

VEPC Working Paper 2610: Non-technical summary

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Australia should return responsibility for the economic regulation of electricity distribution to participating states and territories. The case is that the economic circumstances of distribution networks are becoming more varied, their future investment requirements more uncertain, and the information required to regulate them more specific to each network. Centralised regulation has not delivered the economic benefits claimed for it, while the value of decentralised judgment, experimentation and accountability has increased.

The National Electricity Market (NEM) does not require one institution to determine the revenues of every local electricity distributor. Wholesale electricity trading and interstate transmission require national coordination because decisions in one region affect others. Distribution networks, by contrast, are geographically fixed monopolies. Their investments predominantly serve identifiable communities and respond to particular local demands, constraints and government policies. Common market rules and comparable information remain valuable, but neither requires a central regulator.

The paper makes this argument by reconstructing the political settlement that produced the Australian Energy Regulator (AER), examining the experience of network investment and productivity since regulation was transferred to it, and considering the profound changes now occurring in electricity supply and demand. The conclusion is not to weaken economic regulation but to make it more accountable and better able to adapt to the circumstances of individual networks.

Centralisation was a political settlement, not an economic necessity

When the NEM began, the wholesale market operated nationally, transmission access was regulated nationally and state regulators determined distribution revenues. In the early 2000s the Commonwealth sought a single national energy regulator, arguing that multiple regulators created inconsistency, duplication and uncertainty. The 2002 Parer Review supported that position. Some of the concerns were genuine, particularly for electricity retailers operating across state borders and for governments that both owned and regulated electricity businesses.

But these concerns did not establish a convincing case for centralising the regulation of distribution monopolies. A distributor cannot shift its poles and wires to another state to avoid a regulatory decision. The benefits of harmonised reporting, technical standards and specialist analysis can be secured without transferring every local revenue determination to the same institution. The economic modelling behind the original reform did not isolate the benefits of transferring distribution regulation from the states to a national regulator.

The resulting arrangements reflected negotiations between governments. The Commonwealth obtained the AER within its competition-regulation framework. Detailed economic rules were assigned to a separate Australian Energy Market Commission (AEMC), established under South Australian law. States surrendered direct responsibility for revenue determinations but retained ownership of many networks, control over reliability and planning requirements, and control of the institution that designed regulation (the AEMC). Australia centralised the approval of network revenues without centralising the powers and incentives that drive many network expenditures. That divided responsibility and consequential undermining of transparency and so accountability is a central weakness of the settlement.

What the subsequent record shows

The consequences of centralisation and divided responsibility became evident during the major network investment expansion from the mid-2000s. Governments, particularly in New South Wales and Queensland, imposed more demanding reliability and planning requirements, while distributors and regulators anticipated strong growth in electricity demand. When demand fell short of expectations, significant amounts of investment appeared unnecessary in retrospect. The Productivity Commission criticised politically influenced reliability standards and identified network costs as a major contributor to higher electricity prices.

The institutional division helped obscure responsibility. State governments could impose costly standards and receive returns from government-owned networks, while the AER determined the revenues needed to finance compliance. Governments could point to the independent national regulator when customers questioned prices; the AER could point to state obligations it was required to take as given. The problem was especially acute where state governments owned the distributors. Regulating government-owned businesses using private-sector financing assumptions could allow returns in excess of their actual financing costs, strengthening incentives to expand the regulated asset base. National revenue regulation did not remove these interests or the states' powers to influence network spending.

The paper's quantitative evidence provides a further test of centralisation. Using the final pre-AER observation for each jurisdiction as a matched transfer benchmark, the real regulated asset base of NEM distributors increased by approximately 52 per cent to 2025, while customer numbers increased by approximately 20 per cent. Real regulated assets per customer consequently rose by approximately 27 per cent, from about \$7,000 to \$8,868. Whatever the reasons for individual investments, the industry has not achieved an aggregate economy in regulated capital employed per customer.

A comparison across five states adds an important qualification to the claim that national regulation improved investment discipline. Annual growth in total real regulated assets averaged 5.0 per cent under the former state regulators and 2.8 per cent under the AER. But once growth in demand is considered, the picture changes: annual growth in real regulated assets per MWh delivered was 2.4 per cent under state regulation and 3.2 per cent under the AER. The calculations are indicative and cover different historical periods. They do not explain causality but they find that the expected improvement in aggregate productivity, and particularly capital productivity, is absent from the observed record.

The AER's own benchmarking reinforces this result. Its consistently recalculated series shows distribution-industry total factor productivity falling by an average of 0.5 per cent annually over 2006–24, with a persistent decline in capital productivity even where operating-cost productivity improved. Nor does the paper find any reduction in regulatory staffing attributable to centralisation. The claimed economies from concentrating distribution regulation in one institution are therefore not readily visible, either in the use of network capital or in administrative resources.

Why local regulation is becoming more valuable

The argument for decentralisation is stronger today than when the original jurisdictional system existed. In the early 2000s, distribution networks primarily delivered electricity generated at large power stations to customers whose use was relatively predictable. Today millions of customers generate electricity through rooftop solar, and growing numbers use batteries, electric vehicles and other flexible technologies. Almost three in ten distribution customers used export services in the 2025 regulatory year. Network requirements increasingly depend on the location and behaviour of individual customers, the availability of spare capacity on particular feeders and substations, and the way local constraints are managed.

