



***Agriculture Industries Energy
Taskforce
AER Discussion paper
Profitability measures for
regulated gas and electricity
network business***

*Removing barriers to competitiveness for
Australia's agriculture industries*

December 2017

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This submission is on behalf of the Agriculture Industries Energy Taskforce: National Irrigators' Council, NSW Irrigators' Council, NSW Farmers Assn, Cotton Australia, National Farmers' Federation, Bundaberg Regional Irrigators Group, Central Irrigation Trust (SA), CANEGROWERS, Dairy Connect, Queensland Farmers Federation, Australian Pork Limited, Pioneer Valley Water

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Executive Summary

The cost of electricity in Australia is putting at risk our ability to compete with the world as a provider of food and fibre. For a country with an abundance of renewable and non-renewable sources of energy and whose primary producers are among the worlds' most efficient, this is an untenable situation.

Many of Australia's agricultural products (for both domestic and export consumption) use production processes that rely heavily on power, for example, irrigators who pump and pressurise water or producers who process, package or refrigerate products. Australia should have a comparative advantage for those producers - offering reasonably priced power from the grid. Instead, many food and fibre producers are forced to consider off grid solutions (ie diesel) or face being uncompetitive and sometimes, forced out of production. The result will be stranded network assets, leaving remaining grid consumers who are unable to move off grid, with unsustainable electricity prices (ie death spiral).

Australia's agricultural industries play a significant role as economic drivers in local economies and provide flow on benefits to the national economy. Industries include cotton, rice, sugar, wine, almond, horticulture and dairy. Energy is used for pumping irrigation water, pasteurisation, cool rooms, processing plants and moving products.

The high cost of energy for the agriculture sector sits starkly against the backdrop of the excessive profits of regulated electricity and gas businesses.

The Agricultural Industries Energy Taskforce (the Taskforce) has now made a number of submissions to various inquiries, in some, we have engaged expert advice, and on each occasion we have highlighted that – while not the only factor – network costs are a major contributor to making Australian agriculture less competitive and less viable.

The Taskforce has been, consistently, critical of the methodology used to allow network owners to, as our consultants, Sapere Research Group, said in our ACCC submission, “exceed efficient costs, prices and profits”.

This consideration of the rate of return guidelines is fundamental. The rate of return methodology must be fundamentally changed to ensure a reasonable rate of return commensurate with the secure monopoly position network owners find themselves in and to ensure that we no longer see 'gold plating' of assets.

At its core energy policy in Australia must have as a key objective Australia's competitive position and equity for electricity consumers. We need to ensure that we don't look at elements in isolation, there are entrenched behavioural and systemic problems in the National Electricity Market (NEM) that must be addressed.

We would like to see the AER adopt a performance measurement framework to enable an accurate assessment of the profitability of regulated electricity and gas businesses, comparable to that of other ASX entities, until then meaningful and systemic change will not be realised.

Recommendations

The Taskforce concludes that:

1. The AER should adopt a performance measurement framework to enable an accurate assessment of the profitability of regulated electricity and gas businesses, comparable to that of other ASX entities.
2. The AER be allowed to compare the actual profitability of the regulated entity to:
 - a. The allowed return on equity from its regulatory determination,
 - b. Actual profit of other regulated entities, and
 - c. Actual profit of other businesses operating in the Australian economy.
3. The AER should have access to the following suite of data:
 - Return on Assets
 - Earnings before interest and tax (EBIT)
 - Regulated asset base (RAB)
 - Return on Equity
 - Net profit after tax (NPAT)
 - Total equity
 - Economic profit
 - Earnings before interest and tax (EBIT)
 - Pre-tax weighted average cost of capital (WACC)
 - Total assets
 - Operating profit per customer
 - Earnings before interest and tax (EBIT)
 - Customer numbers
4. The calculation of the weighted average cost of capital (WACC) for transmission and distribution businesses must be based on the evidence of the real borrowing costs and operating conditions of businesses.
5. A comprehensive assessment of the economy-wide costs and benefits of revising the electricity network and transmission businesses' regulated asset base (RAB) to efficient levels is necessary.
6. To calculate the return on assets, return on equity or economic profit measures, the AER should include a balance sheet in its annual data collection from electricity businesses.
7. Additional financial performance measures (as suggested in the McGrathNicol scoping study), including liquidity ratios, financing ratios and activity ratios may be helpful in assessing financial performance and to enable comparison across organisations of different size and across other industries.
8. A review of tariff networks is necessary, to examine and ensure that irrigators and other businesses in non-congested parts of the network are not forced to meet the costs of network investments made to overcome congestion in other parts of the network. (*Refer to Sapere research at footnote 11*)
9. This current examination of profitability measures for regulated gas and electricity network business, provides an opportunity for the AER to move to a "propose-respond" model, where the AER sets the agenda in relation to preferred measures, data required and issues relating to financial performance.

The Taskforce recommends the following further reforms:

10. The Competition Principles Agreement should not apply to state government monopoly electricity networks. The application of this agreement to electricity networks is obviously contrary to the legitimate commercial and economic purpose of this agreement for government

owned businesses that provide services in competitive markets. No longer subsuming the network monopolies under this agreement will mean that the economic regulation of the government owned monopolies will recognise the state government's ownership, and regulatory allowances for the cost of capital will be established accordingly.

This will bring the regulation of government owned networks back into line with the long-established practice in Australia (which prevailed until the Competition Principles Agreement) and will mean that the economic control of government owned network monopolies in Australia will be consistent with the approaches adopted in the economic regulation of government owned networks in other countries including the United States, Germany, Austria and Scandinavian countries.

11. Government owned network monopolies must be economically regulated by the state governments that own them. This is the long-established tradition in Australia until the reforms that led to economic regulation initially by state government regulators and subsequently by the AER. The outcomes delivered by these ostensibly independent regulators have, as we have shown, been highly unsatisfactory. Political accountability for the prices charged by state government distributors must rest with the governments that receive their profits and taxes.
12. The excessive asset valuation must be addressed through write-down of the networks' assets. The AER's current examination of profitability measures for regulated gas and electricity network business may offer some solutions as part of this endeavour.
13. The AEMC should NOT have any role in the economic regulation of networks. The bifurcation of economic regulation between the AER and AEMC is a unique model internationally.
14. The form of regulation (specifically periodic price/revenue controls as opposed to other forms of regulatory control) should be reviewed.

Introduction

It is unacceptable that in an energy rich country like Australia, weak energy policy is compromising Australia's capacity to be a competitive global food producer and to put fresh food on the tables of Australian households.

The Agricultural Industries Energy Taskforce (the Taskforce) has frequently pointed to the impacts of Australia's high electricity prices on our highly efficient agricultural sector. Australian producers have an opportunity to meet the demand of an ever-increasing global need for clean, green food and fibre, but instead face the risk of industry viability against the reality of high electricity costs. These cost pressures are imposing unsustainable barriers on the agricultural sector and driving down Australia's competitive edge.

Australia's 135,000 farmers produce enough food to feed 80 million people, providing 93 per cent of the domestic food supply, and support an export market valued at more than AU\$41 billion per annum (over 13 per cent of export revenue)¹. With population growth and rising personal income, the emerging middle class in Asia provides the major market for over 60 per cent of Australian agricultural exports.

More than 75% of Australian agriculture produce is exported. As a sector that is highly exposed to trade, agriculture must remain competitive in the international market and consequently, reliable, affordable and sustainable electricity supply are a necessary pre-condition for the economic development of agriculture. It is also key to ensuring farmers remain profitable and can efficiently invest in agriculture.

¹ Australian Bureau of Agricultural and Resource Economics and Sciences. (2014). *Agricultural Commodity Statistics*.

