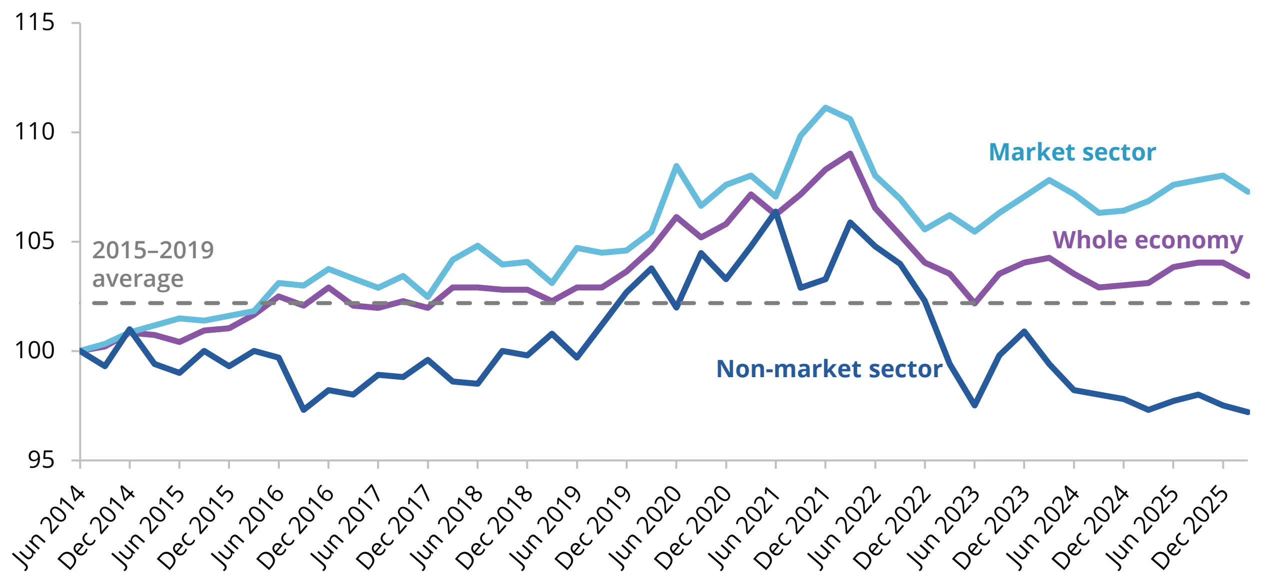
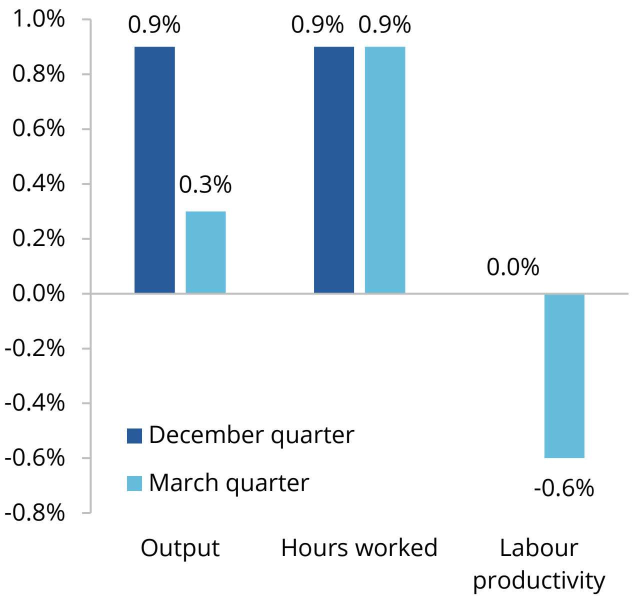
Australian Government
Productivity Commission

