QCOSS

Queensland Council of Social Service

Submission on review of Rate of Return Guideline

May 2018

About QCOSS

The Queensland Council of Social Service (QCOSS) is the state-wide peak body representing the interests of individuals experiencing or at risk of experiencing poverty and disadvantage, and organisations working in the social and community service sector.

For more than 50 years, QCOSS has been a leading force for social change to build social and economic wellbeing for all. With members across the state, QCOSS supports a strong community service sector.

QCOSS, together with our members continues to play a crucial lobbying and advocacy role in a broad number of areas including:

- place-based activities
- citizen-led policy development
- cost-of-living advocacy
- sector capacity and capability building.

QCOSS is part of the national network of Councils of Social Service lending support and gaining essential insight to national and other state issues.

QCOSS is supported by the vice-regal patronage of His Excellency the Honourable Paul de Jersey AC**,** Governor of Queensland**.**

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Context

The Australian Energy Regulator (AER) is seeking submissions on its Rate of Return Guideline (Guideline). The AER's task in setting the rate of return is to determine what a network would earn as a rate of return in a (non-monopolistic) competitive market. In this context, the Guideline attempts to set principles that generate the same returns that a network would face in a competitive market.

The Guideline sets out the approach that the AER uses to estimate the rate of return on capital for regulated energy networks (transmission and distribution). The rate of return comprises the return on debt and the return on equity, as well as an adjustment for tax. The rate of return is also known as the weighted average cost of capital or WACC.

Over the past 15 years, networks within the National Energy Market (NEM) have expanded vastly, with very large increases in capital expenditure and Regulatory Asset Bases. At the same time, the utilisation rate of assets has fallen dramatically and retail electricity prices in the NEM have risen to be among the highest in the world. This has happened in a period of relatively low wholesale electricity prices until recent years.

It is very important that consumers are engaged in the determination of the rate of return as it is applied to the regulatory asset base to determine the regulated revenue (that is, what revenue the networks are allowed to recover) and therefore the price for consumers. In Queensland, the costs associated with the return on capital, and of capital (depreciation) of the asset base, make up about 65 per cent of the regulated revenue and around 27 per cent of the final bill for residential customers.[1]

It is accepted that it is difficult to determine an economic efficient rate of return for monopoly networks due to a lack of comparison markets. Firstly, there are few normal networks in Australia. Secondly, comparison is difficult with overseas networks due to the different legal, structural, and tax arrangements faced by domestic and overseas networks.

As a result, the AER has adopted principles from corporate finance to determine the rate of return. In particular, the AER applies the capital asset pricing model (model) to determine the rate of return. However, there remains considerable complexity and discretionary judgment, in the selection of model variants and the estimation of the values of its constituent components.

Key messages

QCOSS is concerned that the current rates of return based on the existing Guideline are not efficient and do not reflect the same returns that a network would be able to achieve in a competitive market.[2] The AER's approach considers components under the model to determine the rate of return, but does not apply a test to ensure that the outcome is reasonable. The AER has also become cautious in their valuation by selecting components at the top end of the plausible range of values and thereby favouring networks over consumers.

In seeking to achieve the balance between the interests of networks and consumers in a way that is fair to all parties, it is necessary to consider all aspects of the system that are relevant

[1] The Queensland Productivity Commission estimated the distribution share of the final bill for residential customers was 41.6 per cent in 2015-16: QPC 2016, p. 29. The AER Energex allowance for return on and of capital for 2017-18 (after some initial carry-over amounts in 2015-16 and 2016-17 washed out), was 65.3 per cent of total revenues: AER 2015, p. 20.

[2] That is, higher than required to induce an appropriate rate of investment by networks to meet consumer demand.

to the determination of the rate of return. QCOSS's view is that the rate of return is over compensating networks for the level of risk that they face, and the higher rate of return has translated into excessive prices for consumers.

The 2018 Rate of Return Guideline should adjust the AER's approach:

- To determine the rate of return, the AER should consider a broader set of metrics than the model currently allows, including observations of actual investment behaviour of the networks.
- This broader set of metrics would aim reveal whether the outcome under the model is fair and reasonable.
- At a minimum, the broader set of metrics should look to more accurately determine efficiency, including identifying the extent of any over investment.
- In principle, where the AER has to exercise its discretion and judgement, their decisions should favour consumers over the networks.

QCOSS believes that with these adjustments, the rate of return determined under the model is more likely to:

- be more reflective of the efficient returns that a network would be able to achieve in a competitive market;
- encourage more efficient investment decisions, and
- continue to put downward pressure on network prices.

Over investment in networks under the current WACC parameters

In general, the current regulatory settings have been broadly consistent for the past 15 years, and have resulted in negative experience for electricity users.[3]

In this section QCOSS shows with reference to a range of metrics that the settings for the rate of return and the capital allowance have been excessive and has encouraged over-investment.

The starting point for this is to consider the response by rational networks to the suite of incentives provided by regulatory determinations.

Where networks are offered a rate of return that exceeds their efficient cost of capital, and they are allowed capex in excess of their requirements to meet consumer demand, then rational networks are incentivized to over-invest in the network (i.e. they will spend their capex allowance and seek out capital solutions in preference to non-network alternatives) and this will lead to a buildup of their Regulatory Asset Base. It follows that if we can observe a strong pattern of network over-investment in the Regulatory Asset Base, then this is clear evidence that the rate of return is higher than the networks' efficient cost of capital.

The pattern of over-investment can be demonstrated by the following metrics:[4]

1. Increases in network Regulatory Asset Base over time (compared with changes in demand or peak demand);

[3] While the 2013 Rate of Return Guideline changed some of the previous approach, it is reasonable to consider it as an extension of regulatory practice prior to that time.
[4] While these are QCOSS's proposed metrics, the AER could identify other metrics of over-investment by networks.

2. Falls in productivity measures;
3. Sharp price rises relative to inflation or the basket of supplier prices;
4. Falls in utilisation rates for key network assets such as transformers and feeders;
5. Increases in network revenues; and
6. High profitability relative to risk (measured by the equity beta).