Reform of Australia's water resources sector in recent years has resulted in greater competition for water resources. While water savings have been achieved on-farm through investment in infrastructure, the resulting higher use of energy has coincided with a dramatic increase in the cost of electricity. Analyses show that irrigators' and growers' electricity bills have increased in excess of 100% in most cases, and up to 300% for some over the period 2009-2014, mainly due to the rising cost of network charges imposed by the network companies.

Typically, regulated network charges and other costs represent around 50% to 56% of farmers' electricity bills; the actual electricity charges account for around 26%, although this is also changing rapidly. Network charges imposed by the electricity networks continue to have a highly distorting effect on the electricity market. Australian consumers are paying around twice as much for network charges as those in the United Kingdom are around 2.5 times as much as those in the United States.

We recognise the importance of gas supply and its potential role in the electricity grid as we move away from coal supplied power and we acknowledge the steps the Federal Government has taken to sure up domestic gas supply. The Taskforce also supports the Vertigan Review recommendations around improvements in competition and access for existing pipeline infrastructure.

Irrigated agriculture users of electricity are forced to operate in a market environment that lacks genuine competition and appears dominated by generators and transmission and distribution infrastructure owners who aim to maximise returns. The absence of competition results in gaming on a spot market that is struggling to cope with the transition to renewables. It is unacceptable that consumers are forced onto the spot market due to an inability to secure quotes from retailers for fixed term contracts.

The Australian Competition and Consumer Commission (ACCC) is working to address some of these issues. The ACCC preliminary report² tabled in September 2017, following their review into retail electricity supply and pricing, provides a further important step towards systemic change. In May 2017, the ACCC granted authorisation to a group of 28 organisations led by the South Australian Chamber of Mines and Energy (SACOME) to collectively bargain with retailers for electricity. The SACOME group makes up approximately 15 per cent of South Australia's electricity demand.

Recent amendments to the Competition and Consumer Act (CCA) provide for greater flexibility to the collective bargaining approval process for small business.

Under current market governance arrangements, existing loopholes are enabling price gouging by network businesses and preventing a fair and effective pricing structure for consumers.

Efforts by Taskforce members to engage various responsible bodies to highlight the challenges faced by the agriculture sector, has resulted in significant frustration and cynicism due to the complexity and bureaucracy of the electricity industry. We have witnessed the entrenched culture of institutional and blame shifting with governance and regulation of the industry split between many bodies, where prescriptive rules and processes prevent any positive change. The myriad of regulation is increasingly divorced from reality and is unaccountable, built on abstract theoretical ideas that are beyond the reality of the industry and its consumers.

The evidence of excessive industry profit and soaring prices supports our own observations that shareholders are benefiting at the expense of electricity consumers. It would appear that the owners of

² ACCC Retail Electricity Pricing inquiry: Preliminary Report, 27 Sept 2017

the electricity generation, distribution and transmission assets have a dominant voice in driving the policies adopted by the regulatory bodies and take every opportunity to undermine the prospects for energy efficiency and distributed generation, both of which represent competitive threats to their business.

In making a submission to the ACCC retail electricity price inquiry recently, the Taskforce engaged Sapere Research Group to provide expert advice. Sapere's work confirmed that at every level of the electricity market "costs, prices and profits across much of the sector, and at multiple points across the supply chain, exceed efficient costs, prices and profits".

[The Sapere report goes](#) on to show that "despite being subject to price/revenue regulation, network costs, profits and prices also appear to be excessive.

"There is evidence of substantial excess network capacity across many parts of the NEM. We have not been able to identify a corresponding reduction in the allowed cost of capital to accompany risk transfer associated with the move to the RAB roll-forward method for setting the RAB at the start of the following price period (replacing the previous method which included provision for asset optimisation). Consequently, it appears that network prices incorporate the double effect of excessive returns on an excessive asset base."

The Taskforce has long argued that the current regulatory framework is enabling regulated network businesses to build in unacceptable returns. The AER's lack of a performance measurement framework to understand the extent of the profitability of regulated electricity and gas businesses has clearly enabled gold plating resulting in unsustainable price increases to consumers.

There is a critical need for the AER to move to a benchmarking model comparable to that of other entities. For example, the Australian Competition and Consumer Commission (ACCC) monitors and publishes information relating to prices, costs, profits and service quality of a range of sectors, including information on industry margins and the rate of return on assets.

Overseas examples also provide good insight into how regulators have the capacity to collect data which appropriately enables the calculation and reporting of profitability measures and to assess the financial performance of electricity and gas businesses compared to the expected returns under the framework applying in that jurisdiction.

In the UK for example, the monitoring of the financial performance of the electricity and gas transmission and distribution businesses through the collection of data, enables a calculation and report on the return on regulated equity and profit per customer. This enables a comparison with the cost of equity to determine whether businesses are outperforming or underperforming.

The New Zealand example provided in the AER discussion paper is also useful. Distribution businesses regulated by the NZ Commerce Commission provide data on asset value and cash flow to enable the calculation of an internal rate of return (IRR). This is compared to expected returns on a nominal estimate of the weighted average costs of capital (WACC).

We know that the regulated asset base (RABs) of Australia's electricity networks have been artificially inflated and inefficiently grown to excessive levels. Over the past fifteen years, the networks' RABs have increased by around 400%. These growth rates now put Australian electricity networks' RAB levels

significantly higher than their international counterparts; we know that the RAB per connection levels of Australia's distribution networks are now up to nine times the levels of networks in the United Kingdom.

In a submission provided to the 2014 Senate inquiry into the performance and management of electricity network companies, the Taskforce raised the issue of network companies misleading the AER in relation to their weighted average cost of capital (WACC). The issues are complex and regulatory design is the underlying reason for such failures. The determination of the WACC – an issue largely but not completely within the AER's discretion – is based on what the AER calculates to be the WACC of a 'benchmark efficient network service provider'. This calculation is by design, meant to be abstracted from the actual cost of capital of the regulated firms.

There are range of factors across a failed market that are making Australia less competitive. The very comfortable arrangements for the owners of networks are one of the keys. It is crucial to Australia's future agricultural competitiveness that the base calculation of the return these owners are allowed to build into their pricing models is fundamentally reformed to produce a reasonable rate of return commensurate with the secure monopoly position network owners find themselves in and to ensure that we no longer see 'gold plating' of assets.

Response to questions

1. Do you agree with the preferred profitability measures? If not, what other measures do you consider should be reported by the AER and why?

We note McGrathNicol's scoping study to identify financial performance measures used by some overseas regulators or electricity and gas network businesses, where they have identified commonly used financial performance measures that may be relevant when analysing the profitability of the regulated businesses. Broadly, we support these measures which would allow the AER to:

- compare profit of the regulated business to the statutory profit earned by the owner of the regulated business;
- analyse the profits of a regulated business over time;
- compare the profit of a regulated business to the profit earned by other regulated businesses;
- compare the profit of a regulated business to businesses in other industries, including ASX listed companies.

We also note McGrathNicol's observation that further analysis of results could then be undertaken to identify individual elements that may be driving material differences, and unusual results that vary significantly from benchmarks.

We draw on the Consumer Challenge Panel (CCP) submission³ to the AER draft 2018-22 revenue decision regarding Powerlink revenue proposal (Dec 2016). The submission provided an analysis of the actual returns being realised by two Queensland networks (Powerlink Queensland and Energex) over the past fifteen years, and compared those returns with the returns being realised by businesses in other sectors of the economy.

The CCCP analysis compared the returns that Powerlink's owner (Queensland government) has realised from its equity investment in the Queensland networks with the returns it would have received had it invested the same funds in blue-chip ASX 50 companies in other sectors of the Australian economy. This is the first time that such an analysis has been performed on the Australian electricity networks' actual profitability.