Quarterly productivity bulletin – June 2026

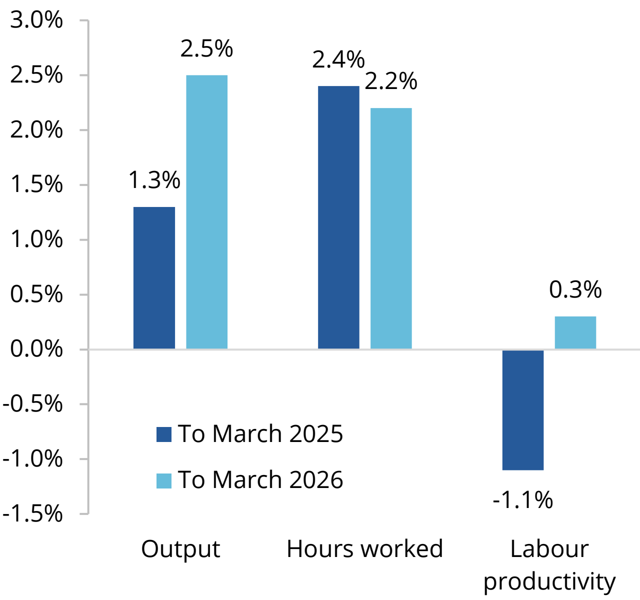
Labour productivity (index, June 2014 = 100)



Quarterly change in labour productivity



Annual change in labour productivity



The 2015–2019 average is the productivity growth prior to the COVID-19 pandemic. It shows us our productivity jumped around during the pandemic but ultimately landed at this level in June 2023.

Source: ABS (2026) *Australian National Accounts: National Income, Expenditure and Product*, March 2026.

Update from Alex Robson
Deputy Chair, Productivity Commission

Australia's labour productivity growth is going from bad to worse.

Labour productivity fell by 0.6% in the March quarter and over the year to March has grown by only 0.3%. Growth in hours worked remains strong (0.9% increase over the quarter, 2.2% increase over the year). The accounting is straightforward: the value of goods and services we produce is increasing, but not by as much as hours worked. In aggregate, we are working harder and longer, but we are not working smarter.

The results are particularly concerning in the market sector – labour productivity fell by 0.7% in the quarter, and only grew by 0.4% in the year to March. Non-market sector labour productivity fell by 0.3% in the March quarter, and by 0.1% over the year to March.

Australia's labour productivity appears stuck at the levels we settled into after the COVID-19 pandemic. We are now 0.1% below where we were in March 2023, when the 'productivity bubble' we saw during the pandemic burst.

A productive economy needs reliable and affordable energy. In this Bulletin's feature article, we take a closer look at productivity in the electricity industry.

There has been significant investment over the past 20 years to replace coal assets reaching end of life. While this investment was clearly necessary, it has seen measured productivity fall significantly as there is a lag between when new energy assets are built and when they start producing at full capacity.

Further, some of the benefits of these investments, like improved network quality and lower emissions, are not picked up in conventional measures of productivity.

This isn't to say that governments cannot do more to help ensure this transformation evolves in the most productive way possible. Australia should continue to identify and act on opportunities to improve productivity through the most efficient and cost-effective investments. We draw on our recent inquiry report – *Investing in cheaper, cleaner energy and the net zero transformation* – to emphasise the need for an integrated suite of policies, working in concert, to improve productivity in the electricity sector and minimise costs for consumers.

