

AER's annual productivity benchmarking

What is electricity distribution productivity benchmarking?

Key points

- Each year the AER is required under the National Electricity Rules to measure the productivity of the electricity distribution industry and the 13 distribution network businesses in the national electricity market that operate the infrastructure delivering electricity to your home or business.
- We compare or 'benchmark' the industry and networks' productivity and publish the results in our annual report (the 2024 Annual Benchmarking Report can be found [here](#)).

To measure distribution network productivity, we compare the quantity of inputs the networks use to transport electricity from high voltage transmission networks to consumers with the quantity of outputs the networks provide. The inputs include the amount of overhead and underground lines, the number of transformers and operating expenditure (opex), while the outputs reflect the amount of reliable electricity transported to electricity consumers.

We measure distribution network productivity in four main ways:

- **Total factor productivity (TFP)**, which we use to understand if the distribution industry or a specific network has become more or less productive over time compared to its past performance.
- **Multilateral total factor productivity (MTFP)**, which we use to understand 'relative productivity' which is whether a distribution business is more or less productive over time and compared to other distribution businesses.
- **Econometric operating expenditure cost function models**, which we use to measure how efficiently distribution businesses use their opex.
- **Partial performance indicators (PPIs)**, which we use to understand whether a distribution business uses one particular input more or less productively over time and compared to other distribution businesses.

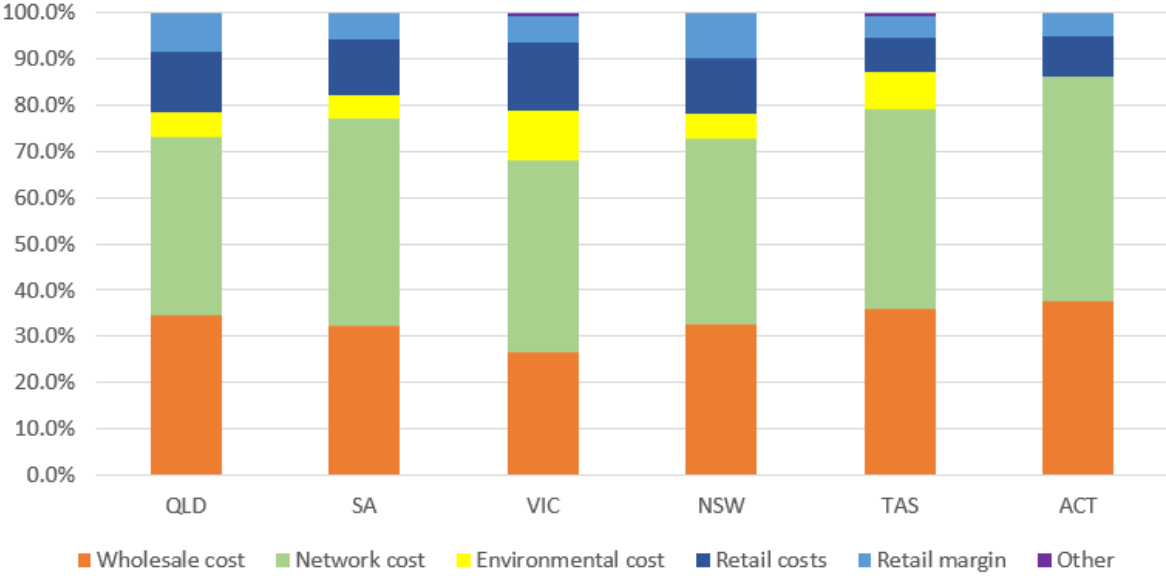
More information on our productivity benchmarking and how we use it can be found in sections 1 and 2 of the distribution report.

Why does the AER measure electricity network productivity?

Key points

- The costs of operating the distribution and transmission networks that deliver electricity to your home or business make up between 35 to 45% of your electricity bill, depending on the state or territory you live in. This is the green component of the bars in Figure 1.
- If your electricity networks are more productive, this should contribute to downward pressure on network costs and your electricity bill.

Figure 1 shows the proportion of your electricity bill that is due to network (transmission and distribution) costs in 2022–23 in different states and territories.



Source: AER, *Default market offer prices 2022-23 cost assessment model*, 26 May 2022; ESC, *VDO calculation model 2022-3*, 27 May 2022; OTTER, *Approved Aurora Energy 2022 revised proposal period*, 31 May 2022; ICRC, *Retail electricity price recalibration 2022-23: standing offer prices for the supply of electricity to small customers*, 6 June 2022.

Note: Figures may differ slightly from the source due to rounding. Categorisation of costs vary from state to state, we have assigned the costs to like categories in the creation of Figure 1.

