

**public interest**  
ADVOCACY CENTRE

## **ATTACHMENT C**

### **PIAC's Submission on Endeavour Energy's 2019-24 Capex Proposal**

**17 August 2018**

## About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit legal centre based in Sydney.

Established in 1982, PIAC tackles barriers to justice and fairness experienced by people who are vulnerable or facing disadvantage. We ensure basic rights are enjoyed across the community through legal assistance and strategic litigation, public policy development, communication and training.

## Energy and Water Consumers' Advocacy Program

The Energy and Water Consumers' Advocacy Program (EWCAP) represents the interests of low-income and other residential consumers of electricity, gas and water in New South Wales. The program develops policy and advocates in the interests of low-income and other residential consumers in the NSW energy and water markets. PIAC receives input from a community-based reference group whose members include:

- NSW Council of Social Service;
- Combined Pensioners and Superannuants Association of NSW;
- Ethnic Communities Council NSW;
- Salvation Army;
- Physical Disability Council NSW;
- Anglicare;
- Good Shepherd Microfinance;
- Financial Rights Legal Centre;
- Affiliated Residential Park Residents Association NSW;
- Tenants Union;
- The Sydney Alliance; and
- Mission Australia.

## Contact

Tim Harrison  
Public Interest Advocacy Centre  
Level 5, 175 Liverpool St  
Sydney NSW 2000

T: (02) 8898 6518

E: [tharrison@piac.asn.au](mailto:tharrison@piac.asn.au)

Website: [www.piac.asn.au](http://www.piac.asn.au)



Public Interest Advocacy Centre



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The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation.

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## List of recommendations

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### **Recommendation 1**

*That AER consider the impact on the RAB and the risks of further growth in the real RAB value to current and future consumers in its decision on allowed capex.*

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### **Recommendation 2**

*That the AER should require Endeavour to reverse their change in connections policy.*

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### **Recommendation 3**

*That the AER initiate a review of the policies and principles around capital contributions to ensure a more consistent approach across networks.*

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### **Recommendation 4**

*That the AER consider the impact on the future productivity performance of Endeavour in its analysis of Endeavour's capex proposal.*

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### **Recommendation 5**

*That the AER review Endeavour's network growth plans in the context of the staged development of Western Sydney, existing levels of local asset utilisation and the opportunities for DER to support a staged approach.*

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### **Recommendation 6**

*That the AER review Endeavour's forecasts for consumer numbers and demand growth to ensure these outcomes are reasonable and consistent with the opportunities for DER, more efficient infrastructure and cost reflective tariff design.*

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### **Recommendation 7**

*That the AER seek reconciliation of the differences in the assumptions used by the AER and by Endeavour in the AER's predictive repex model.*

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### **Recommendation 8**

*That the AER conduct more detailed scrutiny of the larger projects. Where projects would require a RIT-D before proceeding, PIAC recommends that the AER's scrutiny include assessing the major projects against the RIT-D criteria.*

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### **Recommendation 9**

*That stakeholders be provided a reasonable opportunity to assess the Western Sydney Airport Growth Area if it becomes part of Endeavour's revised regulatory proposal for 2019-24 before the AER's Final Decision.*

# 1. Overview of Endeavour Energy's capex proposal

*Note: All figures in the discussion below are presented in \$2018-19 unless otherwise stated*

In the issues paper, the AER sought stakeholder views on whether Endeavour Energy's (Endeavour) capex proposal of \$2.2 billion over 2019-24, is consistent with Endeavour's strategic goals of providing a safe, reliable and sustainable network.

PIAC is concerned that affordability is not given primacy in these strategic goals, despite consumer research consistently demonstrating it is the key priority for NSW consumers. While network safety and reliability are clearly important, they must be achieved in a manner that ensures electricity supply becomes more affordable.

Endeavour has proposed a total capex that is 39% higher than the current capex estimate for 2014-19 and 25% higher than the AER's allowance for 2014-19 as illustrated in Figure 1 below. This increase in capex is largely explained by:

- A significant increase in repex;
- An increase in augex due to customer number growth and changes in customer connection costs; and
- An increase in capital overheads.

**Figure 1 – Comparison of Endeavour's past and forecast capex**



**Source:** AER, Issues Paper, Ausgrid, Endeavour and Essential proposals for 2019-24, Figure 11, 34.

Due to the significant growth in capex, and therefore RAB, PIAC does not consider that Endeavour's current capex proposal should be accepted.

Some specific areas of concern are summarised below. A number of the key issues are also considered in more detail in subsequent sections 2 to 6 of this attachment.

- **Endeavour's RAB increases by 12%:** Effectively managing the size of the RAB relative to demand is central to 'future proofing' the network and is in the long-term interests of consumers, particularly as excess RAB increases risks of underutilisation of assets as markets change and increases exposure to future increases in the cost of capital. Containing RAB growth should be a primary objective of Endeavour's capex plan.
- **Endeavour's productivity continues to decline:** While Endeavour's total factor productivity, opex and capex productivity (as measured by the AER's economic benchmarking) is better than its NSW peers, the declining trend is still a concern. Endeavour's capex proposal is likely to result in further declines in capex productivity, an outcome which is inconsistent with the long-term interests of consumers.
- **Growth capex (excluding new connections):** Endeavour's proposed augex of \$417m includes a large component of expenditure for new development areas (around two-thirds of the total). Endeavour argues that forecast growth rates of 1.5% pa or more, in some existing substation peak loads, will lead to these substations having insufficient capacity during the 2019-24 period. PIAC notes, however, that Endeavour's average network utilisation rate is still less than 50%, suggesting that the substation developments proposed by Endeavour may not all be required in the 2019-24 regulatory period.