Electricity industry productivity: what the numbers miss and how to improve them

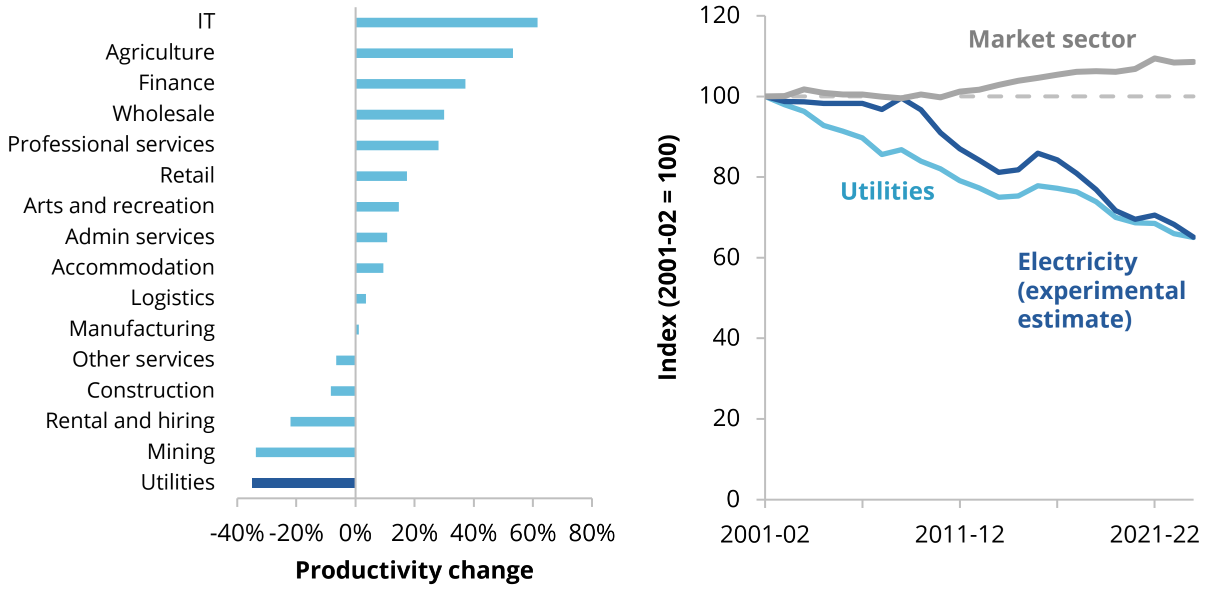
By PC staff writers

The electricity sector is undergoing a massive transformation. Improvements, such as replacing ageing infrastructure, improving the reliability of electricity production or investing in lower emission technology, are being made to reliably meet current and future demand and help Australia meet its emissions reduction targets.

Our capacity to produce electricity efficiently is critical to our overall productivity. But productivity growth in the utilities industry, of which the electricity sector is a part, has been poor (figure 1; AER 2025a, 2025b). In fact, from 2000–01 to 2023–24, the utilities industry was the worst performing industry in Australia (figure 1a). The electricity sector itself did not fare much better.[1]

Figure 1 – Multifactor productivity growth in the electricity industry has been poor

Multifactor productivity growth between 2001–02 and 2023–24



Appendix A.2 includes details on the method used to estimate electricity sector productivity.

Source: PC calculations based on ABS (2026a, 2026b)

To some extent, this decline in productivity was foreseeable. Australia needed to invest in the electricity sector to reliably meet future demand, which is likely to have reduced measured productivity in the short term. We also have to look at the bigger picture – when we account for the benefits of a higher quality electricity system and lower emissions, the productivity trend is not as bad as it first looks.

However, governments can still do more to help ensure we continue this transformation as productively as possible. A disciplined policy focus will help to ensure investment flows to the least-cost energy systems and most efficient means of reducing emissions.

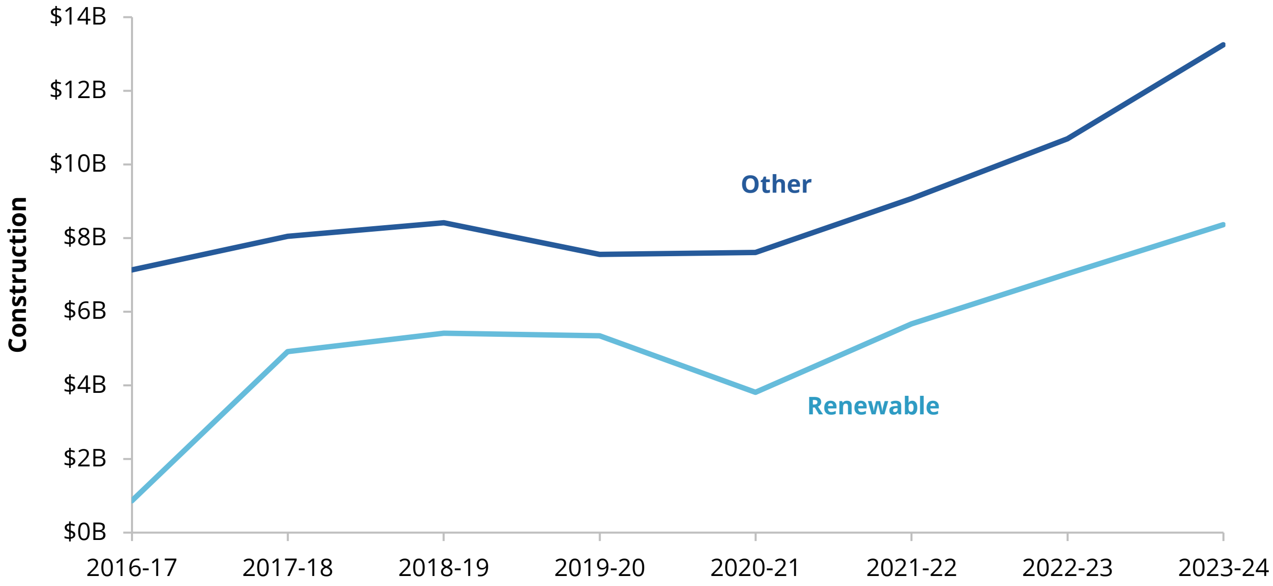
[1] The electricity industry involves electricity generation (including rooftop solar; ABS 2025b), long-distance transmission, the distribution of electricity to end-users and on-selling and market operation activities. The construction of new generation or transmission lines is captured as output in the construction industry. The utilities industry covers electricity, gas, water and waste management services. Electricity accounts for 57% of value added within utilities (PC calculations based on ABS 2025a, table 5).

