

Appendix B: Managing uncertainty through the energy transition

Revised regulatory proposal for the
Evoenergy electricity distribution
determination 2024 to 2029

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1. Energy transition creates unprecedented demand uncertainty

Historical adjustments to the Australian regulatory framework to manage uncertainty

The Australian regulatory framework for setting the five-year expenditure and revenue allowances for electricity networks was developed during times of relative steady state. Historically, there has been reasonably consistent and predictable changes in consumer demand which predominately reflected macroeconomic factors such as population and economic conditions.

While change in consumer demand has occurred, it has tended to be more gradual and limited to the electricity sector. Nevertheless, it resulted in incremental changes both to the regulatory framework itself and how it has been applied to manage this uncertainty to protect the long-term interests of consumers.

Examples include the increasing prevalence of air-conditioning, the roll-out of energy efficiency schemes and the rapid update of photovoltaic solar panels. Each of these changes were managed by adjusting forecasting approaches and ensuring that the regulatory framework and its application remained fit-for-purpose. For instance, to manage demand uncertainty several changes were made such as moving to a revenue cap form of control, placing limits on customer exports, expenditure allowances for enabling export services and changes to demand forecasting approaches to recognise these changes. Slower more gradual reforms (such as the Power of Choice reforms) were also made.

Of course, uncertainty has not always been limited to demand. Distribution networks were required to support the introduction of feed-in tariffs and other schemes. The risk from over or under forecasting these costs created risks to both businesses and consumers (not unlike demand forecasting risk). Initially, these costs were managed through operating expenditure (opex) allowances together with the application of the existing pass-through mechanism before changes were made to the regulatory framework to introduce a dedicated jurisdictional scheme mechanism.

We are facing an unprecedented level of demand uncertainty

The Australian Capital Territory (ACT) Government's ambitious target of net zero by 2045 is backed by legislative change, government subsidies and the ACT Government's own plans to electrify its transport and building infrastructure. Already Canberrans are making choices to transition early to electric vehicles (EVs) and electrify their home to drive emissions reductions, take up latest technologies and respond promptly to strong government signals about their future energy choices.

The pace of change in the ACT is evident in the growth in EV uptake, which continues to outpace even the most optimistic forecasts, as well as the high number of peak demand days observed in the last couple of years and new peak times emerging on the network.

While there is no doubt that the energy transition is underway, there is an unprecedented level of uncertainty regarding the speed of the transition and the associated consumer behavioural responses, including:

- how quickly consumers will transition their energy sources in response to government-led emissions reduction policies and whether government policies will change to strengthen customer incentives to transition;
- where and how customers will choose to use energy through the day, and whether consumers will respond to price signals or be willing to sign up to allow their loads to be controlled;

- whether consumers will invest in and rely upon new technologies, such as EVs fast chargers, to give them flexibility in their energy use; and
- how quickly the ACT and Federal Government will electrify public infrastructure, such as schools and transport systems.

Despite consumers bearing the risk of demand outpacing investment the regulatory framework disincentives a proactive response to this risk

Evoenergy has made a conservative forecast of peak demand on the network based on inputs from independent reputable sources relating to EV uptake and charging behaviours.¹ Evoenergy's revised demand forecast does not include an adjustment to fully take into account the electrification of gas, despite recent data indicating this is already driving material increases in peak demand. Evoenergy considers our revised demand forecasts reflect a prudent and efficient forecast based on the information we have available today.

However, should consumer electricity demand outpace our conservative forecasts, there is a real risk a lag in investment would jeopardise the ability of the network to meet our rapidly growing consumer demands.

If this occurs, capacity shortages will require delays to new connections and developments (like what is occurring in West London) as well as customer curtailment or rationing until network investment catches up. Given the importance of our electricity network to the transition with the electrification of gas and transport, this will effectively act as a handbrake on the ACT's 2045 net zero ambitions.

The operational, planning and deliverability aspects of the energy transition are sufficiently challenging. Unfortunately, as we outline below, the regulatory framework – which ironically has the purpose of promoting efficient investment in the long-term interests of consumers – will impose financial penalties (in the order of 30 per cent of every dollar above our allowance) if we need to ramp up investment in response to an unforeseen increase in consumer demand.

The energy transition is increasing the importance of the electricity network to consumers and the broader community

The consequences of an investment lag increase as the energy transition is leading to greater consumer dependency on the electricity network. Consumers are converting their energy needs, which are currently diversified across electricity, gas and petrol/diesel sources, into a single reliance on electricity.

By 2045, ACT consumers will rely solely on the electricity network to meet all of their energy needs, to charge their vehicles, to cook their meals, heat their homes and showers, charge their devices and export their excess solar. This increasing dependency on the electricity network increases the social and economic consequences of network reliability. The importance of resilience of critical infrastructure, where there is no redundancy, was recently illustrated by the community's experience with the Optus outage on 8 November 2023.

¹ As discussed in Attachment 1 - Augmentation expenditure.

2. Limited regulatory mechanisms to manage demand uncertainty

The current regulatory framework has limited mechanisms to manage the kind of demand uncertainty we face

There are limited options within the current Australian regulatory framework for managing demand uncertainty. The regulatory framework is not contemporary, flexible or reflective of the degree of uncertainty created through the energy transition, particularly in the ACT.