In addition, PIAC is concerned that there are issues with the scope and timing of the various growth projects, noting that some identified growth areas are unlikely to expand as quickly as suggested by Endeavour. For example, while the Government has rezoned land for development in the South West Sydney corridor, the development plans are relatively immature compared to the North West Sydney corridor.

PIAC also seeks review of the assumptions behind the growth rates in peak demand. The growth rates appear excessive in the context of the rapidly emerging opportunities for DER, and Endeavour's new tariff structures (for new meters). We are concerned that Endeavour has not pursued non-network opportunities through enabling greater DER, and implementing effective tariffs for new customers in the growth areas, even though 'green-field' developments offer more opportunities for these activities.

- **Growth capex (new connections):** Endeavour has proposed a further \$309 in augex for connections to Endeavour's network. This is a significant increase and reflects both an increase in forecast connections but more importantly, a change in Endeavour's connections policy.

Endeavour's change to its connection policy was strongly criticised by stakeholders, including PIAC, at the March 2018 deep-dive sessions. We continue to oppose the extent of the policy change, and the impact on the RAB that this change will have.

- **Replacement capex:** Endeavour's proposed replacement capex of \$800.5m is 29% above its 2014-19 allowance and 38% above its expected actual expenditure on repex. Endeavour is also seeking an additional \$20m for a network reliability program.

The need for such an increase in repex is not established, particularly when Endeavour did not see a need to spend its existing allowance for 2014-19. PIAC has concerns with both the modelled capex (73% of total) and the unmodelled (27%) capex components of the replacement project.

With respect to the modelled repex, we encourage the AER to work with the networks to achieve a consensus on the inputs to the model. Unmodelled repex is largely project based and many proposed projects will be subject to a Regulatory Investment Test for Distribution (RIT-D). PIAC recommends that in its review of these larger projects as part of this regulatory determination, the AER applies the RIT-D criteria as a basis for its assessment.

- **Contingent Projects:** Endeavour has identified one contingent project (Western Sydney Airport Area) with estimated cost of \$61.2m. PIAC agrees that this project be included as a contingent project, subject to RIT-D trigger.

However, Endeavour has also indicated that the project may be included in its regulatory capex in its revised proposal. If this occurs, PIAC expects Endeavour to initiate further consultation with stakeholders on the scope, timing and costs and benefits of the project, given the limited time for stakeholders to respond to this important project.

- **Non-network expenditure:** Endeavour's proposed non-network expenditure of \$170m is less than the current expenditure for this category. Information and communication technology (ICT) of \$91.2m is the largest component of this.

While PIAC considers this total ICT capex compares favourably with other networks, it is still important that ICT projects are well justified with clear ex-ante quantification of the expected costs and benefits, and an ex-post assessment of the realised benefits. In the past, NSW DNSPs have not effectively performed these assessments.

- **Capitalised overheads:** Endeavour's proposed capex overhead of \$400m (19% of the total) represents an increase of 10% from the current 2014-19 period. The increase is largely a function of the overall increase in the capex program.

While PIAC considers this percentage is similar to some other DNSPs, we have a real concern that overheads are calculated in a way that does not appear to reflect the changing nature of the provision of services. For instance, there have been substantial increases in outsourcing of operational activities. In addition, a number of services that were once part of the standard network services are now offered as contestable services (e.g. connections and metering). PIAC considers that these changes will reduce (in net terms) the level of internal overhead activity for the provision of the standard network services.



PIAC, therefore, concludes that on the evidence provided by Endeavour, its capex proposal for 2019-24 should not be accepted. The capex proposal drives further RAB growth and transfers unnecessary costs to consumers from further redundancy in the network and changes in the cost of capital. We therefore request that Endeavour continue to work with its stakeholders, the AER and local governments to focus on affordability and 'future proofing' the network.

The following sections provide further detail on some of the issues raised above. This includes further discussion on the following aspects of Endeavour's capex proposal:

- Preliminary observations on DER and Demand management (DM);
- The continued growth of the RAB;
- Endeavour's capital contribution policy;
- The decline in capex productivity;
- Forecasts of growth in new connections and peak demand and the implications of these forecasts for augex; and
- Repex forecasts including modelled and unmodelled expenditures and contingent projects.

## **2. Preliminary observations on Endeavour's DER/DM program.**

Overlaying all of the topics discussed below, PIAC is concerned with the apparent stalling of Endeavour's approach to DER/demand management. In the first instance, PIAC notes that Endeavour has taken limited advantage of the AER's current DMIA allowance having utilised only 24% of its approved allowance by 2016-17.<sup>1</sup>

Endeavour's 2019-24 regulatory proposal discusses a number of opportunities in general terms. However, it appears to still have a focus on 'pilots and trials' and a reliance on the RIT-D process as a means of identifying non-network/DER opportunities. While Endeavour will be introducing demand-based tariffs from 2019 for new connections and PV customers, the impact of these tariffs on Endeavour's proposed augmentation requirements for new greenfield areas is not clear.