Investment in the system makes measured productivity look worse

The electricity sector is capital-intensive. In other words, it relies heavily on physical infrastructure to deliver electricity to households and businesses. The PC estimates that in 2024, the system required about $10 of capital for every $1 of output (this compares to the economy-wide average of just over $2 for every $1 of output). And today's electricity sector looks very different to the one of 20 years ago. Significant investments have been made in both generation and transmission and distribution – over $20 billion in construction costs in 2023–24, and over $113 billion since 2016–17 (figure 2).

Figure 2 – There has been significant investment in the electricity grid

Energy related construction, 2016–17 to 2023–24



Source: PC calculations based on ABS (2024).

The system transformation is taking place for three reasons. We needed to replace ageing coal assets, we have improved the quality and reliability of the system, and we have begun transitioning towards cleaner energy.

First, investment in replacing ageing assets is critical to continue to meet our electricity needs. However, this investment contributes to poor productivity growth in the official statistics. The electricity sector's experience has been similar to the 'investment phase' of a mining boom – measured productivity falls while companies are building new mines (increasing inputs) that they cannot yet use (keeping output the same). Productivity then rises as the mining boom moves into its 'production phase' and the new mines start producing output.

In the electricity sector, the decline in measured productivity is happening because investment in the sector tends to be lumpy, large and take many years to complete. Significant investment is being made now, which will provide energy services for years into the future. But new assets – new generators and an upgraded transmission and distribution network – are not yet fully utilised. Partly, this is because they are still under construction, and partly because they need to be built *before* existing facilities can be retired or closed. The upshot is that a decline in productivity, as traditionally measured, is not unexpected.

Second, we have invested in addressing outage risks and safety issues, particularly as usage has increased. We have also invested in modernising the grid (through initiatives such as the smart meter rollout in Victoria) and in our ability to move power reliably between regions, through projects such as the Heywood interconnector upgrade. And that transformation is not yet complete.

Finally, considerable investment has gone into variable renewable energy (VRE) sources – approximately 37% of investment since 2017–18 has been in new renewable generation and storage (figure 2).

A system based on renewable energy is fundamentally different from one based on coal. Renewable energy is even more capital intensive than the assets being replaced, but with subsequent output requiring zero fuel costs and lower labour input. On the other hand, output from VRE sources fluctuates with weather conditions, and those fluctuations tend to be correlated geographically. This means VRE sources have lower capacity factors (actual generation relative to their maximum possible generation). For example, in CSIRO's latest GenCost modelling, it is assumed that large-scale solar PV has a capacity factor of 19% under its low-cost scenario, whereas new black coal is assumed to have a capacity factor of 89% (Graham and Hayward 2025, p. 73). The system also contains a significant volume of rooftop solar PV, which contributes to more variable grid demand. Investment in storage – batteries, pumped hydro and other technologies – works to smooth out variation in supply and demand. In contrast with traditional generation technologies, VRE sources also tend to be more spread out geographically.