Network costs in Figure 1 cover both transmission and distribution costs. Based on historical data, distribution costs account for a larger proportion (around 75%) of the network costs compared to transmission costs (around 25%).

The AER’s benchmarking reports help put downward pressure on network costs and your electricity bill by:

- providing the AER with information on the efficiency of network costs, helping us identify where to target our assessments of proposed expenditure, inform our assessment of the efficiency of proposed expenditures, and whether we should reduce the amount of money a network can recover from you through your electricity bill
- providing network owners and investors with information on how productive their business is, which along with our incentive schemes, provides them with a financial and reputational incentive to improve their efficiency
- providing consumers with accessible information about the relative efficiency of the electricity networks they rely on
- providing policy makers with information about the impacts of regulation on network costs, productivity and electricity prices.

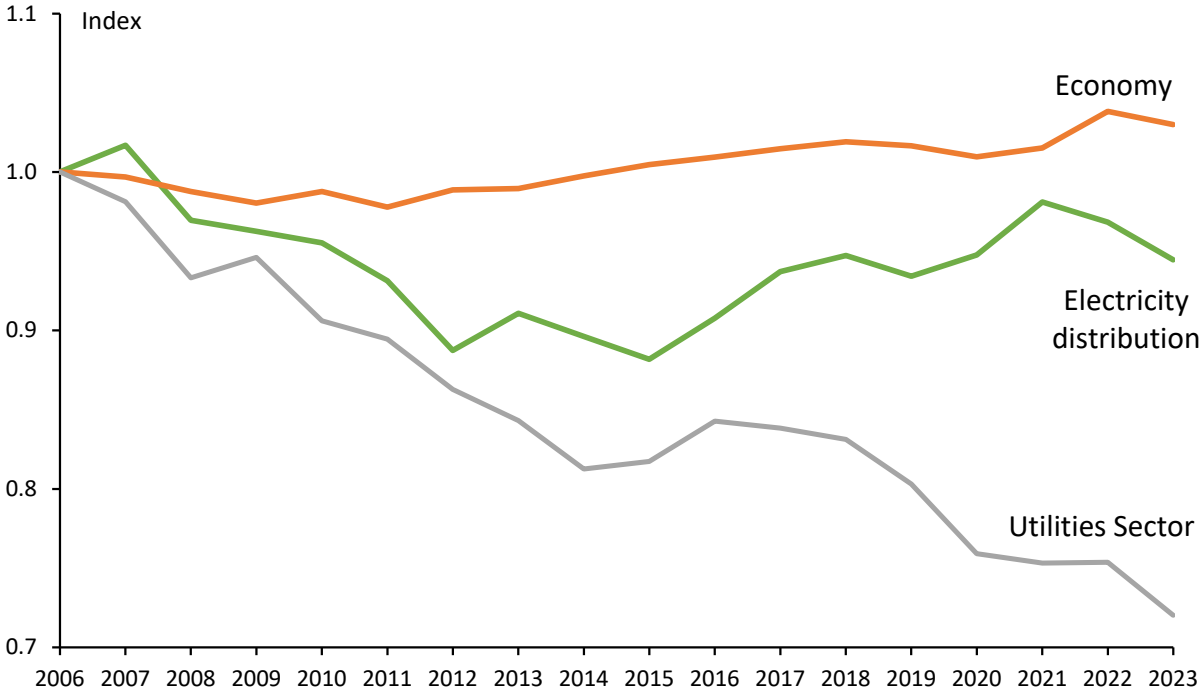
This year we used the benchmarking results to inform opex in our revenue determinations for Ausgrid, Endeavour Energy, Essential Energy, Evoenergy, TasNetworks (distribution), Ergon Energy, Energex and SA Power Networks. We used our econometric operating expenditure benchmarking results to assess the efficiency of opex in proposed ‘base years’ but also took into account the other productivity results.

How has the productivity of the distribution industry changed over time?

Key points

- Electricity distribution industry productivity decreased over the 2006–15 period at an average annual rate of 1.4%. This decline was largely driven by growth in opex inputs, such as maintenance, and capital inputs, such as transformers and underground cables, which exceeded growth in outputs such as maximum demand or customer numbers.
- Since 2015, distribution industry productivity has trended upward by 0.9% per year on average. This is mainly due to reductions in opex.
- Over the 2006–23 period, the productivity growth of the electricity distribution industry has been worse than that of the Australian economy, but significantly better than the utilities sector overall (i.e. electricity, gas, water and waste services).
- In 2023¹, the productivity of the electricity distribution industry decreased by 2.5%. This was the largest year-on-year decrease in distribution industry productivity since 2012 and was primarily due to an increase in opex. A productivity decline was also evident for the utilities sector and the Australian economy as a whole, which saw declines of 4.6% and 0.8%, respectively.

