is expected that augmentation will occur sooner than it might have using previous values for customer reliability.

Endeavour Energy already utilises a probabilistic approach to network planning which reflects the flexibility afforded to us under the new licence conditions. This approach was evidenced by the greenfield business cases we provided in support of our substantive regulatory proposal (attachment 5.25 to that proposal). Endeavour Energy provided further clarification to the AER on this matter in response to information request 005 from the AER. This response provides an explanation as to why the changes are reasonably reflected in our forecast expenditure and additional reductions are not justifiable.

Worley Parson’s report has stated that:

“Following the repeal of Schedule 1 of the Design, Reliability and Performance Licence Conditions, Endeavour has prudently adopted and is applying interim design planning criteria utilising risk-based cost benefit analysis and VCR...”⁹

⁹ WorleyParsons, Review of Proposed Augmentation Capex in NSW DNSP Regulatory Proposals 2014 – 2019, 17 November 2014, pg 5

The removal of licence conditions has already been factored into the original spending proposals and it is incorrect to assume that Endeavour Energy has not taken this into account. The vast majority of the greenfield projects in the proposal are single transformer, single transmission line projects. In addition these projects have also had probability weightings applied. Where we are going to N-1 security, for example at South Leppington, the most recent forecast demand on the existing single transformer zone substation is expected to reach 16MVA by the time the project is commissioned as opposed to the 10MVA limit imposed by previous Licence Conditions. In a similar situation, a single transformer mobile substation (20MVA) was installed in the previous regulatory period at Oran Park, a permanent two transformer substation will be completed in 2016 when the forecast load is expected to reach 18MVA.

4.1.3 Network capacity

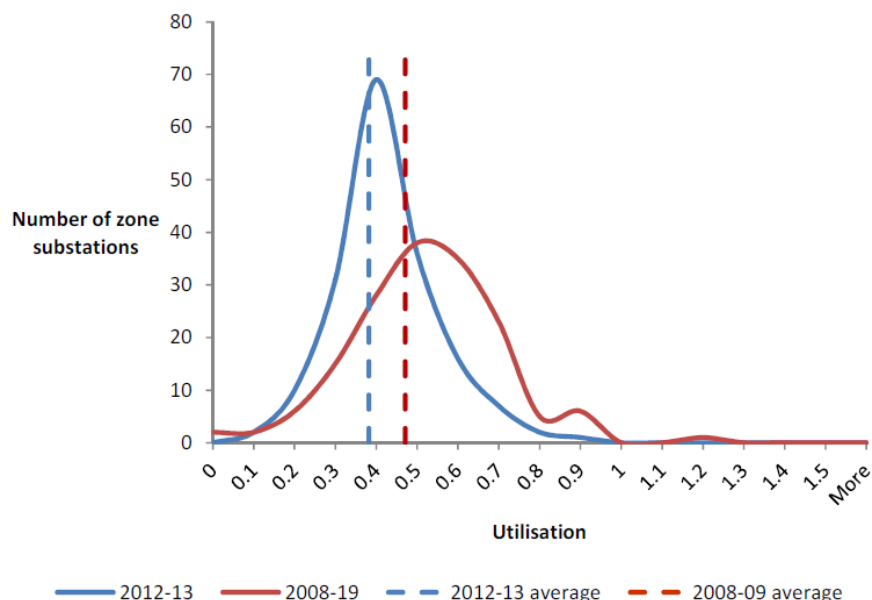
In the draft decision the AER notes the underutilisation of our existing assets as a reason why the augex reductions are achievable and reasonable. Specifically the AER state:

“Nonetheless, Endeavour Energy undertook significant investment in its network in the 2009–2014 regulatory control period, resulting in a significant reduction in asset utilisation in its network. This suggests there is some excess capacity in the network that remains to be more efficiently utilised, ahead of additional augmentation investment.....