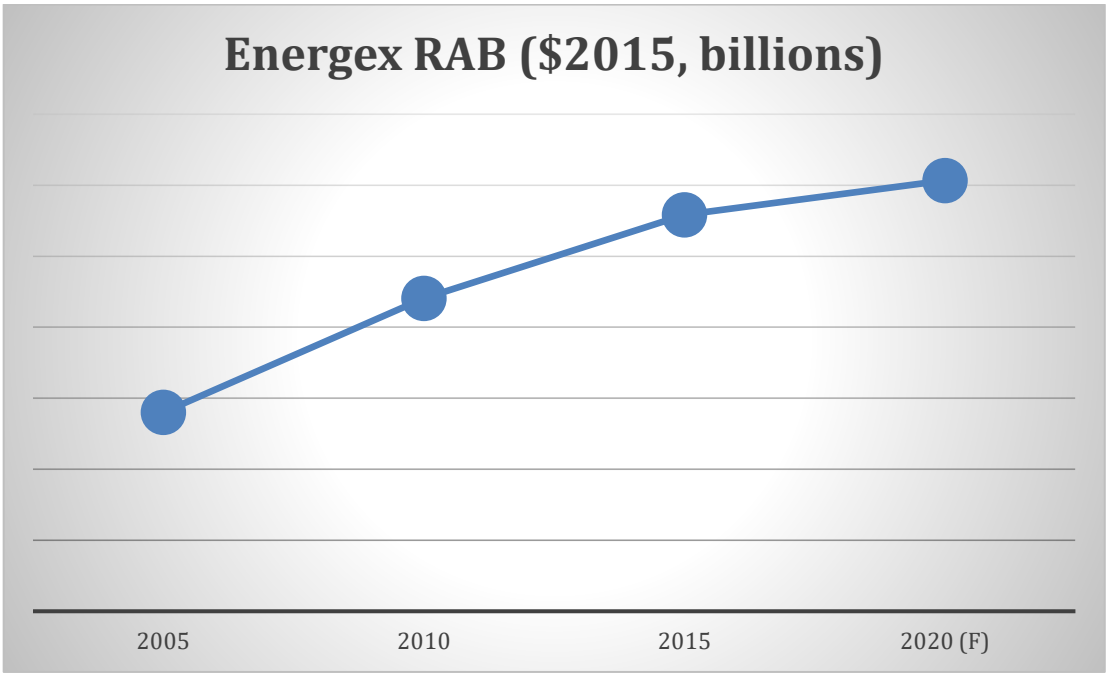
QCOSS contends that if these metrics show that there has indeed been over-investment in networks, and this provides strong and cogent evidence that the rate of return is too high and that the current Guideline has resulted in allowed rates of return in excess of efficient cost of capital.

Network Regulatory Asset Base

One clear sign of over-investment would be where networks invested in their assets in excess of consumer demand.

The evidence shows that Regulatory Asset Bases have grown substantially since 2005. For example, Energex's Regulatory Asset Base is forecast to grow from $4.31 billion in 2005 to $13.591 billion (forecast) in 2020 (Figure 1). This is a growth of 117 per cent in inflation-adjusted terms, compared with forecast inflation over that period of 46 per cent.

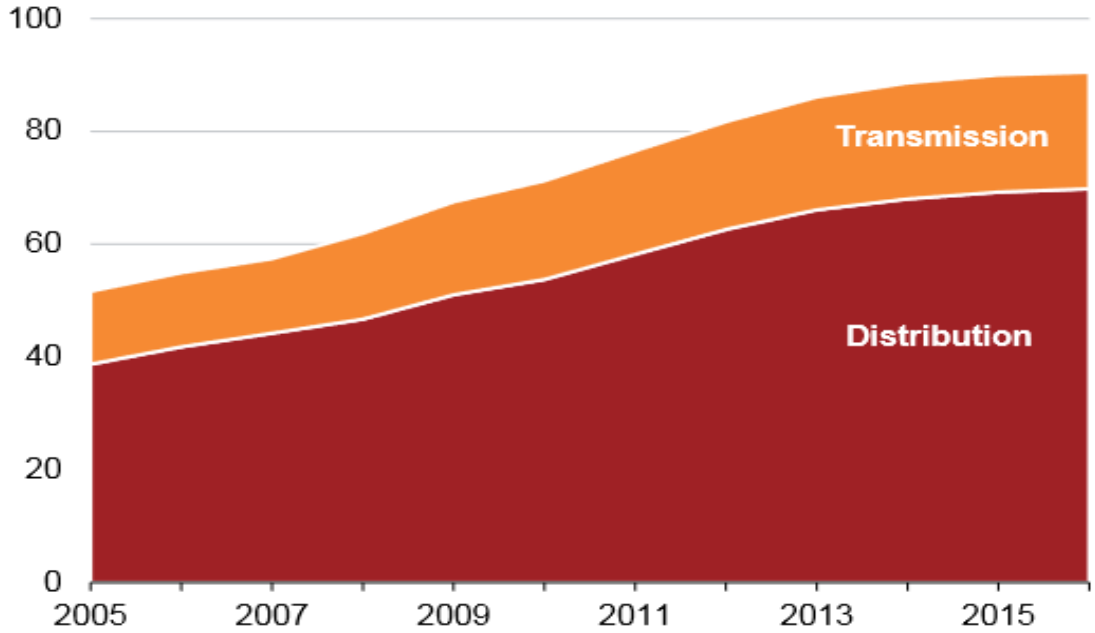
Growth in Energex Regulatory Asset Base, real dollars, 2005 to 2020 (forecast)



Source: QCA and AER regulatory determinations (2020 forecast), adjusted for inflation (2020 inflation forecast 12 per cent from 2015)

More broadly, the Grattan Institute has tracked the increase in network Regulatory Asset Bases within the National Energy Market (NEM) (Figure 2). This shows that there is over $40 billion invested in electricity network assets across the NEM between 2005 and 2016, close to a doubling of the 2005 asset base.

The value of network assets, 2017$ billions[5]

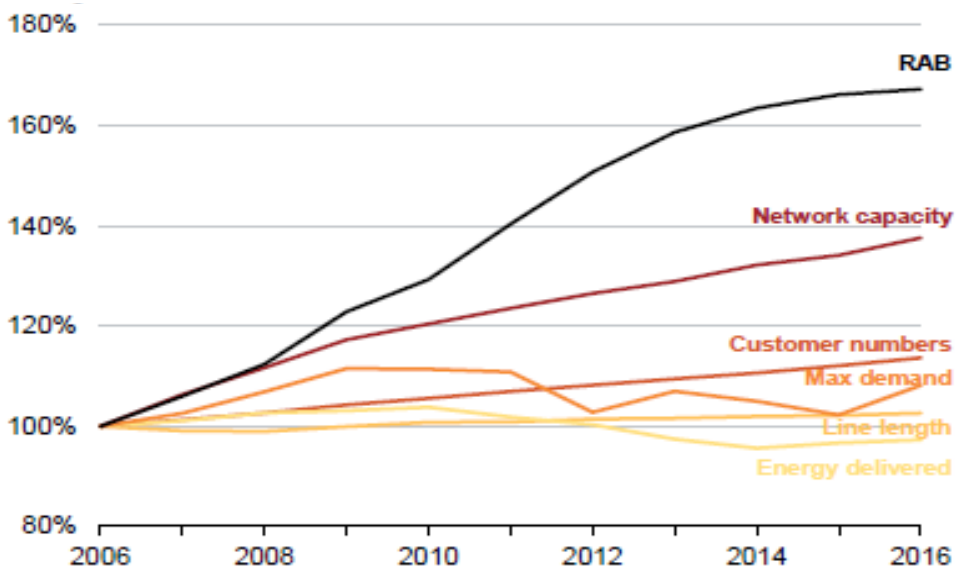


Source: Grattan Institute 2018, Down to the wire: A sustainable electricity network for Australia p. 6

The Grattan Institute notes that growth in the Regulatory Asset Base has far exceeded growth in demand or peak demand over this period and has tracked the growth in the Regulatory Asset Base compared with growth in factors that would normally drive capex, such as network capacity, customer numbers, maximum demand, line length, and energy delivered. Figure 3 presents the change in the Regulatory Asset Base compared with these factors and shows clearly how growth in the Regulatory Asset Base has significantly outstripped all of these indicators.