During the 2012-17 determination period, Powerlink achieved extraordinary profitability levels, achieving annual return on equity levels of up to 75%, compared to the AER's assumed 9.4%. Powerlink achieved these major gains from over-forecasting its capex needs and was rewarded with around \$300 million in 'windfall gains', due to its revenue allowances, including return on capex that it did not incur. Stakeholder criticisms of the AER's 2013-17 allowances have been proven correct (eg Powerlink's actual demand was 40% lower than its forecast demand during the period).

Powerlink's over-investments continued to result in increasing levels of excess capacity and major declines in asset utilisation levels. Powerlink's operational efficiency continued to decline significantly over the period. Powerlink continued to receive very high bonuses from the AER's Service Target Performance incentive Scheme achieving annual bonuses of over \$20 million.

³ *Consumer Challenge Panel submission to the AER draft 2018-22 revenue decision. Powerlink revised 2018-22 proposal*

The AER has accepted Powerlink's 2018-22 period proposed return on capital allowances with some minor changes, reflecting movements in market conditions since Powerlink's revenue proposal was submitted.

Powerlink is extraordinarily profitable, achieving many multiples of the returns that the AER assumes and many multiples of the returns being achieved by Australia's best performing ASX 50 companies.

The Queensland government is unlikely to have actually invested the reported 'share capital' levels. Over the past fifteen years, the Queensland government's investment in Powerlink there has been an accrued total return of:

- 23 times the returns achieved by the Australian construction sector (Lend Lease)
- 15 times the returns achieved by the Australian telecommunications sector (Telstra)
- 10.5 times the returns achieved by the Australian minerals and resources sector (BHP)
- 10 times the returns achieved by the Australian banking sector (NAB)
- 3.6 times the returns achieved by Australia's most profitable supermarket (Woolworths)

No other ASX 50 stock has come close to Powerlink's returns. These returns are being realised despite Powerlink being the most inefficient transmission network in the NEM. The primary driver of Powerlink's profitability is the AER's provision of excessive 'return on capital' allowances.

The WACC/RAB Inconsistency

The AER's methodology for determining the networks' 'return on capital' allowances does not appropriately consider the impacts of RAB indexation:

- The AER's methodology for estimating the required percentage returns (for both equity and debt) is based on the returns that investors require on their actual capital investments.
- However, the AER calculates its 'return on capital' allowances by multiplying those percentage returns to artificially inflated capital bases.

This inconsistent approach, together with the AER's incorrect gearing assumptions, is resulting in the AER providing 'return on capital' allowances well above the required levels – eg it is currently resulting in the AER providing 'return on equity' allowances to Powerlink of around four times the required level.

2. Do you agree the five assessment criteria used by McGrathNicol to assess the profitability measures are appropriate? If not, what alternative criteria should be used?

We note the two objectives identified by McGrathNicol in the scoping study to establish financial performance measures. The first objective: *Measure the actual profitability of the regulated entity* is broad and it is not clear what mechanisms, benchmarks or principles would be applied to determine 'actual profitability'.

The second objective appears to be more comprehensive and would potentially provide the AER with a broader capacity to scrutinise an entity's profitability, that is:

- Allow the AER to compare the actual profitability of the regulated entity to:
 - The allowed return on equity from its regulatory determination,
 - Actual profit of other regulated entities, and
 - Actual profit of other businesses operating in the Australian economy.

As noted, until the AER adopts a performance measurement framework to enable an accurate assessment of the profitability of regulated electricity and gas businesses, and comparable to that of other ASX entities, a true picture of profitability will not be established. An international benchmarking model would also be of benefit.

The five criteria identified by McGrathNicol appear to be comprehensive:

Criterion 1: requirements are based on clear concepts and performance measures are able to be calculated consistently over time.

Criterion 2: calculation does not require significant manipulation of data, or require assumptions to be made. The measure's calculation is not significantly impacted by accounting adjustments, taxation treatments, or the entity's financing structure.

Criterion 3: generally accepted by industry experts as a good measure of profitability, and easily understood and meaningful to persons without a financial background

Criterion 4: suitable given the industry characteristics (e.g. capital intensive, long life assets, regulated revenue and returns).

Criterion 5: readily able to be compared to other businesses in the sector and other businesses in the broader economy.

The ratings classifications detailed in the McGrathNicol scoping study in order to rate the appropriateness of the financial performance measures, appear to be satisfactory.

3. Do you agree that the identified data is required to develop the preferred profitability measures?

It is apparent that the lack of relevant data has been a key limitation to reporting on the profitability of network businesses. The Taskforce agrees with the need for the following data as suggested in the discussion paper:

- Return on Assets
 - Earnings before interest and tax (EBIT)
 - Regulated asset base (RAB)
- Return on Equity
 - Net profit after tax (NPAT)
 - Total equity
- Economic profit
 - Earnings before interest and tax (EBIT)
 - Pre-tax weighted average cost of capital (WACC)
 - Total assets
- Operating profit per customer
 - Earnings before interest and tax (EBIT)
 - Customer numbers

The Taskforce has repeatedly pointed to the obligation to have regard to the benchmarks in setting expenditure allowances.

We have raised in previous Government related submissions that, in promoting their interests on the calculation of the WACC, network businesses propose what they argue to be the WACC of the

benchmark efficient network service provider. It is in these proposals that we consider the network companies have intentionally misled the AER, with a focus on three aspects:

- the calculation of the cost of debt
- debt and equity raising costs and
- income taxes.

Income taxes, debt and equity raising costs are compensated through cash allowances whereas the compensation for the cost of debt is determined as a percentage allowance to be applied to the regulated asset base (RAB).

With regard to debt costs, networks argue that their debt is high risk. They also argue that the credit rating of their debt determines their borrowing costs. However, the evidence from the actual yields on network bonds and the price paid for bank debt shows that network businesses' actual borrowing costs are much lower than implied by their credit ratings. This is because lenders recognise that networks are monopolies and hence, while credit rating agencies may, for example, assess the credit rating of a network business to be, say, BBB. Its status as a monopoly means that actual credit risks are lower, and hence lenders are willing to lend money at much lower rates than implied by their credit ratings.

With respect to income taxes, again a 'normative' model is applied (ie the specific circumstances are not examined) and the focus of argument on taxation allowances has been on the treatment of imputation credits. Network businesses have argued for much more favourable parameters, including successfully in the Australian Competition Tribunal (ACT), in applications for the review of the merits of the AER's decisions.

The networks' arguments however, do not reflect the reality of the taxation they incur. For example, the Queensland distributors, Energex and Ergon, were parties to an application to the ACT in 2010 to challenge the AER's decision on the imputation of dividends. But the full income tax of these government-owned distributors is paid directly to the Queensland Government. The imputation of their dividends is completely irrelevant. Although the distributors' argument prevailed in the ACT, the Queensland Government did not allow the Queensland distributors to raise their revenues by \$490m to increase tax charges to consumers. However, in their further revenue proposals to the AER, these businesses again sought tax arrangements that did not reflect their own circumstances (i.e. that dividend imputation is entirely irrelevant to them since the taxation is paid directly to their state government owners).

It is not clear whether the taxation allowances for the privately owned distributors properly represents their actual tax costs. We are aware for example of taxation issues with SA Power Networks where they proposed that electricity consumers be charged a little under \$450m, when their published financial statements in period showed that for the three years for each year data was available, SAPN received a tax credit of around \$4m. This may have been due to the specific structure of SAPN and that taxes were being paid at some other level of the organisation.

Taxation concerns also apply to the privately owned Victorian distributors where it is understood the Australian Taxation Office were investigating several issues. This is a complex area, and potentially made more so due to the lack of transparency and current limitations to reporting on the profitability of network businesses and lack of relevant data.

In respect of debt and equity raising allowances, which are worth often several hundred million over the course of a regulatory period, the AER again applies a 'benchmark' model. There is no evidence that the businesses, (particularly the government-owned networks), incur anywhere near the allowances

they seek (and which the AER approves). In particular, the government-owned networks do not incur equity raising costs (they are owned by governments) and their debt is arranged by state treasuries which do not incur many of the costs that the networks seeks to recover from their customers (which are based on the false assumption that they are privately owned).