....Fourth, Endeavour Energy's proposed expenditure to meet growing demand in new developments is likely to be overstated. This is because there is excess capacity in existing network adjacent to the new development areas, and there is some uncertainty about whether all of the new suburbs will be ready for development within the 2014–2019 period. We have not made an explicit adjustment to the augex forecast to account for the overstated pockets of growth proposal. However, we consider that it lends further support to our 15 per cent reduction to the augex forecast (as outlined above).¹⁰”

In support of this assertion the AER provided utilisation data from its augex modelling at an overall level and for individual zone substations:

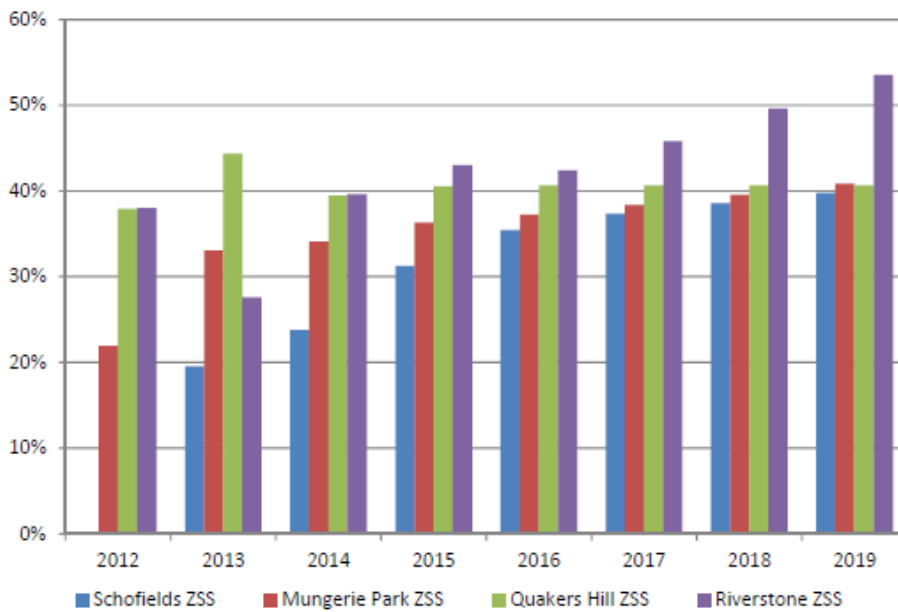
Figure 5-1 Zone substation utilisation 2008–09 and 2012–13



Source: AER analysis; augex model.
 Note: Utilisation is the ratio of maximum demand and the normal cyclic rating of each substation for the specified years.⁵³
 Figure 5-1 shows the number of Endeavour Energy's total zone substations at each utilisation band.

¹⁰ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 33

Figure A-4 North-West growth areas zone substation (ZSS) utilisation



Source: AER analysis

We have not revised our augex forecast to address this matter as, while we consider the analysis correct, we do not consider that it is applicable to our augmentation expenditure forecast.

Irrespective of this issue, the assertion that Endeavour Energy can service localised, greenfield growth through existing assets is fundamentally flawed.

We accept that there is capacity available in the substations named by the AER and a fundamental part of our strategy for servicing the initial stages of development in each precinct is to utilise this capacity by running 11kV feeders back to these substations where appropriate. By way of example, the following table shows the new South West sector loads that have been serviced recently from Hinchinbrook zone substation.

