

AER's annual productivity benchmarking

What is electricity transmission productivity benchmarking?

Key points

- Each year the AER is required under the National Electricity Rules to measure the productivity of the electricity transmission industry and the 5 transmission 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 transmission network productivity, we compare the quantity of inputs the networks use to transport electricity from generators to distribution networks with the quantity of outputs the networks provide. The inputs are the amount of transformers, overhead and underground lines and operating expenditure, while the outputs reflect the amount of reliable electricity transported to electricity consumers.

We measure transmission network productivity in three main ways:

- **Total factor productivity (TFP)**, which we use to understand if the transmission 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 transmission business is more or less productive over time and compared to other transmission businesses.
- **Partial performance indicators (PPIs)**, which we use to understand whether a transmission business uses one particular input more or less productively over time and compared to other transmission businesses.

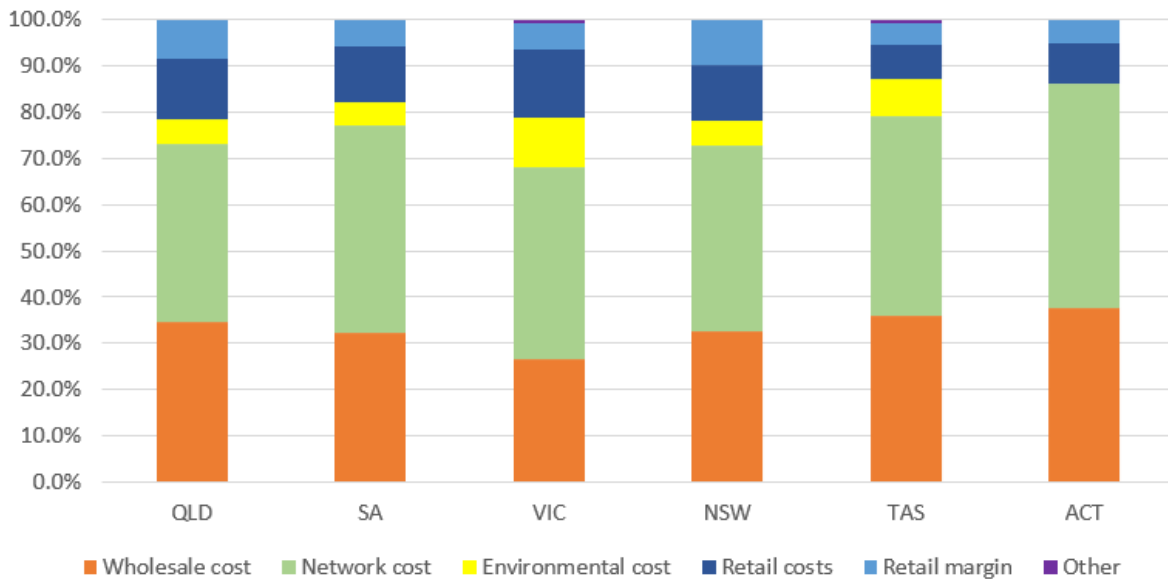
More information on our productivity benchmarking and how we use it can be found in sections 1 and 2 of the transmission report.

Why does the AER measure electricity network productivity?

Key points

- The costs of operating the transmission and distribution 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 shown as 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 residential 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 2022–23*, 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 government policy makers with information about the impacts of regulation on network costs, productivity and electricity prices.

