

AER's annual productivity benchmarking

Electricity distribution industry

What is productivity benchmarking?

Key points

- *Each year the AER measures the productivity of the 13 electricity distribution network businesses in the national electricity market that operate the infrastructure that delivers electricity to your home or business.*
- *We compare or 'benchmark' the industry and networks' productivity and publish the results [here](#) in our Annual Benchmarking Reports.*

To measure distribution network productivity, we compare the quantity of inputs the networks use to transport electricity from high voltage transmission networks to consumers in urban and regional areas (i.e. the amount of transformers, overhead and underground lines, operating costs etc.), with the quantity of outputs the networks provide (i.e. 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 has become more or less productive over time compared to its past performance.
- **Multilateral total factor productivity (MTFP)**, which we use to measure 'relative productivity' which means whether a distribution business is more or less productive over time and compared to other distribution networks.
- **Econometric operating expenditure cost function models**, which we use to measure how efficiently distribution businesses use their operating expenditure.
- **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.

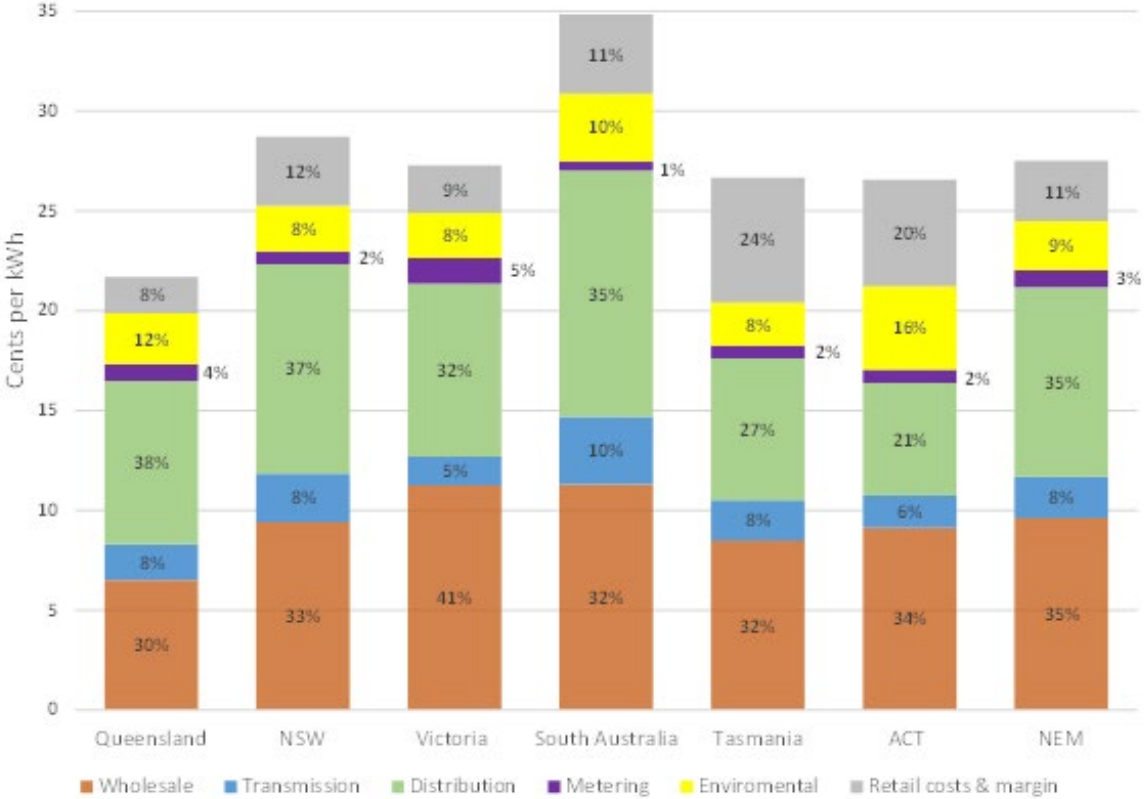
More information on our productivity benchmarking models and data, and how we used them can be found in sections 1 and 2 and Appendix B of the distribution report [here](#).