Hinchinbrook	Ingham's Farms Redevelopment into 861 dwellings	2011
Hinchinbrook	South Cecil Hills Part 1 with 648 dwellings	2011
Hinchinbrook	South Cecil Hills Part 2 with 252 dwellings	2013
Hinchinbrook	Middleton Grange Release Area – 2850 lots	2008

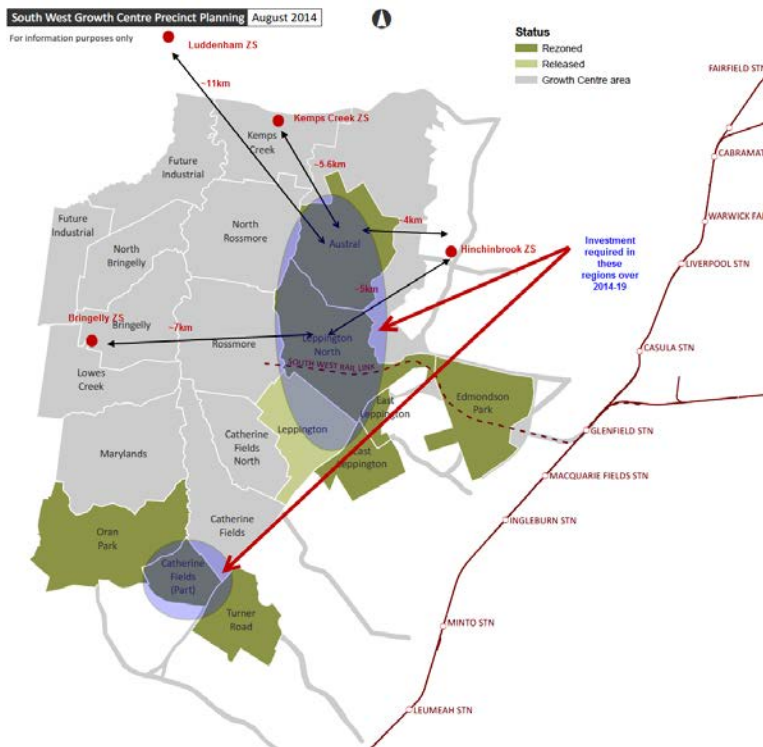
Further use of this capacity where it is technically and economically viable is already included in our augex proposal.

The provision of adequate power supply is however not reliant solely on transformer capacity being available at a substation. This capacity must also be located sufficiently close to the new load that it can be serviced without the voltage drop between the substation and the load becoming unacceptable and non-compliant with national and local standards and regulations.

In the South West, Endeavour Energy proposes to commence works to service or expand service for the greenfield areas of Leppington, Leppington North, Austral, East Leppington, Oran Park, Catherine Fields (Part) and Turner Road precincts. The AER proposes that we do this instead by raising the utilisation of the existing substations of Luddenham ZS, Kemps Creek ZS, Bringelly ZS and Hinchinbrook ZS. As the marked up map below indicates, these substations are between 4km and 11km (straight line) from the areas that require servicing.

While these distances are technically acceptable for a lightly loaded rural network, when the load density increases to that typical of an urban network, the voltage regulation experienced at the end of a feeder quickly becomes unacceptable and the establishment of additional feeders becomes necessary. At this stage it becomes more cost effective to establish a supply point central to the new load in the form of a

new zone substation. The timing of investments in our proposal has been optimised given forecast growth rates.



The extension of distribution feeders for development precincts also requires the development of a road network and localised street patterns. Extending feeders across rural undeveloped land (paddocks and rural properties) presents challenges and generally results in temporary solutions that require costly rework when further development occurs.

Our Area Plans for the North West and South West growth sectors of Sydney (Attachments 5.23 and 5.24 to our substantive proposal) show the network configuration, including zone substation locations, for these two areas which have been planned to cost effectively provide an adequate supply of electricity to each precinct. This component of our augex forecast has been developed by considering the appropriate time to establish new zone substations in light of the best information we have regarding customer connections from parties such as the NSW Department of Planning, local councils and developers.