In this context, we note Endeavour's comments regarding demand management (DM) opportunities in greenfield developments. Endeavour states with respect to the major 'greenfield' development sites:

These areas have historically been rural and semi-rural in nature and as such have had little or very low-capacity electricity supply infrastructure. It is not possible for the existing network to supply the scale of development that is occurring...

Demand management programs are ineffective in limiting this growth in infrastructure, which is required simply for the number of customer connections irrespective of the loading presented by each customer.<sup>2</sup>

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<sup>1</sup> See, AER, *Decision – Approval of DMIA expenditures by distributors in 2016-17 and 2017*, July 2018, Table 2, p 9. The report covers actual and planned expenditures for the three years 2014-15, 2015-16 and 2016-17. Only one new project was raised in 2016-17, and there were no further expenditures on the previous projects.

<sup>2</sup> Endeavour Energy, *10.12 Demand management & non-network options strategy*, February, 2018, p 8.

PIAC finds it difficult to reconcile this view, with Endeavour’s claim in its augex proposal that one third of its existing substations are experiencing growth rates greater than 1.5%pa,<sup>3</sup> largely due to greenfield developments. Endeavour is therefore suggesting in its capex proposal that there are costs not only for new infrastructure, but also for expansion of upstream, existing infrastructure. Effective DER/DM may enable Endeavour to reduce and/or postpone the replacement and upgrades of this existing upstream infrastructure.

PIAC does support Endeavour’s “grid scale battery energy storage system” (BESS) project. Endeavour has already completed a contract to a third party to design, build and install the BESS and states that:

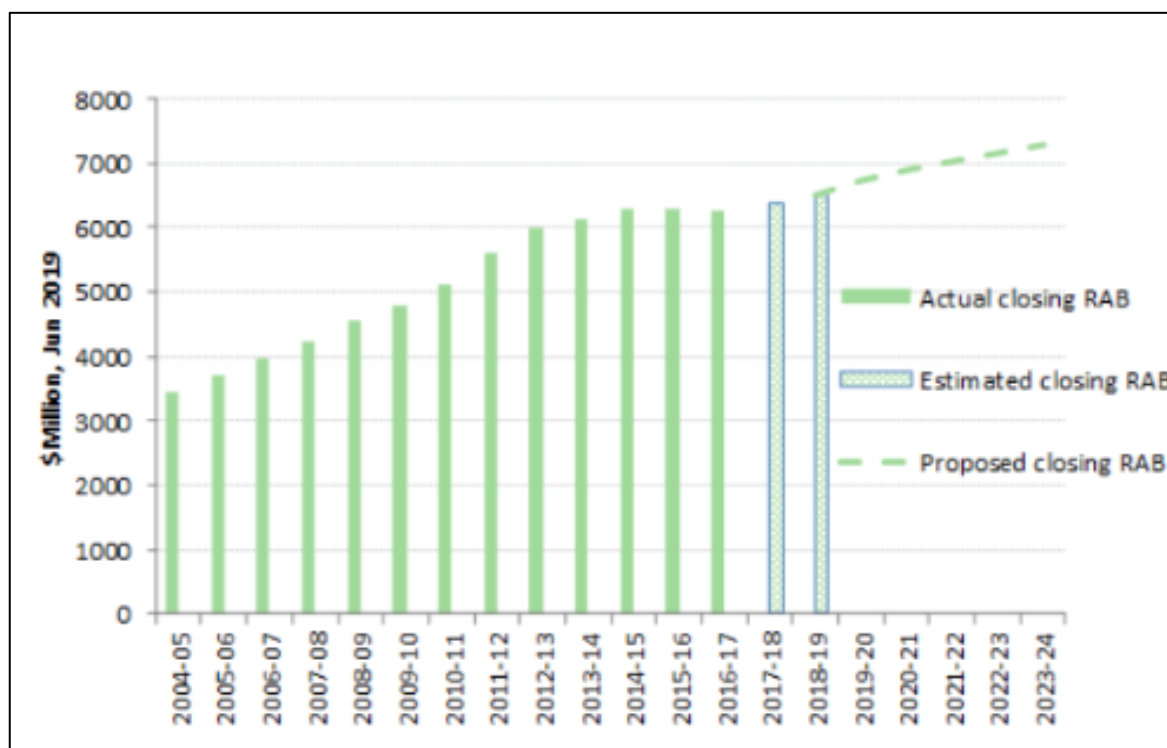
If [the trial is] successful, the project could defer future network investment and will contribute to keeping costs down while providing reliable supply sooner to customers.<sup>4</sup>

It is projects such as BESS that will deliver future flexibility and reduce risks to the network and consumers alike.

### 3. Continued growth in the RAB.

A central issue for PIAC is the continued growth in the RAB – up to 12% in the forecast period. Based on this forecast, Endeavour’s RAB will have grown by some 60% over the 15-year period from 2009 to 2024. Figure 2 below illustrates this point.

**Figure 2 – Endeavour’s historical and forecast RAB value (\$m, 2018/19)**



**Source:** AER, *Issues Paper, Ausgrid, Endeavour and Essential proposals for 2019-24*, Figure 10, p 32.

<sup>3</sup> Endeavour Energy, *Regulatory proposal*, 123.

