AER Consumer Challenge Panel (CCP4)

Hugh Grant and David Headberry

Submission to the AER

Powerlink Queensland

2018-22 Revenue Proposal

June 2016

1 Summary Of Key Points

1.1 Current Regulatory Period Outcomes

- Powerlink achieved return on equity levels of up to 75% during the current (2013-17) regulatory period, compared to the AER's assumed 9.4%
- Powerlink was rewarded with 'windfall profits' of around $300 million due to its revenue allowances including returns on capex that it did not incur
- Many of the stakeholders' criticisms of the AER's 2013-17 allowances have proven to be correct (e.g. Powerlink's actual demand was 40% lower than its forecast demand during the period)
- Powerlink's operational efficiency continued to decline significantly over the period
- Powerlink's over-investments continued to result in increasing levels of excess capacity and major declines in asset utilisation levels
- Powerlink continued to receive very high bonuses from the AER's Service Target Performance Incentive Scheme (STPIS) - achieving annual bonuses of over $20 million

The above outcomes illustrate that Powerlink's 2013-17 allowances were well above the efficient level.

It is therefore very important that the AER does not fall into the false sense of security that could arise from making simple comparisons between Powerlink's proposed 2018-22 allowances and its 2013-17 allowances.

1.2 Powerlink's Extraordinary Profitability

Powerlink is extraordinarily profitable.

This submission outlines that Powerlink is achieving many multiples of the returns being realised by all other sectors of the Australian economy (e.g. 23 times the returns being achieved by the construction sector and 16 times the returns being achieved by the telecommunications sector).

1.3 Proposed Revenue

The reductions in Powerlink's revenue compared to the previous regulatory period is only due to reductions in interest rates. If interest rates had remained at the same level as the previous regulatory period, Powerlink's proposed revenue would be around 25% higher.

Returns on past investments are driving Powerlink's revenue to a greater degree than all of other Australian energy networks, accounting for 71% of Powerlink's proposed 2018-22 revenue.

1.4 Return on Capital (Rate of Return)

1.4.1 The AER's Return On Capital Determination Methodology Does Not Appropriately Consider The Impacts Of RAB Indexation

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 investments. However, the AER calculates its 'return on capital' allowances by multiplying those percentage returns to artificially inflated capital bases.

This is resulting in the AER providing return on capital allowances well above the required levels – e.g. it is resulting in the AER providing 'return on equity' allowances to Powerlink of around 4 times the required level.

The AER needs to revise its return on capital determination methodology to apply its percentage returns to capital bases that are more reflective of Powerlink's actual investments, e.g.:

- A debt base of around 55% of Powerlink's RAB
- An equity base of around 10% of Powerlink's RAB

1.4.2 The AER's Weighted Average Cost of Capital (WACC) Parameters

1.4.2.1 Return on Equity

- Powerlink's proposed equity risk premium of 4.55% is similar to the equity risk premium that the AER provided to the electricity networks during the previous regulatory period – **i.e. in the midst of the Global Financial Crisis.**
- The AER needs to have greater regard to stakeholders' critiques of its 'Market Risk Premium (MRP estimation approach and to apply an MRP at the lower end of the AER's range (i.e. 5.0% or below)
- The AER needs to have greater regard to stakeholders' critiques of its 'Equity Beta' estimation approach and to apply an equity beta at the lower end of the AER's range (i.e. 0.4 or below)

1.4.2.2 Return on Debt

Powerlink is proposing a 'return on debt' allowance of 5.2%.

This represents a debt margin (nominal debt less the nominal risk free rate) of around 2.5%, which is:

- Similar to the debt margin that the AER provided to Australian networks for the previous regulatory period **– i.e. during the Global Financial Crisis**
- Over twice the debt margin that was provided by the ACCC for the 2002-07 regulatory period
- Around five times the debt margin currently being provided by Ofgem for the UK networks

The AER claims that it has used BBB+ ratings in the development of its return on debt allowances. However it is well understood that due to limitations in the availability of Australian BBB+ data, in practice BBB ratings are used – i.e., the AER is providing significantly higher return on debt allowances than appropriate.

The AER needs to determine a return on debt allowance for Powerlink that is more reflective of the debt costs that Australia's electricity networks actually incur

1.5 Capital Expenditure

1.5.1 Powerlinks' Poor Capital Efficiency

Powerlink is much less efficient than the other transmission networks, having incurred significantly higher capex over the past decade, both in absolute terms and after normalisation for changes in network outputs.

The AER needs to have significant regard to Powerlink's poor capital efficiency in its determination of Powerlink's capital expenditure allowances.

1.5.2 Replacement Capex

Powerlink is proposing to spend a total of around $800 million in repex for the 2018-22 period, which would represent the continuation of Powerlink's extraordinary high repex spend levels.

This submission provides detailed critiques of deficiencies with Powerlink's repex proposal and the AER's repex assessment methodology.

CCP4 recommends that the AER's repex assessment methodology needs to have greater regard to:

- Powerlink's very poor capital efficiency and excessively high regulatory asset base (RAB)
- The implications of Powerlink's very high excess capacity level
- The implications of Powerlink's very low asset utilisation levels
- A critical assessment of the outcomes (e.g. system performance outcomes) that Powerlink's proposed repex programs and projects will deliver
- Determination of efficient repex allowances rather than basing its allowances on Powerlink's recent repex spend levels which have not been demonstrated to be efficient
- Detailed assessments of the prudency and efficiency of Powerlink's proposed repex projects
- Replacing Powerlink's proposed standard asset lives with the asset lives being achieved by other networks (Powerlink assumes much shorter asset lives than the other networks)
- A review of actual asset condition information - ensuring that asset replacements are justified on the basis of robust assessments of asset condition together with risk assessments that identify the risks of replacement versus alternative options
- Ensuring that alternative options to asset replacement (e.g. revised maintenance strategies, asset refurbishments, life extensions, and other risk mitigation options) are appropriately considered

- An assessment of the extent to which Powerlink's previous replacement capex programs have 'pre-installed' its repex requirements for the next regulatory period
- Ensuring that re-use strategies are more appropriately considered

1.5.3 Business IT Capex

- Powerlink is proposing an average business IT capex spend of around 2.5 times its actual spend during the 2002-07 regulatory period – a spend level that the regulator (the ACCC) considered to be reflective of Powerlink's efficient long-term needs
- Powerlink's business IT capex has consistently been much higher than the other transmission networks
- Powerlink has not demonstrated the business benefits it has realised from its major IT expenditure over the previous decade
- Powerlink's proposed business IT capex projects are very poorly justified

This submission provides a critique of the Powerlink's proposed IT programs and projects; and outlines CCP4's expectation that the AER will apply a high degree of scrutiny to its assessment of the prudency and efficiency of Powerlink's proposed IT projects.

1.6 Operating Expenditure

Powerlink is proposing a record-high opex spend for the next regulatory period, well above the efficient level

Powerlink's proposed opex is around three times its opex spend over the 2002-07 regulatory period – a spend level that was above the level that the ACCC considered to be reflective of Powerlink's efficient long-term opex needs

Powerlink's 2016 opex spend is over 230% of its 2007 opex spend

Powerlink's opex has increased by an average of 11% per annum since 2007, during which Powerlink's key system outputs reduced

Powerlink's opex growth over the past decade has been much higher than the opex growth of the other transmission networks, both in absolute terms and when normalised for changes in system outputs

1.6.1 The AER's Base Year Opex Determination

- The application of the AER's *base-step-trend* approach will not determine efficient base year opex costs for Powerlink
- The AER needs to set Powerlink's base year opex on the basis of benchmark efficient costs, not on the basis of Powerlink's historical costs which, as outlined within this submission, have been demonstrated to be materially inefficient
- For many years Powerlink has selectively used the outcomes of benchmarking reports to support its opex efficiency claims
- By contrast, Powerlink is now attempting to argue that the AER should not apply benchmarking to its assessment of Powerlink's opex efficiency

- This submission outlines why the AER needs to apply benchmarking to the determination of Powerlink's efficient base year opex
- The AER's base year opex determination also needs to have greater regard to the opex reductions that Powerlink should be realising from its major capex programs over previous regulatory periods (e.g. the opex reductions that Powerlink should be realising from its lower asset ages and reduced asset utilisation levels

1.6.2 Labour Price Change

- Powerlink is proposing an average annual real labour price growth factor of 1.12%.
- The electricity network sector is currently in a major contraction phase due to declining demand for its services, whereas the other sectors covered by Powerlink's labour forecasts are not
- The AER needs to determine efficient labour prices based on forecasts that consider the specific drivers of labour prices in the Australian electricity network sector
- Those forecasts need to take into account:
  - The electricity network sector is currently in a major contraction phase - industries in contraction do not face real labour price increasing drivers
  - The evidence that demonstrates that Powerlink's current labour costs are excessive
  - The evidence that demonstrates that Powerlink's labour and workforce practices are inefficient
  - The interaction between labour price change and productivity change – i.e. real labour price increases need to be compensated by offsetting productivity improvements

An appropriate consideration of the above issues will confirm that Powerlink's labour prices should be reducing rather than increasing.

1.6.3 Productivity

- Powerlink had the largest productivity decline of the five Australian TNSPs in 2014, with a fall of 4.9 per cent
- Powerlink is proposing to apply an annual productivity change factor of 1.2% over the 2018-22 period
- All of Powerlink's directly connected customers operate within capital intensive industry sectors that have consistently delivered much more significant productivity outcomes over the past decade
- There is no justification for Powerlink to continue to deliver lower productivity outcomes than other comparable industry sectors
- The AER needs to determine an appropriate combination of labour price and productivity change factors aimed at driving Powerlink's productivity back into line with the levels being achieved by other capital intensive industry sectors

2 Introduction

This submission outlines the perspectives of two AER Consumer Challenge Panel (CCP4) members – Hugh Grant and David Headberry - on Powerlink Queensland's 2018-22 revenue proposal.

The use of the term "CCP4" within this submission should be interpreted as representing the collective views of Hugh Grant and David Headberry.

Most of the charts included within this submission have been developed by CCP4 members from various sources of information; including RIN data, current and past revenue proposals, current and past AER decisions, and the electricity networks' annual reports.

Where there is no attribution of data or information sources, it should be assumed that it has been derived by CCP4 members.

3 Observations of Current Regulatory Period Outcomes

An observation of the outcomes of the current regulatory period (2013-17) identifies that:

Powerlink Achieved Extraordinary Profitability Levels

Powerlink achieved actual return on equity levels much higher than the AER's assumed percentage returns, achieving returns on equity levels of up to 75%, compared to the AER's assumed 9.4%

Powerlink Achieved Major Windfall Gains From Over-Forecasting Its Capex Needs

Powerlink achieved around $300 million in 'windfall gains' over the period, due to its revenue allowances including returns on forecast capex that it did incur

Stakeholders' Criticisms Of The AER's 2013-17 Revenue Determination Were Correct

Many of the stakeholders' criticisms that the AER received during Powerlink's 2013-17 revenue determination have proven to be correct, e.g.:

- The AER's excessive return on capital allowances enabled Powerlink to achieve extraordinary profitability levels
- Criticisms of the AER's demand forecasts - demand and consumption continued to decline during the period as predicted by numerous stakeholders, in stark contrast to Powerlink's forecast demand growth of 40% and the AER's forecast demand growth of 27%
- Powerlink's operational efficiency continued to decline significantly over the period due to the AER setting Powerlink's opex allowances on the basis of Powerlink's historical costs, rather than benchmark efficient costs

Powerlink's Excess Capacity Level Increased and its Asset Utilisation Levels Decreased

Powerlink's over-investment continued to result in increasing levels of excess capacity and declining network utilisation

Powerlink Continued To Receive Very High Bonuses Under the STPIS Scheme

Powerlink continued to receive very high bonuses from the AER's Service Target Performance Incentive Scheme (STPIS) – achieving annual bonuses of over $20 million

Returns On Past investments Drive Powerlink's Prices More Than Other Australian Networks

Returns on Powerlink's regulatory asset base (RAB) are now driving Powerlink's prices to a greater degree than all of the other Australian energy networks

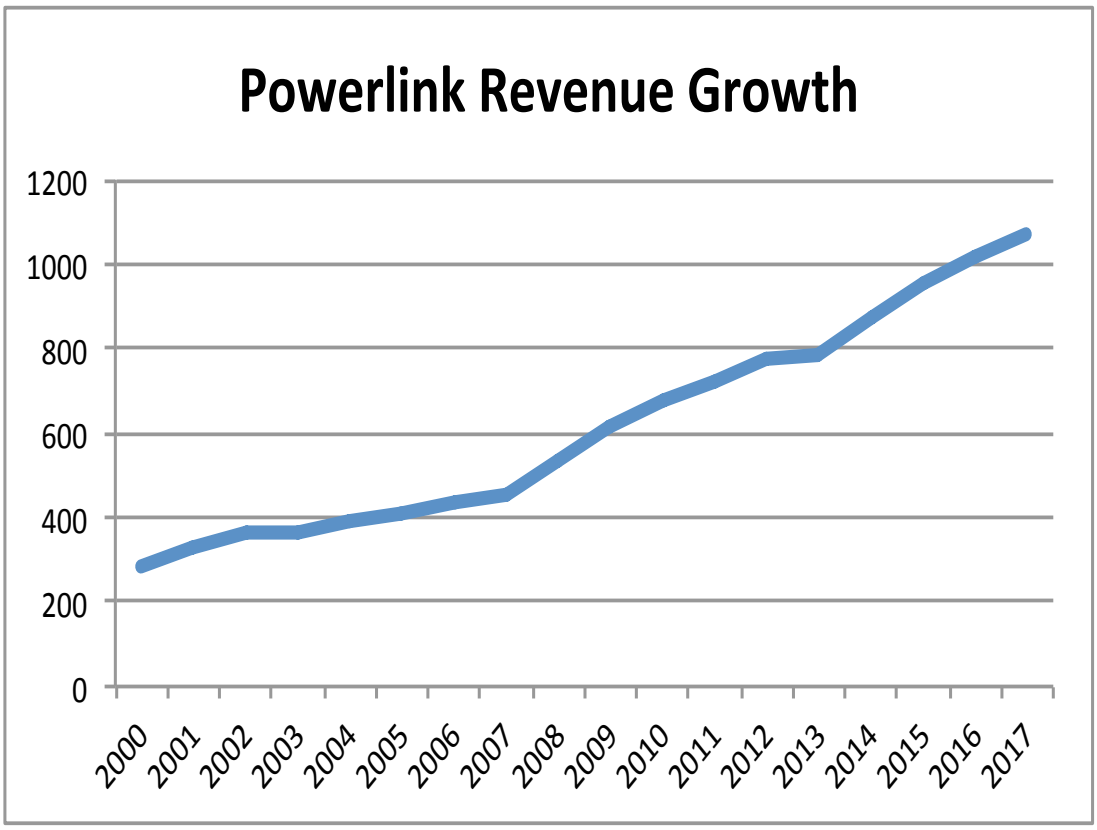
The above outcomes illustrate that Powerlink's 2013-17 allowances were well above the efficient levels.