The South West Sector is one of two geographic regions where Endeavour Energy is expecting connections growth to occur. The land area covered by the South West Growth Centre is an area that will eventually have an urban development the size of Canberra. The land area in question is larger than the area of CitiPower’s entire network and supplying this precinct from existing assets could be considered as equivalent to supplying the Melbourne CBD from PowerCor substations. Development does not always occur in the fringes where it would be reasonable for the AER to expect supply to be made available from nearby existing assets. However, there are other development drivers, for example, the development of the Leppington Town Centre and the development of the South West Rail Link. These drivers mean that the requirement for capacity is not conveniently located on the fringes of existing development, close to existing assets that have sufficient capacity.

It is therefore unreasonable for the AER to expect supply to be made available to these developments from existing assets.

4.2 Maximum demand

In its draft decision, the AER’s reduction of augex consisted of a 2.86% reduction to account for the latest demand forecast. Specifically, the AER conducted the following analysis:

“We first summed the ratcheted demand for all major substations for the 2018–19 regulatory year. We then subtracted the summed ratcheted demand for all major substations for the 2014–15 regulatory year. Based on our analysis, Endeavour Energy expects a 40.2 MVA, or 12.81 per cent, reduction in ratcheted demand in the 2014 forecasts compared to the 2013 forecasts.⁶¹ Consistent with this, for the purposes of this draft decision, we have used this 12.81 per cent reduction in the demand forecast as an input when reducing Endeavour Energy’s proposed augex allowance.^{11”}

In addition to the above, the AER considers the general downward trend in global demand further supports the reduced investment allowance for augex.

Endeavour Energy accepts that global peak demand across our network is reducing, however it should be noted that global peak demand is not necessarily a useful concept when determining the appropriate level of demand driven investment. As outlined in our regulatory proposal and this revised proposal, Endeavour Energy’s augex forecast is primarily driven by greenfield development. Development in greenfield areas results in localised increases in demand in areas where there is no infrastructure available to service it.

The graph below indicates that, despite decreasing global peak demand, our customer numbers are continuing to increase. Much of this increase is forecast to be in greenfield developments where investment in infrastructure is necessary.



The AER have applied a reduction to the HV feeder augmentation program. Endeavour Energy accepts this reduction on the basis that a large portion of the HV feeder program augex relates to constraints in existing areas.

4.3 Program efficiency

In its draft decision the AER has relied on consultant advice from WorleyParsons in determining the 15% reduction to augex. The trend analysis and demand forecasts above reinforce the AER’s view that this represents a reasonable reduction:

“On augex, WorleyParsons found that Endeavour Energy’s forecast was overstated as it did not have full regard to the efficiencies that were likely to be found through the application of cost-benefit analysis of augmentation options.^{12”}

WorleyParsons specifically state:

“Endeavour is applying an increasing level of business risk management to its business and it carries out prudent risk assessments as part of its approval processes for commitment to projects and programs. As a consequence of the timing and development of these assessments, the expenditure forecasts in the Regulatory Proposal do not reflect potential savings that could be realised in the Augex program. Further efficiency gains could be achieved by the application of

¹¹ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pgs 43-44
¹² AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, 27 November 2014, pg 26

more detailed risk assessment during the forecasting or asset management strategy phase of programs.¹³

WorleyParsons consider the Distribution Works Program provides an example of an area where improvements have been made that can be transposed to the remainder of the program:

"It is noted from the "Distribution Works Program 2014-19" that it has been possible to revise the projected 5-year expenditure down from the \$88.9M stated in the SAMP to \$54.9M, a reduction of \$33.9M or 38%, and this is the basis of the regulatory forecast. The reduction was achieved through a related risk assessment, more detailed assessment and cost-benefit analysis. It is also noted that some of this reduction was achieved through the upgrading of feeder protection systems rather than augmentation to meet increased fault level conditions.