<sup>4</sup> Endeavour Energy, *Demand management & non-network options strategy*, 38.

This growth in the RAB exceeds expectations notwithstanding the expected growth in customer connections and is driven by the proposed expansion of Endeavour's capex program.<sup>5</sup>

The extent of this RAB growth poses a challenge not only for current prices, but for future prices as it is consumers who ultimately wear the risk of this growth in capex from underutilisation of the assets in the future and increases in the cost of capital over time. Further, it crowds out the opportunity to focus on non-network solutions and is a major factor in the continued decline in the AER's measure of total factor productivity and capex partial factor productivity.

### ***Recommendation 1***

*That AER consider the impact on the RAB and the risks of further growth in the real RAB value to current and future consumers in its decision on allowed capex.*

## **4. Endeavour's capital contributions policy**

Endeavour changed their capital contributions policy in August 2017 to recover more connections costs from existing consumers. Endeavour claims its previous policies allocated too much cost to new developments and has sought to increase the component of 'socialised' connection costs.

PIAC is disappointed that this was done with no consumer consultation. Endeavour Energy did not seek to engage with consumers on this issue until a Customer Consultative Committee meeting in November 2017. Following this meeting, it was not discussed again until a 'Capex Deep Dive' meeting in January 2018. It was not made clear to stakeholders until February 2018 that Endeavour was retrospectively engaging on the change.

PIAC does not support the change because:

- By shifting a higher share of new connection cost to Endeavour Energy, the new policy will increase the value of Endeavour's RAB over the long term. Given that RAB growth is a key driver of high distribution charges and that energy affordability is a priority for consumers, this is not an appropriate change;
- Endeavour Energy's argument that a lower tax liability resulting from fewer gifted assets would be a benefit for consumers is not convincing. While reduced tax liability will benefit consumers in the short term, it will be far outstripped by RAB growth in the long term;
- By increasing the amount that existing customers pay for the new connections, Endeavour Energy are reducing the locational price signal for new connections. Developers should face a price signal when connecting to the network to ensure that they connect in efficient locations;
- Currently, the NEM is moving to a 'causer pays' model of cost recovery.<sup>6</sup> By changing their capital contributions policy, Endeavour have specifically sought to move away from this model by socialising some of the direct costs for new connections; and

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<sup>5</sup> Endeavour also states that a key driver of this RAB increase is the AER's treatment of inflation (Ibid, p 83), however, the AER states that assessment is incorrect (see AER, *Issues Paper*, June 2018, op cit, p 33).

<sup>6</sup> For example see: potential reforms from the AEMC's [Coordination of generation and transmission investment review](#), and/or the transition to cost reflective network tariffs.

- Endeavour has repeatedly framed the change in terms of equity, suggesting that recovering a high capital contribution from new connections is unfair because existing connections may not have had to pay the same contribution. However, recovering the capital costs associated with new developments from existing customers is more inequitable. Under the new policy, costs associated with connecting new home buyers will be recovered from all other consumers, including low income and vulnerable households. PIAC does not support a change that will result in vulnerable consumers subsidising relatively wealthy home buyers.

PIAC welcomes Endeavour's proposal to convene an industry working group on this topic<sup>7</sup> and will work constructively in that forum to further this discussion.

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### **Recommendation 2**

*That the AER should require Endeavour to reverse their change in connections policy.*

PIAC has become aware during the DNSPs' deep-dive processes of the extent to which networks vary in their approach to capital contributions. Some networks allocate a significant amount of the costs of augmentation of the network to the new users of the network (directly or indirectly through charges to developers). Other networks allocate a relatively small amount of new connection capex to new users and effectively socialise the cost of the augmentation to all existing and new users of their network.

Clearly, the current AER guidelines on capital contributions are very broad and allow for considerable discretion on the part of each of the networks. In addition, these decisions were made in the context of jurisdictional and regional policies, which varied from state to state and even region to region.

PIAC therefore believes that the AER needs to lead a more transparent discussion on the principles of capital contributions leading to a more consistent approach across the networks (noting that there will still be differences according to the purpose of the expansion).

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### **Recommendation 3**

*That the AER initiate a review of the policies and principles around capital contributions to ensure a more consistent approach across networks.*

## **5. Endeavour's declining capex productivity**

PIAC recognises that Endeavour has rated more highly than the other NSW DNSPs on the AER's various measures of productivity. However, it is by no means 'best in class' in the NEM, an outcome recognised by Endeavour. Endeavour states:

Endeavour Energy is currently benchmarked as the most efficient network in NSW, but we're sitting in the middle of the pack when compared to other distributors in the NEM. Our ambition is to be the best distributor in Australia and so we have set our sights on lifting our performance right across the business.<sup>8</sup>

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<sup>7</sup> Endeavour Energy, *Regulatory Proposal*, 53.

<sup>8</sup> Endeavour Energy, *Regulatory Proposal*, op cit, p 23.