[5] Grattan Institute 2018, p. 6

Growth in network assets compared to capacity and actual use



Notes: 'Network capacity' refers to the potential load (volts and amps) the network can handle. 'Maximum demand' shown here is a NEM-wide aggregate of networks' peak demand, indicating the average change in maximum demand across networks.

Source: Grattan Institute 2018, p. 7

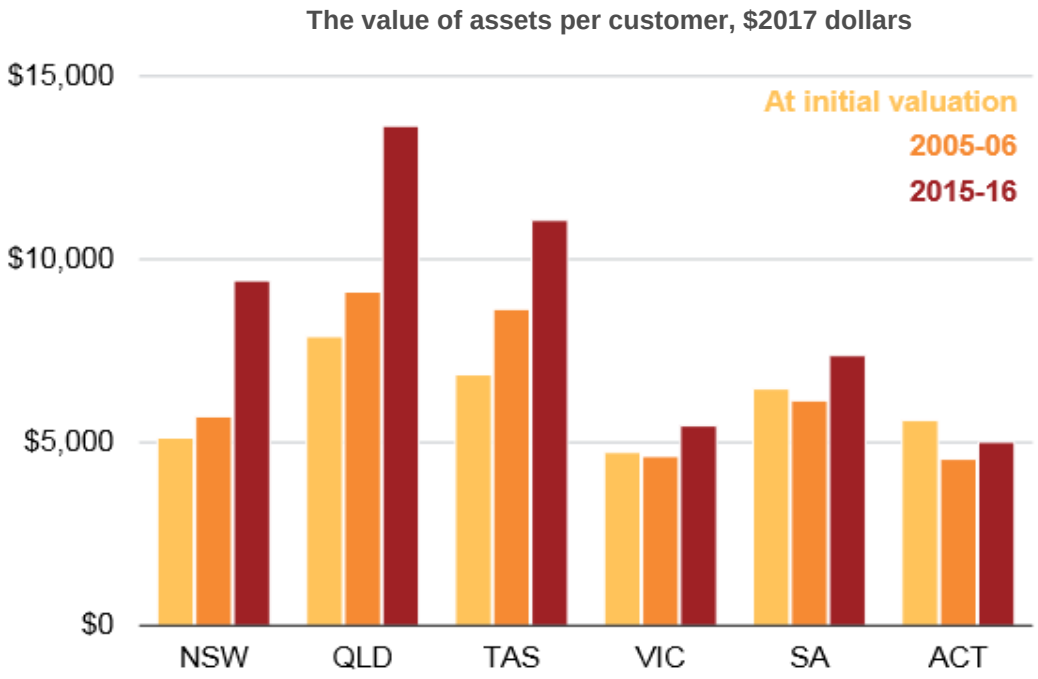
As the Grattan report notes:[6]

> *… network assets have outgrown usage – a combination of customer numbers and peak demand – by up to $20 billion since* Regulatory Asset Bases *were initially valued in the late-1990s and early-2000s. The vast bulk of this 'excess growth' or 'over-investment' is concentrated in NSW and Queensland – $18.5 billion.*

The growth has been particularly pronounced in the NSW, Queensland, and Tasmanian networks, with the value of network assets per customer increasing substantially (Figure 4):

> *The value of network assets per customer in NSW has increased from just over $5,000 in 2006 to just under $10,000 in 2016 (in real terms). In Queensland, assets per customer have increased from just under $8,000 to almost $14,000, and in Tasmania, from about $7,000 to $11,000*

[6] Grattan 2018, p. 7



Note: Initial valuation occurred at different times for different networks, ranging between 1995 and 2003. See the Technical Supplement to this report for more information.

Source: Grattan analysis of network determinations (AER (2018a)).

Source: Grattan Institute, p. 8

Productivity

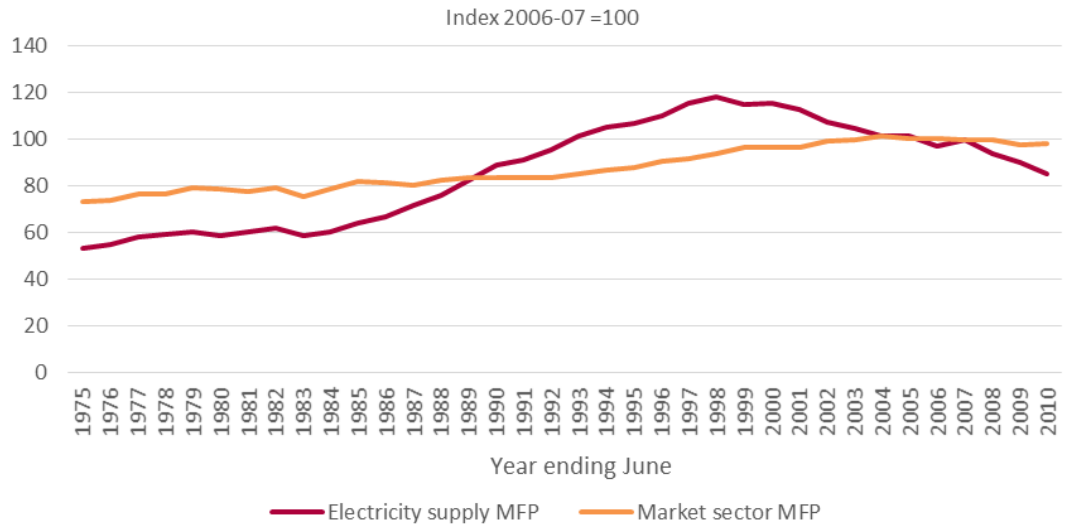
Over-investment could be expected to lead to a decline in the capital productivity of the networks, that is the value that each dollar of the asset base contributes to the supply of services to customers. As the amount of assets, or Regulatory Asset Base per customer rises, then this is a sign of a fall in capital productivity.

The AER tracks network productivity through its benchmarking work. It focusses primarily on total factor productivity (TFP), which is the combination of capital productivity and operating productivity. The AER does provide information also on capital productivity.