It is therefore very important that the AER does not fall into the false sense of security that could arise from simple comparisons between Powerlink's proposed 2018-22 allowances and its 2013-17 allowances.

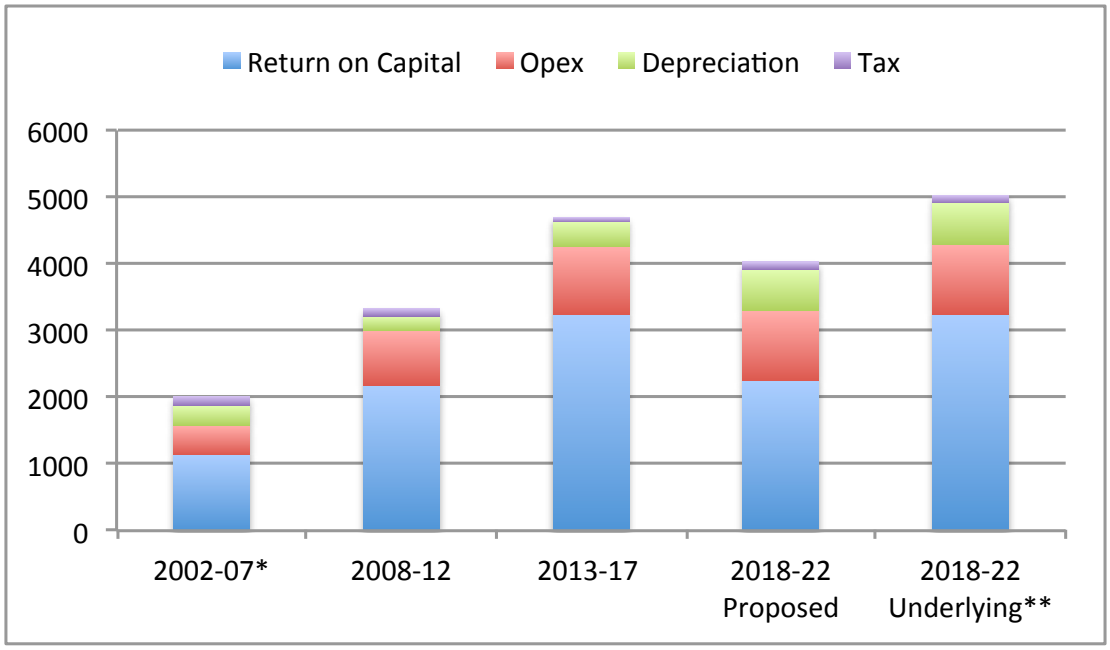
4 Powerlink's Proposed Revenue

4.1 Powerlink's Historical Revenue Growth

The chart below outlines the growth in Powerlink's revenue over the previous three regulatory periods.



4.2 Comparison with Previous Period Revenues



The above chart compares Powerlink's revenue building block components with the previous regulatory periods. The "2018-22 underlying revenue" is the revenue that would apply if the risk free rate remained at the average rate that prevailed during the previous regulatory periods.

It illustrates that:

- If interest rates had remained at the same level as the previous regulatory periods, Powerlink's proposed revenue and prices would be around 25% higher
- Powerlink is continuing to propose very high opex levels
- Powerlink is proposing a 68% increase in depreciation allowance compared to the current period
- Returns on past investments will continue to drive Powerlink's future revenue and prices, accounting for 71% of Powerlink's proposed 2018-22 revenue

4.3 Price Impacts

It is important to note that Powerlink's actual prices will be highly dependent upon the actual energy delivered by its network. Powerlink is regulated under a 'revenue cap' framework, which means it receives guaranteed revenues irrespective of the energy delivered by its network.

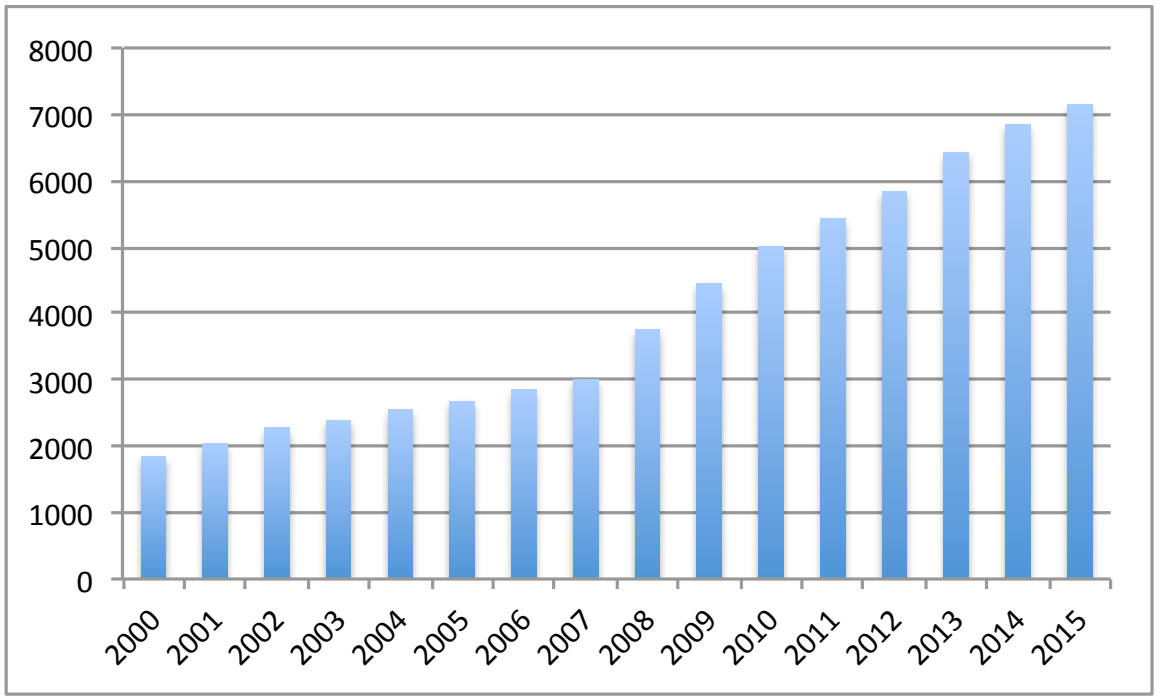
The 'revenue cap' form of regulation insulates Powerlink from volume risk, by passing that risk on to customers - i.e. if the actual energy delivered is lower than Powerlink's forecast, then Powerlink will increase its prices to recover its guaranteed revenues.

Furthermore, Powerlink's prices could also be significantly impacted by the Queensland distributors' new "cost reflective tariff structures" currently being assessed by the AER.

CCP4 considers that the sensitivity of Powerlink's prices to the above issues has not been appropriately reflected in Powerlink's revenue proposal, or in its claims regarding the price impacts of its proposal.

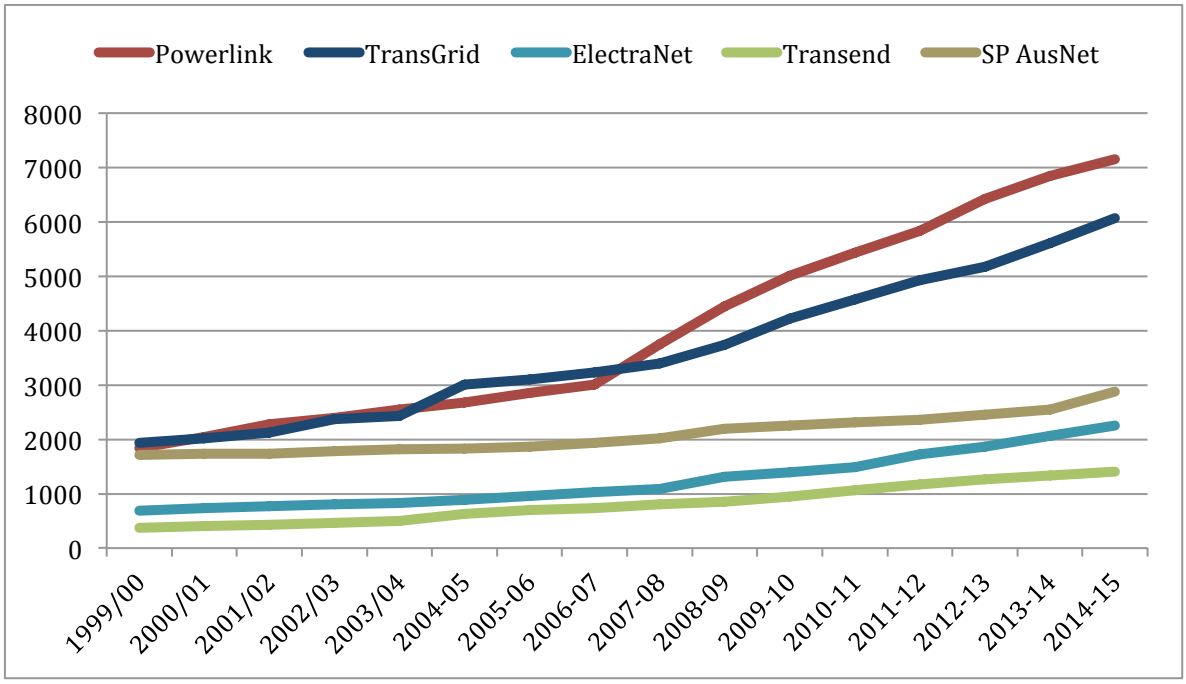
5 Powerlink's Extraordinary RAB Growth

The chart below illustrates the extraordinary growth in Powerlinks RAB over the past 15 years. It illustrates that Powerlink's RAB has grown sharply, particularly since 2007.

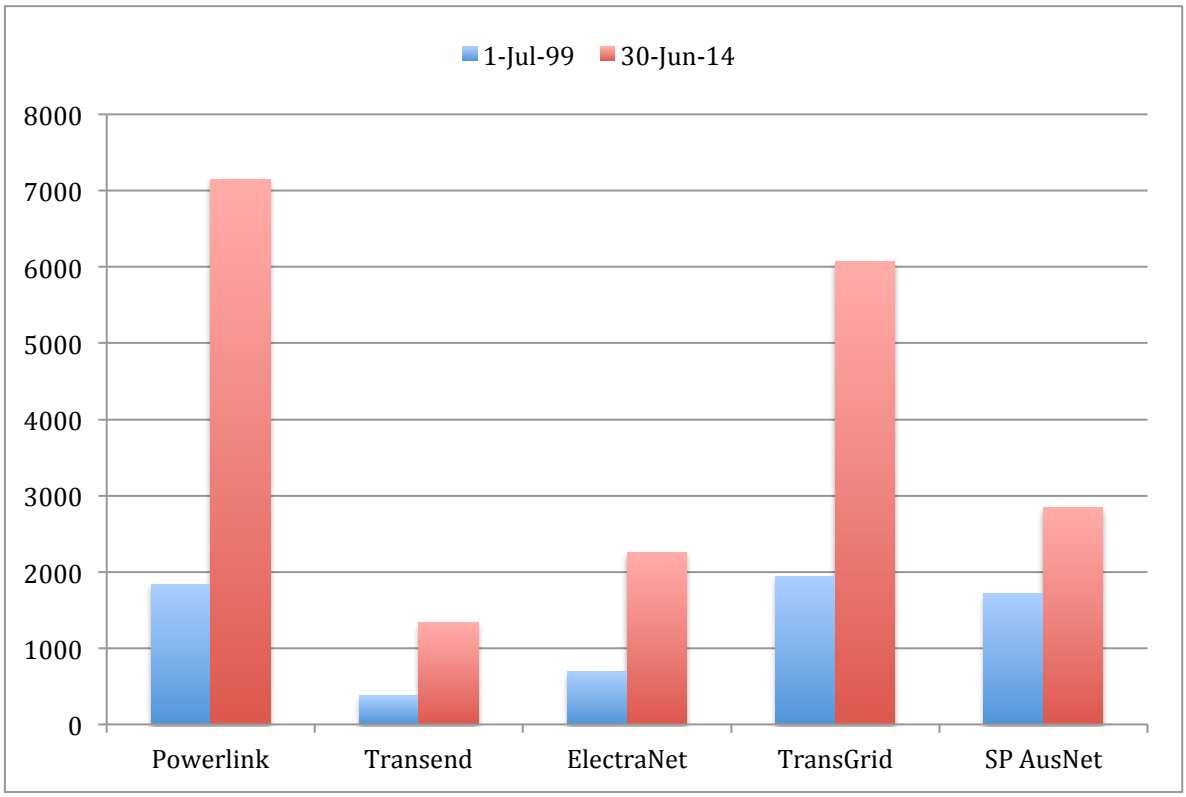


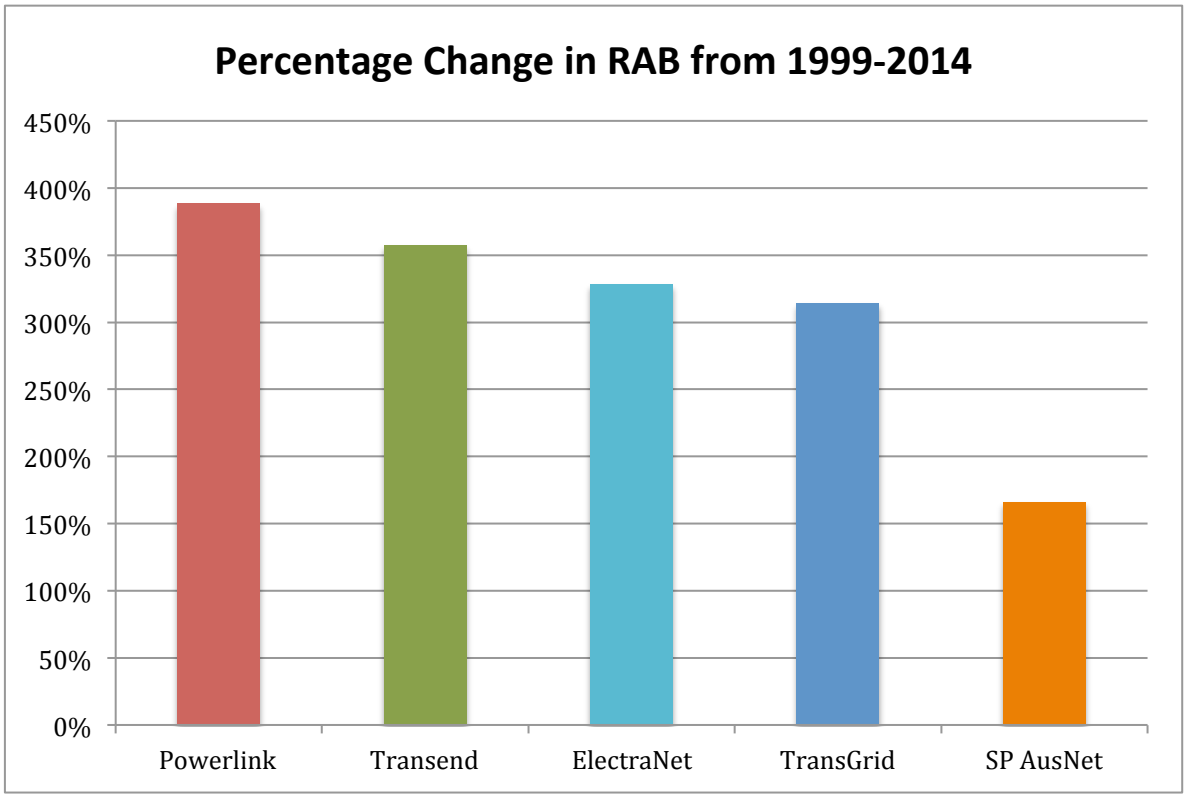
The chart below outlines the growth in the RABs of the 5 NEM transmission networks from 1999-2015.