Improved productivity in its capex expenditure is essential for Endeavour to overcome the challenges of improving affordability while ensuring the performance of the network satisfies its safety and reliability obligations. However, Endeavour's productivity (as measured by the AER) has decreased over the period 2006-2016 in both absolute and relative terms. The AER's most recent (2017) annual productivity benchmarking review of DNSPs in the NEM indicates that between 2015 and 2016 Endeavour declined from 7<sup>th</sup> to 8<sup>th</sup> place across the 13 DNSPs.<sup>9</sup>

## 5.1 Econometric benchmarking

Table 1 summarises Endeavour's total factor productivity (TFP), opex partial factor productivity (OPFP), and capital partial factor productivity (CPFP) changes since 2006. In particular, it demonstrates the continued decline in CPFP. On an index score basis, CPFP has declined from the 2006 base year of 1.00 to 0.793 in 2016, or some 21% while OPFP has also continued to decline.<sup>10</sup>

**Table 1 – Endeavour's output, input and TFP and partial productivity indexes 2006-2016**  
(% change per annum)

Period Growth rate (% per annum)	Output Index	Input Index	TFP Index	OPFP Index	CPFP Index
Growth rate 2006-16pa	1.20%	3.48%	-2.28%	-2.02%	-2.31%
Growth rate 2006-12 pa	1.16%	3.74%	-2.59%	-2.42%	-2.61%
Growth rate 2012-16 pa	1.27%	3.08%	-1.81%	-1.41%	-1.87%

**Source:** *Economic Insights*, October 2017, Table 5.10, p 75.

Endeavour states that it expects OPFP and TFP to improve in 2017-18 due to: "significant cost reductions associated with the Endeavour 2020 program and new business priorities".<sup>11</sup> However, Endeavour's discussion on productivity improvements in 2017-18 does not extend to an assessment of trends in capital productivity in 2017-18 or subsequent years. Based on Endeavour's current capex proposal, PIAC expects Endeavour's productivity to decline across the 2019-24 period despite growth in consumer numbers and expansion of the network.

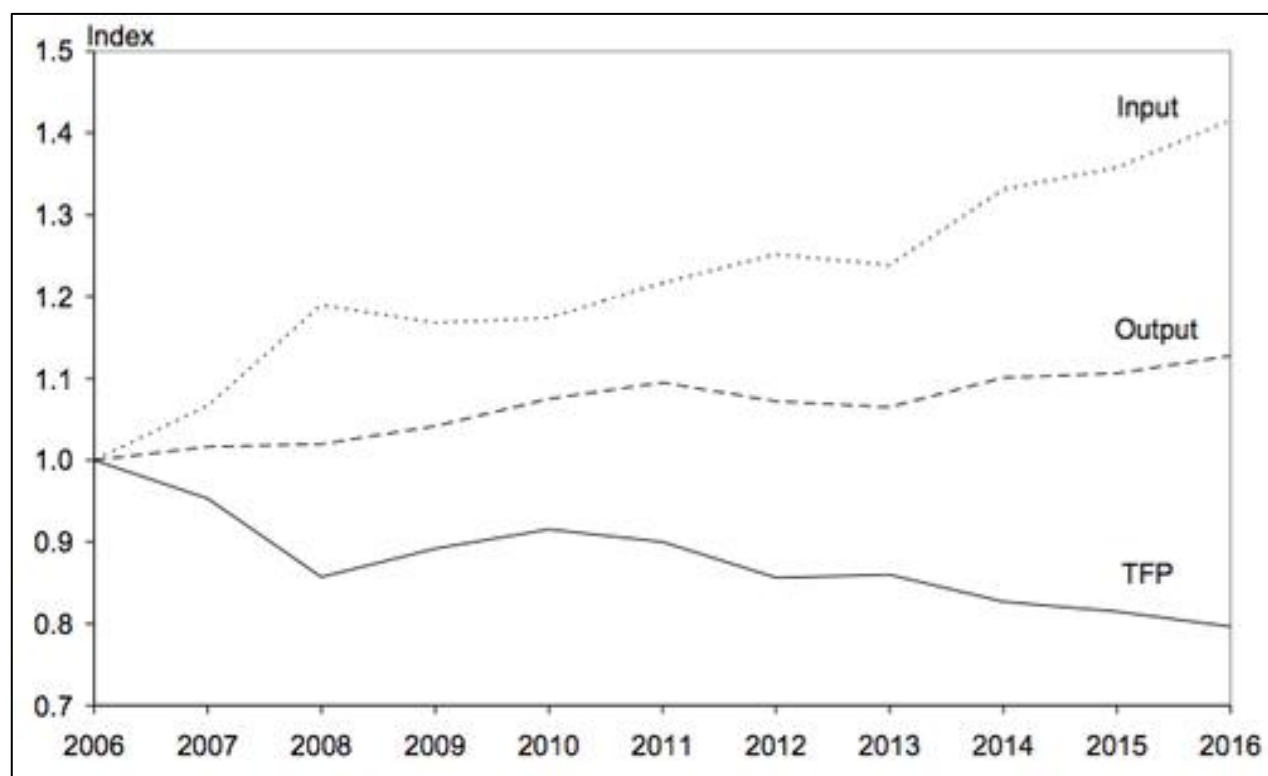
The broad reason for the decline in overall productivity (and its components) between 2006 and 2016 is identified in Figure 3 below: 'inputs' grew at a faster rate than 'outputs' across the period.

<sup>9</sup> See AER, *2017 Annual benchmarking report, electricity distribution network service providers*, November 2017, Table 2, p 34.