Figure 2 shows how productivity (TFP) in the electricity distribution industry, utilities generally and the Australian economy overall has changed from 2006 to 2023.



Source: AER’s Annual Benchmarking Report for distribution, 2024.

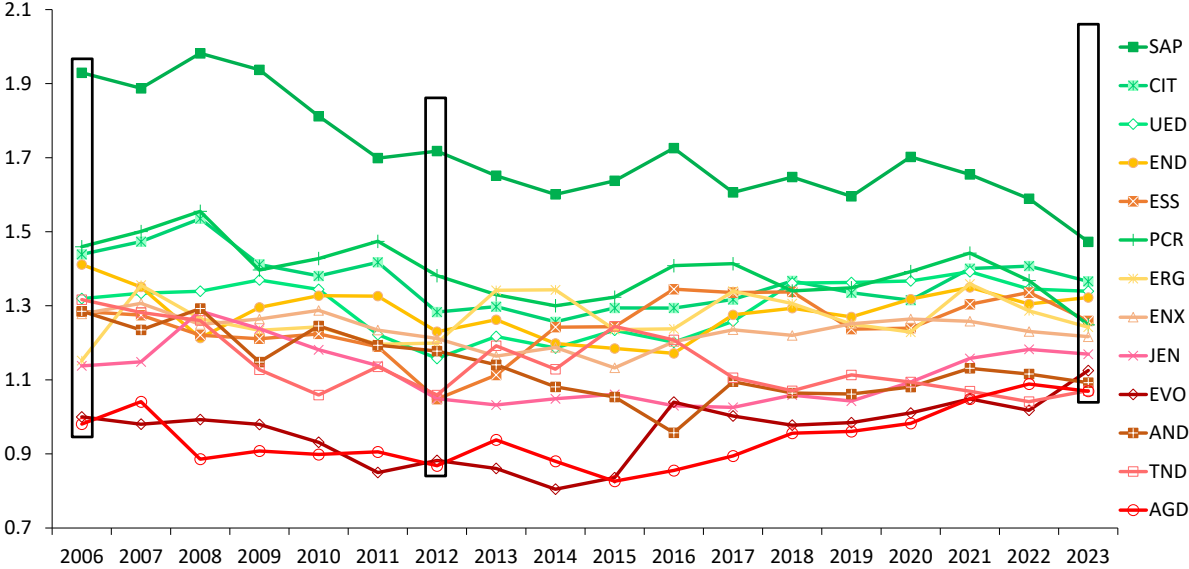
¹ We refer to regulatory years in this fact sheet. These are financial years except for Victorian firms which reported on a calendar year basis prior to 2021. For example, for simplicity we use 2023 for 2022–23.

How has the relative productivity of distribution networks changed over time?

Key points

- Over the 2006–23 period, there has been a convergence in the productivity levels of distribution networks as measured by MTFP. This is shown by the three, equal-sized, black-bordered columns placed in 2006, 2012 and 2023.
- Lower ranked networks have improved their productivity since 2015, largely due to decreases in opex.
- Higher ranked networks have seen gradual productivity decline and now exhibit productivity levels closer to the midfield, largely due to higher opex.

Figure 3 shows changes in relative productivity levels (MTFP) of the 13 distribution networks from 2006 to 2023.