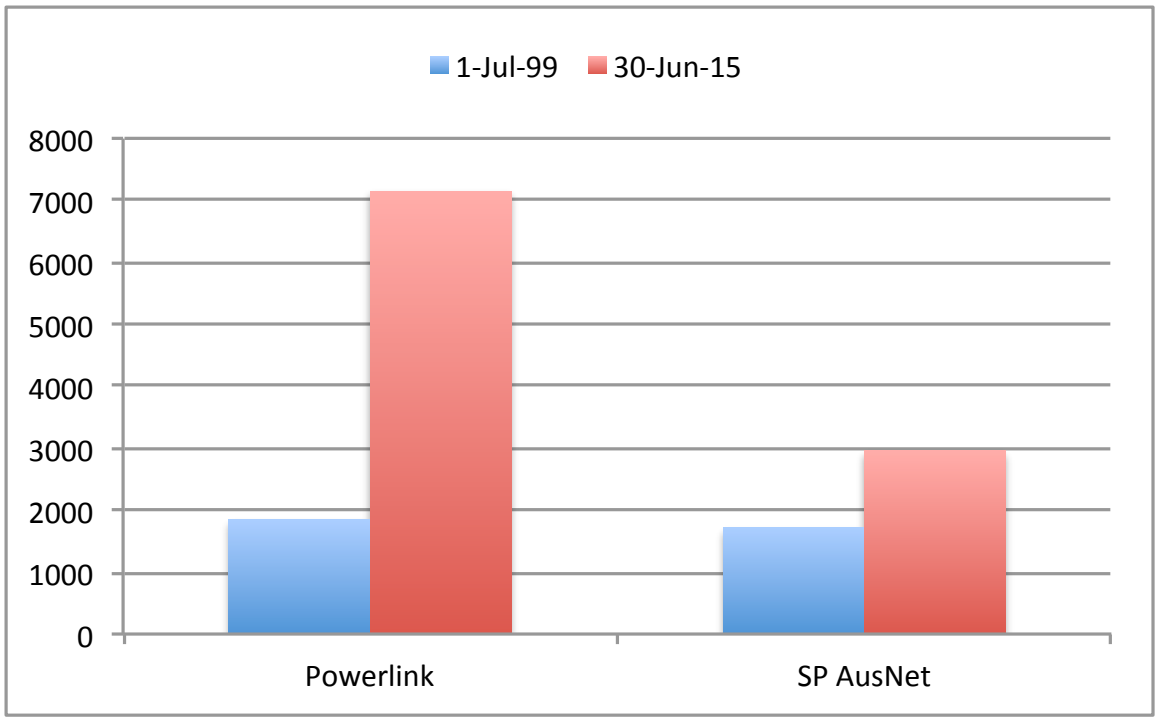
It highlights that Powerlink's RAB grew at the highest rate of all of the transmission networks.



The charts below illustrate the overall changes in the RAB valuations of each transmission network from 1999-2014. They highlights that Powerlink exhibited the highest RAB growth, both in absolute terms and also in percentage terms.







The above chart illustrates the dramatic difference between Powerlink and SP AusNet's RAB growth over the past 16 years:

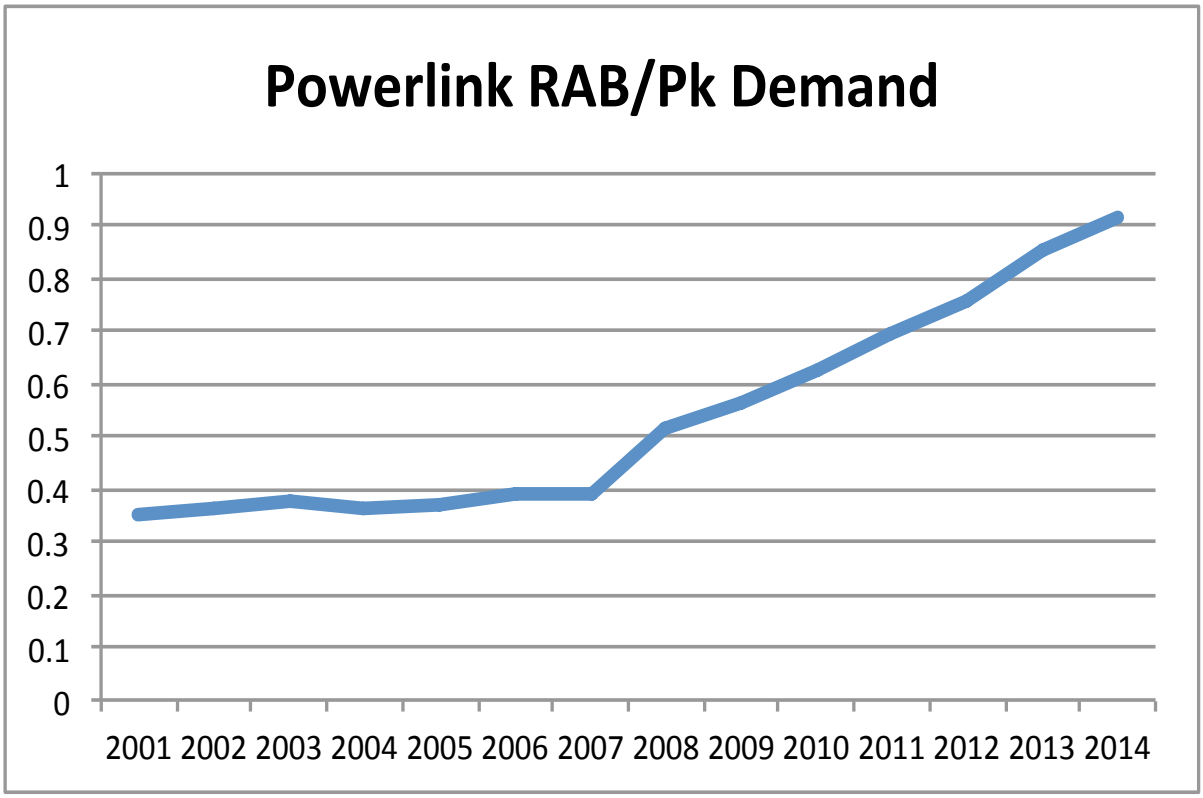
It illustrates that:

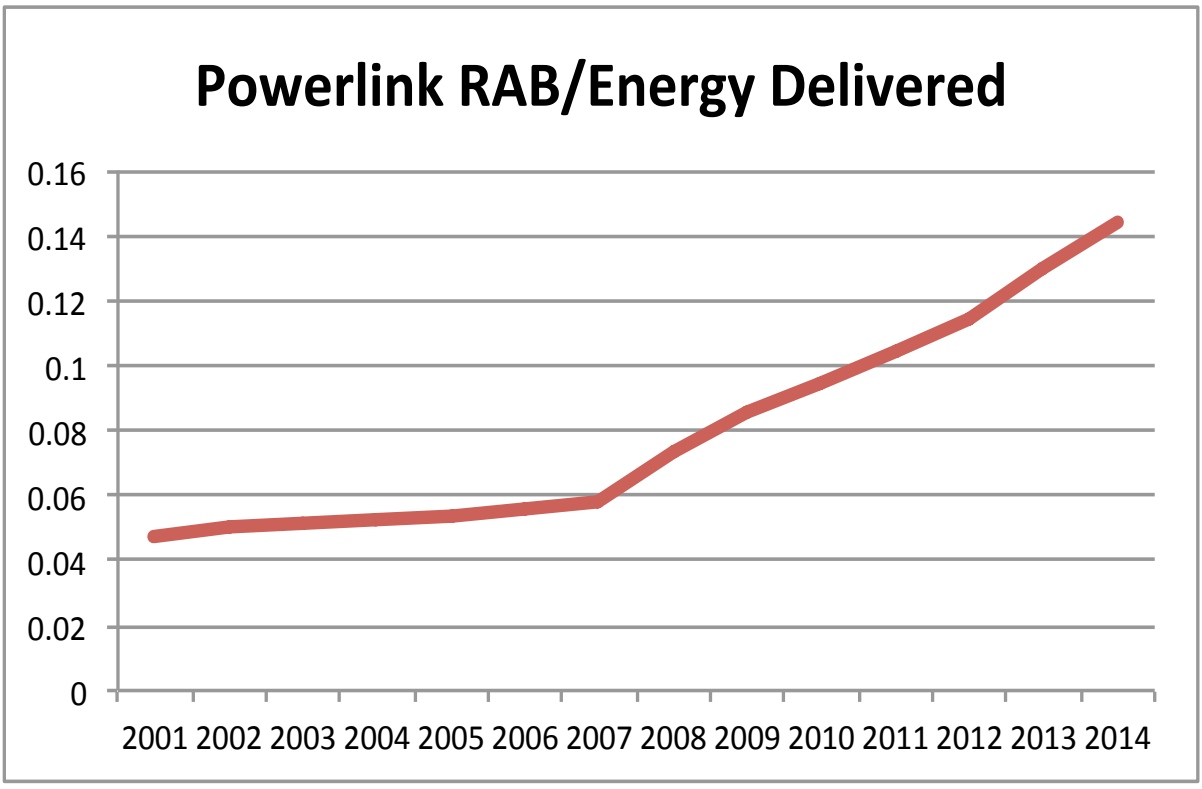
- In 1999, Powerlink's RAB value was similar to SP AusNet's
- Powerlink's RAB has subsequently grown to around 4 times its 1999 value
- By comparison, SP AusNet's RAB has grown to around 1.7 times its 1999 value

Various studies have identified that Powerlink's RAB value has grown much more significantly than all of the other transmission networks - both in absolute terms, and after normalisation for system outputs.

The charts overleaf illustrate the trends in Powerlink's RAB when normalised for two key system outputs - peak demand and energy delivered. They illustrate that Powerlink's RAB/Peak Demand and RAB/Energy Delivered ratios more than doubled over 2007-14 period.

This emphasises the importance of the AER's capex determination for Powerlink incorporating an appropriate consideration of Powerlink's capital efficiency.


Powerlink RAB/Pk Demand
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Powerlink RAB/Energy Delivered
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

6 Powerlink's Capital Efficiency

6.1 The AER's Capital Efficiency Benchmarking Results

The National Electricity Rules (NER) require the AER to have regard to benchmarking results when setting the capex allowances for Australia's transmission networks. [1]

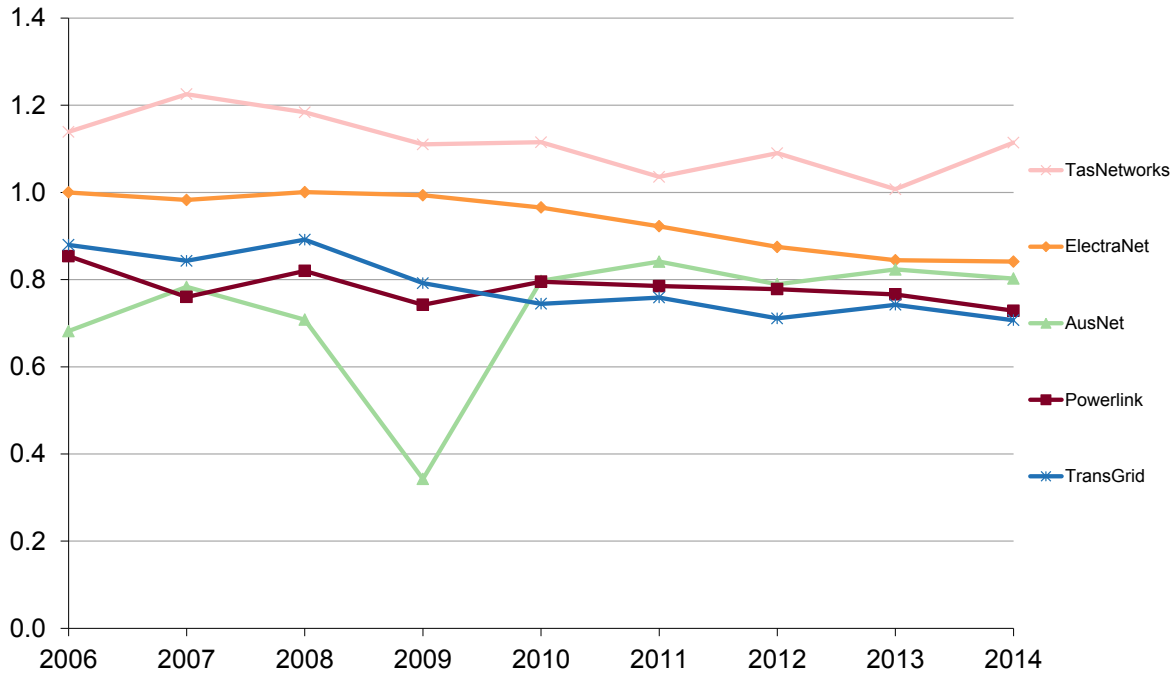
6.1.1.1 Multilateral Total Factor Productivity (MTFP) Results

The chart below outlines the MTFP score for each transmission network over the 2006-14 period.