The AER has supported the ‘benchmark efficient’ approach to the calculation of the cost of debt and equity and in respect of debt and equity raising costs. To date, the AER has accepted many of the network businesses' claims despite compelling evidence that they are not supported by evidence of their actual costs, and the AER has not acted on the advice of its advisors Professor Lally and Chairmont Consulting². Under the current regime, the **networks are not required to disclose their actual borrowing costs. This must change.**

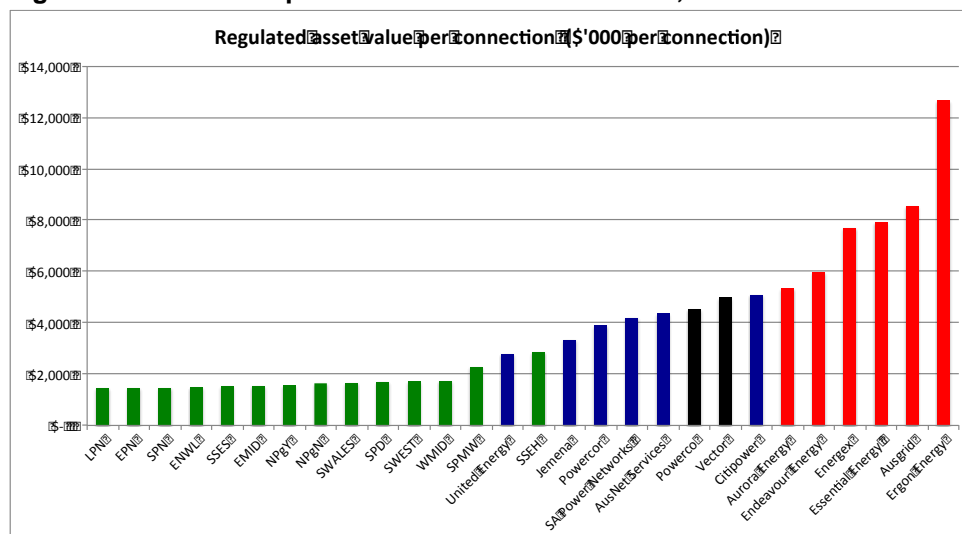
The Taskforce seeks a comprehensive assessment of the economy-wide costs and benefits of revising the electricity network and transmission businesses’ regulated asset base (RAB) to efficient levels. We have long called for a review of the RAB of electricity network infrastructure in order to deliver real cost reductions to consumers.

There have been countless studies into the drivers of recent electricity cost increases and most of these studies have concluded that the RAB and the Weighted Average Cost of Capital (WACC) have been a driving force behind these increases.

Given the current value of the electricity distribution and transmission businesses’ RAB, electricity costs will remain high unless there is a fundamental shift in the way the RAB is set and calculated into the future (i.e. reduced to more sustainable levels).

Regulatory asset valuations amongst distributors in the NEM (particularly those in NSW and Qld) are now extremely high by international standards. **Table 1** compares the regulated asset values per connection of Australian government owned distributors (the red bars) with the privately-owned distributors in Australia (the blue bars), New Zealand’s two largest distributors (the black bars) and the British distributors (the green bars).

Table 1: Regulated asset value per connection in Great Britain, New Zealand and Australia⁴



Source: regulatory accounts, CME Analysis

⁴ regulatory accounts, CME Analysis

A series of factors have contributed to the inflated RAB values for the distribution network businesses in the NEM, including the state based reliability standards and growth in demand in certain areas. None of these drivers however, have been as important as the regulatory framework governing the setting of the original RAB value and determining the ongoing valuation of the RAB in each regulatory determination.

Under the current regulatory framework, the AER has limited control to adjust the distribution network businesses' RAB, as the valuation methodology has been set within the National Electricity Rules (NER). The inability of the federal regulator to set network prices based on efficient RAB values has been demonstrated by the outcomes of the AER's revenue determinations in recent years, which have delivered unsustainably high electricity prices for consumers.

In terms of the methodology for determining the RAB, several deficiencies, include:

- a. The initial regulatory valuations of the distribution and transmission businesses were determined when the networks were established in the mid to late 1990s. A number of valuation methodologies could have been adopted however, the regulator chose to apply the 'Depreciated Optimised Replacement Cost' (DORC) valuation methodology – a methodology that resulted in the highest possible RAB valuation for the networks.
- b. The opening RAB methodology required the regulator to subsequently optimise the ongoing RAB value to reflect the efficient value of assets needed to provide the required services. This meant that if the networks invested in more network capacity than required, the regulator was supposed to exclude the value of the excess capacity from the regulatory asset base until such time as the additional network capacity was required. However, in practice, this capacity assessment has rarely been applied. As a result, consumers were faced with:
 - having initial regulatory valuations set at the highest possible levels using the DORC valuation methodology, based on the expectation that the ongoing RAB valuations would be subjected to optimisation; and
 - regulators not actually applying the required optimisation to the ongoing RAB valuations.

In 2006 the AEMC made amendments to the National Electricity Rules which effectively removed the optimisation requirement, together with changes that ensured that all future CAPEX was automatically rolled into the RAB without any prudence or efficiency review. The removal of the optimisation and ex-post review provisions in 2006 was a major driver of over-investment.

- c. The incentives for over-investment were particularly strong for government-owned networks due to their lower borrowing costs and the additional benefits that they realise from over-investment.

The Taskforce again contends that the network assets are substantially over-valued, not least in light of declining asset utilisation due to lower than expected demand.

The writing down of assets in the competitive market is commonplace and is provided for in International Financial Reporting Standards (IFRS). IAS 36 "Impairment of Assets" seeks to ensure that an entity's assets are not carried at more than their recoverable amount (i.e. the higher of fair value less costs of

disposal and value in use)⁵. It also defines how the recoverable amount is determined. Similar rules are implemented in the regulation of gas in Australia and further in the United States a “used and useful” approach is applied in the regulation of utilities.

While several reviews attempted to modify the approach to RAB regulation, to date no changes or recommendations have been made by the AEMC or other Government departments that would change the current approach to valuing the RAB. The Queensland Productivity Commission (QPC), including members seconded from Queensland Government departments, considered reliability performance, the “adverse financial impact” on the state to write down the RAB and regulatory barriers. The adverse financial impact was linked to increased borrowing costs, lower shareholder returns and an adverse effect on the credit rating. The QPC also noted that the national electricity rules currently provide no scope for the AER to undertake a RAB write down – this is a principal regulatory barrier⁶.

In its final rule determination in 2012 the AEMC blocked a proposed rule change that would have enabled a potential RAB write down. This decision blocked an opportunity to return to the optimisation rules that applied in the original NEM design.

Neither the QPC nor the AEMC conducted a detailed economy-wide analysis of the benefits associated with optimising the RAB and promoting efficient investment in, and operation of, the network identified by Professor Garnaut. Instead, both focused on the potential narrow impacts of such action on the network service providers and their shareholder owners. This is an unacceptable outcome; the risk should not be borne entirely by consumers, but rather equitably shared by the networks’ shareholder owners and consumers. The sharing of risk ensures that the networks continue to aim for further efficiencies.

Notwithstanding these issues, the Taskforce continues to seek a change to the way electricity networks’ RAB is calculated as part of their network cost and embedded in their submissions to the Australian Energy Regulator (AER). The regulatory framework for gas pipelines requires the assets to be optimised and the value of unused and redundant assets to be written down. The asset revaluation was removed from the electricity pricing rules, not surprisingly just prior to the electricity RAB valuations took off. Why is the regulatory pricing framework that applies to gas and electricity networks not consistent? If it were, electricity networks would be entitled only to a return on their useful and used assets, a small step towards real cost reflective pricing.