<sup>10</sup> See *Economic Insights* 2017, op. cit., Table 5.10, p 75.

<sup>11</sup> Endeavour Energy, *Regulatory Proposal*, op cit, p 23. See also Figure 3.3 (p 24), which illustrates Endeavour's expectation for both opex and total factor productivity in 2017-18.

**Figure 3 – Endeavour’s output, input and TFP indexes, 2006-2016**



**Source:** *Economic Insights*, October 2017, Figure 5.14, p 75.

The output measure used by Economic Insights (EI) includes a weighted measure of customer numbers, ratcheted maximum demand,<sup>12</sup> line length, energy and minutes off supply.<sup>13</sup> Of these factors, the customer numbers metric is weighted most heavily in the index, and also saw the most growth since 2006. EI reports a steady growth over the period 2006-2016 in customer numbers with customer numbers some 14% more in 2016 compared to 2006. Thus, Endeavour’s significant customer number growth is the major factor in the increase in output seen in the chart above.

Over the same period, the line length output variable also increased by 11%. Both these growth figures are higher than the other NSW networks and EI states that this likely reflects the growth in new areas in Sydney’s west. However, other output measures have either declined (energy) or remained reasonably static (ratcheted maximum demand and minutes off supply).<sup>14</sup>

<sup>12</sup> In the economic benchmarking study, the ratcheted maximum demand output measure is based on the maximum demand observed over the observed 11-year period. In the case of Endeavour, this occurred in 2011 (over the period 2006 to 2016).

<sup>13</sup> For details of the defined inputs and outputs, see *Economic Insights*, October 2017, op cit. p 1. Importantly, customer number growth and ratcheted peak demand growths are important contributors to the output measures (45.8% and 17.6% respectively). These are both factors that Endeavour has identified as major drivers of its current and forecast augmentation and customer connection capex.

<sup>14</sup> Ibid, pp 76-77.



The inputs index includes the cost of overhead and underground cables, transformers and opex. EI concludes that: “Total input quantity increased in 2016 in line with increases in opex usage, transformer and underground distribution cables inputs.”<sup>15</sup>

PIAC’s concern is that the increases seen in Endeavour’s proposed capex for 2019-24, including significant expenditures on zone substations, will drive a further decline in Endeavour’s total and capex productivity. This will inevitably lead to poorer outcomes and higher prices for consumers

Further, based on EI’s analysis of the historical data, PIAC considers that the forecast growth in consumer numbers and line length will not offset this decline in capex productivity. Nor will it mitigate the long-term risks to consumers arising from the expansion of the RAB.

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#### **Recommendation 4**

*That the AER consider the impact on the future productivity performance of Endeavour in its analysis of Endeavour’s capex proposal.*

## **5.2 Asset utilisation**

Asset utilisation is a non-econometric approach to assessing the productivity of historical and current investment in the RAB. Like econometric measures, it reveals a low level of capex productivity for Endeavour.

Endeavour’s proposal refers in several places to the improvement in utilisation of existing assets in the 2014-19 regulatory period.<sup>16</sup> PIAC’s review of the AER’s annual Economic Benchmarking RINs confirms that Endeavour has managed to improve the utilisation of its existing assets.

However, this improvement is coming off a very low base. For example, the RIN data indicates that in 2013-14, Endeavour’s average utilisation rate was as low as 40%. By 2016-17, the RIN data indicates this had improved to a utilisation rate of 48%. Nevertheless, this is still a low figure and suggests there is still excess capacity in the system for Endeavour to use to supply growth areas for a longer period of time.

While some areas, such as the North West Sydney Corridor, will require expansion of the network in 2019-24, there are other areas, such as the South West Sydney corridor, where land has been released, but development of the area is some way into the future. It is these areas there are opportunities to improve utilisation of the existing substation assets for this regulatory period (at least) and/or to encourage additional DER.

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#### **Recommendation 5**

*That the AER review Endeavour’s network growth plans in the context of the staged development of Western Sydney, existing levels of local asset utilisation and the opportunities for DER to support a staged approach.*

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<sup>15</sup> Economic Insights, October 2017, 78. In particular, underground cables were 80% above 2006 compared to 48% for the industry as a whole. Underground cables are significantly more expensive to construct than overhead wires/cables.

<sup>16</sup> Utilisation rates are a function of the rated capacity in a section of the network and the maximum peak demand for the period.

## 6. Endeavour's customer number and peak demand forecast

The previous discussion on productivity and utilisation of assets assumes that Endeavour's forecast of new connections for the 2019-2024 period is reasonable. In this section, PIAC identifies a number of areas that we believe warrant further investigation by the AER.

The expansion of Endeavour's network into new growth areas is a major factor in Endeavour's augex forecasts, including the customer connection component of augex. The network expansion is also a contributor to the repex forecast as the growth requires the expansion of existing 'upstream' network facilities. For instance, Endeavour claims that one-third of its existing 164 substations will experience growth rates of more than 1.5% pa in capacity requirements.<sup>17</sup>

Endeavour is forecasting growth of more than 21,000 customers per year over the next decade, with over 105,000 new connections forecast in the 2019-24 period, some 5% more than the current regulatory period of 99,000<sup>18</sup>. Endeavour also anticipates the continued relatively high level of average consumption and growth in peak demand usage in its region. Each of these assumptions is worthy of further review.