It highlights that:

- ElectraNet's productivity declined by around 15%
- The productivity levels of Powerlink and TransGrid declined by around 10%
- TasNetworks' productivity declined slightly
- The above declines contrast with the productivity of the SP AusNet which improved by around 15% over the period

Figure 1 Multilateral total factor productivity by TNSP for 2006–14

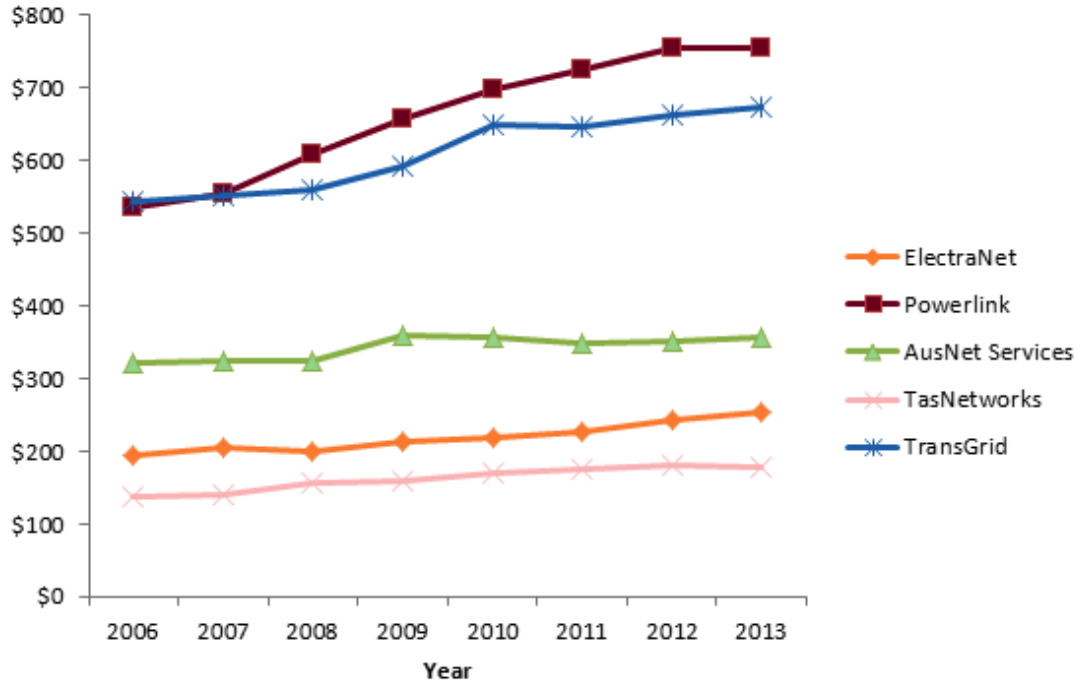


Note: In 2009 AusNet Services had large customer interruptions

[1] NER Clause 6.5.7 (e) (4)

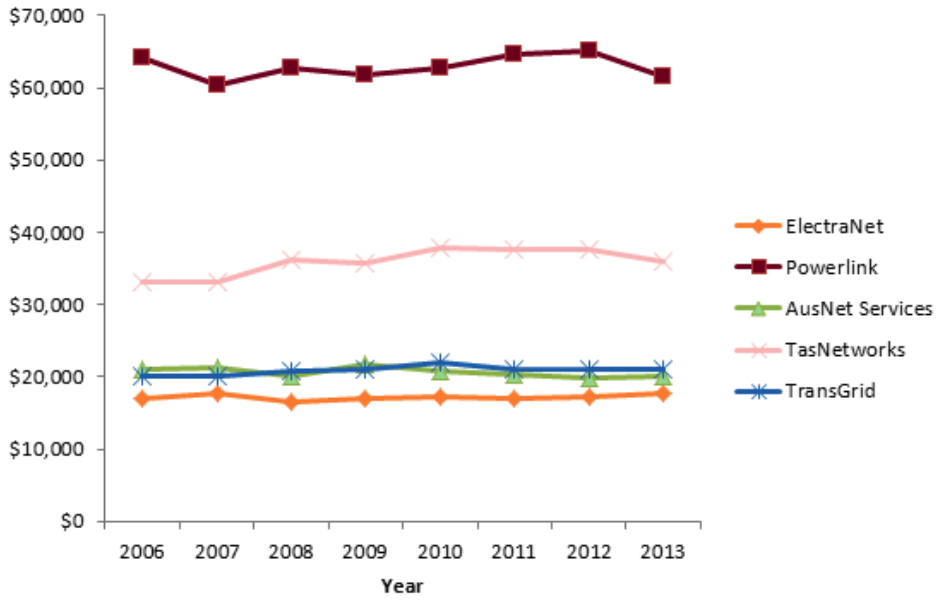
The chart below illustrates how the total costs of the transmission networks changed over the 2006-13 period. It illustrates that Powerlink has the highest costs and that the differences between Powerlink's costs and the costs of the other transmission networks grew significantly over the period.

Total costs of the transmission networks ($million 2013)



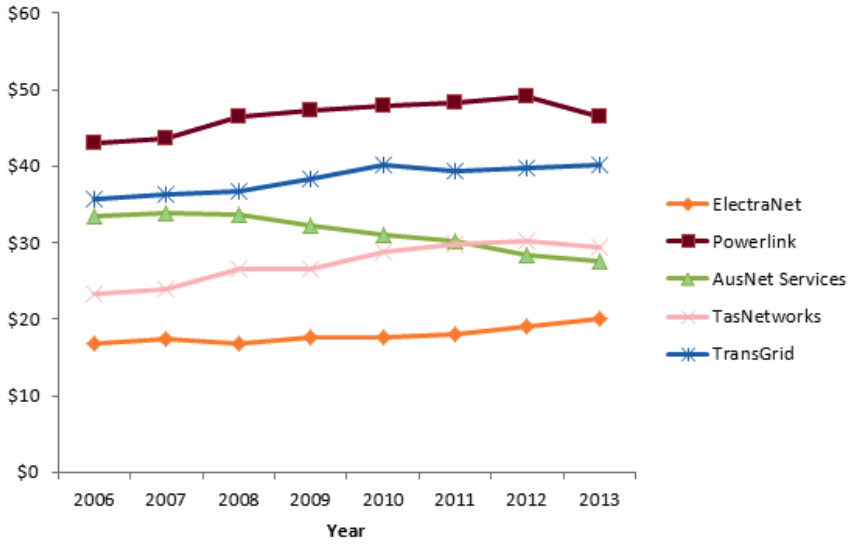
The chart below illustrates the transmission networks' total cost per MVA of downstream connection point of transmission capacity. As outlined by the AER - *"Powerlink performs poorly under this measure with a very high total cost per MVA of connection point capacity"*

Figure 2 Total cost per MVA of connection point capacity ($2013)



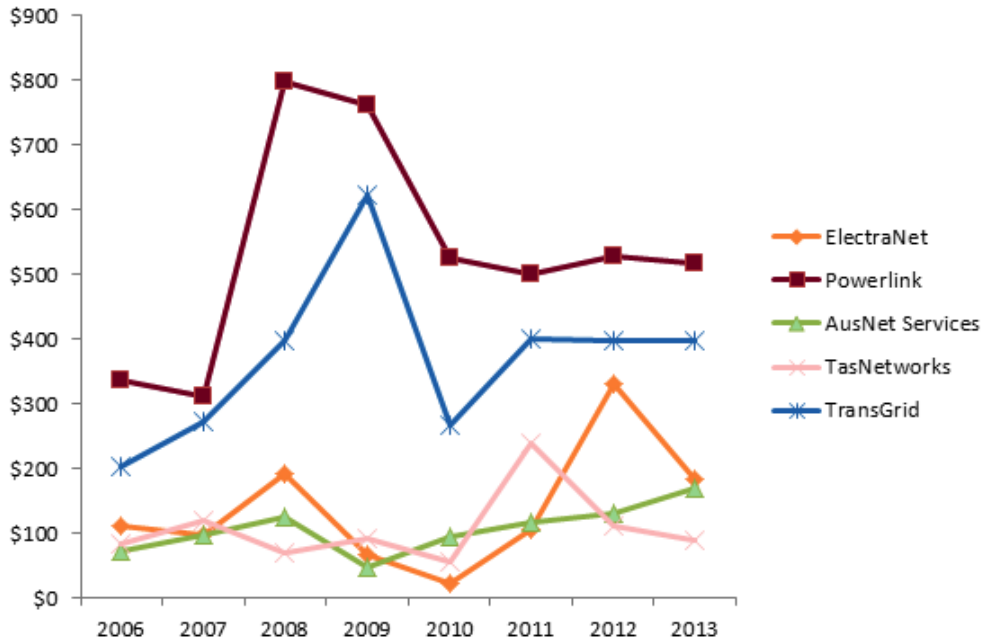
The chart below illustrates the total cost per kilovolt (kV) of entry and exit points. Under this measure, Powerlink has the highest costs of all the transmission networks.

Total cost per total kV of entry/exit points ($2013)



The chart below illustrates that Powerlink's capex spend was significantly higher than the capex spend of all of the other transmission networks in every year over the 2006-13 period.

Figure 3 Capex over time ($million 2013)



6.1.2 Conclusions from the AER's Capital Efficiency Benchmarking Results

The AER's capital efficiency benchmarking results reinforce the conclusions of all of the other studies into the electricity transmission networks' different investment rates – that exogenous factors do not explain Powerlink's dramatically higher investment levels.

6.2 EUAA Study Into The Transmission Networks' Different Capex Levels

In October 2012, the EUAA performed a research study into the Australian transmission networks' different investment levels. [2]

The key relevant findings and conclusions of that study included:

- Powerlink demonstrated the lowest capital efficiency level of the five transmission networks
- Powerlink's investment level was much higher than the other transmission networks, both in absolute terms and after normalisation for changes in system outputs
- The privately owned Victorian transmission network (SP AusNet) is much more efficient than the other transmission networks, spending substantially less capital and operating expenditure both in absolute terms and after normalisation for changes in system outputs

6.3 Demand Growth

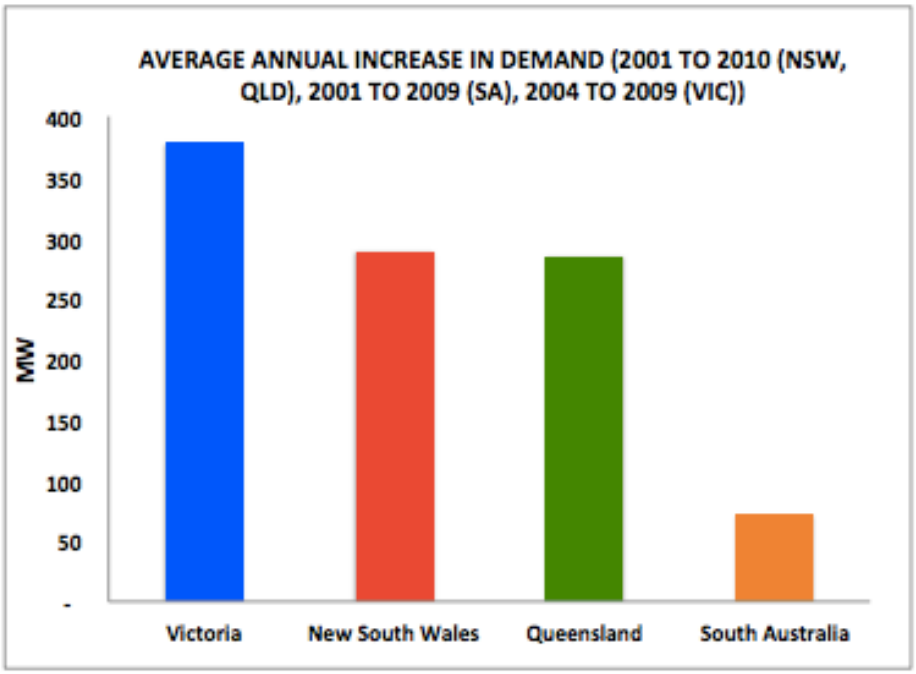
Growth in peak demand is one of the most common reasons that the networks provide to explain their RAB growth levels.

The chart overleaf (derived from the EUAA study) outlines the average annual increase in demand for four Australian states over the 2001-2010 period.

It illustrates that demand growth was highest in Victoria, followed by NSW, Queensland and South Australia.

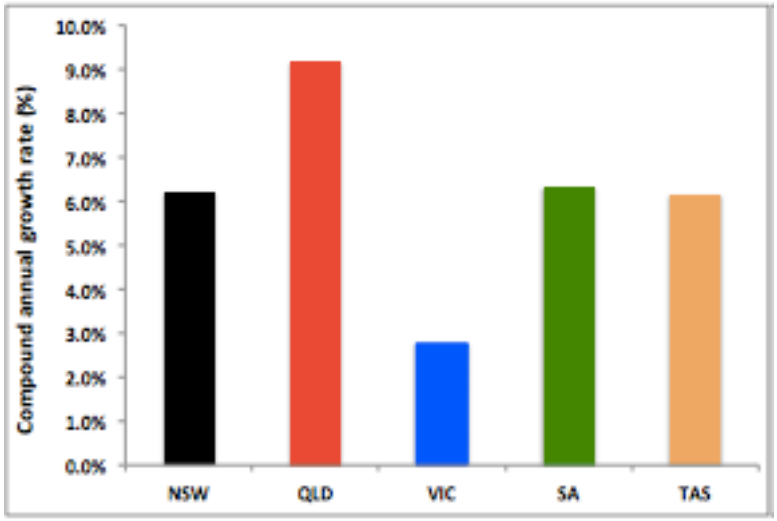
[2] A comparison of outcomes delivered by electricity transmission network service providers in the National Electricity Market, EUAA, October 2012

Figure 15. Demand growth MW per annum average over the measured periods



6.3.1 RAB/Peak Demand Trends

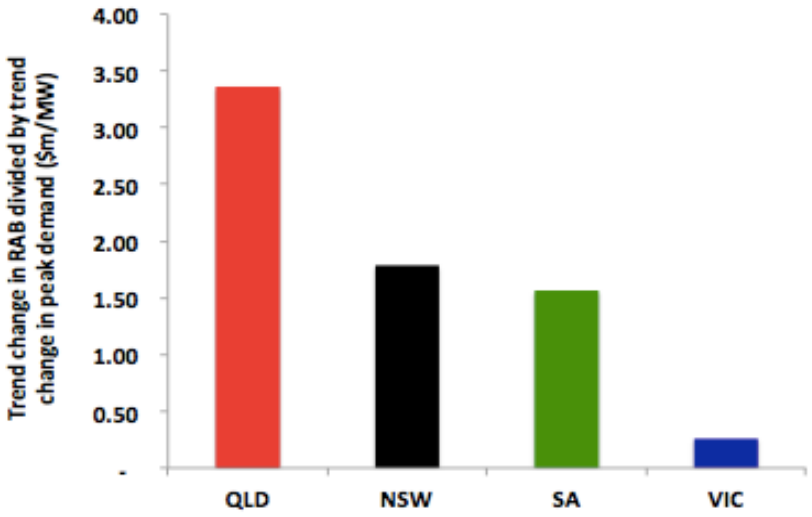
The chart below illustrates the compound annual growth rate of the Australian transmission networks' regulatory asset bases (RABs) over the 2005 to 2013 period. [3]



[3] A comparison of outcomes delivered by electricity transmission network service providers in the NEM, EUAA, 2012

The chart below illustrates the differences in the trend change in RAB normalised for the change in peak demand for Australia's transmission networks over the 2005-12 period. [4]

It highlights that Powerlink's RAB grew at a much higher rate than the other transmission networks, at around 14 times the growth rate of the Victorian transmission network (SP AusNet)



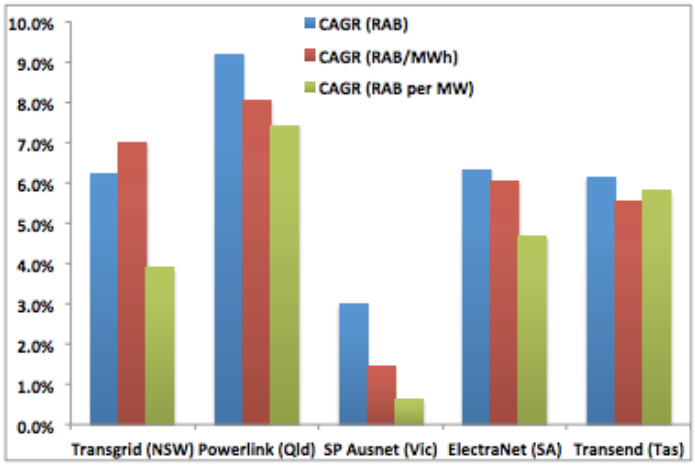
The chart below illustrates the compound annual growth rates of the transmission networks' RABs normalised for growth in peak demand and energy delivered for the period from 2005 to 2013.