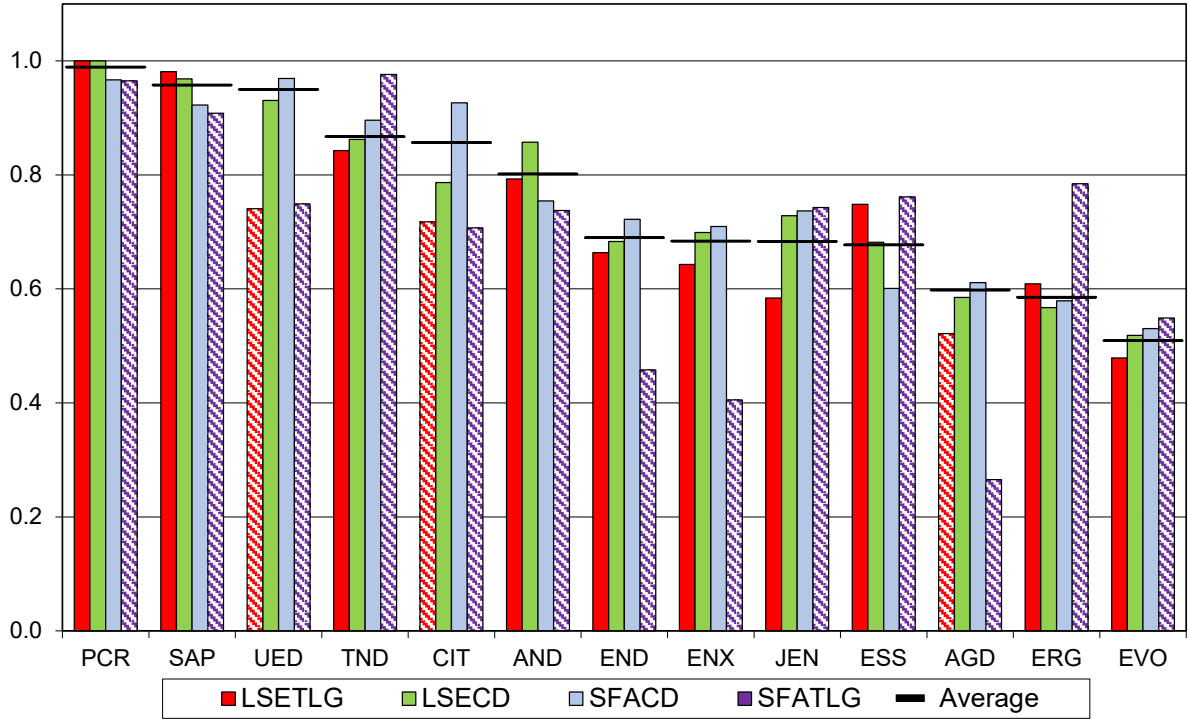
Source: AER’s Annual Benchmarking Report for distribution, 2024.

What is the relative productivity of distribution networks’ opex?

Key points

- Over the 2006–23 period, Powercor, SA Power Networks, United Energy, TasNetworks, CitiPower and AusNet were the most efficient networks in terms of opex. Evoenergy, Ergon Energy and Ausgrid were the least efficient over this period.
- These results are central to our assessment of the efficiency of opex in revenue decisions and account for some, but not all, operating environment factors.

Figure 4 Econometric operating expenditure efficiency scores and opex MPFP, 2006–23



Source: AER analysis; Quantonomics
 Note: The average score, indicated by the horizontal black lines, excludes the hatched bars which do not meet the underlying economic assumption that an increase in outputs is achieved with an increase in inputs.

Which distribution networks were more and less productive in 2023?

Key points

- 3 of the 13 distribution networks became more productive in 2023, as measured by MTFP. The largest increase in productivity was for Evoenergy (10.0%) due to a large decrease in opex coinciding with higher maximum demand on its network. Evoenergy’s large productivity increase in 2023 saw it climb from last (13th) to 10th in the MTFP rankings. TasNetworks and Endeavour Energy were the other networks with positive productivity changes.
- 10 distribution networks became less productive in 2023 as reflected by their MTFP results, with Powercor’s MTFP decreasing more than any other network (–9.2%). This decline in Powercor’s productivity saw it fall from 3rd to 6th place in the MTFP rankings and was driven mainly by higher opex due to vegetation management compliance.
- SA Power Networks remained the top ranked DNSP by MTFP, despite a 7.6% decline in MTFP in 2023. This decline in productivity was driven by higher opex resulting from storms in November 2022 and a large flood event from November 2022.
- Our distribution benchmarking accounts for some but not all differences in operating environment factors in the measured productivities across businesses. Therefore, these results should only be considered as indicative of the business’ relative performance. Further information on the limitations of the AER’s benchmarking can be found in section 2.2 of the 2024 Annual Benchmarking Report.

Table 1 distribution networks ranked from most to least productive based on 2023 productivity scores (MTFP), their 2022 scores and the % change from 2022.

DNISP	2023 Rank	2022 Rank	2023 MTFP	2022 MTFP	Change (2022–23)
SA Power Networks (SAP)	1	1	1.473	1.589	-7.6%
CitiPower (CIT)	2	2	1.366	1.407	-3.0%
United Energy (UED)	3 ↑	4	1.339	1.345	-0.4%
Endeavour Energy (END)	4 ↑	6	1.322	1.305	1.3%
Essential Energy (ESS)	5	5	1.259	1.336	-5.9%
Powercor (PCR)	6 ↓	3	1.249	1.368	-9.1%
Ergon Energy (ERG)	7	7	1.242	1.286	-3.5%
Energex (ENX)	8	8	1.216	1.231	-1.2%
Jemena (JEN)	9	9	1.169	1.182	-1.1%
Evoenergy (EVO)	10 ↑	13	1.125	1.018	10.0%
AusNet (AND)	11 ↓	10	1.092	1.116	-2.1%
TasNetworks (TND)	12	12	1.071	1.041	2.8%
Ausgrid (AGD)	13 ↓	11	1.069	1.089	-1.8%

Source: AER's Annual Benchmarking Report for distribution, 2024.

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