....The expenditure forecasts in the Regulatory Proposal are likely to be biased on the high side.¹⁴

Endeavour Energy considers the business cases attached to its original proposal clearly demonstrate that the example relied upon above is not an isolated case. Rather, this approach to planning is evident throughout our augex forecast. Endeavour Energy considers a recommended reduction of 10-20% is not reasonable unless a systematic and significant flaw is identified in our forecasting process. While we consider that our planning processes result in prudent and efficient forecasts, we have reviewed our original proposal to determine whether further efficiencies may be included. Specifically we have considered the four components of our augex forecast:

- completing 2009-14 projects: The costs associated with this component of our forecast are generally already committed, having been initiated in the prior regulatory period. We do not consider that there are further efficiencies to be obtained;
- greenfield development: Our forecast already recognises the removal of Schedule 1 of the licence conditions and only provides for the establishment of the minimum infrastructure necessary to service greenfield developments, except in those areas where observed growth in demand is already outstripping initial capacity. Further, we have applied probabilities to the expenditure forecasts for each greenfield project based on our assessment of the likelihood of the development proceeding within the regulatory period. We consider that the application of any further efficiencies to this part of our augex program would negatively impact on our ability to service these developments in a timely manner;
- high voltage development: A comprehensive analysis of the risks associated with the constraints on the 11/22kV distribution network and the best way of addressing these risks was included in the Distribution Works Program submitted with our substantive proposal (attachment 5.26). Due to timing issues, the associated reductions in capex were not included in our proposal or RIN data. We have amended our forecast expenditure for this part of our program from \$88.8million to \$54.9million to reflect both identified program efficiencies and forecast reductions in peak demand; and
- low voltage development: This component of our augex program is generally reactive in nature and allows for the augmentation of the low voltage distribution network to address quality of supply issues. The majority of expenditure in this component is associated with upgrading distribution substations where the load has exceeded the substation capacity, resulting in voltage regulation that exceeds acceptable limits or potential damage to the substation. In 2012 Endeavour Energy updated its maintenance standard relating to the assessment of distribution substation loading, which allows us to better understand the risk associated with excess load on individual substations. A full planning cycle has now elapsed since the publication of this standard and we have been able to assess the impact of the changes on our expenditure forecast. Consequently we have amended our forecast expenditure for this part of our program from \$36.4million to \$21.9million.

¹³ WorleyParsons, Review of Proposed Augmentation Capex in NSW DNSP Regulatory Proposals 2014 – 2019, 17 November 2014, pg 8

¹⁴ WorleyParsons, Review of Proposed Augmentation Capex in NSW DNSP Regulatory Proposals 2014 – 2019, 17 November 2014, pg 6

4.4 Balancing item

Endeavour Energy included a balancing item in the capital expenditure table in our RIN. This item was necessary as not all elements of our capex proposal fitted the definitions of the categories of expenditure provided by the AER. The AER were unable to determine the composition of the balancing item and made an arbitrary spread of this item across the assessed categories of expenditure. We do not consider this to have been an appropriate treatment of this item as it included specific elements that, while not strictly meeting the AER's definitions, could be considered as either augex or repex and are more appropriately considered in these categories. In particular, two elements of the balancing item are most appropriately considered as augex.

4.4.1 Land acquisition

This is expenditure on acquiring land for the purposes of construction of zone substations to service greenfield development. When developable land is held by multiple small land owners, the most equitable way for zone substation land to be provided is for Endeavour Energy to acquire the land at an undeveloped market price. Endeavour Energy may also make strategic land acquisitions ahead of the time it is required if a specific location is required for network configuration purposes. In these cases Endeavour Energy will acquire the land at undeveloped rates in preference to waiting until the land has started to be developed and is only available at developed rates. Our proposal included \$5.7million for land acquisition over the period. We have reviewed this figure in light of the latest information on land development in the greenfield areas and believe that it is appropriate.

4.4.2 Asset relocation

Generally the relocation of Endeavour Energy assets to allow for activities such as land development or road widening is funded by the proponent. In certain situations, Endeavour Energy has identified a need for an augmented asset to meet an identified or forecast network constraint. In these cases we will fund the cost difference between a like for like replacement and the augmented cost. Our forecast of \$4.3million is based on historical volumes of this work, which we believe continue to provide a reasonable basis for our forecast in this category.