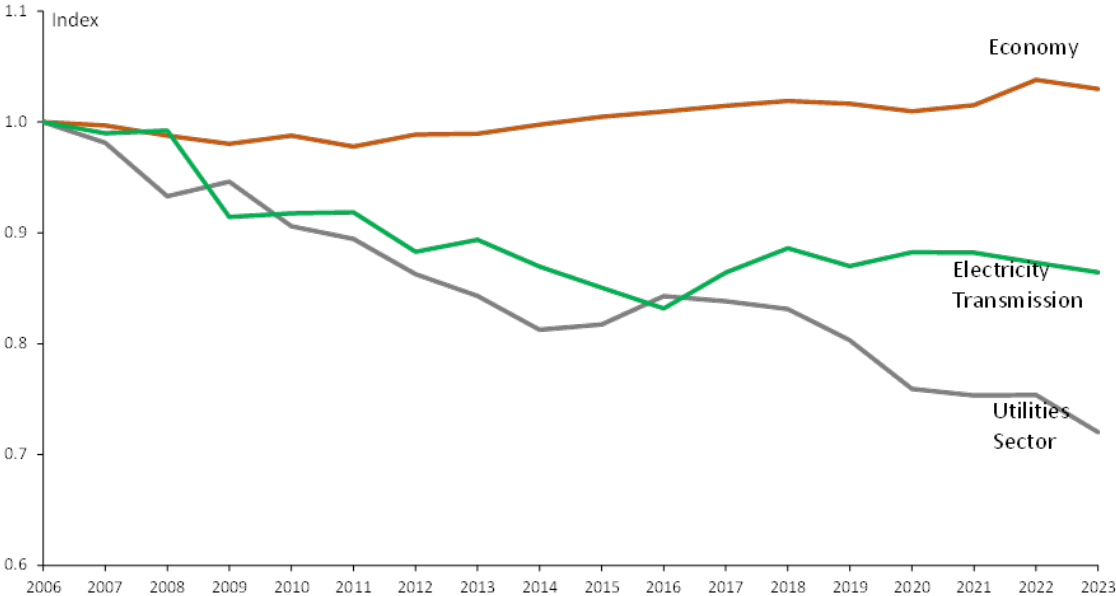
This year we used the benchmarking results to assist in informing our final revenue decision for TasNetworks (transmission), including assessment of the efficiency of its operating expenditure in its base year. We take the suite of benchmarking results into account but do not solely rely on them in forming a view on inefficiency, which reflects the maturity of the benchmarking and sample size.

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

Key points

- From 2006–16, productivity of the electricity transmission industry declined on average by 1.8% per year. This was largely driven by growth in capital inputs.
- This declining trend was followed by improvement in transmission industry productivity between 2016 and 2018 (an average annual rate of 3.2%). Reductions in the operating expenditure input, and lower growth in the capital input relative to earlier years, were the key drivers.
- From 2018-2023, the productivity of the electricity transmission industry has broadly stabilised, largely due to a plateau in capital productivity during this period.
- From 2006-23, the overall performance of the electricity transmission industry was 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 transmission industry decreased by 1.0%. This was primarily due to an increase in operating expenditure and higher transformer inputs. Productivity decline was also evident for the utilities sector and the economy as a whole, which saw declines of 4.6% and 0.8%, respectively.