While Figure 4 above shows that the Regulatory Asset Base per customer has risen substantially across the Queensland since 2005, the AER 2017 distributor benchmarking report shows the capital productivity of Energex has declined substantially over the 2006 to 2016 period, with Ergon capital productivity relatively flat over the period (Figure 5).

In addition to the AER benchmarking work, the Queensland Productivity Commission found evidence that the productivity of the electricity sector declined substantially since the last 1990s, significantly due to the increase in network Regulatory Asset Bases relative to demand.

Electricity supply and market sector multi-factor productivity (MFP)[23], 1974–75 to 2009–10, Australia



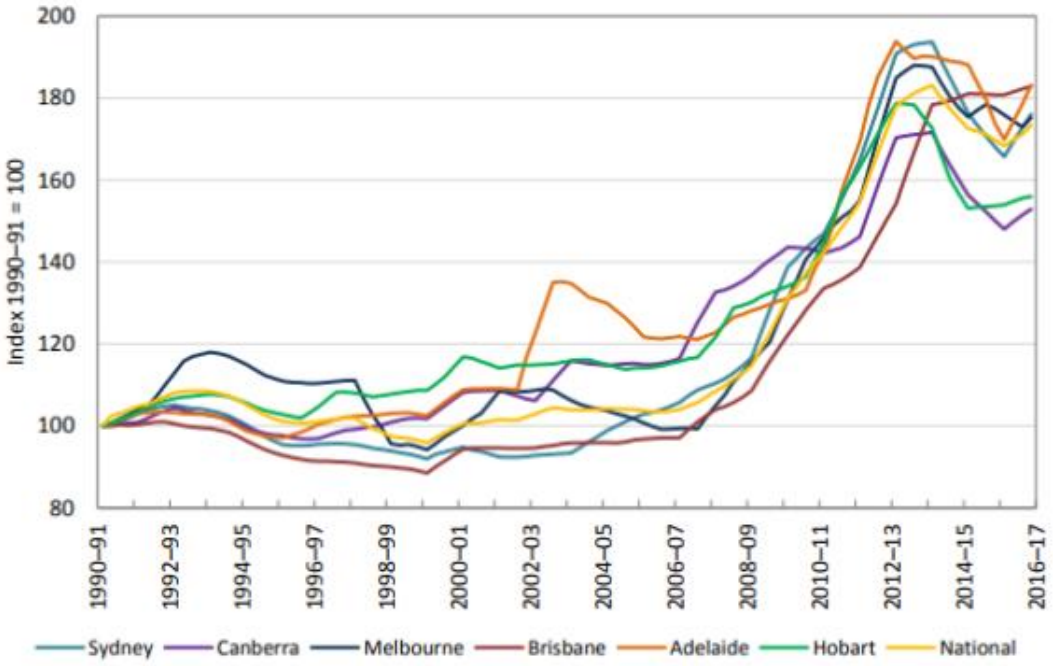
Source: *Queensland Productivity Commission 2016, p. 20*

Price trends

Increases in prices above inflation or industry input costs can also be a sign of over-investment. They can indicate that networks are investing above the rate of growth in demand, leading to higher prices.

Looking at the evidence, it is clear that retail electricity prices have risen sharply in the last 10 to 15 years, as shown in the ACCC's preliminary report into electricity retail prices (Figure 6).

Retail price index (inflation-adjusted), Australian capital cities



Source: ACCC 2017a, p. 12

The ACCC interpreted Figure 6 to show that:[7]

> *Australia has an electricity affordability problem. What's clear from our report is that price increases over the past ten years are putting Australian businesses and consumers under unacceptable pressure….*
>
> *Consumers have been faced with increasing pressures to their household budgets as electricity prices have skyrocketed in recent years. Residential prices have increased by 63 per cent on top of inflation since 2007-08.*
>
> *The main cause of higher customer bills was the significant increase in network costs for all states other than South Australia.*

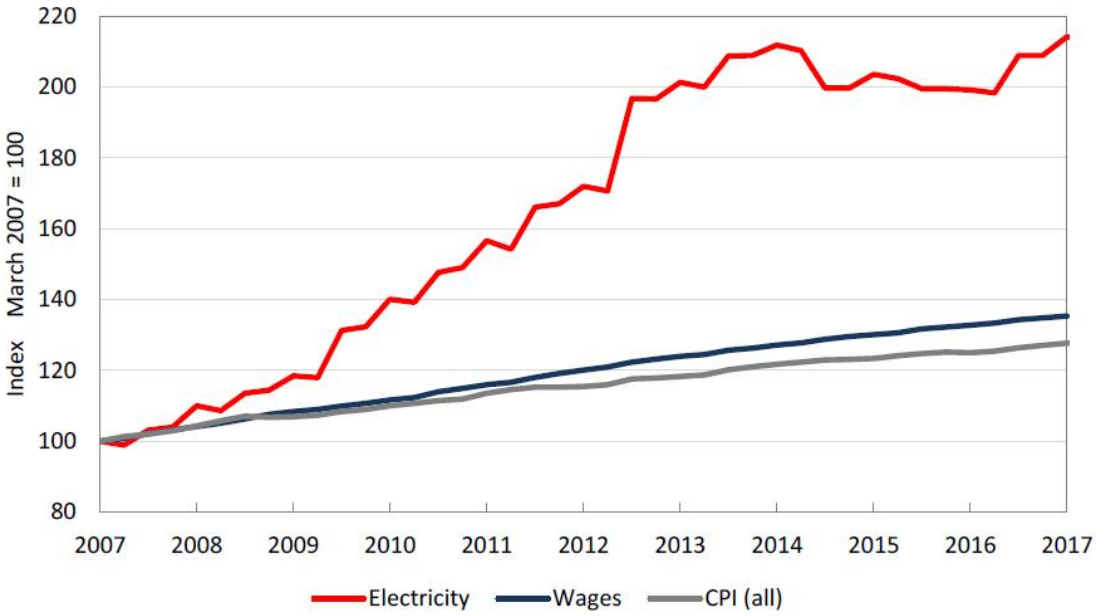
The Grattan Institute's *Down to the Wire report* mirrors the ACCC's view:[8]

> *Network costs are the biggest proportion of electricity bills for most customers in the NEM. For the average residential consumer, an estimated 42 per cent of the bill, or around $700 a year, will be paid to network companies.*
>
> *As well as being the largest component of the bill, network costs have also grown the most. Between 2007-08 and 2016-17, the network component of the bill increased 40 per cent on average across the NEM and was a major contributor to rising electricity bills, particularly in NSW and Queensland.*

These price increases have far outstripped inflation, as indicated in Figure 7.

[7] ACCC 2017b
[8] Grattan Institute, p.