The forecasts raise a number of issues for PIAC, including:

- The forecast of customer growth appears to reflect the most recent trends as the Sydney region has expanded westwards. However, it is not clear if the current surge in customer growth rates in Endeavour's area is sustainable. For example, Endeavour provides an economic forecast by NIEIR, which indicates that between 2017-18 and 2028-29, household growth rates will decline from 3.1% to 1.9% per annum.<sup>19</sup>

In addition, Sydney's growth is very dependent on net overseas migration<sup>20</sup> and there are recent signs that overseas migration has declined by some 10%, as a result of implementing tighter immigration rules.<sup>21</sup> This is, in turn, likely to reduce household formation pressures on the key growth corridors in Endeavour's region.

PIAC's concern here is that Endeavour's capex proposal will lead to the building of new substations and other large assets to service a demand that may not eventuate within the current regulatory period.

- Endeavour highlights the NSW Government Planning reports including the prospect of substantial releases of land in the Western Sydney corridor. However, there can be a long delay between the release of land for development and actual development. For instance,

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<sup>17</sup> AER, *Issues Paper*, 36.

<sup>18</sup> Ibid, 36.

<sup>19</sup> NIEIR, *Economic Scenarios for the Endeavour Region: 2017-2029*, September 2017, Table 5.2, 36. The table provides growth rates for each of the LGA's in the Endeavour region, for Endeavour as a whole, and for NSW.

<sup>20</sup> Overseas migration accounted for 85,000 out of a total of 102,000 increase (83%) in Sydney's population in 2016-17. See: <http://www.abc.net.au/news/2018-04-24/melbourne-sydney-brisbane-populations-soar-growth-drivers-differ/9693470>

<sup>21</sup> For instance, see Primrose Riordan, "[Peter Dutton says migrant intake cut is good for Australia](#)", *The Australian*, 15 July 2018.



plans for the North West corridor expansion are quite mature while plans for the South West corridor appear to be considerably less well developed.<sup>22</sup>

PIAC considers there may be opportunities for Endeavour to delay some expansion capex into the next regulatory period given the lack of specific plans for much of this area. At least some of the growth in this region is related to the Western Sydney Airport, which is projected to be in place by 2026 but is currently categorised by Endeavour as a contingent project.<sup>23</sup> PIAC considers the outcome of this may be relevant to the timing and quantum of the forecast capex for South West Sydney corridor.

- Given so much of Endeavour's proposed augex will occur in greenfield developments (over \$300m), it is also a unique opportunity for Endeavour to vigorously pursue DER at much lower costs and to design the new network to better suit these conditions. It is also an opportunity for Endeavour to take maximum advantage of the proposed new tariffs that include a demand charge component.<sup>24</sup>
- PIAC understands that Endeavour's peak demand forecast is based on a 'bottom-up' approach with post-model adjustments for spot loads, lot releases, load transfers and factors such as energy efficiency, roof-top PV and government policies. For instance, Endeavour states:

Our maximum demand forecasting model uses a bottom-up approach beginning with a forecast of peak demand at the zone substation level, then moves upwards to the sub-transmission substation level and bulk supply points. Total network level demand forecast are determined by aggregating forecast values progressively.<sup>25</sup>

Based on this summary of its approach, PIAC questions whether Endeavour has effectively applied a top-down forecast as a constraint on the individual zone substation forecasts. Bottom-up forecasts, in aggregate, are likely to overstate forecasts at the individual level and in aggregate.

## **Recommendation 6**

*That the AER review Endeavour's forecasts for consumer numbers and demand growth to ensure these outcomes are reasonable and consistent with the opportunities for DER, more efficient infrastructure and cost reflective tariff design.*

## **7. Endeavour's repex forecast**

Endeavour is proposing significant increases in its repex compared to its repex for the current regulatory period. PIAC is concerned with the size and timing of the expenditure on replacement, particularly in the context of the very significant level of capex invested by Endeavour in the

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<sup>22</sup> See: <https://www.planning.nsw.gov.au/Plans-for-your-area/State-Significant-Precincts>

<sup>23</sup> See: Endeavour Energy, *Regulatory Proposal*, 153-154.

<sup>24</sup> Endeavour's tariff plan as set out in its TSS for 2019-24, states that Endeavour will assign all new customers to a seasonal demand tariff with the option to 'opt-out' to the flat energy tariff. In addition, Endeavour plans to shorten its peak demand window to 4pm-8pm weekdays. These are strong signals to new consumers to install PV and to maximize late afternoon PV generation. See summary in Endeavour Energy, *Regulatory Proposal*, 7.

<sup>25</sup> Endeavour Energy, *Regulatory Proposal*, 72.

regulatory period 2009-14 to 2013-14 (approximately \$3 billion in \$18/19), which reduced asset utilisation to 40%. Generally, PIAC would expect such high investment levels to reduce the need for repex in subsequent periods.

## 7.1 Modelled repex capex

The AER places most reliance on its 'predictive repex model' to estimate an efficient modelled repex. The AER's model is designed to model replacement expenditure for the high volume, low value assets 'business-as-usual' (BAU) replacement expenditure. The AER's model requires, inter alia, information on benchmark replacement age profiles and replacement costs (by asset category), along with data on the age profile and replacement rate of the individual DNSP in order to calibrate the model for each DNSP.