As outlined by the EUAA report:

"It is clear from this that the RAB for Powerlink has grown more strongly than for any of the other TNSPs in absolute terms, and after normalisation for energy delivered or annual peak demands"

"At the other end of the spectrum, the growth in the RAB for SP Ausnet has been the lowest in absolute terms and particularly after normalisation for growth in demand"

Figure 10. Compound Annual Growth Rate of the RAB, and normalised for growth in energy delivered and peak demand, from 2005 to 2013[xiii]



[4] A comparison of outcomes delivered by electricity transmission network service providers in the National Electricity Market, EUAA 2012

6.3.2 Load Capex/Load Growth

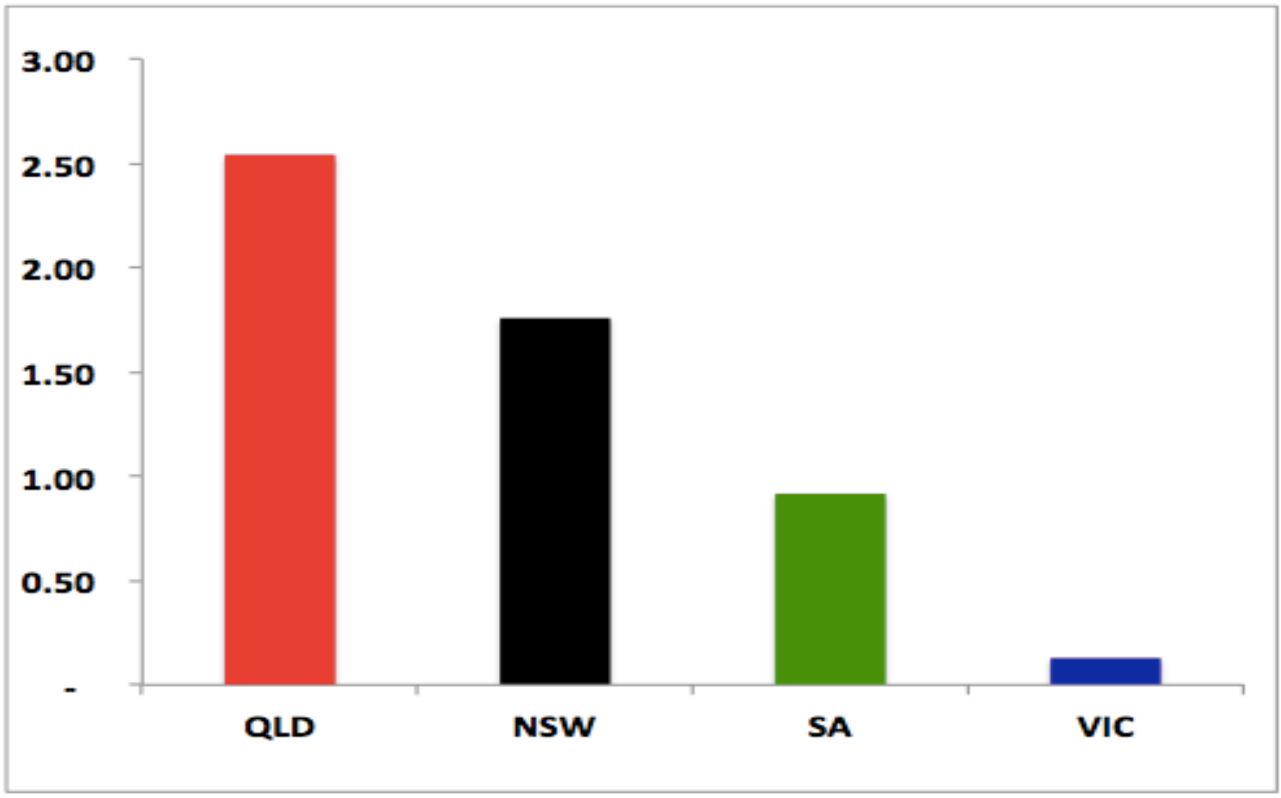
As not all RAB growth is directly related to demand, comparing the ratio of the networks' demand-related capex to their growth in peak demand represents a more accurate analysis of the efficiency of the networks' load driven capex.

The diagram below illustrates the average annual growth-related capex of Australia's transmission networks divided by the average demand growth over the 2005 – 2011 period.

It illustrates that Powerlink incurred significantly higher capex to meet demand growth than the other transmission networks, i.e.:

- Powerlink invested in load capex at over 20 times the rate of SP AusNet
- TransGrid invested in load capex at over 15 times the rate of the SP AusNet
- ElectraNet invested in load capex at 7 times the rate of SP AusNet

Average Annual Load-Driven Capex Divided by Average Annual Demand Growth for Australia's Transmission Networks [5]



[5] A comparison of outcomes delivered by electricity transmission network service providers in the National Electricity Market, EUAA 2012

6.3.3 Powerlink's Systemic Over-Estimation of Demand

A significant part of the explanation of Powerlink's inefficient capex spend is that Powerlink's demand forecasts have been consistently significantly overstated. This has been demonstrated by numerous studies and analyses.

6.3.3.1 AER Analyses

6.3.3.1.1 The AER's Analysis of Powerlink's Over-Forecasting Record

As part of its assessment of Powerlink's 2013-17 revenue proposal, the AER and its consultant (EMCa) performed an analysis that compared Powerlink's previous demand forecasts with its actual demand.

The key findings of that analysis included:

- Powerlink had consistently and systemically materially over-forecasted demand
- Powerlink's actual demand was significantly below its demand forecasts for each year of the previous regulatory period
- Powerlink's previous demand forecasts all commenced with significant first-year step increases followed by high growth paths, each of which had considerably over-estimated the peak demands that actually eventuated
- Powerlink could have deferred at least $700 million of capex over the 2007-12 regulatory period (25 per cent of its total capital expenditure allowances) if it had forecast demand more accurately
- Powerlink could still have met demand in the 2007-12 regulatory period even if its actual demand exceeded its forecasts by up to 450MW, as Powerlink used the 10 per cent PoE forecast for planning purposes
- Despite Powerlink's systemic over-forecasting pattern, the EMCa found no evidence that Powerlink reviewed the accuracy of its past demand forecasts

6.3.3.1.2 Powerlink's 2013-17 Demand Forecast

The AER considered that Powerlink's 2013-17 forecasting followed this same pattern of its previous forecasting and that Powerlink had materially overstated its demand forecasts.

Powerlink forecasted an average annual increase in peak demand of 5.1%/annum and an annual growth in energy delivered of 6%/annum over the 2013-17 regulatory period, which it attributed to:

- The resource industry boom (particularly in the Surat Basin);
- Strong population growth;
- Return to pre-GFC economic growth trends; and
- Increased penetration of domestic air conditioning

The AER's consultant (EMCa) identified a number of major deficiencies with Powerlink's demand forecasts, including:

Major Inconsistencies With Demand Trends And The Projections Of Credible Forecasters

Despite all credible forecasters projecting that Queensland's electricity demand and consumption would continue to decline, Powerlink's forecasts assumed a dramatic reversal of the declining demand trend, forecasting a growth in energy consumption of 30 times the trend growth rate of the previous five years.

Non Credible Population Forecasts

Powerlink's population forecasts were materially higher than all of the other forecasters (including KPMG, the Queensland Treasury, the ABS and EMCa).

Non-Credible Electricity Price Assumptions

Powerlink's demand forecasts assumed significantly lower electricity prices than the forecasts from other sources

Non Credible Assumptions and Inputs to Powerlink's Demand Forecasting Models

Powerlink's demand forecasts incorporated many non credible assumptions that "consistently led to an upward bias in Powerlink's demand", e.g.:

- Non credible and unsubstantiated claims regarding future air conditioning load growth
- Major flaws in Powerlink's temperature correction method assumptions
- The use of macroeconomic variables that were consistently "on the upper end of accepted forecast ranges"

Non Credible Sectoral Growth Assumptions

Powerlink's forecasts incorporated excessive sectoral growth assumptions (e.g. for the commercial sector) that did not reflect the flat economic activity outside of the mining sector

6.3.3.1.3 Stakeholders' Reponses To Powerlink's 2013-17 Demand Forecasts

The AER received detailed submissions from a number of stakeholders that outlined that Powerlink's demand growth projections were not credible and completely at odds with recent trends and the forecasts of all credible forecasters. [6]

The Australian Energy Market Operator (AEMO) stated that Powerlink's energy and demand projections had been consistently high and that Queensland's demand could be 620MW lower than Powerlink's 2011 demand forecast.

[6] See for example:
EUAA Submissions to Powerlink's Revenue Proposal, the AER's Draft Decision and Powerlink's Revised Revenue Proposal
Wesfarmers' Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision
The Energy Consumers Group (the Group) Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision
TEC Submissions to Powerlink's Revenue Proposal, the AER's Draft Decision and Powerlink's Revised Revenue Proposal
PAGE Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision

It is important to note that Powerlink's 2013-17 revenue proposal was submitted at a time when all credible independent forecasters had firmly concluded that the recent flat/declining load trends would continue.

For example, the Ross Garnaut report published 14 months before Powerlink's 2012-17 revenue determination outlined why the flat/declining load trends would continue in future, including: [7]

- Consumers moderating their electricity usage due to higher prices
- The impacts of energy efficiency measures
- The increasing penetration of solar PV

6.3.3.1.4 Powerlink's Response To Stakeholders' Critiques

Powerlink responded aggressively to the above critiques.

Powerlink's Revised Revenue Proposal included a 30 page challenge supplemented with an 85 page consultant report (from ACIL Tasman) that attempted to refute the stakeholders' critiques.

Powerlink's responses included many unsubstantiated claims and assertions, including:

Claims That Past Trends Were Not Reflective Of Powerlink's Future Load Expectations

The thrust of Powerlink's argument was that the recent demand decline was due to the GFC and the Queensland floods; and that demand would dramatically reverse to record high growth levels over the next regulatory period.

However, as noted by the AER, Powerlink had consistently over-forecast demand for several years prior to the GFC.

Non Credible Claims Regarding The Impact Of Energy Efficiency Measures

Powerlink made a number of non-credible claims that attempted to downplay the impact of energy efficiency measures – e.g. claiming that energy efficiency responses "will have a negligible impact on peak electricity demand". As outlined by various stakeholders' submissions, such claims were contrary to proven research and to simple logic. [8]

Unsubstantiated Claims Regarding The Price Elasticity Of Demand

Powerlink's response included non-credible and unsubstantiated claims that attempted to refute EMCa's analysis regarding the price elasticity of demand

Criticisms of EMCa's Forecasting Methodology

Powerlink provided an extremely critical assessment of EMCa's forecasting methodology providing a "scorecard table" that essentially asserted that EMCa's forecasting methodology was negligent and did not meet the basic expectations of credible forecasting practices.

[7] The Garnaut Review Update Paper 8: Transforming the Electricity Sector. Garnaut R. (2011)

[8] See for example the submissions by the Total Environment Centre (TEC)

Non Credible Claims Regarding An Anticipated Booming Queensland Economy

In response to the AER's draft decision, Powerlink's CEO stated: [9]

"Powerlink has significant concerns with the AER's draft determination"

"The AER's consultants had failed to factor in readily available economic growth indicators into their forecasts, including the flow-on effects of the booming resources sector in Queensland".

"Powerlink will be urging the AER to recognise that Queensland is on the edge of unprecedented expansion in this state."

6.3.3.1.5 Powerlink's Actual 2013-17 Demand

The AER made some adjustments to Powerlink's 2013-17 demand forecasts.

The table below outlines the differences between Powerlink and the AER's 2013/14 peak demand forecasts and the actual peak demand that eventuated - i.e. the differences that eventuated just two years into the current regulatory period.

	2013/14 Medium Forecast (MW)	2013/14 Actual Peak Demand (MW)	Difference
Revenue Proposal			
10% POE	10,907	7,500	45% over estimate
50% POE	10,500	7,500	40% over estimate
Draft Decision			
10% POE	10,090	7,500	35% over estimate
50% POE	-	7,500	-
Revised Revenue Proposal			
10% POE	10,443	7,500	39% over estimate
50% POE	9,962	7,500	33% over estimate
Final Decision			
10% POE	9,871	7,500	32% over estimate
50% POE	9,500	7,500	27% over estimate

The above table highlights that:

- Powerlink's original (50% POE) demand forecast was 40% higher than its actual peak demand
- The AER's final decision capex allowances were based on an assumed (50% POE) demand forecast that was 27% above Powerlink's actual peak demand

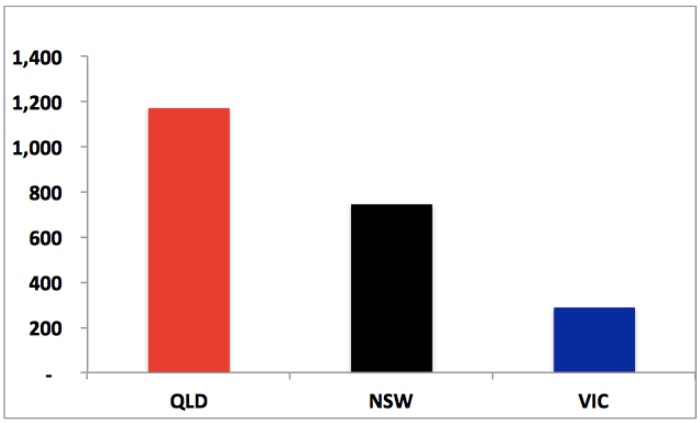
[9] "Electricity bills up in Queensland because of Powerlink overspend", Courier Mail Article, 5th Dec, 20111

It is very important to note that Powerlink was rewarded with 'windfall profits' of around $300 million for those "forecasting errors", as its revenue allowances included returns on capital for forecast capex that it did not incur.