The CSIRO has found that renewables are among the lowest-cost generation technologies, even after accounting for complementary storage, firming and network costs (Graham and Hayward 2025). Simshauser and Gilmore (2026, p. 1) have argued that if investment in the NEM had been restricted to coal- and gas-fired generation over the past two decades, wholesale prices would have been higher today. And looking ahead, Graham and Hayward (2025, p. x) argue that a combination of solar PV, onshore wind, storage and either natural gas or hydrogen represents the basis for a least-cost generation mix for Australia.

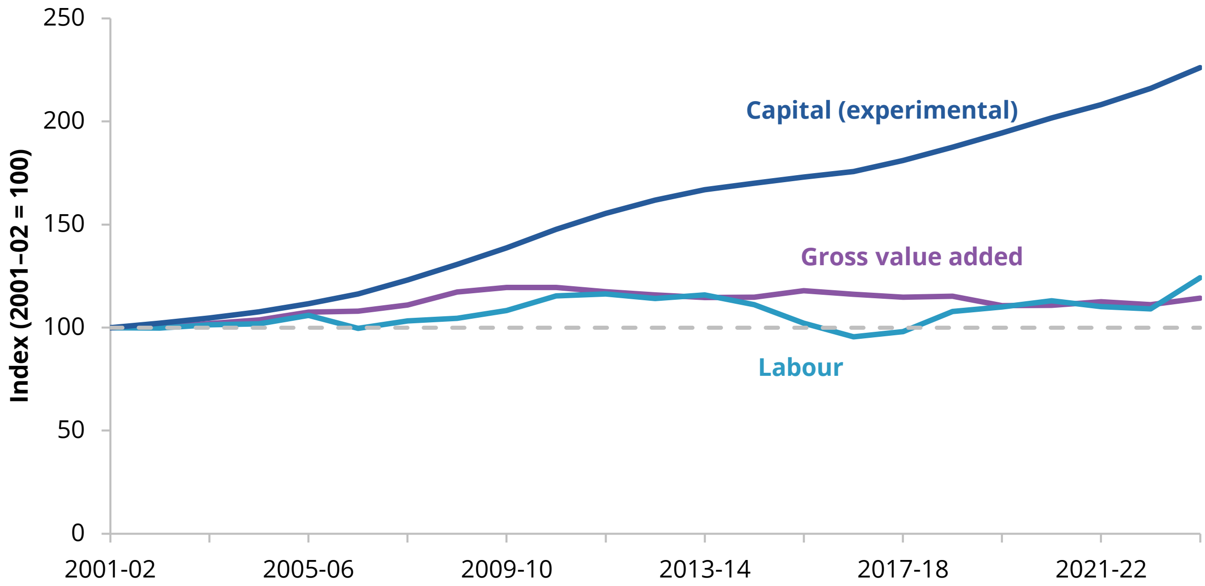
The result of all this investment is an energy system with more generation capacity and new types of generation like grid-scale solar and wind farms. Upgrades to transmission and distribution lines have improved the quality, safety and reliability of the network and connected the existing network to new generator locations. It has 'two-way' capability, to deliver electricity into the grid from houses, or to receive electricity from small-scale generators, such as rooftop solar panels, and batteries to help store electricity from when it is generated until when it is needed.

But this investment has contributed to a productivity decline. Measured productivity has declined because gross value added (output) has not kept up with investment (inputs) (figure 3). Despite a 126% increase in the capital stock since 2001–02,[2] output has only increased 14% over the same period.

[2] The approach used to estimate the capital stock is discussed in appendix A.2.

Figure 3 – Investment has far outstripped gross value add

Inputs and outputs of the electricity sector, 2001–02 to 2023–24



Results are similar to those for the utilities sector.

Source: PC calculations based on ABS (2026b).

Productivity is not as bad as it appears

Accounting for quality improvements

Some electricity sector investments have focused on quality improvements. While, conceptually at least, quality improvements constitute productivity improvements, they are not captured in the ABS measures of output. This means that measured productivity can appear lower than actual productivity.

