

Benchmarking

Benchmarking allows us to compare the cost of undertaking similar activities across service providers in the National Electricity Market. Assessing relative costs enables us to understand efficiency, which is an important consideration for determining expenditure allowances as part of our pricing decisions.

Benchmarking in expenditure assessment

The National Electricity Rules ('NER') require us to determine operating and capital expenditure allowances that reasonably reflect the efficient costs of providing safe and reliable electricity supply.

In doing so, the NER also require us to have regard to benchmarking when forming a view about the efficiency of a service provider's proposed expenditure.

Benchmarking is a useful tool that enables us to compare a service provider to its peers. By examining the cost of undertaking similar activities, we can determine how efficient the service provider is relative to its peers.

We have a number of benchmarking techniques. We developed these techniques as part of the Better Regulation process that commenced in late 2012.

The NER require us to have regard to benchmarking when determining efficient expenditure allowances.

Our approach

Our approach to benchmarking includes a process that captures a broad range of material from stakeholders. We set out this approach in the *Expenditure Forecast Assessment Guideline* ('the Guideline') that we published in November 2013.

We developed the Guideline following extensive consultation and effective and inclusive consumer engagement throughout 2013. This consultation included numerous workshops with service providers and consumer representatives to seek their input in developing our benchmarking techniques.

Following the Guideline process, we collected independently audited data from each service provider in the National Electricity Market ('NEM'), which we then tested and validated in consultation with the service providers. We have used this data to develop and refine our benchmarking techniques.

While benchmarking is a key component of our approach, it is not all we consider. We seek to gather evidence from other sources to make a holistic decision.

Therefore, in making our draft decisions we have reviewed a large amount of material. This includes reports from experts engaged by the service providers and ourselves and submissions from service providers, users, consumer groups and the Consumer Challenge Panel.

Overall, our approach is consistent with what we set out in the Guideline. Further details of our Guideline approach are available at <http://www.aer.gov.au/node/18864>.

Our assessment approach involves numerous benchmarking techniques, which we complement with other analysis to make a holistic decision.

Benchmarking for operating expenditure

As operating expenditure ('opex') is largely recurrent and predictable, we assess a service provider's proposed opex by developing our own estimate starting with the actual opex the service provider spent in one year of the previous regulatory period. We refer to this year as the 'base year'.

We use our techniques to assess the efficiency of the base year. If we find the base year is materially inefficient, we adjust it. Then we apply a rate of change to account for changes in prices, productivity and the outputs the business is required to deliver. In certain circumstances, we may also include additional efficient costs.

We then compare our estimate with the service provider's proposal to determine if it reasonably reflects the opex criteria.

For electricity distribution service providers, benchmarking is central to assessing the efficiency of the base year. We engaged Economic Insights to develop the following economic benchmarking techniques to assist with this, including:

- Multilateral total factor productivity (MTFP)

- Multilateral partial factor productivity (MPFP)
- Cobb Douglas stochastic frontier analysis (SFA)
- Translog least squares estimate regression
- Cobb Douglas least squares estimate regression.

MTFP enables us to assess the overall efficiency of service providers. The other four techniques specifically measure how efficiently the service providers use opex.

Figure 1 shows the results of Economic Insights' four opex modelling techniques. A score of 1.0 is the highest score. Figure 1 demonstrates that on each of the four models, the historic opex of ActewAGL, Ausgrid, Endeavour Energy and Essential Energy ('the ACT/NSW service providers') have low scores. Other NEM service providers such as CitiPower and Powercor have comparatively higher scores.

We also conducted analysis using partial performance indicators ('PPIs') and opex driver-based category analysis metrics. The results of these simpler benchmarking techniques are consistent with the benchmarking results.

Additionally, we conducted targeted detailed reviews of certain opex categories. Our findings from these reviews support the benchmarking results.