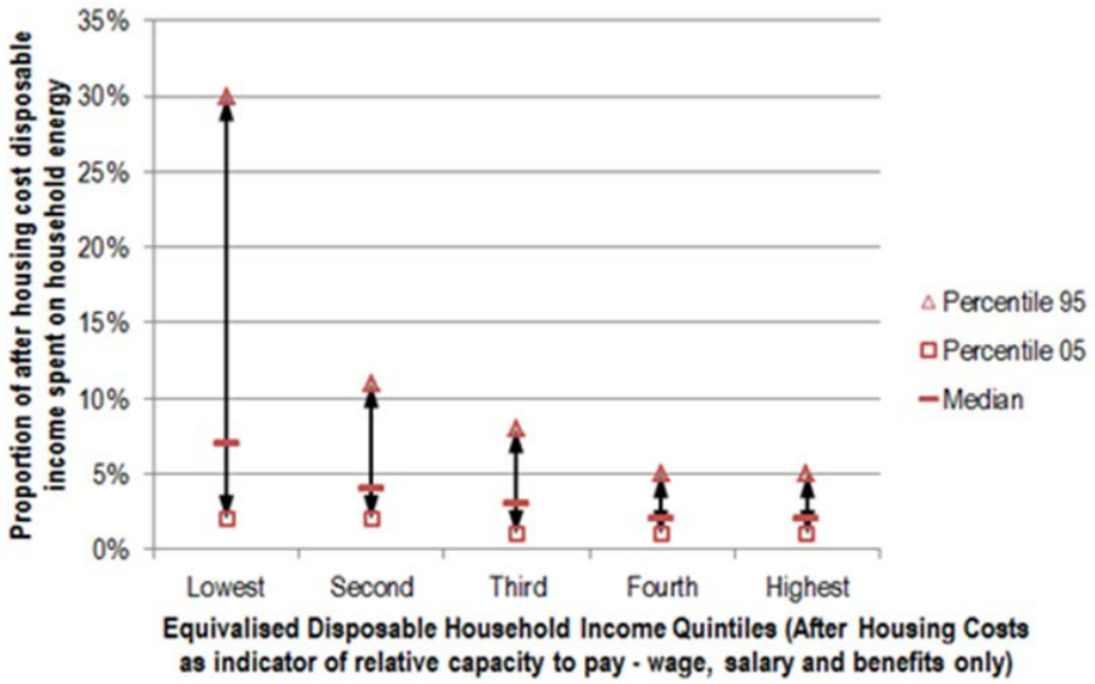
CPI for electricity compared with other sectors and wage growth



Source: ACCC 2017a, p.13

This has led to energy hardship especially for low income people. This group is especially vulnerable to increases in electricity prices as incomes have not been growing in real terms (Figure 8).

Proportion of after housing costs disposable income spent on household energy, by household income quintiles



Source: ACOSS 2018, ECA Forsighting Forum Presentation, Sydney

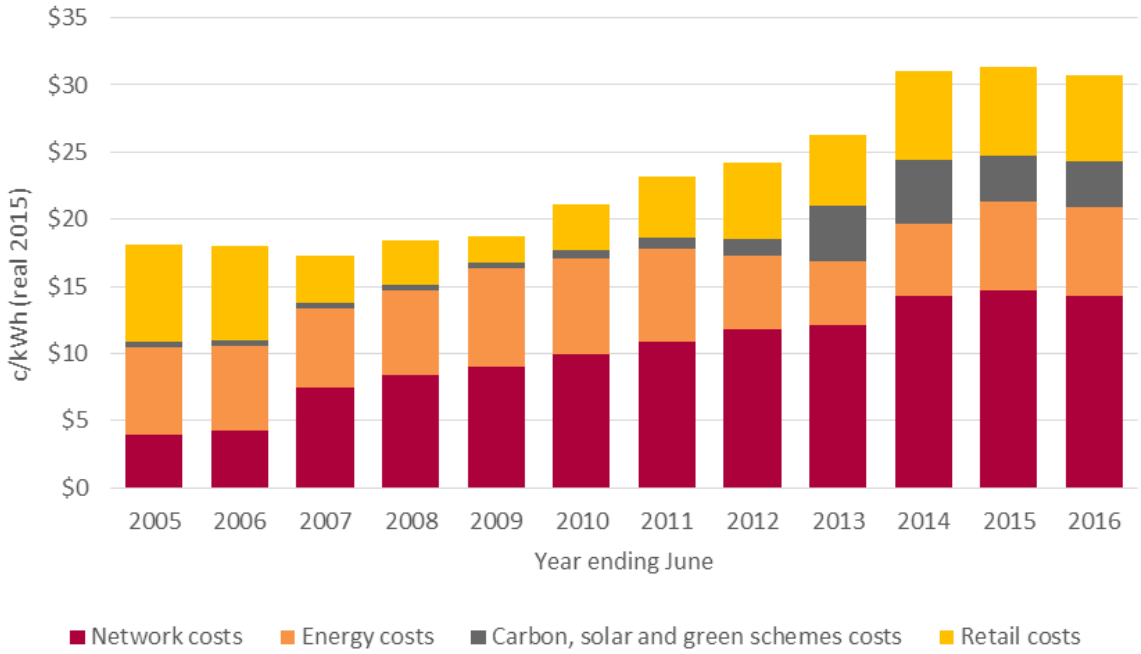
In Queensland, a 2016 Queensland Productivity Commission review of retail electricity price trends found that:[9]

- *Since 2006–07, Queensland electricity prices have increased in real terms by 87 per cent [to 2015-16]. Network costs contributed to 82 per cent of the real growth in the electricity prices since 2004–05.*
- *This trend in electricity prices is similar across Australia. A prolonged period of stable electricity prices has been replaced by rapid increases. Only the price increases of tobacco in Australia have exceeded the price increases for electricity since June 2007.*
- *Escalating network costs have been the primary driver of electricity price increases over the last decade, accounting for 82 per cent of the escalation in electricity prices since 2004-05.*

This view is borne out by the chart of the rise in the primary retail electricity tariff in Queensland, tariff 11. Tariff 11 has risen substantially since 2005, particularly the network component (Figures 9 and 10 below).