6.3.3.1.6 EUAA Study into Powerlink's Demand Forecasting Record

The above findings were reinforced by the EUAA study into the demand forecasting records of Australia's transmission networks. As highlighted in the chart below (from that report), the EUAA study identified that over the 2006-2012 period, Powerlink's level of over-forecasting was four times higher than the Victorian over-forecasting level.

Figure 17. Average annual difference between projected and actual peak demand (MW) over the period from 2006/2007 to 2011/2012



6.3.3.1.7 IRP Review Findings Regarding Powerlink's Demand Forecasting Record

Powerlink's track record of consistently over-estimating its demand forecasts was also identified by the Queensland Government Independent Review Panel on Network Costs, which stated that: [10]

"Another factor contributing to the escalation in capital programs has been the ***consistent over-estimation of demand by the NSPs***

"*The Panel also notes that the current* ***revenue cap control mechanism places volume risk on customers****"*

"Where demand is over-estimated, capital programs will be excess to requirements and ***network tariffs to customers will increase during the regulatory control period to ensure the NSPs are able to recover the allowable revenue"***

It is clear from Powerlink's $175 million load capex spend in the first year of the current regulatory period (2012/13) and from its public statements at that time, that Powerlink was intending to fully spend its load capex allowance for the period, until it was directed by the Queensland government not to do so following the release of the highly scathing IRP review report in May 2013

It is also important to note that Powerlink had proposed a total load capex allowance of over 7 times its actual spend during the period

[10] Queensland Government Independent Review Panel (IRP) on Network Costs, Final Report

6.3.4 Powerlink's Influence Over ElectraNet's Efficiency

Whilst the EUAA's previous study into the relative efficiencies of the NEM distributors [11] concluded that the privately owned distribution networks in Victoria and South Australia were much more efficient than the government owned distributors in the other states, the EUAA's equivalent study into the transmission networks' relative efficiencies did not reach the same conclusion.

Rather, the transmission study concluded that the privately owned South Australian transmission network (ElectraNet) incurred capital additions at rates closer to the government owned transmission networks.

The EUAA study concluded that this was due to Powerlink's controlling influence over ElectraNet, as ElectraNet's largest shareholder, asserting that ElectraNet was not subjected to the incentives and disciplines associated with a privately owned utility. [12]

Consequently, it appears that Powerlink's influence and control over ElectraNet resulted in a reduction in the benchmark efficient level of the transmission network sector.

6.3.5 Queensland Government Independent Review Panel On Network Costs

The *Queensland Government Independent Review Panel (IRP) on Network Costs* [13] outlined major issues with the very poor capital and operational productivity of the Queensland electricity networks (Powerlink Queensland, Energex and Ergon Energy).

The IRP's key findings in relation to Powerlink's capital productivity included:

- *"An industry engineering **culture biased toward expanding the network infrastructure and enlarging the capital base** of the NSPs - **driving inefficient expenditure**"*
- *"A **deficient commercial model** in that there was **no rigorous capital rationing** by the Government, as shareholder and provider of capital, to guide investment decisions"*
- *"A **regulatory model that does not allow** the Australian Energy Regulator (AER) to drive **the networks to deliver efficient capital** and operating programs"*

[11] Australia's rising prices and declining productivity: the contribution of its electricity distributors, EUAA, 2011

[12] A comparison of outcomes delivered by electricity transmission network service providers in the National Electricity Market, EUAA 2012

[13] Queensland Government Independent Review Panel (IRP) on Network Costs, Final Report

6.4 Exogenous Factors Do Not Explain The Networks' Different Investment Levels

Numerous studies have been performed into the different capital investment levels of Australia's electricity networks. [14]

All of those studies have firmly concluded that exogenous factors do not explain the dramatic differences in the networks' investment levels.

Rather, they identified that the networks' ownership structure (i.e. whether the network is controlled by public or private owners) is the most significant driver of the networks' investment levels. [15]

6.5 SP AusNet's Perspectives

The above conclusions are strongly supported by the Victorian privately-owned transmission business - SP AusNet, and by the joint submission by the six Victorian transmission and distribution networks to the *Senate inquiry Into The Performance and Management of Electricity Network Companies.* [16]

In his presentation of evidence to the Senate Inquiry, AusNet's General Manager, Asset Management, asserted that:

We have controlled our costs much more effectively than the government owned networks

"When you compare us to New South Wales and Queensland, in particular, you just do not see the same increases in price that we have seen there"

"Here, our share of the electricity bill is about 23 per cent. In New South Wales and Queensland, it is between 40 and 50 per cent. It is materially different. I heard some commentary from one of your previous witnesses that there is no point just looking at network prices; you have to look at the overall retail price. But I think that dodges the key issue, which is that we have done a better job of low network prices."

[14] For example:
Senate Inquiry Into The Performance and Management of Electricity Network Companies, June 2015
Electricity Network Regulatory Frameworks: Productivity Commission Inquiry Report, 9 April 2013
Senate Select Committee on Electricity Prices: Reducing Energy Bills and Improving Efficiency, Independent Review Panel, Electricity Network Costs, Final Report, November 2012
Queensland Government Independent Review Panel (IRP) on Network Costs, Final Report, 2013
A comparison of outcomes delivered by electricity transmission network service providers in the NEM, EUAA, 2012
Australia's rising prices and declining productivity: the contribution of its electricity distributors, EUAA, 2011
Shock to the system: Dealing with falling electricity demand, Grattan Institute, December 2013
Putting the customer back in front: How to make electricity cheaper. Grattan Institute, December 2012
The Garnaut Climate Change Review Update, Paper 8: Transforming the Electricity Sector, 2011
PIAC: Privatisation and the regulatory valuation of electricity distribution network service providers in New South Wales: Evidence and Issues - a report for the Public Interest Advocacy Centre, CME, October 2014
Write-downs to address the stranded assets of electricity networks in the National Electricity Market: evidence and issues, CME, April 2015

[15] As outlined in section 6.3.4, the issue of "control" is important as the EUAA 2012 study considered that Powerlink Queensland's "control" over ElectraNet resulted in ElectraNet not being subjected to the incentives and disciplines associated with a privately owned utility

[16] Submission to the Senate Select Committee Inquiry into the performance and management of electricity network companies: Victorian Electricity Distribution Businesses, 18th December 2014

"If we then look at some work that Ernst & Young did, our average residential customer costs went down by 18 per cent between 1996 and 2013—so down by 18 per cent. In Queensland they went up by 140 per cent and in New South Wales they went up by 122 per cent, so it is materially different"

We invest less and later than the government owned networks

"So why can we do this? Why are we doing more with less? I think it is just fundamentally because of the ownership structure"

"We aim to spend less to get the same outcomes. We have investors, and I use that term very carefully. We do not have owners; we have investors, and we have investors like superannuation funds and so on, who demand a return from us"

"Our commercial view is that, while there is potentially an incentive to increase your RAB—to increase your asset base—we make more money by responding to the AER's efficiency incentive schemes"

"So we do better by spending less. We do better over the long run by spending less, by finding cheaper alternatives to deliver good outcomes"

"We only invest if there is not an alternative solution like demand management and if the economic value of the loss of supply outweighs the cost of doing something about it. This means, in practical terms, we invest later than somebody in New South Wales will"

"We are currently doing, as a transmission company, a huge redevelopment of the CBD supply in Melbourne. My guess—it is not accurate—is that we are doing that four or five years later than somebody in New South Wales would do it, and we look at that all the time to check: if we can avoid the investment, we will avoid the investment. It means we have to do some things in terms of contingency plans, but if we can avoid an investment we will"

Our efficiency has been independently verified

"I feel very awkward saying these great things about ourselves. The point here is that this is not our view: it is the Australian Competition and Consumer Commission's view, it is the AER's view, it is the Productivity Commission's view, it is the Energy Users Association of Australia's view, it is the view of Bruce Mountain.

"Person after person looks at this objectively and looks at the data that is before them and finds we are cheaper and more reliable. I put that down to our ownership structure—I am sure there are other aspects, but it is primarily driven by who we are run by and the drive they bring to this"

6.5.1 Conclusions Regarding Powerlink's Capital Efficiency

The key conclusions from the various studies and analyses into the transmission networks' different capital efficiency levels are as follows:

- Powerlink is the most inefficient transmission network in the NEM, by far
- Powerlink is much less efficient than the other transmission networks, demonstrating significantly higher growth in revenues, regulatory asset base, capital and operational expenditure, both in absolute terms and after normalisation for changes in network outputs
- SP AusNet has invested much less and later than Powerlink to achieve the same outcomes
- SP AusNet's efficiency has not been at the expense of safety or reliability

6.5.2 CCP4's Recommendations Regarding The AER's Consideration Of Powerlink's Capital Efficiency

The AER's recent capex determinations have incorporated some "observations" of its benchmarking results relating to the networks' relative capex efficiency performance.

However, those "observations" have not materially influenced the AER's capex determinations.

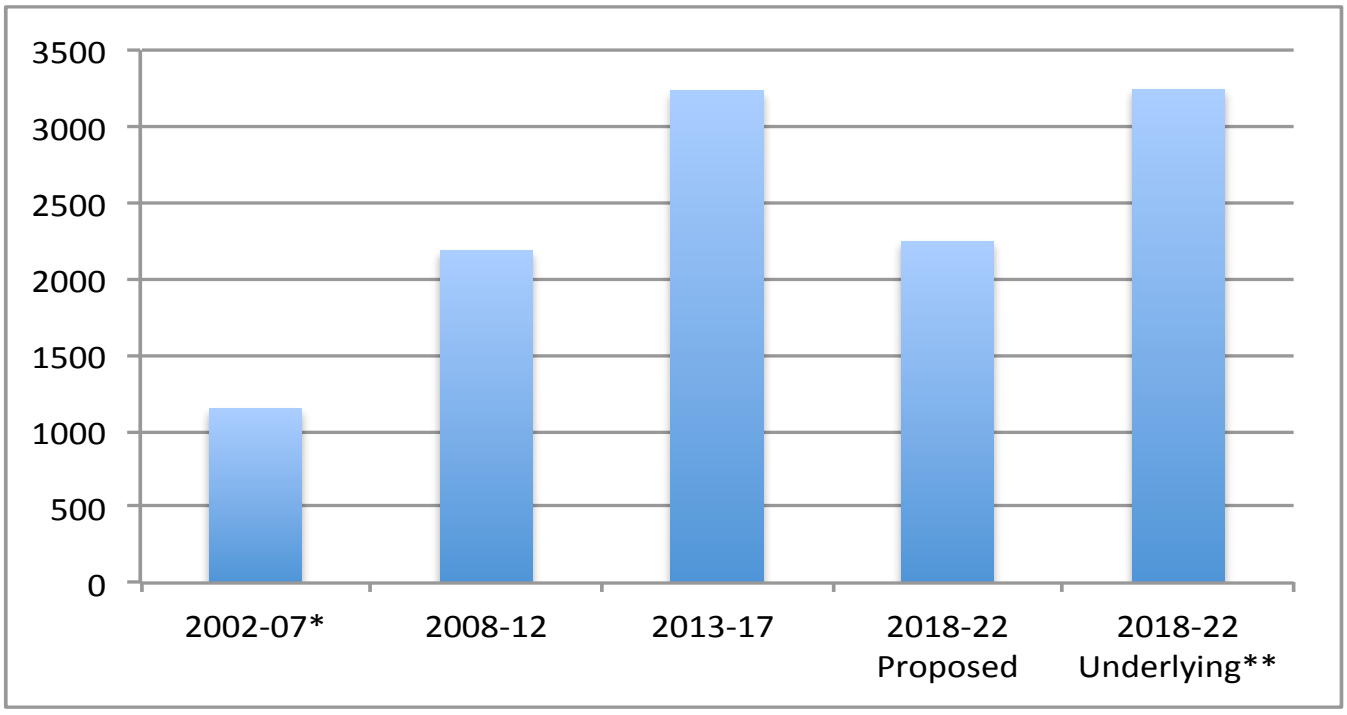
In light of Powerlink's very poor capital efficiency, CCP4 considers that the AER needs to have much greater regard to Powerlink's poor capital efficiency in its determination of Powerlink's 2018-22 capital expenditure allowances.

7 Return on Capital (Rate of Return)

7.1 Powerlink's Proposed Return On Capital

The chart below compares Powerlink's proposed return on capital for the 2018-22 regulatory period with its return on capital allowances for the previous regulatory periods. The "2018-22 underlying" return on capital is the return on capital that would apply if the risk free rate remained at the average rate that prevailed during the previous regulatory periods.

It illustrates that, if interest rates had remained the same level as the previous period, Powerlink's proposed return on capital would be higher than its return on capital allowance for all of the previous periods – **i.e. it would be higher than the record-high return on capital allowance that the AER provided to Powerlink in the midst of the Global Financial Crisis (GFC).**



* 2002-07 figures pro-rated to 5 years (rather than 6 years) for comparison purposes

** Based on the average interest rates that applied in the previous 3 regulatory periods

7.2 The AER's Return On Capital Determination Methodology

7.2.1 The AER's Insufficient Consideration Of The Outcomes Of Its Previous Return On Capital Determinations

The Rules require the AER to take into account the outcomes of its previous determinations when making its return on capital determinations. [17]

Over recent years, the AER has received numerous submissions that have provided evidence that demonstrates that: [18]

- Australia's electricity networks are much more profitable than the AER assumes
- Equity markets and investors are valuing the electricity networks significantly higher than their regulated asset bases (RABs) – with the most recent sale (TransGrid) being over 165% of RAB
- Lenders are lending to the networks at significantly lower rates than the 'cost of debt' allowances provided by the AER
- The AER is inappropriately applying the discretion it has been provided under the Rules, by selecting WACC input parameters at the top end of the possible ranges
- The AER has consistently set higher WACCs than other comparable regulators in Australia and overseas

Many of those submissions referred to the paper submitted by the AER Consumer Challenge Panel (CCP) to the AER Board in July 2014, which highlighted a variety of information that the AER should consider when making its WACC determinations. [19]

It is therefore extremely disappointing that the AER has had insufficient regard to those submissions and their recommendations.