4.5 Revised proposal

We have considered the issues that the AER has raised in its assessment of our augex forecast and have reviewed our program in this light. The following summarises our revised proposal.

Augmentation factor	Original proposal	Revised proposal
Complete 2009-14 projects	\$41.0M	\$41.0M
Greenfield development	\$151.5M	\$151.5M
High voltage development	\$88.9M	\$54.9M
Low voltage development	\$33.4M	\$21.9M
Total augex	\$314.8M	\$269.3M
Balancing item elements		
Land acquisition	\$5.7M	\$5.7M
Asset relocation	\$4.3M	\$4.3M
Total augex including balancing item	\$324.8M	\$279.3M

This represents a 14% reduction in the direct costs of the program and is attributable to a consideration of the impact of our latest demand forecast and efficiency improvements in each of the augex drivers.

The AER should note that the delivery of timely and well planned greenfield precincts and housing is one of the actions associated with the goals detailed in the NSW government's Metropolitan Strategy. Endeavour Energy's ability to provide infrastructure to service these precincts is a key requirement for the achievement of this goal. Failure to provide sufficient augex allowance to allow us to develop the necessary infrastructure will have broad consequences beyond Endeavour Energy.

5.0 Demand management response

Demand management is a related activity that is employed as an alternative to network options such as augmenting the network where this is more efficient to do so. In assessing Endeavour Energy's proposal the AER have decided to continue to apply Part A of the DMIA. However, the AER note that it considered making an explicit adjustment to the systems capex forecast in response to demand management deferrals from the 2009-14 period. Specifically:

“We have considered whether it is appropriate for us to determine an explicit amount of capex that could be deferred through demand management, based on the scale and positive outcomes achieved by Ausgrid during 2009–14 and the Productivity Commission report. Using this approach we could apply an explicit systems capex forecast offset for Endeavour of 9.2%, or approximately \$93 million (\$2013–14).¹⁵”

In relation to this issue the AER invite further submissions:

“We welcome views on whether this is the most appropriate approach in providing incentives for the optimal amount of demand management. To the extent that stakeholders consider that the long term interests of consumers may be better promoted through explicit recognition of demand management and consequential adjustments to capex and opex, we seek views on the appropriate capex/opex trade-off that should be included.¹⁶”

Endeavour Energy agrees with the AER’s demand management draft determination and we have not revised our forecasting approach to introduce an explicit demand management driven reduction to system capex as contemplated by the AER .

In the draft determination the AER consider whether to reduce system capex in response to demand management deferrals during the 2009-14 period. The AER’s rationale in raising this concept is as follows:

“Our analysis suggests that the Endeavour Energy’s estimate of \$34 million significantly understates the amount of capex that could be deferred. By comparison, analysis of Ausgrid’s demand management activities in the 2009–14 period found that it was able to achieve a deferral of \$334 million or 9.2% of its system capex portfolio based on an \$8 million investment.¹⁷”

The capex deferral amount of \$34million is a gross understatement of Endeavour Energy’s achievement during the 2009-14 period. Listed below are the actual programs that were operational during the period and their achievements. These figures have been audited and submitted to the AER on an annual basis during the D-Factor review process.

Summary of Demand Management Programs in 2009-14 Period:

Program	Capex deferred (million)	Years Deferred	Total Demand Reduction (MVA)	Program completion year
Chipping Norton	\$16.4	1	2.7	2011
Windsor-Richmond	\$10.7	1	1.6	2011
Parramatta	\$18	3	5.9	2012
Liverpool	\$15	2	6.24	2012
Westmead	\$7.7	1	1.3	2012
Rooty Hill	\$23	indefinite	5.0	2013
Granville	\$32	1	0.82	2013
Arndell Park	\$28	1	2.24	2014
Erskine Park	\$6	2	1.6	2014
Minto	\$20.5	indefinite	7.92	2015
Bawley Point	\$7.2	indefinite	1.3	-
Total	\$184.6		36.7	