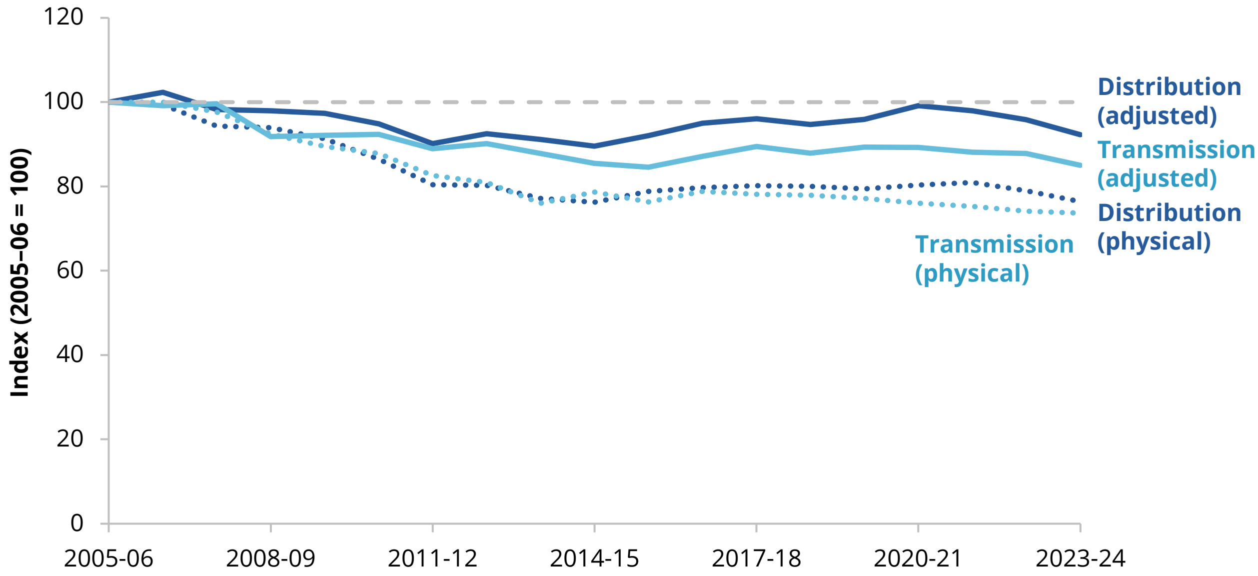
First, electricity networks can handle much higher peak demand than in the past. Investment to accommodate higher peak demand means the 'lights have stayed on' – system reliability has been maintained – but average capacity utilisation has fallen. For instance, rising use of air-conditioning in the 2000s pushed up evening demand in particular. Service quality would have fallen if network capacity had not increased commensurately. So capital growth had to grow to meet the peak demand in the evening, outstripping the increase in overall demand. More recently, self-supply from household solar installations has similarly led to an increase in the ratio of peak to average demand. The grid has faced lower demand from households with solar panels while the sun has been shining and had to be able to supply those households when the sun goes down, reducing utilisation of grid-scale assets (AER 2025a, p. 8).

Further, there have been improvements in safety. Significant investments in underground cables may have reduced car crash and bushfire risks but these benefits are not captured in any productivity measures (Topp and Kulys 2012, pp. 53–54).

While the ABS does not adjust for quality, the AER (2025a, 2025b) adjusts for at least some quality drivers (such as increases in capacity to meet peak demand and improvements in reliability), as well as other measures (such as the number of households connected to the grid and circuit length). From 2006–07 to 2023–24, adjusted productivity measures fell 8% for the distribution element of the sector and 15% for the transmission element, compared to 24% and 26% falls in the non-adjusted productivity measures (figure 4).

Figure 4 –Adjustments slow, but do not reverse, declining productivity

AER estimates of transmission and distribution productivity, 2005–06 to 2023–24



Adjusted measures are the AER's headline results that account for both energy throughput, quality factors and other factors such as number of consumers connected to the grid and circuit length. Physical productivity measures are based only on energy throughput.

Source: PC calculations based on AER (2025a, 2025b).

Accounting for emissions reductions

Emissions reductions are another quality improvement not included in the data. Measured output only considers the value of electricity produced; it doesn't consider the social benefit associated with reducing the volume of CO_2 or other pollutants emitted for every dollar of electricity produced. Looking only at CO_2 emissions, while these have declined by 30% in the electricity sector since their 2008-09 peak (PC calculations based on DCCEEW 2025), this benefit is not captured in measured productivity.