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



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

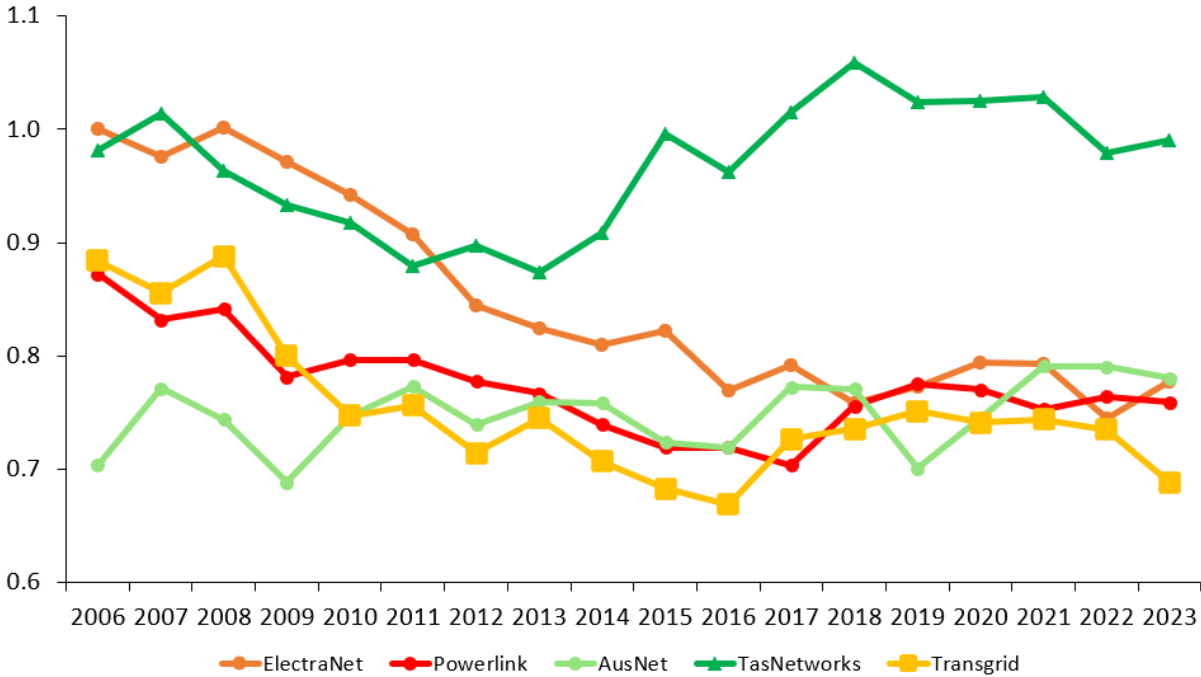
¹ We refer to regulatory years in this fact sheet and the associated report. For example, for simplicity we use 2023 for 2022–23 which is April-March for AusNet and July-June for all other transmission networks.

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

Key points

- Over the 2006–23 period, there has been a general clustering of the relative productivity of 4 transmission networks below TasNetworks. Of these 4 networks, AusNet experienced improving MTFP over time while Powerlink, Transgrid experienced declining MTFP.
- TasNetworks’ relative productivity declined from 2006, but then trended upwards from 2013 to be the highest ranked transmission network, consistently ranking first as measured by MTFP since 2012.
- AusNet’s relative productivity has fluctuated over time, with rankings of between third and fifth, but it has trended up since 2019 to be ranked second in 2023.
- The relative productivity of Powerlink, Transgrid and ElectraNet has generally fallen over time and is significantly lower in 2023 for each network than it was in 2006.
- Powerlink and ElectraNet’s relative productivity remained stable from the 2018 to 2023, with MTFP scores being in the middle range relative to other networks.
- Transgrid’s relative productivity showed an upward trend from 2017 to 2022, which elevated its productivity to similar levels of other networks. This reversed in 2023 driven by lower reliability and an increase in operating expenditure.

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



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

Which transmission networks were more and less productive in 2023?

Key points

- TasNetworks maintained its first place ranking in 2023 as the most productive transmission network, with an improvement in its relative productivity (MTFP). This was driven by a change in capital inputs, particularly a lower number of overhead line and underground cable inputs.
- ElectraNet’s MTFP ranking improved from fourth to third, overtaking Powerlink in 2023. This was mainly due to higher outputs, namely increased circuit length in ElectraNet’s network, and improved reliability relative to last year.
- AusNet and Transgrid maintained their rankings of second and fifth, respectively, but had decreases in productivity in 2023 as measured by MTFP. This reflected increased capital inputs for both transmission networks and increased operating expenditure input for Transgrid.
- Our transmission benchmarking accounts for some but not all possible 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 shows transmission networks ranked from most to least productive based on 2023 productivity scores (MTFP), their 2022 scores and the % change from 2022.

	Rank (2023)	Rank (2022)	MTFP Score (2023)	MTFP Score (2022)	Change between 2022 and 2023
TasNetworks	1	1	0.99	0.98	1.1%
AusNet	2	2	0.78	0.79	-1.3%
ElectraNet	3↑	4	0.78	0.74	4.3%
Powerlink	4↓	3	0.76	0.76	-0.6%
TransGrid	5	5	0.69	0.73	-6.5%

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

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