At the same time, prospective electricity demand is becoming both more uncertain and more geographically concentrated. Data centres illustrate the scale of the change. The Australian Energy Market Operator's 2026 forecast suggests NEM data-centre consumption could rise from approximately 5 TWh in 2025–26 to 34 TWh by 2035–36. But proposals for new data centres are not equivalent to firm electricity demand: projects may compete for alternative sites, be delayed, connect in stages or never proceed. Their impact depends on exactly where they locate and whether they connect to distribution or transmission.

The distinction is especially striking around Sydney. Ausgrid received enquiries and applications representing more than 10 GW of prospective data-centre capacity, yet forecasts more than 2 GW of connected data-centre load by 2040. Transgrid reported about 20 GW of enquiries for large electrical loads in Western Sydney, compared with approximately 1.5 GW under signed data-centre connection agreements. These figures are not directly comparable measures of demand and should not be added together. They reveal, however, the extraordinary distance between speculative interest and sufficiently committed projects.

Nor are these uncertainties evenly distributed across the NEM. A Sydney or Melbourne network accommodating prospective hyperscale data centres confronts different investment decisions from a network facing modest demand growth, or one exposed to a particular industrial development. Even neighbouring substations can face very different risks. Investment undertaken too early may leave customers financing underutilised assets for decades; investment undertaken too late may prevent a credible project from proceeding. The right response depends on the probability of particular developments, local capacity, the scope for staged augmentation and the financial commitments required from prospective customers.

These developments increase the economic value of decentralised regulation. Regulators with closer responsibility for the affected networks, customers and jurisdictional policies are better placed to test competing investment proposals, make the costs of local planning choices visible and adapt regulatory treatment to the risks faced by individual distributors. A single national forecast cannot settle these questions; nor should a uniform national regulatory method suppress the differences between networks. Centralisation puts more distance between decision-making and precisely the local information that is becoming more important.

Decentralised regulation also creates opportunities to discover better approaches. Separate regulators can test different methods of connection charging, investment staging, flexible demand procurement and risk allocation at the same time. With common data and public benchmarking, the results can be compared and successful approaches copied. Uniform national regulation can spread one mistaken approach across every network; jurisdictional variation permits errors to be identified and corrected through comparison. As uncertainty grows, this capacity for institutional learning becomes a substantial economic advantage, not merely a philosophical preference.

This does not weaken the case for coordinated transmission planning. Large data-centre loads can create upstream constraints that affect wider electricity systems, and major interstate transmission investments have effects well beyond any one network. Such spillovers justify wider decision-making. The stronger case for decentralised distribution regulation and the continuing case for national transmission coordination follow from the same economic principle: responsibility should reflect where the relevant information lies and where costs and benefits fall.

International experience and a workable reform

International practice reinforces the argument. The United States, India, Canada and Argentina combine electricity-market integration or extensive interstate trade with predominantly state or provincial distribution regulation. Germany combines common methodology with both federal and regional implementation. Brazil is a notable federal-regulation counterexample, but its electricity responsibilities have a different constitutional history. These examples show that national market integration does not depend on a single national distributor regulator. Australia's additional separation between the AEMC as detailed rule-maker and the AER as regulator is also an unusual institutional choice rather than a necessary ingredient of effective regulation.

The practical reform is to return formal responsibility for distribution economic regulation to participating jurisdictions, while preserving common regulatory accounts, service definitions, data standards and benchmarking. Each jurisdiction could use its independent state regulator, share specialist resources with others, or contract with the AER and pay transparently for that service. Shared analysis would preserve economies of expertise without imposing uniformity in regulatory decisions. Detailed national rules should remain where national market benefits can be demonstrated, not simply because they have become entrenched.

Government ownership does not defeat this proposal. It makes transparency and independent regulation more important. Jurisdictional regulators should identify the costs of government-imposed reliability and planning requirements, publish their assessment of efficient expenditure and disclose material ownership-related financing incentives. Bringing responsibility for local policy and its regulatory consequences into the same jurisdiction makes it harder for governments and regulators to attribute costly decisions to one another. The objective is greater public accountability, not ministerial control of price determinations.

Conclusion

The original centralisation of electricity distribution regulation was a negotiated institutional compromise whose economic advantages were never convincingly established. Two decades of experience have not demonstrated the promised productivity or administrative dividend. The subsequent transformation of electricity distribution makes the case for a single national regulator weaker still: network investment needs are increasingly local, diverse and uncertain, and regulatory success increasingly depends on the use of dispersed knowledge and the ability to learn from different approaches.

Australia should therefore re-decentralise distribution economic regulation. Doing so would restore clearer responsibility for state policies and network costs, enable regulatory approaches to respond to the different risks facing individual distributors, and create opportunities for comparison and discovery. National wholesale-market institutions, transmission coordination and common benchmarking should be retained. What should end is the presumption that national consistency requires one national authority to decide how every geographically local distribution monopoly is regulated.