We can adjust the official productivity estimate to provide a sense of the quality improvements associated with these emissions reductions. Electricity sector output can be reduced to account for the negative externality associated with CO_2 emissions. The PC estimates that after accounting for these emissions reductions, applying a target consistent carbon value of $67[3], productivity has fallen by 23% rather than 32% between 2001–02 and 2022–23 (this is *without* the AER adjustments described above) (appendix A.3).

Policy implications

A closer look at the numbers shows that productivity in the electricity sector has dipped largely due to long-term investments that we expect to pay off over time. What's more, when accounting for improvements to quality and emissions reduction, productivity in the sector has not been as bad as it first appears.

However, we still have an opportunity to improve productivity through more efficient and cost-effective investments.

[3] This aligns with Treasury's marginal abatement incentive estimate of $67 per ton between 2025 and 2030 (The Treasury 2025).

First, policies to support new clean energy generation should be designed to achieve national energy and climate objectives at least cost. There would be general benefits from moving to more market-based signals for the provision of energy services such as the bulk supply of energy and for assets to provide firming and reliability services. The Energy and Climate Ministerial Council is working on mechanisms in the NEM to ensure efficient market arrangements have a greater role in these investment decisions (ECMC 2026). In addition, targets for specific emissions reduction technologies can increase costs. Moving to technology-neutral renewable energy incentives could reduce the costs of meeting current state targets for renewable penetration in the NEM by 4% over the period 2026 to 2040 (PC 2025, p. 15).

Procurement based on state-level renewables targets are also likely to raise costs and should be phased out. Different jurisdictions have different degrees of comparative advantage in renewable energy – policy settings should ensure investment flows to the most cost-effective locations. Coupling technology-neutral renewable energy incentives with federal rather than state-specific targets could achieve rates of renewable penetration consistent with current state targets at 8% less total cost over the period 2026 to 2040 (PC 2025, p. 15).

Second, market and regulatory arrangements should also seek to optimise grid investment and usage, including encouraging non-network solutions (for example, encouraging consumers to shift when they do power-hungry tasks like electric vehicle charging to non-peak periods), where this is efficient.

Third, productive investments in energy infrastructure need to be made in a timely manner. Development of energy infrastructure is taking too long – faster approvals would bring significant benefits. A one-year acceleration for new wind farms and key transmission could cut electricity bills by 7% over a decade (PC 2025, p. 37).

Recent changes to the *Environment Protection and Biodiversity Conservation Act 1999 Act* (Cth) – including to introduce national standards, facilitate regional planning, provide more information about the environment and improve offsetting arrangements – are essential to speeding up approvals (PC 2025, p. 37). Administrative changes could build on these reforms. Regulatory and facilitation resources should be focused on projects that are most important to the energy transition. The Australian Government has a list of priority projects, but the projects need to be assessed faster, and prioritisation of approval resources and major project facilitation could also reduce roadblocks (PC 2025, p. 37).

- A strike team should be formed to assess priority clean energy projects under. The team should be adequately resourced and have a strong clean energy capability.
- An independent person with strategic oversight should be appointed – an Australian Government Coordinator-General – to work across governments and with industry to keep approvals on track and break through roadblocks.

Finally, policies should be aligned to an efficient emissions reductions pathway. Over time, governments should calibrate policy settings so that all policies' costs of achieving emissions reduction are broadly aligned with national target-consistent carbon values – estimates of the implied carbon prices needed to meet Australia's emissions targets (PC 2025, p. 35). Additionally, clarity within the electricity sector is needed on the emissions policy for firming technologies (PC 2025, p. 14).

We need an integrated suite of policies, working in concert, to improve productivity in the electricity sector and minimise costs for consumers.

Appendix A: technical appendix

A.1 The available measures of multifactor productivity

Three different measures of multifactor productivity for electricity are available: the ABS's measures of multifactor productivity (capital and labour productivity) for utilities, the PC's estimates of multifactor productivity (capital and labour) productivity for electricity supply and the AER's estimates of multifactor (capital and operational expenditure) productivity for electricity transmission and distribution.