The options available under the Australian regulatory framework, include:

- proposing a contingent project for a specific investment at a specific location to meet specific demand thresholds with a cost of greater than \$30 million (refer National Electricity Rules (the Rules) clause 6.6.A)
- reopening the capital expenditure (capex) allowance during the regulatory period should an unforeseen and uncontrollable event occur (including a demand event or series of events) which would increase the required capex to maintain a safe and reliable network by more than 5 per cent of the Regulated Asset Base (RAB) (refer the Rules clause 6.6.5)
- proposing a pass-through event for an event that is consistent with the nominated pass-through event considerations (which requires that an event be clearly identified)
- propose an amendment to the Capital Expenditure Sharing Scheme (CESS) to remove augmentation expenditure (augex).

None of these options cleanly address the real potential for the energy transition to drive rapid demand growth broadly across the entire network. Rapid demand growth broadly across the network would lead to spatially diverse demand constraints which require smaller packages of network investments to maintain reliability.

In recognition of the extent of uncertainty created by the energy transition, Ofgem, the UK energy regulator, recently introduced three new uncertainty mechanisms into its 2023–2028 regulatory determination for electricity networks, RIIO-ED2.² The new mechanisms all related to electricity demand/load uncertainty and included a combination of:

- scaling expenditure allowances to reflect the actual demand for opex, secondary reinforcement and low voltage augmentation; and
- reopener provisions for net zero policy changes and high voltage augmentation.

We recognise that any reforms to the Australian regulatory regime to address the degree of uncertainty created by the energy transition would not be implemented in sufficient time for the AER's final decision on our 2024–29 regulatory review. We therefore have worked within the current regulatory framework in developing our initial and revised regulatory proposals.

Our initial approach

To manage the uncertainty associated with the speed of the energy transition in the ACT, our initial regulatory proposal included a contingent project for a program of feeder and distribution substation works if demand for electricity materially exceeds our initial proposal forecasts that underpinned our augmentation program. Our regulatory proposal approach was strongly supported by a range of

² Ofgem (2022), 'RIIO-ED2 Final Determinations', 30 November, <https://www.ofgem.gov.uk/publications/riio-ed2-final-determinations> (accessed 21 November 2023).

stakeholders including, but not limited to, our 2024–29 reset review community panel and Energy Consumers Reference Council (ECRC).

The AER's draft decision did not accept our contingent project proposal on the basis it did not meet the requirements set out in the Rules. The Rules require networks propose specific projects in specific locations with specific triggers for investment. The Rules also require the project be demonstrably probable to occur. The AER's draft decision noted our intention to consider reframing our contingent project submission as part of our revised proposal.

Consumer engagement and options considered in developing our revised proposal

As part of development of our revised proposal we re-engaged with our ECRC and community forum on the challenges of managing the high degree of demand uncertainty associated with the speed of the energy transition. Our consumer representatives remained of the view there should be mechanisms in the regulatory framework to accommodate the uncertainty to ensure Evoenergy invests in the infrastructure required to support the energy transition and achievement of net zero emissions.³

In preparation for our revised proposal, we explored the option of proposing a contingent project for a new zone substation at Mitchell to accommodate growth in demand which could not be accommodated for by capacity at our Gold Creek or City East zone substations. However, we are concerned that this type of specific project in a specific location does not address the network-wide impacts of demand exceeding our forecasts, nor provide the flexibility to address development-driven emerging constraints on specific distribution zones during the period.

The most efficient investment solution to meet the needs of our consumers will be highly dependent on the nature of the unanticipated demand growth that occurs on our network. Broad demand growth across the network has the potential to create spatial diverse network constraints. In this case the most efficient solution may be a series of feeders works or distribution substation investments which would be of lower cost to consumers and may defer the need for investment in a new zone substation which is significantly higher cost than other solutions.

Our revised proposal is therefore not to propose a contingent project. Given the nature of the demand uncertainty, we cannot satisfy the existing criteria to nominate specific location-based investment requirements that would be the most prudent and efficient outcome for our consumers. Although the criteria are slightly different, we have for the same reasons not to propose a cost pass-through event.

We have not proposed excluding augex from the CESS. Such an approach would equate to removing 36 per cent of our revised capex forecast from the incentives-based regulatory regime. Adjusting the CESS would also only remove penalties to Evoenergy associated with overspending the regulatory allowances to undertake additional investment to meet demands. Adjusting the CESS would not address the fundamental concern of Evoenergy and our consumers that there are insufficient opportunities within the regulatory framework to address the scale of demand uncertainty associated with the energy transition underway in the ACT.

Our revised proposal relies on the reopener provisions in the Rules

Our revised proposal therefore includes no additional mechanism for managing demand uncertainty, other than reliance on the reopener provisions for capex currently contained in the Rules.

We remain concerned however that rapid and broad growth in electricity demand across the network will lead to spatially diverse network constraints and investment requirements which will not meet any

³ Refer to Appendix C - Phase 3 Engagement report and Appendix C1 - Deep Dive Panel Report.

of the available regulatory options to reopen the capex decision. We are open to further engagement with the AER on how this risk could be managed.

We note that while we can identify the risk broadly of demand materially outpacing our forecast, we cannot foresee a specific event with enough granularity to include the corresponding augmentation requirements in forecast capex (or as a contingent project or pass through event).

Our revised proposal therefore relies solely upon the existing provisions within the Rules to reopen the capex decision if unanticipated demand growth leads to additional investment requirements in excess of 5 per cent of the RAB.