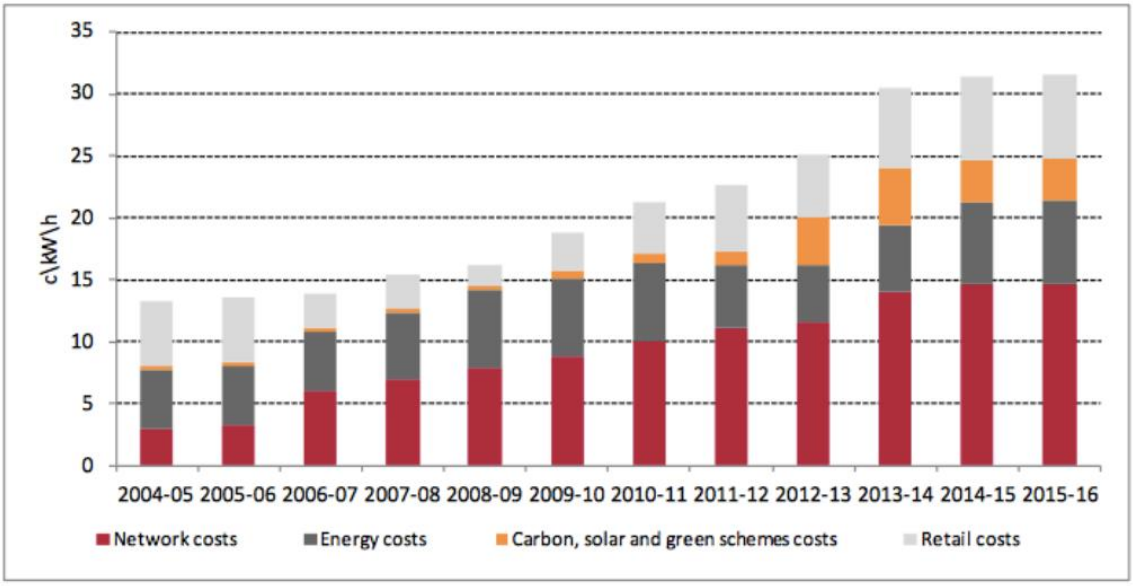
[9] Queensland Productivity Commission, pp. 23, viii

Average Queensland annual Tariff 11 real cost components



Source: Queensland Productivity Commission, p.30

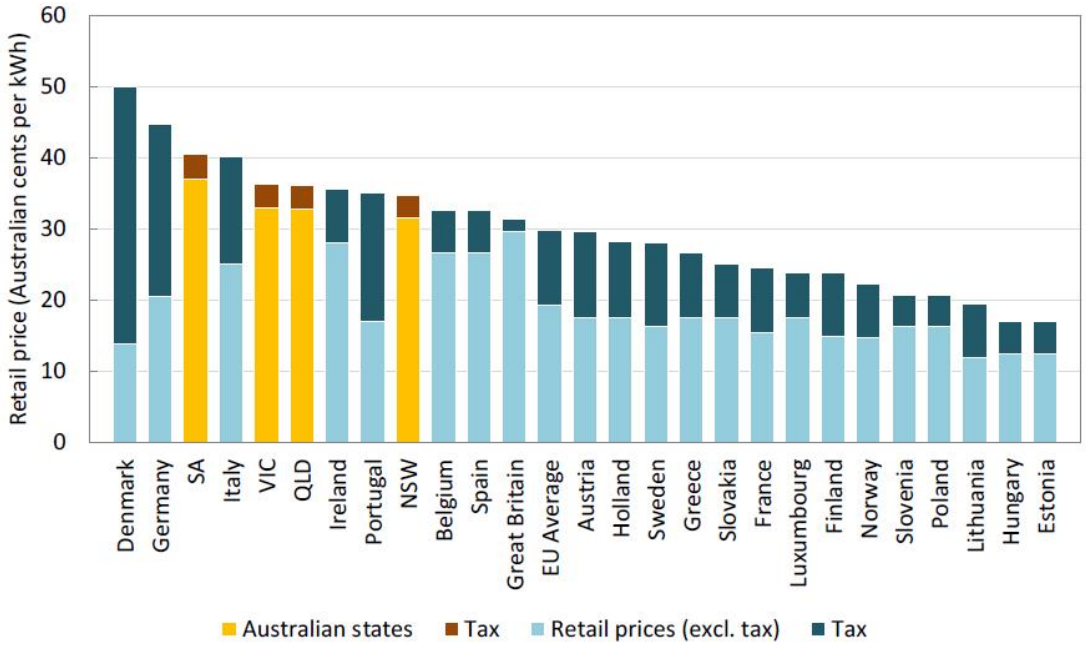
Average Queensland Annual Tariff 11 cost breakdown 9c/kWh)



Source: ResponseAbility 2018, p. 14

International comparisons also show that Australian retail electricity prices are very high compared to OECD comparators (Figure 11).

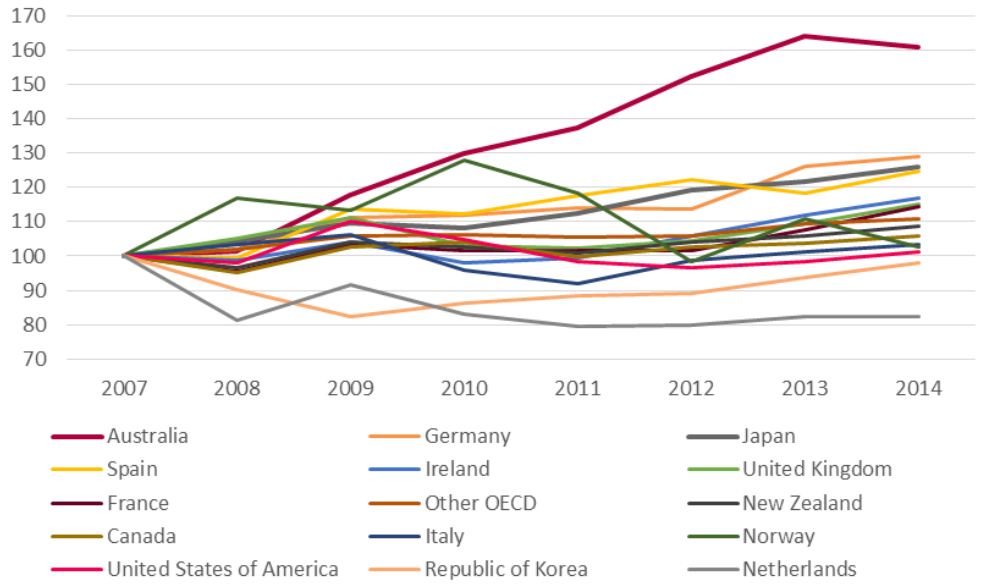
Comparison of residential electricity prices (before and after tax) (Australian cents per kWh) (May 2017 prices in Australia, 2015 prices in European countries)



Source: ACCC 2017a, p. 25

Retail price growth in Australia has outstripped growth in all other OECD countries by a substantial margin. Figure 12 shows the rate of growth in retail electricity prices in Australia compared with other OECD countries from 2007 to 2014. The rate of growth in Australia far exceeds any other OECD country.

International real electricity retail price indexes (2007=100)



Source: Queensland Productivity Commission, p. 32

Utilisation rates

The degree of utilisation of the network is a good indicator of whether there is over-investment. Rapidly falling utilisation of assets would suggest over-investment.