Why does the AER measure electricity network productivity?

Key points from Figure 1

- *The costs of operating the distribution (and transmission) networks that deliver electricity to your home or business make up between a quarter and almost a half of your electricity bill, depending on the state or territory you live in.*
- *If your electricity network is 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 distribution and transmission network costs in 2021 in different states and territories.



Source: AEMC, Residential electricity price trends 2021, Final Report, December 2021.

The AER’s benchmarking reports helps 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 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 financial and reputational incentives to improve their efficiency.
- providing consumers with accessible information about the relative efficiency of the electricity networks they rely on.
- providing government policy makers with information about the impacts of regulation on network costs, productivity and electricity prices.

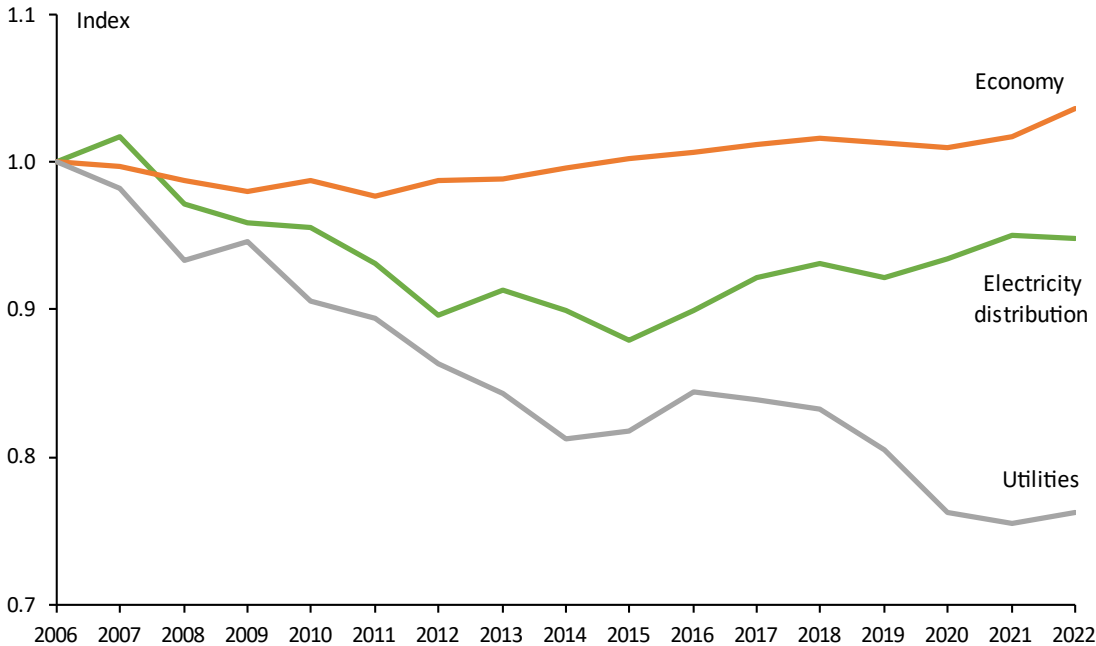
This year we used our benchmarking results to analyse the productivity of a number of distribution networks and inform our assessment of the efficiency of their proposed expenditures. This included operating expenditures for our draft decisions for Ausgrid, Endeavour Energy and Essential Energy in NSW, Evoenergy in the ACT, and TasNetworks in Tasmania.