The actual figure of deferred capex is \$185 million. Endeavour’s direct capex expenditure was \$2,361million with \$447million spent on the now rescinded Schedule 1 requirements. This leaves a direct capex spend of \$1,914million during 2009-14. The actual capital deferred through the targeted demand

¹⁵ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 76

¹⁶ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 74

¹⁷ AER Draft Decision Endeavour Energy distribution determination 2015-16 to 2018-19, Attachment 6: Capital expenditure, 27 November 2014, pg 76

management in 2009-14 represents 9.6% of Endeavour's system capex, which marginally exceeds Ausgrid's achievement.

Endeavour Energy has been at the forefront in terms of customer engagement in developing innovative demand management technologies and programs. Endeavour was the first Australian electricity distributor to develop and trial a residential air conditioning cycling program in 2001. We expanded the program during the Solar Cities program and implemented the program as a DM strategy in the Rooty Hill DM Program which assisted in indefinitely deferring the North Glendenning zone substation. Also trialled during the Solar Cities program was a residential critical peak pricing program. Endeavour used the learning from this program and developed a residential load curtailment program which was also used in the Rooty Hill DM Program.

Endeavour's experience also supports the concept of 'option value' in that deferring a decision will ultimately lead to a better and more informed decision being made. Endeavour strongly supports the use of demand management and has investigated and implemented programs since 1998. Demand management is ingrained into the Endeavour planning process. Endeavour personnel led the working group in the development of the first NSW distributor Demand Management Code of Practice. The suggestion that Endeavour has not implemented demand management as efficiently and effectively as other electricity distributors is not based on fact and a misinterpretation of the information previously provided. In fact, the residential DM programs that Energex is implementing are based on Endeavour's experience and DM trials.

The capex deferral achievement during the 2009-14 period was based on the brownfield growth related capex. It is not appropriate to allocate a percentage for demand management on the entire capex expenditure program for the 2014-19 period. Endeavour Energy is firmly of the view that demand management should only be undertaken when it is demonstrated to be cost effective. Our forecast expenditure on augmenting the existing network is minimal and accordingly the case for investing in demand management activities is not present to the extent that it was in the previous period. The majority of the capex requirement in the 2014-19 period is to cater for greenfield development where the opportunities for demand management are limited and historic deferral rates are therefore not likely to be achieved.

Endeavour Energy provided the demand management strategy for the 2014-19 period with our proposal (attachment 5.34) that outlines our intended demand management activities for the period and demonstrates our ongoing commitment to demand management. This strategy identified an amount of \$23.1million of capital expenditure that has the potential of being deferred within the 2014-19 period. This is based on five projects that supply existing network supply areas and where initial screening for DM options was conducted and shown to have a positive outcome for a non-network option. This is part of the RIT-D process as stipulated in the National Electricity Rules Part B - Network Planning and Expansion. To allocate an arbitrary expenditure number as a target to defer goes against the principles of the NER and pre-empts the RIT-D process in identifying the most cost effective option that addresses a network limitation. The arbitrary figure of \$93 million is not based on any analysis of Endeavour's augex program and would severely impact on its ability to deliver network infrastructure to supply new development greenfield areas.

Endeavour supports the draft decision of not including an explicit reference in the capex or opex forecasts for demand management. Endeavour also agrees that it is appropriate to rely on the incentive framework, together with the new requirements around the RIT-D and the distribution Annual Planning Report, to drive the efficient use of demand management and share the benefits with consumers through the CESS. It is however worth noting that the business case for carrying out demand management activities requires a capital investment proposal that may be deferred. If Endeavour's capex allowance is cut on the basis that projects may be deferred or avoided through the use of demand management there needs to be an explicit opex allowance made to fund these activities.