Endeavour also refers to the AER's predictive model as a check on its overall repex proposal and emphasises that its repex proposal is significantly less than the repex forecast by the AER's repex model. For example, Endeavour produced a range of modelled repex outcomes for different calibration processes that it claims have been variously used by the AER in previous determinations. The modelled repex using different calibrations ranges from \$789m to \$1,315m for 2019-24, while Endeavour proposes a modelled repex of \$582m.<sup>26</sup>

PIAC has discussed the model and its application with both the AER and Endeavour staff. Following these discussions, we remain concerned with the discrepancies between the AER and Endeavour in the assumptions used in the predictive model with respect to the age/replacement profile between the AER's and Endeavour.

The main reason for the differences in the output of the predictive model appears to be the AER's decision to use three years of Endeavour's historical replacement rates and cost data for calibration of the model, while Endeavour has adopted a five-year calibration period. Endeavour states this longer period is preferable because it "mutes the impacts of one-off events such as our lease transaction process".<sup>27</sup>

By contrast, the AER has indicated that using a five-year calibration period (which it had previously used) will mean that the very high level of capex that the NSW DNSPs incurred during the 2009-2014 period will be captured in the model and distort the results, meaning that the repex forecasts would be unrepresentative of future efficient and prudent repex costs.

PIAC agrees in principle with the AER's approach. Our strong view is that the NSW DNSPs capital investment program in 2009-14 was not representative of future efficient and prudent replacement investment. We understand that the AER has been in extensive discussion with Endeavour on its revised repex model assumptions, and PIAC welcomes this positive approach to addressing what appears to be a key matter in setting repex at prudent and efficient levels.

### **Recommendation 7**

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*That the AER seek reconciliation of the differences in the assumptions used by the AER and by Endeavour in the AER's predictive repex model.*

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<sup>26</sup> Endeavour, *Regulatory Proposal*, Table 10.8, 135

<sup>27</sup> Ibid, 136.

## 7.2 Endeavour's unmodelled repex & other system capex

Unmodelled repex includes larger and/or more 'one-off' projects that cannot be readily modelled using historical trend data. PIAC expects that the AER will more closely scrutinise the larger of these projects. The majority of the expenditures relate to two categories: 'substation civil and ancillaries' projects (\$170.8m); and 'SCADA, communications and network control renewal' projects (\$48.0m).<sup>28</sup>

Other system capex projects include:

- Reliability expenditure (\$20m) – relating to upgrading of poor performance feeders, as required by licence conditions but not funded by the STPIS program.
- Technology expenditure (\$24.9m) – expenditure relating to evaluating operational technology solutions to address network management issues.<sup>29</sup>

A number of these projects appear to be in excess of \$5m and will require Endeavour to undertake a regulatory investment test (RIT-D) process, before proceeding with the project. While PIAC is not in a position to scrutinise these individual projects as part of its current submission, we stress the importance of the AER's review considering factors that will ultimately be important components of any RIT-D review. This process should include, as a minimum, examining the following questions:

- What is the defined 'need' for this project?;
- What is the size and scope of the project?;
- Does the project pass the 'net benefit' test based on reasonable forecasts, VCR, discount rates and other relevant parameters?;
- Is the timing of the project appropriate – is the project required in this regulatory period, or can it be deferred in total, or in part?; and
- Are there other options that have been adequately explored, to address the problem or defer the project –such as non-network options?<sup>30</sup>

### **Recommendation 8**

*That the AER conduct more detailed scrutiny of the larger projects. Where projects would require a RIT-D before proceeding, PIAC recommends that the AER's scrutiny include assessing the major projects against the RIT-D criteria.*

## 8. Western Sydney Airport Growth Area contingent project

Endeavour has included one contingent project in its proposal, the "Western Sydney Airport Growth Area", with a projected cost of \$61.2m. Given the stated uncertainty about the electricity supply arrangements for the project, PIAC supports the classification of this project as a contingent project.

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<sup>28</sup> Ibid, 137-140.

<sup>29</sup> Ibid, 139-140.

<sup>30</sup> PIAC notes and welcomes the AER's current review of the RIT-D Guidelines, and we believe they will provide a more transparent guide to best practice for the DNSP while assisting consumer participation in the RIT-D process.

However, we note Endeavour's comment that the supply arrangements may be finalised before the revised proposal is due and may be included in the revised proposal.<sup>31</sup>

PIAC has some concerns about the limited time available for the AER (and consumers) to scrutinise this large and important project if it is included in the revised proposal, notwithstanding that Endeavour will have to conduct a RIT-D on the project. We therefore recommend that if Endeavour includes this project in its revised proposal, Endeavour also initiate a broader consultation on the project with the AER and interested stakeholders, prior to the AER's final decision, with provision for further input to the AER from stakeholders. For instance, there may not be sufficient time between the publication of Endeavour's revised proposal and the deadline for stakeholders' submissions to effectively evaluate this important project.

### ***Recommendation 9***

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*That stakeholders be provided a reasonable opportunity to assess the Western Sydney Airport Growth Area if it becomes part of Endeavour's revised regulatory proposal for 2019-24 before the AER's Final Decision.*

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<sup>31</sup> Endeavour Energy, *Regulatory Proposal*, 154.