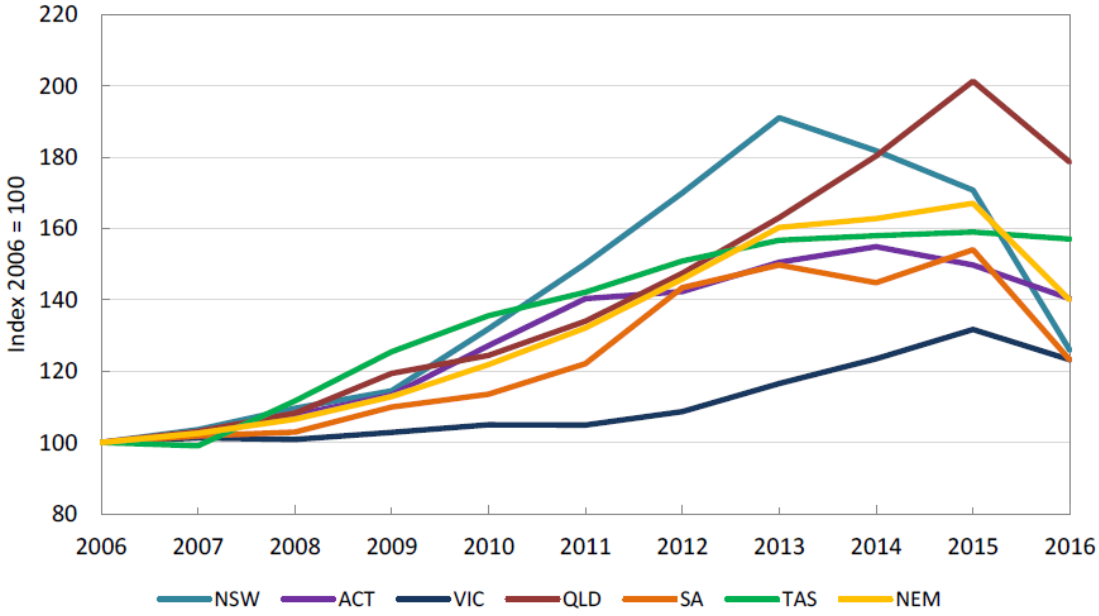
The AER could check utilisation rates for key network assets such as transformers and feeders to assess if there has been over-investment.

Network revenues

Growth in network revenues compared to demand or peak demand is another indicator of over-investment.

The ACCC preliminary report on electricity prices found that network revenues had grown very strongly in real terms since 2006 (Figure 13). By contrast, the average growth in demand and peak demand over this period has been mild.

Index of revenue changes from 2006 to 2016 by state in real terms (index base year 2006)



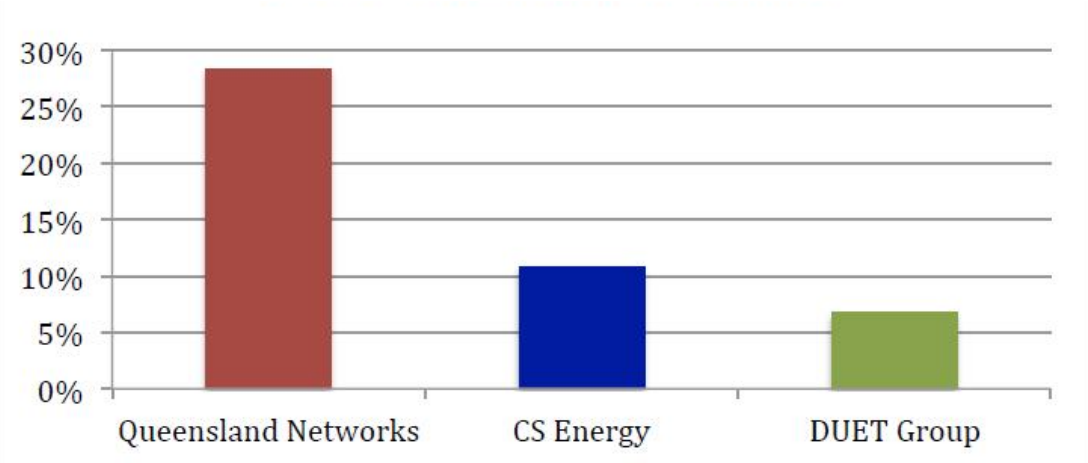
Source: ACCC 2017a, p. 62

Profitability compared to industry peers

Strong rises in profitability for networks show that the rate of return is higher than networks' private cost of capital.

ResponseAbility have presented comparative data on the profitability of the Queensland networks (Powerlink, Energex, Ergon) compared to other energy supply industry participants (Figure 14). Figure 4 shows that Queensland networks are substantially more profitable than other industry participants.

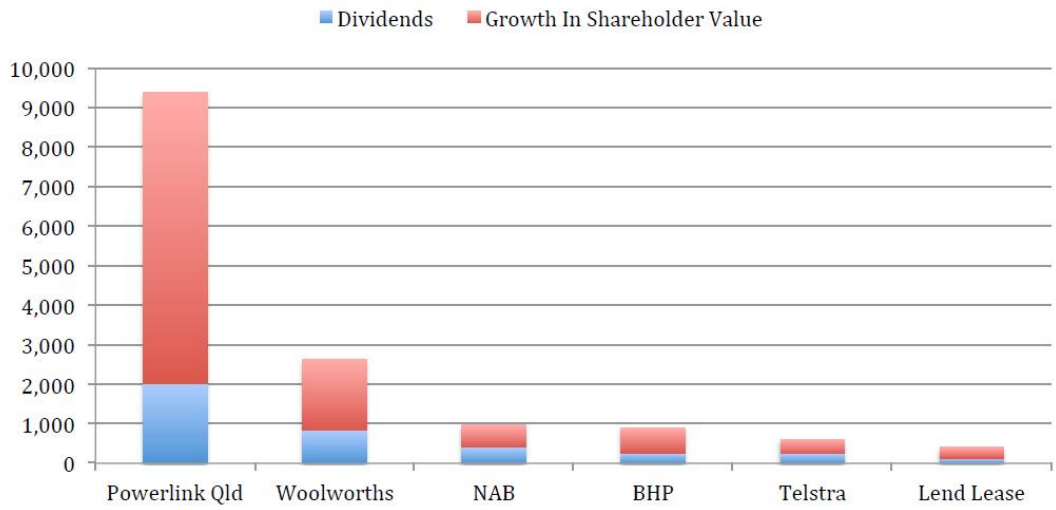
Average annual profit margins over the past 5 years



Source: ResponseAbility 2018, p.2

ResponseAbility also investigated the profitability of Powerlink and found that its returns were vastly larger than those of large listed companies (Figure 15).

Comparison of Powerlink returns with major listed companies



Source: ResponseAbility 2018, p. 19

The setting and approach in the current Guideline

QCOSS considers that the settings and approach in the current guideline have induced a significant portion of this over-investment. QCOSS's view is that the following factors contributed to this issue:

- Inclusion of data from firms and services that do not reflect the core business of the networks.
- A narrow focus on WACC parameters without also considering broader market outcomes as a cross check; and
- Excessive caution in coming to decisions on the appropriate value of WACC components and the overall WACC, which has manifested in awarding a rate of return higher than efficient levels.