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

Key points from Figure 2

- From 2006 to 2022, productivity of the electricity distribution industry (comprised of 13 distribution networks) decreased by 0.3% per year, mainly due to a long-term decline in the productivity of capital inputs (i.e. the transformers, overhead and underground lines that make up an electricity distribution network). This performance was worse than that of the Australian economy but significantly better than that of the utilities sector overall (i.e. electricity, gas, water and waste services).
- The long-term decline in distribution industry productivity abated in 2015 and productivity has trended upward since then. This improvement since 2015 is generally due to reductions in operating expenditure.
- In 2022, the productivity of the electricity distribution industry decreased slightly by 0.2%, driven primarily by a decrease in reliability due to adverse weather events such as storms. This slight decline in 2022 contrasted with the increased productivity in the overall Australian economy (1.9%) and the utilities sector (0.9%) over 2022.

Figure 2 shows how productivity (TFP) in the electricity distribution industry, utilities generally and the Australian economy overall has changed from 2006 to 2022.



Source: AER’s Annual Benchmarking Report for distribution, 2023.

Which distribution networks were more and less productive in 2022?

Key points from Table 1

- Five of the 13 distribution networks became more productive in 2022 with Ausgrid and Essential Energy leading the improvements and increasing their productivity by 8.9% and 7.6% respectively as measured by MTFP. Improvements among these five networks can mainly be attributed to increasing operating expenditure productivity, reflecting lower operating expenditure.
- Eight distribution networks became less productive in 2022 as reflected by their MTFP results with Powercor's MTFP decreasing 6.2%, more than any other network.
- SA Power Networks and CitiPower remain the 1st and 2nd ranked distribution network, with Essential Energy rising to become the 3rd ranked.
- Evoenergy, TasNetworks and AusNet Services are the lowest ranked distribution networks in 2022, with Evoenergy dropping by two places to last and AusNet Services falling by one place to 11th.
- Our distribution benchmarking accounts for some but not all possible differences in operating environment factors in the measured productivities across networks. Therefore, these results should only be considered as indicative of relative performance.

Table 1 shows distribution networks with their 2022 and 2021 MTFP ranking, scores and the % change in MTFP scores between 2021 and 2022.

Distribution network	2022 Rank	2021 Rank	2022 MTFP	2021 MTFP	Change (2021–2022)
SA Power Networks (SA)	1	1	1.482	1.535	-3.5%
CitiPower (VIC)	2	2	1.461	1.455	0.4%
Essential Energy (NSW)	3↑	7	1.340	1.242	7.6%
Powercor (VIC)	4↓	3	1.311	1.395	-6.2%
Endeavour Energy (NSW)	5	5	1.272	1.299	-2.1%
Ergon Energy (QLD)	6↓	4	1.261	1.309	-3.7%
United Energy (VIC)	7↓	6	1.248	1.292	-3.4%
Jemena (VIC)	8	8	1.206	1.159	4.0%
Energex (QLD)	9	9	1.141	1.156	-1.3%
Ausgrid (NSW)	10↑	13	1.055	0.966	8.9%
AusNet Services (VIC)	11↓	10	1.038	1.049	-1.0%
TasNetworks (TAS)	12	12	1.037	1.021	1.6%
Evoenergy (ACT)	13↓	11	1.008	1.033	-2.4%

Source: AER's Annual Benchmarking Report for distribution, 2023; Quantonomics' Economic Benchmarking Results, 2023.