In general, the measures are comparable. Where results align, they are likely an indication of underlying trends. However, there are some differences in results – likely due to differences in the construction of the measure – meaning the results should be interpreted with caution. The key differences between the measures are summarised in table A.1.

Table A.1 – Key differences between productivity measures

	Utilities	Electricity	Transmission and distribution
Author	**ABS**	**PC**	**AER**
Underlying data	National accounts	National accounts and other ABS sources	Data reported to the AER
Inputs	Labour hours and real capital services	Labour hours and real capital stock	Real capital stock and operational expenditure
Output	Gross value added	Gross value added	Multilateral index (energy throughput, consumers, circuit length, reliability, peak demand)
Coverage	Australia	Australia	National electricity market (excludes WA and NT)

Source: ABS (2026a), Quantonomics (2025).

A.2 Estimating multifactor productivity for the electricity sector

Multifactor productivity can be calculated using output, labour, capital and the labour share of income (equation 1).

$$\text{Multifactor productivity} = \frac{\text{Output}}{\text{Labour}^{\text{Labour share of income}} \times \text{Capital}^{1-\text{Labour share of income}}} \qquad (1)$$

For the utilities sector (which includes electricity, gas, water and waste services), the ABS publishes data for each of these variables and estimates productivity.

As the ABS does not publish comprehensive data for the electricity sector, the PC's estimates of electricity sector productivity rely on both published and unpublished data.

- Output data (real gross value added) is available from the ABS National Accounts, table 5.
- Labour data (hours worked) is available from the ABS Labour Account.
- Capital stock estimates are based on BLADE and TableBuilder Business Activity Statement data and capital stock estimates for the utilities sector.
- The labour share of income is available from BLADE and TableBuilder Business Activity Statement data.

Specifically, capital stock estimates are based on a perpetual inventory method (equation 2), with data apportioned from the utilities sector using the Business Activity Survey in TableBuilder.

$$\text{Capital stock}_{\text{Year } t} = (1 - \text{Depreciation rate})\text{Capital stock}_{\text{Year } t-1} + \text{Gross fixed capital formation}_{\text{Year } t} \quad (2)$$

The depreciation rate used was the average depreciation rate for the utilities sector from 2001–02 to 2023–24. Electricity sector gross fixed capital formation was estimated using utilities' gross fixed capital formation, apportioned to the electricity sector using the share of nominal capital purchases made by the electricity sector in that year (using the Business Activity Survey). The initial capital stock was the initial capital stock in the utilities sector, apportioned using the average share of nominal capital purchases made by the electricity sector (using the Business Activity Survey).

Ultimately, this approach is likely to be illustrative but not precise. Total capital purchases for the utilities sector in the Business Activity Survey are lower than total capital purchases in the national accounts so some data may be missing (for example, rooftop solar is not covered in the Business Activity Survey). Nonetheless, the fact that electricity capital purchases are consistently around 50% to 60% of utilities sector capital purchases implies that capital trends are likely quite similar between the electricity and utilities sectors.

A.3 Estimating emissions-adjusted productivity

Productivity measures can be adjusted for emissions reductions using the ratio of the costs imposed by those emissions to sectoral output (equation 3; De Ridder and Rachel 2025, p. 8). For example, if a sector produces $200 of value added (after accounting for intermediate expenses), but creates $60 of environmental harm via emissions, then emissions adjusted output would be $60 (or 30%) lower than non-emissions adjusted output. As inputs remain unchanged, productivity would therefore be 30% lower.

$$\text{Emissions adjusted productivity} = \text{productivity} \times \left(1 - \frac{\text{emissions} \times \text{social cost of carbon}}{\text{output}}\right) \quad (3)$$

We apply a target consistent carbon value of $67[4] (2023-24 value from Infrastructure Australia 2024) rather than a social cost of carbon. This measure analyses how productivity trends differ when costing emissions at the price that abatement may have cost in other areas of the economy.

[4] Technically, the marginal cost of abatement rises over time so the average value over the period we investigate may be below $67. Nonetheless, given the series we draw on starts in 2023-24 we simplify by using this value.

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