Calculation of the weighted cost of capital (WACC)

The calculation of the WACC for distribution and transmission businesses in the NEM are the drivers of unsustainable electricity costs for consumers. The calculation of the WACC must change.

The determination of the WACC for the electricity distribution and transmission businesses – an issue that is largely but not completely within the AER’s discretion - is based on what the AER considers to be an adequate rate of return of a ‘benchmark efficient transmission or distribution service provider’. The calculation of the WACC, by its very design, is meant to be abstracted by the actual cost of capital of regulated monopoly businesses.

⁵ CANEGROWERS submission to the Finkel Review: <http://www.environment.gov.au/submissions/nem-review/canegrowers.pdf>

⁶ *Ibid.*

As the Taskforce argued in our 2014 submission to the Senate inquiry into electricity network companies, distribution network businesses have promoted their interests on the WACC calculations by arguing that:

- a. their debt is of 'high risk' (i.e. a BBB rating). In addition, they have claimed that the credit rating of their debt determines their borrowing costs. There is evidence however that the actual yields on network bonds and the price paid for bank debt shows that network businesses' actual borrowing costs are much lower than imposed by their credit rating. This is due to the fact that lenders recognise that networks are monopoly businesses and are willing to lend money at much rates than implied by their credit ratings. The evidence provided by Energy Users Rule Change Committee to the AEMC in 2011 shows that actual network borrowing costs, even during the peak of the financial crisis, were lower than suggested by the networks' credit ratings.
- b. their imputation credits should be calculated on favourable imputation credits. As highlighted in the Taskforce's submission to the Senate Inquiry (above), an example from the Queensland distributors, Energex and Ergon shows that the full income tax of these government-owned distributors is paid directly to the Queensland Government. The imputation of their dividends is therefore completely irrelevant. It is still not clear to the Taskforce whether the taxation allowance for privately owned distributors properly represents their actual tax costs.
- c. their debt and equity raising costs are higher than is actually the case. In particular, government owned network businesses incur nowhere near the costs of a comparative 'benchmark service provider. Government-owned network businesses do not incur equity raising costs – as they are government owned – and their debt is arranged by the respective state treasuries, at a rate lower than the network businesses seek to recover from their customers. This outcome arises from the incorrect assumption by the regulator that these businesses are 'privately' owned.

We note that the AER supports the 'benchmark efficient' approach to calculating the distribution and transmission businesses WACC and has accepted many of the network businesses' claims despite compelling evidence that they are not supported by the evidence of actual costs.

The calculation of the WACC for the transmission and distribution businesses must be based on evidence of the real borrowing costs and operating conditions of these businesses.

Transmission and Distribution businesses must be required to disclose their actual borrowing costs.

Return on Equity

We note the approach taken in Canada, where the Ontario Electricity Board calculates a return on equity to review the financial performance of electricity distributors, allowing a 3% variance on the expected return on equity.

As referenced in the CCP submission to the AER draft 2018-22 revenue decision Powerlink revised revenue proposal ⁷, a number of Australian and international investment consortiums attempted to purchase the NSW transmission network, TransGrid, which was sold for \$10.3 billion, amounting to 165% of TransGrid's RAB value.

⁷ *Consumer Challenge Panel submission to the AER draft 2018-22 revenue decision. Powerlink revised 2018-22 proposal*

Over recent TransGrid revenue determination processes, TransGrid made many assertions that the AER's approach to determining its return on equity allowances would not enable it to recover efficient financing costs or to attract equity investors – and claimed that it would result in lower investment in the network and a significant increase in TransGrid's financing risks.

The sale price achieved by TransGrid sits in stark contrast to those claims.

4. If you consider other profitability measures should be reported, what data is required to support those measures?

We have no specific comment here beyond the need to include a comprehensive examination and clear understanding of an entity's cost of borrowings, as noted above. Also noting that the measures used need to keep pace with changes in both technology and networks solutions, requiring periodic review and updating.

5. Do you consider we should use the same measures and data for all regulated businesses, or should we adopt different measures for different sectors (electricity/gas) or different segments (distribution/transition) of the energy sector?

The discussion paper notes that, for electricity businesses, the income statement contained in AER's annual reporting requirements provides both EBIT and NPAT, yet the AER does not currently require from entities, an annual balance sheet which would report total equity and total asset data. Therefore, to calculate the return on assets, return on equity or economic profit measures, the AER would need to include a balance sheet in its annual data collection from electricity businesses.

The Taskforce contends that it is imperative that a balance sheet is included in annual data collection and supports the adoption of a uniform approach to the income statement and balance sheet data requirements for all regulated businesses. A uniform approach would be across electricity and gas sectors (and preferably also) across different segments, that will enable benchmarking within sectors, an important consideration in light of the rate at which technology, network solutions and the market is evolving. It would also enable external benchmarking by facilitating comparison of the regulated business' profitability measures, between regulated businesses and across industries.

6. In addition to profitability measures, should we report other measures of financial performance? If so, how would these other measures contribute to the achievement of the NEO or NGO?

We note the additional financial performance measures suggested in the McGrathNicol scoping study, which include liquidity ratios, financing ratios and activity ratios. These may be helpful in assessing financial performance and to enable comparison across organisations of different size and across other industries.

Other considerations

The Taskforce recognises that regulation of electricity supply is complex, however while the National Electricity Law has established an overarching objective, the long-term interests of consumers and the Australian economy have been disregarded and ignored for too long.

The establishment of Energy Consumers Australia (ECA) in January 2015 has brought a greater degree of a consumer voice to the vast number of reviews and regulatory determinations occurring in the regulatory space since that time. Additionally, the Taskforce is supportive of the Consumer Challenge Panel (CCP) that has provided a 'direct line' between consumers and the AER.

The Taskforce acknowledges that the AER engaged a consultant to review the effectiveness of the CCP initiative and it is concerning that the AER expressed the opinion that the advice provided by the CCP did not substantially alter the matters or issues considered in their regulatory decision making process. This is of particular concern when it is claimed that the 'long term interests of consumers' are at the centre of decision-making.

Electricity use varies across agricultural businesses depending on industry, intensification of operations, location and structure of the business. Farms that require heating, cooling or irrigation have higher levels of electricity use. In some industries, electricity consumption is stable year-round, in others there can be significant seasonal variability. For some farmers, demand is flexible, providing choice as to when electricity is consumed. For others, demand is driven by factors beyond individual control, such as streamflow, the weather, and regulations that govern access to water, reducing options for an individual to manage their own demand⁸.

In Queensland, varying stakeholder feedback has been provided to the Taskforce on electricity supply in rural areas, highlighting the decreasing electricity-grid reliability experienced by many farmers and ancillary activities, such as processing and pumping of water. In some regional areas, reliability is an ongoing issue and, in some cases, it is decreasing. Disruption in electrical supply results in processing down-time, and unnecessary wear and tear on machinery, reducing the life-span of critical assets and infrastructure including energy efficiency measures.