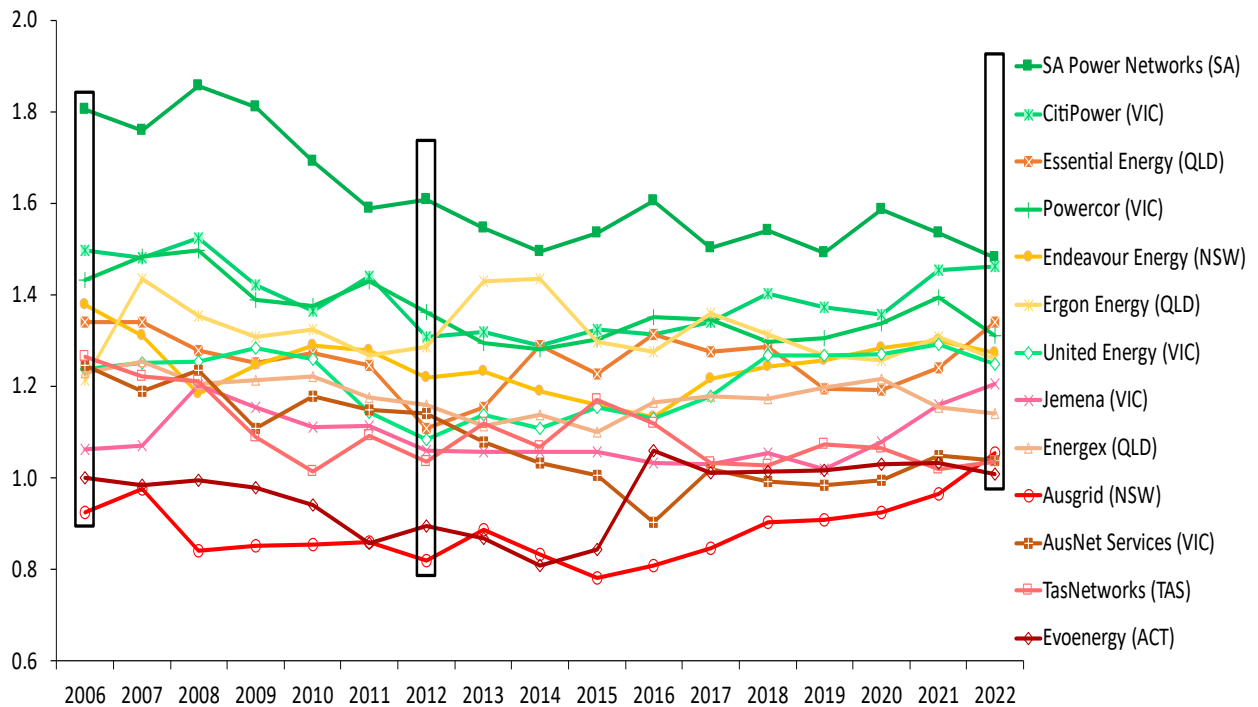
Note: All scores are calibrated relative to the 2006 Evoenergy score which is set equal to one.

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

Key points from Figure 3

- Since 2006 there has been convergence in the productivity levels of distribution networks as measured by MTFP, shown using the three equal-sized, black-bordered columns placed in 2006, 2012 and 2022.
- The least productive distribution networks have improved their performance since 2012.
- Several middle-ranked networks have improved their relative MTFP performance to be closer to the top-ranked businesses.
- The top-ranked networks have experienced a gradual overall decline in productivity for most of the period since 2006.

Figure 3 below shows changes in relative productivity levels (MTFP) of the 13 distribution networks from 2006 to 2022.



Source: AER's Annual Benchmarking Report for transmission, 2023.

Future development of our distribution productivity benchmarking

We continue to undertake work to refine our productivity benchmarking. Key priorities include:

- Reviewing the weights applied to current outputs in our MTFP benchmarking and refining the implementation of our preferred approach to address differences in capitalisation of costs between distribution businesses.
- Examining options to improve the performance of our econometric models.
- Reflecting the increasing consumer energy resources investment, collecting additional data related to export services ahead of a future review into the impacts of export services on benchmarking by 2027.
- Incremental improvements, including in relation to operating environment factors.

Further information on our benchmarking development program can be found in section 8 of the distribution report [here](#).

© Commonwealth of Australia 2023

This work is copyright. In addition to any use permitted under the *Copyright Act 1968* all material contained within this work is provided under a Creative Commons Attributions 3.0 Australia licence with the exception of:

- the Commonwealth Coat of Arms
- the ACCC and AER logos
- any illustration diagram, photograph or graphic over which the Australian Competition and Consumer Commission does not hold copyright but which may be part of or contained within this publication.

The details of the relevant licence conditions are available on the Creative Commons website as is the full legal code for the CC BY 3.0 AU licence.

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601
Tel: 1300 585 165