Our application of opex benchmarking

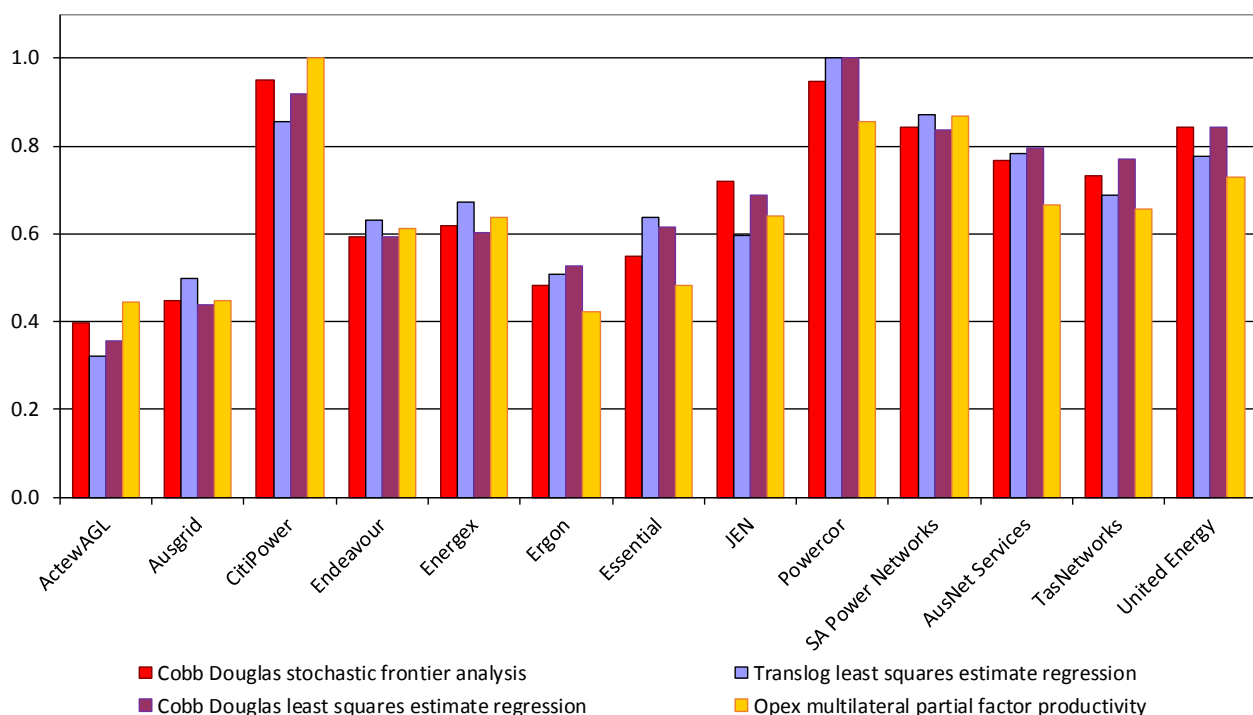
Following our analysis using a combination of quantitative and qualitative techniques, we were satisfied a forecast based on the ACT/NSW service providers' historical opex would not reasonably reflect the opex criteria. Therefore, adjustments were necessary.

We used our preferred benchmarking model as the starting point to arrive at an alternative estimate of what we considered reasonably reflects an efficient base level of opex. However, we considered it was necessary to reduce the target level of efficiency by:

1. Providing an allowance for operating environment differences not completely captured by our preferred benchmarking model
2. Comparing the service providers' efficiency to a weighted average of all networks with efficiency scores above 0.75 rather than the most efficient service provider in our preferred model.

Therefore, our benchmark comparison point incorporates the different operating environments of a number of service providers, covering rural and urban areas, different terrains, different sized customer bases and circuit lengths.

Figure 1 Opex modelling results



The resulting adjustments to base year opex for each of the ACT/NSW service providers are (\$2013-14):

ActewAGL – \$26.6 million (38.6%)
 Ausgrid – \$163.7 million (33.3%)
 Endeavour Energy – \$23.0 million (10.3%)
 Essential Energy – \$144.1 million (34.7%)

For electricity transmission service providers, we produced MTFP, MPFP and PPI analysis. However, due to limited data, we were unable to draw conclusions about relative efficiency of base year opex.

Due to the absence of sufficient data, we were unable to conduct benchmarking to assess opex for gas or for interconnectors.