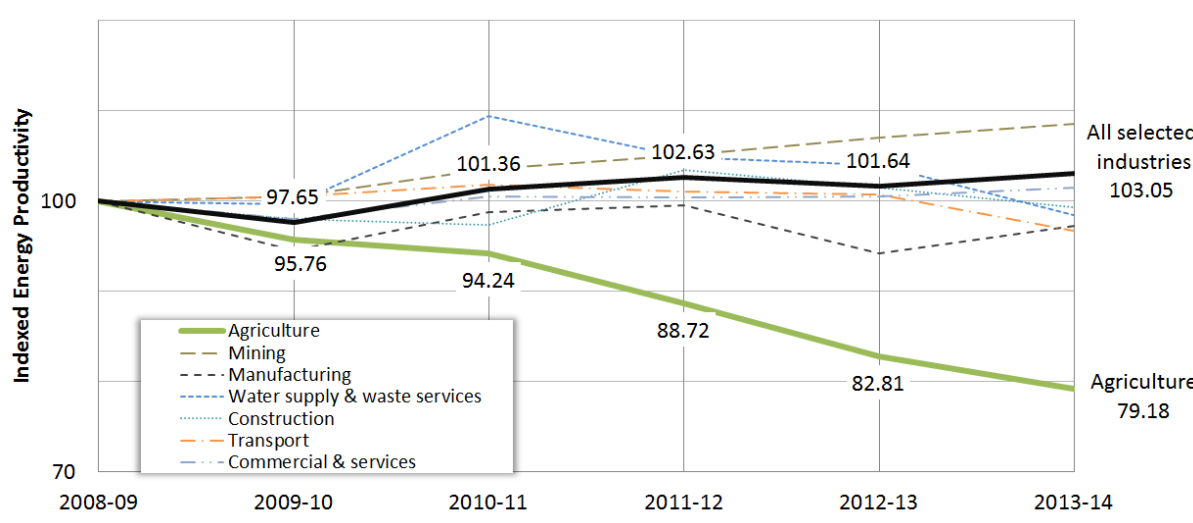
Affordability and reliability are key for agricultural producers – wholesale price spikes and outages can result in annual returns for some farmers being undermined over a period of a few hours. However, overinvestment to enhance reliability comes at the expense of affordability. Efficient investment in, combined with efficient operation and use of, electricity services is crucial for farmers, other consumers and the wider economy.

Most sectors of Australian industry have achieved significant gains in energy productivity over the past decade. The conspicuous exception is agriculture where energy productivity is declining.⁹ The chart below shows a decline of 21% since 2008.

⁸ National Farmers Federation submission to the Finkel Review, <http://www.environment.gov.au/submissions/nem-review/national-farmers-federation.pdf>

⁹ (Eyre, 2016) <http://www.aginnovators.org.au/blog/new-thinking-needed-about-regional-electricity-supply>

Figure 1: Indexed energy productivity performance of industry sectors. Agriculture energy productivity has declined 21% since 2008 (Eyre, 2016).



Analysis by NSW Farmers has suggested that greater reliance on diesel due to higher electricity costs, as irrigators switch from mains electricity to diesel generators, is a key factor in low energy productivity.

Improving agricultural energy productivity largely depends on access to affordable electricity. Electrification is a priority for most sectors of agriculture and is a requirement of the new technologies required to achieve general productivity gains (eg precision agriculture, automated control systems, electric vehicles robotics). Yet, we are moving in the wrong direction as exorbitant network charges drive irrigators to substitute electricity for diesel and to disconnect from the grid.

Attempting to segregate what needs to form the highest priority objective potentially ignores the diverse needs of consumers and geographic and user density factors that drive the economics of electricity supply in regional areas.

The current electricity grid, with its reliance on centralised generation, is an inefficient way to supply electricity to many regional and remote locations. Areas with a low density of users and sharp seasonal demand peaks (ie. in typical of irrigation districts) are the least cost-effective to supply under the current model.

A strategic integrated least cost planning approach is necessary to identify more cost effective ways to manage demand, improve service delivery and incentivise agribusiness to stay grid connected.

The high impacts of electricity pricing is being felt not only by the agricultural sector but by all consumers. The Energy Consumer Sentiment Survey (ECSS) undertaken by the ECA (published in February 2017) revealed:

- 60-70% of small businesses expressed a 7 out of 10 rating for satisfaction with reliability of electricity services
- Very low levels of satisfaction in relation to value for money for electricity services with consumers ranking electricity behind gas, internet, mobile phone, insurance, banking and water services.

Of further interest, the ECSS and the UMR Strategic research company report indicated that the primary reason consumers are investing in PV panels or behind the meter solutions was to manage consumption and to gain control of costs. The 2017 ECSS results found 34% of households are considering installing solar systems in the next 5 years, while 27% are considering installing battery storage. Small business interest in the technology is also strong, with 51% of small businesses considering installing solar systems and 49% battery storage in the next five years.

These movements in investment patterns indicate that consideration of prices paid by consumers should be a key focus by the regulator and across grid planning. This is particularly important given the upcoming pricing trends for electricity that have been earmarked by various institutions engaged in the NEM.

For example, the *AEMC 2016 Residential Electricity Price Trends* report highlights that electricity bills are anticipated to rise between \$28 and \$204 by 2018–19.¹⁰ As decisions are made managing the transition away from coal fired generation, the impact of price pass-throughs that will be fed back to consumers requires careful consideration. The CSIRO/ENA *Energy Network Transformation Roadmap* found that more than \$16 billion in network investment could be avoided by 2050 if distributed energy resources are optimised. The rate at which technology and the market is evolving also means that non-network solutions, involving less long-lived capital investments that can be adjusted with the circumstances, are preferable. To avoid further flow back of costs, any investment in centralised energy infrastructure must be carefully considered.

Greater focus is needed on the approach to managing peak demand loads across the NEM. Building additional power plants specifically to meet the small number of peak demand periods every year is the most expensive way to deal with potential blackout incidences. A more sensible policy approach would involve a cross network energy efficiency strategy to lower the overall load that consumers place on the network and encouraging co-generation or tri-generation capacity amongst high energy users.

Co-generation is significantly more efficient than gas and coal fired power generation as it produces heat energy as well as electricity that can be used for industrial processes. Electricity market reform could reduce electricity demand and gas use by encouraging gas cogeneration (as well as renewable energy). Efficiency measures for gas consumption can be encouraged through the State based energy efficiency schemes such as the Victorian Energy Efficiency Target and NSW Energy Savings Scheme; these have recently been broadened to include gas.

There is also opportunity to manage pricing impacts in the network that consumers currently use. In January 2016, Professor Ross Garnaut released a paper¹¹ stating that *“forcing high network charges on consumers in the face of declining use of the grid would impose a bigger penalty on consumers and businesses than a consumption tax, or even a carbon price. Metrics including the falling cost of renewables, reduced demand levels, should be applied to network assets to ensure that the network was priced properly.....and the first step towards rational pricing is to write down the value of redundant grid capacity”*.

¹⁰ *How much will electricity prices rise in 2017 across Australia*, available via: <https://www.finder.com.au/how-much-will-electricity-prices-rise-in-2017-across-australia>

¹¹ Garnaut, R. (2016). *Australia after Paris: Will we use our potential to be the energy super-power of the low-carbon world?* Public lecture hosted by the Young Energy Professionals, State Theatre Centre of Western Australia, Perth (21 January 2016).

Tariff Structure

The Taskforce supports a review of network tariffs. **These should be designed to ensure that irrigators and other businesses in non-congested parts of the network are not forced to meet the costs of network investments made to overcome congestion in other parts of the network.**

The current level of prices and the structure of network tariffs incentivises food and fibre producers in the NEM to consider alternative energy sources – to move off the grid - or forces them to shut down their high energy intensive irrigation equipment. The decision not to use high energy equipment significantly reduces productive capacity.

There will be significant pressure to change the current model of electricity tariffs with rapid technology change in energy hardware and software. The market will ultimately need to move to a model where customers will interact with the network in a way that suits them. The centralised grid model will be 'competing' in a market where consumers may be able to cost-effectively 'opt-out' of grid-supplied power unless it provides appropriate reliability and price. A preferred option may be for customers to move to a genuine net-metered model where they are able to trade power between their own and other nearby sites, paying DNSPs for local use of network. This model may increase grid utilisation as customers install optimum generation and storage on their sites, rather than overcapitalising in plant at individual sites with the aim of going off-grid. Accordingly, this model would secure revenue for DNSPs, though in the form of a (time-and-distance-weighted) network transport fee rather than the current network charging regimes.