In its 2013 Rate of Return Guideline, the AER used data from a number of Australian energy utility firms to identify a reasonable range for the equity beta in its guideline of 0.4 to 0.7 and then used factors such as the Black model, dividend growth models, and market data to select the value of 0.7, at the very top of the plausible range.[10]

Problems with this approach included:

- The AER considered energy utility firms facing higher risks than networks. Networks are much lower risk than other firms within the supply chain because they are guaranteed to earn a return on all capital investment up to the capex allowance;
- The AER also considered the overall returns of networks even though networks earn part of their returns from activities outside standard control activities and subject to some degree of market contestability, e.g. alternative control services, negotiated services, and completely unregulated services. As these are more risky than standard control services, the impact of considering them by assessing the overall returns of the networks is to uplift the observed plausible range for the equity beta;
- This included market data such as takeover and valuation reports and broker reports can be self-interested or can 'bake-in' broker and market perceptions that rates are likely to be set higher than necessary by the AER.[11]
- The Black model is inconsistent with other models such as the foundation model used by the AER.

In addition, the broader problem is that the equity beta is set based on an unavoidably narrow comparator group and can easily be distorted by a few data points. In our view it is it is more appropriate to assess the reasonableness of the equity beta and the overall rate of return based on observations of whether networks are over-investing according to the metrics discussed above in this submission than on the basis of a very restricted range of Australian energy utility firms. The pattern of investment of networks in the market is a supporting reliable guide to setting the equity beta and rate of return than observations of a restricted group of near and not-so-near comparators.

The danger of a narrow focus on the WACC parameters is:

- That the model is an artificial construct rather than an actual depiction of market behaviour;
- There are few data points for many of the WACC inputs, such as the cost of debt inputs;
- Reliance on Australian regulated energy utility information makes the calculated WACC inherently less reliable;
- Potential biasing of sources, such as broker reports; and
- Potential distortion from past AER WACC decisions.

Thus, it is more reliable to observe the actual observed behavior of regulated networks to deduce whether the rate of return is encouraging over-investment rather than focusing disproportionately on debates about particular WACC components.

At the same time, we consider that the approach of the AER has been overly cautious, and this has also contributed to rates of return that are higher than efficient. We accept that there is uncertainty and hence judgement is required on which rate of return is appropriate, at least within a reasonable range. However, when considering where to set the rate of return within a reasonable range, it is important to consider the relative impacts of over-investment that might result from a rate that has been set too high compared to under-investment if the rate is set too low. A view is that if the rate is set too low, then networks will not invest, and customers will bear large losses from significant loss of supply of electricity, while if the rate is

[10] AER 2013, p. 15

[11] Based on the argument that it is perceived to be safer to set the rate too high than too low given the relative impacts of an investment strike compared to paying too much for network services.

set too high, then consumers may pay a little more for electricity than they should, but the overall impact will be only mild.

In our view, it is not necessary to be so risk averse for the following reasons:

- Networks have the advantage of information asymmetry and can provide information that uplifts both the lower end and the upper end of the apparent reasonable range;
- If the rate is set low but within a reasonable range, then networks may moderate investment but the risk of an investment strike is unlikely to happen;
- If the rate was set too low for a specific regulatory period, this can be corrected in subsequent regulatory periods;
- Setting the rate low provides greater incentives for networks to engage in demand management and to defer investment, resulting in possible savings in capital;
- Setting the rate too high by contrast, does not incentivize networks to act efficiently in capital spending or seek savings in capex.

Our views are supported by the views of the Australian Competition Tribunal in the *Telstra* case[12] where the Tribunal stated:[13]

> *Telstra assumed that setting a WACC that was too low would deter investors. However, different investors will inevitably have different attitudes to risk. Setting the WACC below the true value may deter some investors and therefore result in less investment taking place in the short run, but it will not be likely to cause all investors to cease providing funds. Of course, the service provider might be forced to cut back on maintenance or service quality if it perceived the return on these investments to be too low, but no evidence was advanced by Telstra that consumers' valuations of different levels of quality was asymmetric. It is possible, at least in theory, that consumers might value lower quality, or less innovation, that might follow from less than efficient levels of investment no differently than they value the surplus lost from greater - than - efficient quality, or wasteful innovation, that could arise from too much investment.*

Many of the assets used in network services are long-lived, say 40-50 years. Therefore, if the rate is set too high and there is over-investment, the impacts of the over-investment will be felt for 40 or 50 years. However, if the rate is set too low, then impacts of any consequent slowdown in investment will only be felt for the 5 years of a regulatory period.[14]

This situation is further compounded when this approach is used to influence the settings not only of the overall rate of return, but of many of the components of the rate of return, including the equity beta, risk-free rate, market risk premium, and gamma. The impact is that with each of the components set above an efficient level, there is a multiplier effect where each of the components is too generous, and the overall rate of return generated by multiplying them together is much too generous.

Findings and recommendations

Setting the rate of return too high and providing over-generous recognition of capex has encouraged networks to over-invest which has then lead to large increase in the Regulatory Asset Bases. The result has been a very large increase in network charges which is unsustainable and unaffordable for many low-income households. Consumers have faced raising retail prices which, in the case of Queensland, increased 87 per cent between 2006 and 2016. These price rises have had a detrimental impact on consumers and especially low

[12] *Re Telstra Corporation Ltd* (No 3) [2007] ACompT 3 (17 May 2007)
[13] Para 452
[14] Typically, the regulatory period is 5 years.

income and vulnerable consumers. Sharply rising electricity prices have led to increases in energy poverty, disconnections, and the numbers of consumers on hardship programs.

Our review of market metrics uniformly shows over-investment by networks. QCOSS argues that the observed impacts of this over-expenditure should be taken into account as clear evidence that the rate of return has been set too high and has induced this over-expenditure.

QCOSS believes that the current Guideline does not result in a rate of return that accurately reflects the returns that a network would be able to achieve in a competitive market.

The 2018 Rate of Return Guideline should adjust the AER's approach:

- To determine the rate of return, the AER should consider a broader set of metrics than the model currently allows, including observations of actual investment behaviour of the networks.
- This broader set of metrics would aim reveal whether the outcome under the model is fair and reasonable.
- At a minimum, the broader set of metrics should look to more accurately determine efficiency, including identifying the extent of any over investment.
- In principle, where the AER has to exercise its discretion and judgement, their decisions should favour consumers over the networks.

QCOSS believes that with these adjustments, the rate of return determined under the model is more likely to:

- be more reflective of the efficient returns that a network would be able to achieve in a competitive market;
- encourage more efficient investment decisions, and
- continue to put downward pressure on network prices.

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