Rather than focusing on the rate of return objective and responding to the deficiencies of its *return on capital* determination approach outlined by various stakeholders, the AER has devoted an inordinate amount of scarce resources attempting to defend its rate of return guideline and its default WACC parameters.

As outlined within the recent AER CCP3 panel submission, the AER's focus on defending its rate of return guideline is alienating consumers and other stakeholders from the network revenue determination process. [20]

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[17] NER, clause 6A6.2

[18] See for example:
AER Consumer Challenge Panel (CCP3) Submission on the Victorian distributors 2016-20 Revenue Proposals, Sept 2015
AGL Submissions to the AER on the NSW Electricity Distribution Networks 2014-19 Revenue Proposals, August 2014
PIAC submission to the Australian Energy Regulator's NSW electricity distribution network price determination, August 2014
CCP2 (Hugh Grant) Submission to the AER on the AER's Preliminary Revenue Determinations for the Queensland Distributors

[19] Consumer Challenge Panel, Smelling the roses and escaping the rabbit holes: the value of looking at actual outcomes in deciding WACC, July 2014

[20] CCP3 Submission on the AER's Preliminary Determinations for the Victorian Distribution Networks

7.2.2 The AER's 'Return On Capital' Determination Methodology Does Not Appropriately Consider RAB Indexation

As outlined above, many stakeholders have criticised the AER for applying excessive WACCs when calculating the networks' 'return on capital' allowances. However, excessive WACCs are only part of the problem.

A key regulatory principle that is fundamental to building block revenue regulation is that the methodology for determining the networks' return on capital allowances must be consistent with the asset valuation methodology.

The cumulative value of RAB indexation accounts for a large component of the networks' RAB valuations, currently accounting for over 30% of some networks' 2015 RAB values. [21]

Having such levels of 'artificial capital' contained within the networks' regulatory valuations is not necessarily troublesome provided that it is appropriately considered in the determination of the networks' 'return on capital' allowances.

However, the AER's methodology for determining the networks' 'return on capital' allowances does not appropriately deal with the impacts of RAB indexation.

In essence, 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 investments. However, the AER calculates its 'return on capital' allowances by multiplying those percentage returns to artificially inflated capital bases resulting in the AER providing return on capital allowances well above the required levels.

7.2.2.1 The AER's Approach to Determining the Networks' Return on Capital Allowances

'Return on Capital' allowances are intended to reflect the efficient funds that the networks require to attract investment in the network.

Rather than setting the allowances on the basis of the networks' actual cost of capital, the National Electricity Rules (NER) require that the rate of return is *"to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the electricity networks"* [22]

The AER defines the benchmark efficient entity as *"one who only provides regulated electricity or gas network services, operating within Australia"*. [23]

The rationale for setting the rate of return on the basis of a benchmark is that it theoretically provides the networks with incentives to finance their business as efficiently as possible.

[21] Assets or Liabilities – The Need To Apply Fair Regulatory Values To Australia's Electricity Networks, Hugh Grant, 5 May 2016
[22] NER, Clause 6.5.2 (c)
[23] AER Rate of Return Factsheet, October 2015

The AER provides return on capital allowances for two funding sources - equity and debt:

- 'Return on Equity' allowances are intended to reflect the returns that shareholders require to invest in the business
- 'Return on Debt' allowances are intended to reflect the interest rates that the networks pay when they borrow money to invest in the business

The AER assumes that efficient network businesses fund their investments by borrowing 60 per cent of the required funds, whilst raising the remaining 40 per cent from equity.

7.2.2.1.1 The AER's Approach to Determining Return on Equity Allowances

The AER's approach to determining the networks' return on equity allowances is as follows:

- **Determination Of The Percentage Return On Equity (ROE)**

The AER estimates the percentage return on equity that it considers investors require to invest in businesses with similar risk profiles to the electricity networks.

Importantly, the AER derives the market risk premium (MRP) that equity investors require from share market information – i.e. it is based on the MRP required by companies that do not inflate their equity investment base. Consequently, the AER is applying an outcome from the share market that is not applicable to the setting of the return on equity for entities that inflate their asset base.

- **Multiplying The Percentage Return On Equity To A Theoretical Equity Base**

The AER then calculates the network's 'return on equity' allowances by multiplying the percentage ROE to a theoretical equity base, which the AER assumes amounts to 40% of the network's RAB value.

7.2.2.1.2 The AER's Approach to Determining Return on Debt Allowances

Similarly, the AER's approach to determining the networks' return on debt allowances is as follows:

- **Determination Of The Percentage 'Return On Debt'**

The AER estimates the percentage return on debt that it considers reflects the interest rates that the networks pay when they borrow money to invest in the business – i.e. the AER aims to estimate the interest rates that debt providers will charge businesses with similar risk profiles to the electricity networks.

In doing so, the AER assumes that the debt is based on a BBB+ credit rating and a debt term of 10 years.

- **Multiplying the Percentage 'Cost of Debt' To A Theoretical Debt Base**

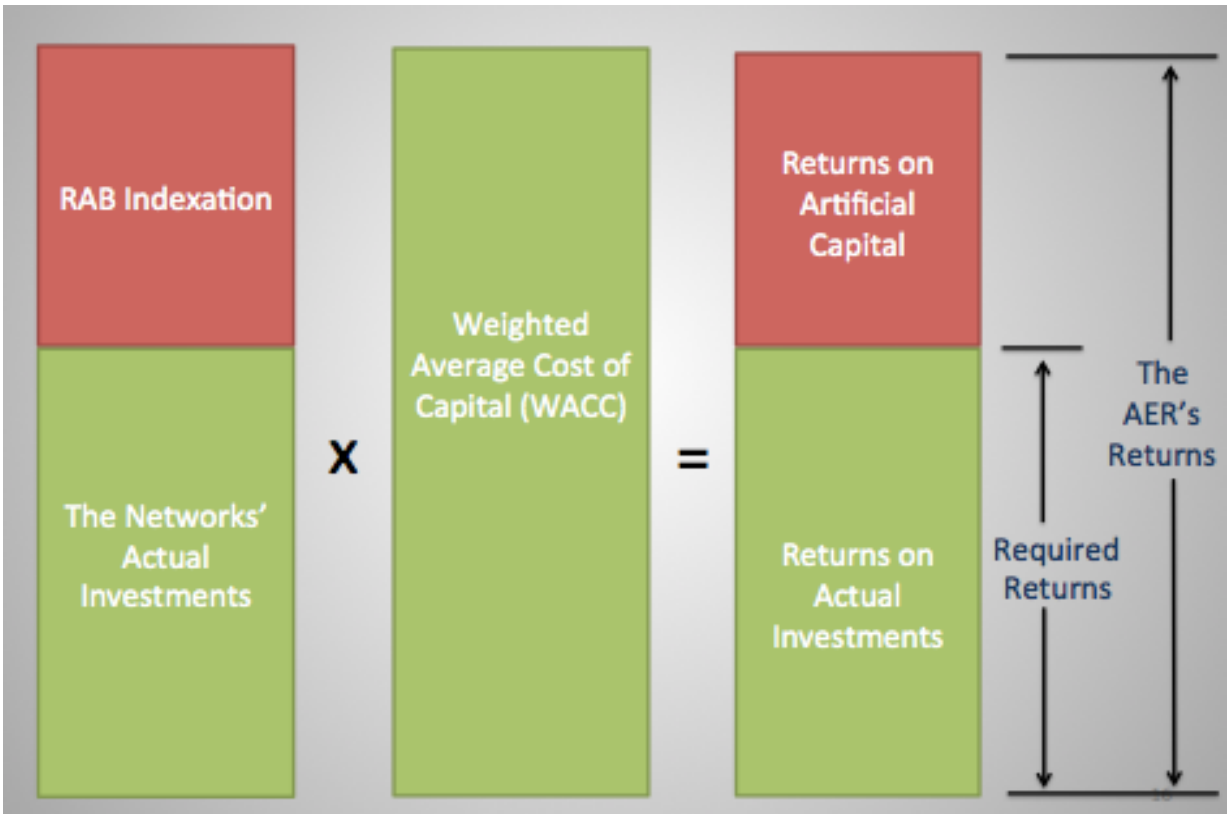
The AER then calculates its 'return on debt' allowances by multiplying the percentage interest rate to a theoretical debt base, which the AER assumes amounts to 60% of the network's RAB value.

7.2.2.2 The AER's Assumed Capital Bases Are Much Higher Than the Networks' Actual Investments

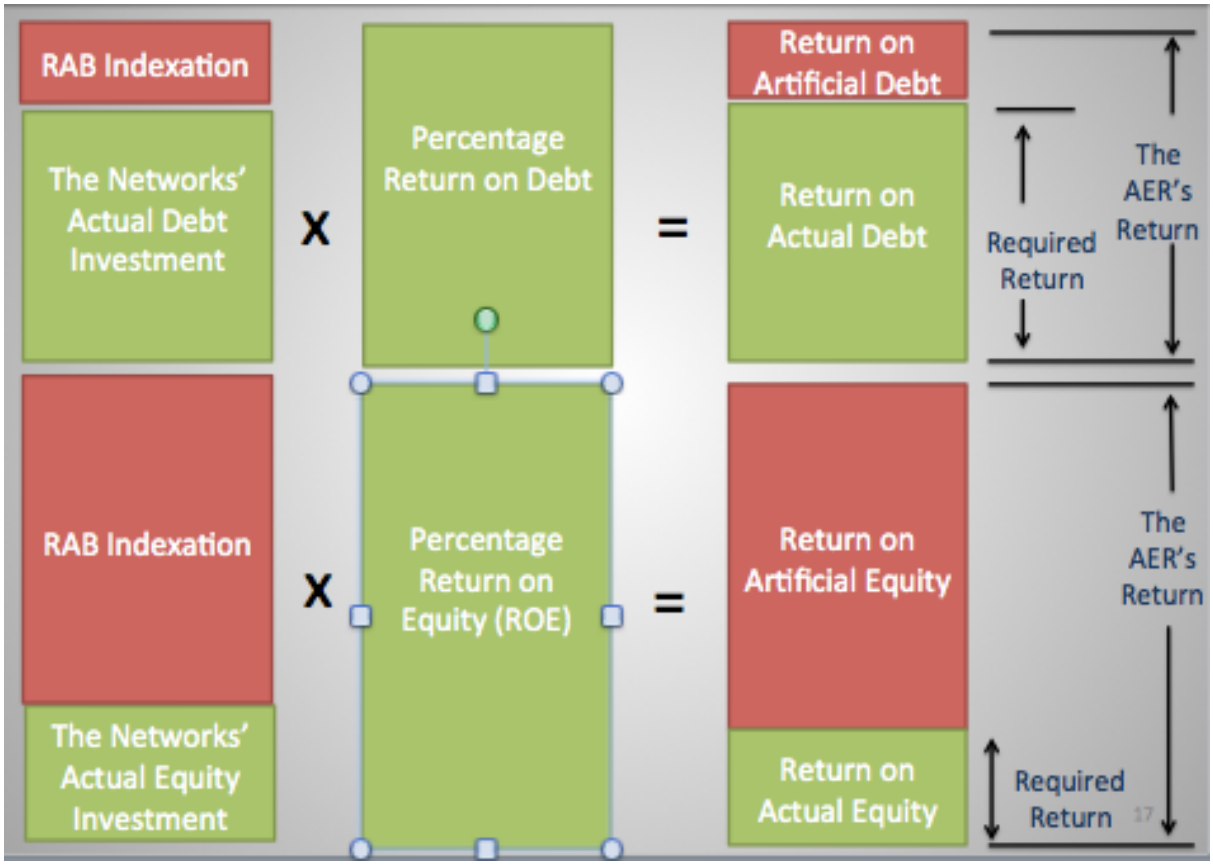
The AER's assumed capital bases are much higher than the networks' actual investments.

This is illustrated in the diagrams overleaf which outlines the impact of RAB indexation on the AER's assumed capital bases and the AER's return on capital allowances. They illustrates that the AER is inappropriately providing returns on 'artificial capital' that the networks have not invested.

Impact of RAB Indexation on The AER's Total Return On Capital Allowance



Impact of RAB Indexation Broken Down To *Return On Equity* and *Return On Debt* Allowances



The tables below outline the materiality of those differences by comparing the AER's assumed investment levels for Powerlink Queensland and Energex; and the networks' actual investment levels.

Powerlink Queensland Investment Levels (30 June 2014)

	The AER's Assumed Investment Bases		Powerlink Queensland's Actual Investment Bases			Difference
	Value ($bn)	% of RAB	Value ($bn)	% of Total Investment	% of RAB	
Equity	3.056	40%	0.791	16%	10.4%	**The AER's assumed equity level is 3.9 times Powerlink's actual equity investment**
Debt	4.585	60%	4.154	84%	54.4%	**The AER's assumed debt level is 10.4% higher than Powerlink's actual debt level**
Total	**$7.641 billion**		**$4.945 billion**			**The AER's assumed total investment is 1.55 times Powerlink's actual investment**

Energex Investment Levels (30 June 2014)

	The AER's Assumed Investment Bases		Energex's Actual Investment Bases			Difference
	Value ($ bn)	% of RAB	Value ($ bn)	% of Total Investment	% of RAB	
Equity	4.471	40%	1.597	20%	14.3%	**The AER's assumed equity level is 2.8 times Energex's actual equity investment**
Debt	6.707	60%	6.465	80%	58%	**The AER's assumed debt level is 4% higher than Energex's actual debt level**
Total	**$11.178 billion**		**$8.062 billion**			**The AER's assumed total investment is 1.39 times Energex's actual investment**

The above tables illustrate that:

Total Investment Levels

- Powerlink Queensland's RAB valuation is 1.55 times Powerlink's actual total investment
- Energex's RAB valuation is 1.39 times Energex's actual total investment

Equity Investment Levels

- The AER's assumed equity investment for Powerlink is 3.9 times Powerlink's actual equity investment
- The AER's assumed equity investment for Energex is 2.8 times Energex's actual equity investment

Debt Investment Levels

- The AER's assumed debt level for Powerlink Queensland is over 10% higher than Powerlink's actual debt level
- The AER's assumed debt level for Energex is 4% higher than Energex's actual debt level

Debt/Equity Ratios

As a percentage of their actual investment levels:

- Powerlink funded 16% of its investment from equity and 84% from debt
- Energex funded 20% of its investment from equity and 80% from debt

As a percentage of RAB:

- Powerlink's equity investment amounts to 10.4 % of RAB, rather than 40 % assumed by the AER
- Energex's equity investment amounts to 14.3 % of RAB, rather than 40 % assumed by the AER
- Powerlink's debt investment amounts to 54.4 % of RAB, rather than 60 % assumed by the AER
- Energex's debt investment amounts to 58 % of RAB, which is close to the 60 % assumed by the AER

Outcomes

As a result of the above differences:

- The AER is providing 'return on equity' allowances to Powerlink of at least 3.9 times the required level
- The AER is providing 'return on equity' allowances to Energex of at least 2.8 times the required level
- The AER is providing 'return on debt' allowances to Powerlink of over 10% above the required level
- The AER is providing 'return on debt allowances to Energex of over 4% above the required level

The outcomes of the above differences to the networks actual returns are outlined below.