The incentive to move to alternative energy sources has intensified since a 2014 rule change made by the AEMC which mandated the move to 'cost reflective tariffs'. The 2014 AEMC rule change on distribution network pricing has caused a transition to 'cost reflective' tariffs – demand driven tariffs or Time of Use Tariffs - which has had (and will continue to have) a significant impact on irrigators' and growers' electricity costs. While demand based tariffs are a sensible approach when congestion and constraints exist in the system, it is an absurd strategy to deploy when:

- a) There is spare capacity in the National Electricity Market
- b) Food and fibre producers have limited information about their energy use and the tariff structure applicable to them.

Congestion is used by many networks as justification for price structures. Yet a recent report by Sapere Research concluded that network congestion data used by Ergon in its Queensland tariff proposal overstates congestion by a factor of approximately 375. The scale of this pricing distortion added up to \$1.8 billion over five years.¹² Similar congestion modelling of NSW networks undertaken by the Institute of Sustainable Futures, using data provided by the networks, indicates similarly nil to low numbers of areas / regions impacted by network congestion. Prices in all NEM states would appear to be being distorted by these exaggerated congestion claims.

However, despite the information available in relation to congestion, in reality it is difficult to make appropriate assessments about what constitutes an appropriate tariff (and pricing) structure when so little is known about individual consumption patterns or investments behind the meter. As highlighted by the recent review into the Security of the National Electricity Market:

'The growing number of distributed energy resources could also impact on power system security. They are not centrally controlled or visible to AEMO and there is currently no formal

¹² Sapere. (2016). *Errors in Australian Energy Regulator's Draft Decision on Ergon Energy's 2016 Tariff Structure Statement*, November 2016. Commissioned by CANEGROWERS Launched on 15 February 2017. See <http://files.canegrowers.com.au/queensland/web-CANEGROWERS-Sapere-Report-Launch-document.pdf>

*national framework for collecting information on them (such as their location, date of installation, controller settings, brand, model and real time energy statistics). This means that power system models and forecasts are less accurate than in the past, particularly when the output from distributed energy resources is high and fluctuating’.*¹³

Given the inaccuracy of AEMO energy forecasting historically, it is concerning that these forecasts will become progressively more unreliable. However, irrespective of the increased challenges to forecasting demand, the regulatory framework governing network charges is having real impact on food and fibre producers no.

In the case of Queensland, QFF has modelled the impacts of moving towards cost reflective tariffs¹⁴ on irrigators in the St George district. Based on our analysis, implementation of demand tariffs on irrigators in St George will increase electricity bills between 200% and 300%. In one example, an irrigator who currently is on Tariff 62 (with an associated bill of \$150,000 per year) would be forced to pay \$450,000 under the new tariff arrangements despite no alternation in his electricity use. Such an exponential increase in input costs cannot be absorbed by a cotton producer or any agricultural business in a similar circumstance.

In NSW, 185 primary producers will be forced to switch to ‘Time of Use’ or ‘Demand Driven Tariffs’ which will result in cost increases of up to 100 per cent with no corresponding change in electricity use. The resulting cost pressure is significant and illustrates the vulnerability of irrigators to the current regulatory framework governing electricity producers where the AEMC rules require a shift to cost reflective tariffs.

The introduction of ‘cost reflective tariffs’¹⁵ on agricultural producers results in severe reductions in farm profitability and results in perverse operational outcomes. The tariffs and associated costs are pushing food and fibre producers to alternative energy sources – moving them away from the electricity grid – or forcing them to shut down their electricity intensive irrigation equipment.

Without the acknowledgement of the requirements of consumers, irrigators may abandon the grid which will have significant implications for those who do not have the choice or ability to move off the grid. These impacts will be particularly amplified for rural and regional communities or in ‘end of line’ scenarios. In these situations, rural communities may often be reliant on large industrial users paying for electricity to maintain their electricity infrastructure and generation capacity. While the Taskforce supports investigation of alternative solutions for ‘end of line’ scenarios, a complete abandonment of the grid is not in the interest of broad rural and regional consumers.

Driving prices – through network tariffs - towards a scenario where electricity from the grid becomes unviable, is in no-one’s interest. There continues to be no modelling or understanding of the broad impacts that will occur through high prices forcing large customers to seek off grid solutions.

There should also be an assessment of whether a network transport fee, payable by customers who may generate power at one site and consume at another, is established. The fee could include a consideration of distance and a peak time component consistent with the points above.

¹³ Dr Alan Finkel, *Independent Review into the Future Security of the National Electricity Market (Preliminary Report)*

¹⁴ As per the Australian Energy Market Commission rule change in 2014 on the distribution network pricing arrangements.

¹⁵ Cost reflective tariffs in most cases refer to demand based tariffs. These already apply to consumers that use over 160 mWh in NSW. In Queensland consumers are being transitioned to demand based tariffs with the transition to be complete in 2020. In Queensland demand based tariffs apply to consumers who use over 100 Mwh.

Improvements to regulatory processes undertaken by the AER

The current 'propose-respond' arrangement as part of the AER pricing determinations process, creates a significant advantage for network businesses relative to the regulator, and effectively places the onus of proof on the regulator to demonstrate that the businesses' proposals are incorrect or flawed. While the AER is able to interrogate and question various aspects of network business submissions during the pricing determinations and seek information, the regulator is not free to set the agenda.

This process leaves the regulator constrained and enables network businesses to effectively inundate the regulator through the weight of material it provides. The vast weight of materials presented to the regulator by the networks makes it virtually impossible for the regulator to consider all available information.

This weight of material also disadvantages consumers and our own Taskforce members, who do not have the resources to adequately review and respond to this material. As such, consumers (rightly or wrongly) place an additional expectation on the AER to provide clarity on the proposals, their decisions and to any queries that arise, particularly where there is a range of conflicting views presented.

This current examination of profitability measures for regulated gas and electricity network business, provides an opportunity for the **AER during the revenue determinations process, to set the agenda** in relation to preferred measures, data required and issues relating to financial performance.

Changes to institutional responsibilities in the NEM

There are significant changes that must occur in the roles and responsibilities within the NEM. This was highlighted by the ECA in their submission to the Finkel Review:

"AEMO is the institution charged with national transmission planning and maintaining security and reliability of supply. The current arrangements - where key reliability functions reside within the AEMC's Reliability Panel, and transmission planning is done by AEMO in Victoria, but transmission businesses in other jurisdictions - do not support the whole-of-system approach needed to run a highly complex, integrated national network."

There is also clear bifurcation of roles and responsibilities by AEMC and the AER. It is interesting to note that the AEMC has not once approved a rule change put forward by consumers. For its part, the AER views its role narrowly, as a regulator that oversees compliance with those rules. The AER appears not to take an active role in proposing rule changes despite having a clear role in doing so and receiving significant advice from its own CCP of the deleterious effect of existing rules. The AER has also received strong customer feedback over the impact of the resulting electricity price spiral on the international competitiveness of their businesses.

Appropriate standards for the security and reliability of the electricity system

A combination of high reliability standards and poor demand forecasting has been responsible for the over capitalisation and investment in the electricity network. Reliability standards set across the NEM warrants close review. The Institute of Sustainable Futures produces a constraints map of the distribution network and according to the data (provided directly by the networks), there are no areas warranting investment as a result of excessive demand. A similar picture is painted in Queensland where according to *Ergon's 2016 Distribution Annual Planning Report*, 98 per cent of the low voltage network has enough spare capacity to meet all forecast peak demand growth for the foreseeable future. This data supports our argument that there has been an inefficient level of capital investment

undertaken by the network companies in the previous ten-year period, which has resulted in a 'gold plated' infrastructure network.

To avoid any future network expansion and unnecessary augmentation, a close review of the reliability standards is warranted. In particular, an assessment of consumers' 'willingness to pay' for future grid reliability would be timely in light of alternative energy supply options which potentially provide 'back-up' supply through off-grid solutions and/or the existence of energy storage systems. It can be assumed that given these alternative options, consumers' willingness to pay for high reliability from the grid has diminished to a degree (or will diminish when the technologies are proven to be viable).

The role/impact of new technologies

The energy industry is in the midst of technological disruption, both in the physical technologies for the generation, storage and use of power; and in 'soft' technologies that can monitor, manage and securely trade power. The availability of these technologies is increasing rapidly.

The Queensland Government is working closely with the AEMC and stakeholders to develop new models for grid usage such as virtual net metering, peer to peer trading etc. including but not limited to:

- Where a farmer has multiple network connections, they can have renewables connected to the main NMI/account, and credit against consumption at a separate pump connection against the solar generation (with a 'grid transport fee');
- a farm business could generate enough power at one site with a bioenergy plant to cover the consumption at a number of separate (but nearby) sites, by offsetting that consumption against generation at the main site (with a 'grid transport fee').

To allow these new grid usage models to work, the AEMC will need to develop new rules. It is thought that the avenues currently being investigated by the Queensland Government could have been supported via the adoption of the rule change for Local Network Generation Credits (ERC0191) which was rejected by the AEMC in its draft determination. It should be noted that rule changes will be required to allow virtual metering, and additional leadership by the COAG Energy Council will be required to facilitate the adoption of decentralised energy generation and greater renewable energy deployment.

Across the grid, considerably higher levels of planning and data collection are required to ensure there is no reoccurrence of historically inaccurate demand predictions. Already, approximately 1.5 million rooftop solar systems are in place, and it is predicted that there will be 1.1 million battery storage systems in place in conjunction with PV panels by 2035¹⁶. There is no current understanding of the behind the meter investment and as such, the contribution these resources make to energy generation is VERY poorly understood. Smart meters will play an important role in improving the performance and delivery of the National Electricity Objective in the future.

Smart meters at end-user premises, as opposed to simply metering energy use for bulk billing purposes, are required to provide vital information. Smart meters allow both distributor network businesses and electricity end users to have better information on how energy is consumed, and to better control that use, including in the use of end-user generation systems.

According to the Energy Networks Association (ENA) "*As technology and energy markets develop rapidly, smart meters and other devices will benefit individual consumers. Customers should receive*

¹⁶ Dr Alan Finkel, *Independent Review into the Future Security of the National Electricity Market (Preliminary Report)*

practical information and more rewarding tariff structures that match their needs; be able to control their energy use to get better deals and participate in new markets, such as exporting energy to the Grid through solar panels or supporting energy storage options as these develop commercially”¹⁷.

While rules are now in place that will allow for a very gradual transition of consumers to smart meters i.e. when a meter upgrade is required or following the completion of the solar bonus scheme, we believe that if future grid needs are to be catered for, it is critical that transition to smart meter solutions should occur much more rapidly.

There are many issues to be resolved to facilitate the roll out of smart meter technology. These include:

- issues of smart meter connectivity in regional areas due to telecommunications blackspots
- data privacy and security concerns associated with smart metering arrangements
- education of consumers so they are aware of the shift away from ‘bulk’ electricity pricing on to time of use and load based metering
- the transitional arrangements for historical costs associated with older meter installations as metering responsibilities shift away from the network companies and on to retailers; and
- transparency of metering costs for consumers as retailers take on metering responsibilities.

In many cases, larger agricultural users have been mandated to ‘upgrade’ their meters to smart or interval based meters at their own cost. We believe that the challenges associated with a smart meter roll out must be addressed in order to develop a full understanding of our network capacity and the energy needs for the future NEM.

Broader regulatory reform is required to drive the regulatory change needed within the NEM. The network rules do not allow for localised solutions currently evolving within the existing network. The regulatory process should enable the market to respond quickly to allow for widespread adoption of these technologies that would allow customers to increase the utilisation of electricity networks.

For example, businesses in regional areas would benefit from the ability to ‘net-off’ their generation and use or trade with nearby sites, paying a small fee for the use of the local network (network transportation fee) rather than full network and retail costs. Solutions such as peer-to-peer trading may offer greater local network utilisation and stability, offering new revenue opportunities for DNSPs and result in less sub-optimal options such as ‘do nothing’ or eventual independence from the grid.

Distributed energy generation may represent a cost-effective approach to increasing the reliability of electricity supply above current grid levels. It may also be accompanied by cost measure benefits of ‘local energy trading system’ – where utilities can provide customers with solar and storage and allow their output to be traded in a suburban network. Such approaches require significant changes in the way incumbent utilities (e.g. Ergon, Essential Energy) manage their business models and will require networks to look to a more ‘distributed’ model, while the implications for centralised generation, and for retailers, will also be significant.

The rule changes required to allow this to occur need to be initiated urgently to ensure that remaining connected to the electricity network is a viable option for regional businesses, and in fact, the preferred option. It needs to be made absolutely clear that the network rules need to promote new solutions not protect existing owners.

¹⁷ *Changing the Face of Energy Management. Electrical Comms Data. Jan/Feb 2015. Vol. 14 No.6. pp. 32-34.*

Improvements to governance and regulation in the grid

Despite the attempts by various review processes to disentangle the regulatory structure of the Australian Energy Markets, our view remains that the current governance structure is highly complex and provides little opportunity for individual consumers or stakeholder representative bodies to engage effectively with the three key entities: Australian Energy Regulator (AER), Australian Energy Market Commission (AEMC) and the Australian Energy Market Operator (AEMO).

The tiered overview of the various governance bodies, regulators and COAG committees, does not provide a clear picture of the roles and responsibilities of these entities. There is a lack of transparency and clear delineation of responsibilities which makes it virtually impossible for food and fibre producers to fully engage with the governance bodies.

Fundamental reform is needed within the existing regulatory arrangements, not simply minor 'fine-tuning' that has characterised so much of the regulatory debate to date. We support, and have been engaged in, the activity emerging from some of the recommendations of the Finkel review.

The Taskforce proposes the following further reforms:

- a. The Competition Principles Agreement should not apply to state government monopoly electricity networks. The application of this agreement to electricity networks is obviously contrary to the legitimate commercial and economic purpose of this agreement for government owned businesses that provide services in competitive markets. No longer subsuming the network monopolies under this agreement will mean that the economic regulation of the government owned monopolies will recognise the state government's ownership, and regulatory allowances for the cost of capital will be established accordingly.

This will bring the regulation of government owned networks back into line with the long-established practice in Australia (which prevailed until the Competition Principles Agreement) and will mean that the economic control of government owned network monopolies in Australia will be consistent with the approaches adopted in the economic regulation of government owned networks in other countries including the United States, Germany, Austria and Scandinavian countries.

- b. Government owned network monopolies must be economically regulated by the state governments that own them. This is the long-established tradition in Australia until the reforms that led to economic regulation initially by state government regulators and subsequently by the AER. The outcomes delivered by these ostensibly independent regulators have, as we have shown, been highly unsatisfactory. Political accountability for the prices charged by state government distributors must rest with the governments that receive their profits and taxes.
- c. The excessive asset valuation must be addressed through write-down of the networks' assets. The AER's current examination of profitability measures for regulated gas and electricity network business may offer some solutions as part of this endeavour.
- d. The AEMC should NOT have any role in the economic regulation of networks. The bifurcation of economic regulation between the AER and AEMC is a unique model internationally.
- e. The form of regulation (specifically periodic price/revenue controls as opposed to other forms of regulatory control) should be reviewed.

Finally, in the context of possible privatisations of the transmission and distribution businesses in NSW and Qld, the question arises how partially privatised distributors should be regulated. Notwithstanding the complexity of this issues, our view is that if 'privatisation' takes the form of minority private shareholder participation, and governments continue to retain majority ownership and control, then the network should be regulated by the government, not by the AER.

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