7.2.2.3 The Networks' Actual Return On Equity

Return on Equity is the ratio (expressed in % terms) of the annual profit achieved by the business, divided by the equity investment, i.e.:

$$\text{Return on Equity} = \frac{\text{Net Profit After Tax (NPAT)}}{\text{Shareholder Equity}}$$

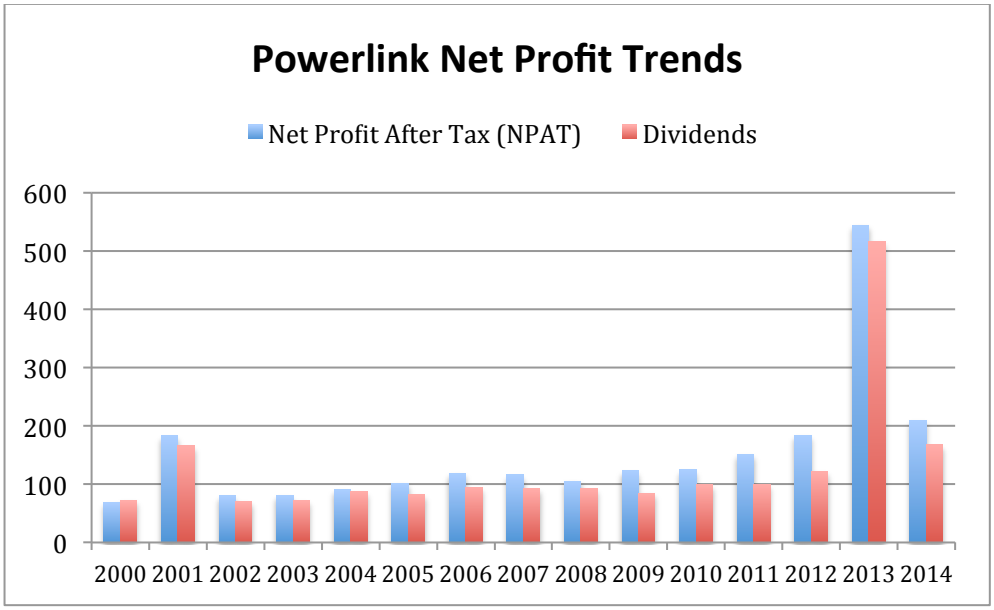
Shareholder Equity is the networks actual equity investment – i.e. the sum of the networks' share capital plus retained earnings.

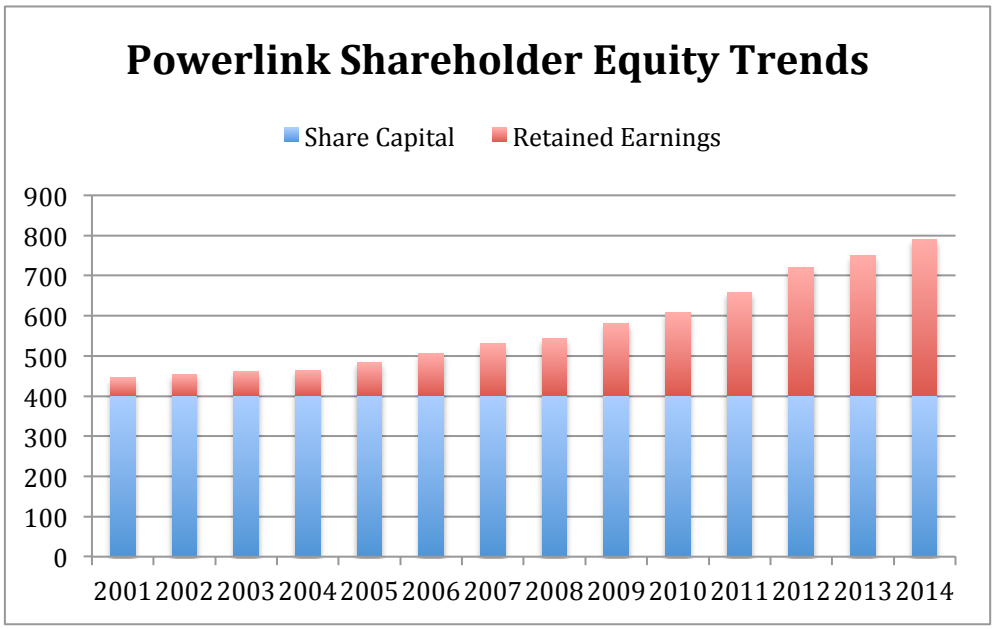
The charts overleaf illustrate the trends in the Queensland's electricity networks' profits, shareholder equity and actual 'return on equity' levels over the 2000-2014 period.

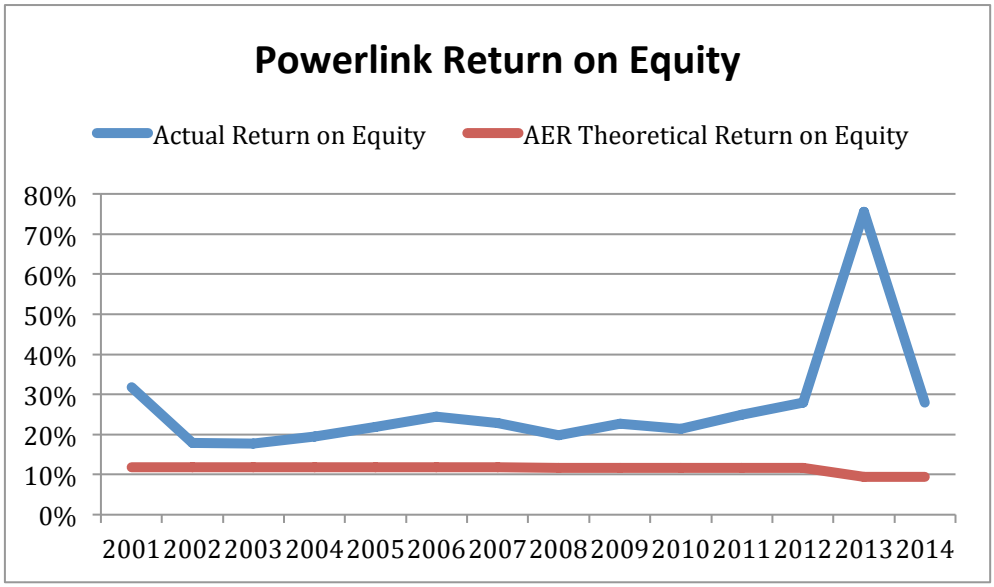
They illustrate that:

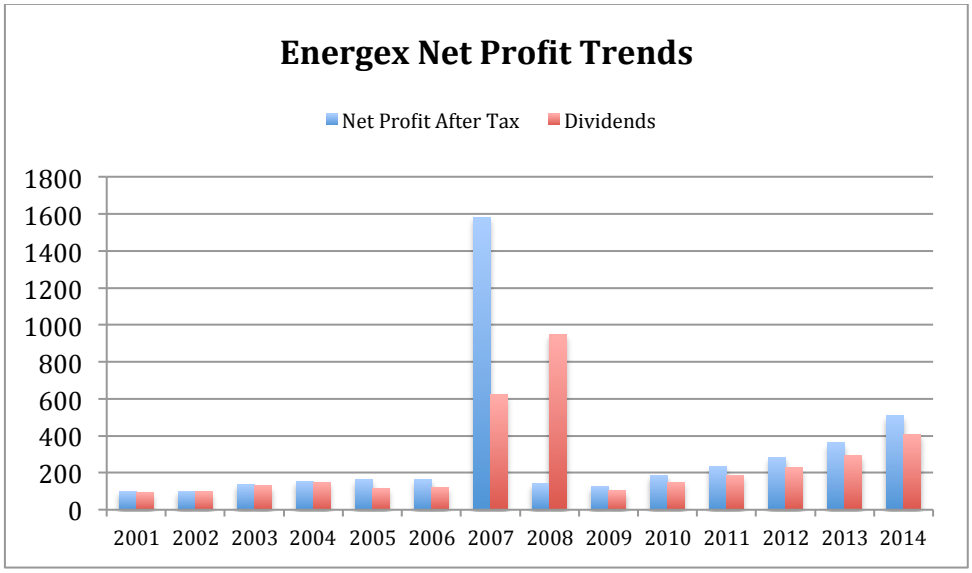
- Powerlink Queensland achieved actual return on equity levels of 18% to 75%, which amounted to 1.5 -8.1 times the AER's theoretical return on equity levels
- Energex achieved actual return on equity levels of 10.5% to 148%, which amounted to up to 13.5 times the AER's theoretical return on equity levels
- By comparison, most ASX50 companies have struggled to achieve annual return on equity levels of 5% over that period
- Over the past 15 years the Queensland networks' annual profits have grown strongly
- In some years there were significant spikes in the networks profits.
- At no time over the past 15 years have the networks experienced low profits or losses (unlike all other businesses of their size)
- The networks consistently extracted very high dividend levels, with dividend payout ratios averaging around 90% - i.e. they have reinvested minimal amounts of retained earnings into the business
- The networks' extraordinary growth levels have been predominantly funded by increased debt, e.g.:
    - Powerlink Queensland's RAB grew fourfold with no change to its share capital of $401 million
    - Energex's RAB grew fourfold whilst Energex reduced its invested equity' by $175 million (from $921million to $746 million)
- Funding such levels of growth through debt would be impossible for businesses that operate in any other sector of the Australian economy
- The commercial constraints that apply in all other sectors would require the businesses to inject significant levels of equity to fund such growth levels

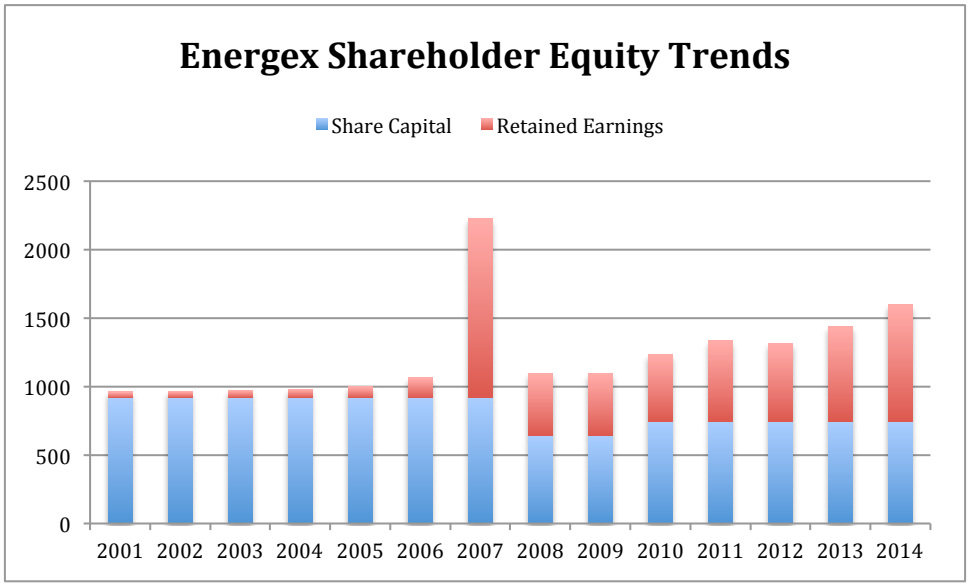
This demonstrates the deficiencies with the AER's return on capital determination methodology and how the AER is inappropriately providing **guaranteed returns on artificial investments.**

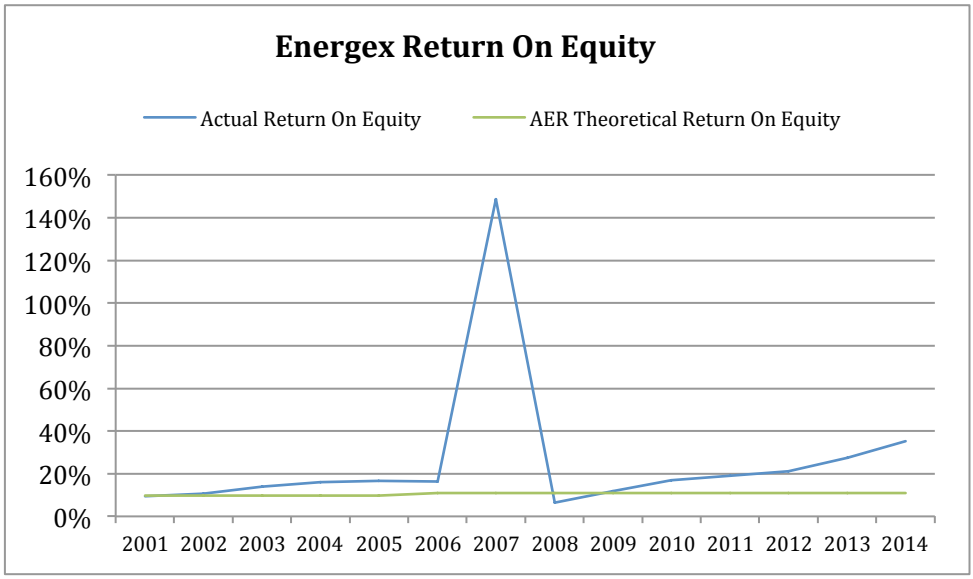

Powerlink Net Profit Trends
Net Profit After Tax (NPAT)
Dividends
600
500
400
300
200
100
0
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Powerlink Shareholder Equity Trends
Share Capital
Retained Earnings
900
800
700
600
500
400
300
200
100
0
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Powerlink Return on Equity
Actual Return on Equity
AER Theoretical Return on Equity
80%
70%
60%
50%
40%
30%
20%
10%
0%
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Energex Net Profit Trends
Net Profit After Tax
Dividends
1800
1600
1400
1200
1000
800
600
400
200
0
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Energex Shareholder Equity Trends
Share Capital
Retained Earnings
2500
2000
1500
1000
500
0
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Energex Return On Equity
Actual Return On Equity
AER Theoretical Return On Equity
160%
140%
120%
100%
80%
60%
40%
20%
0%
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

7.2.2.4 The Networks' Actual Debt Costs

Analysis of the Queensland networks' actual debt levels and debt costs highlights that:

- The networks' actual debt levels are lower than the levels that the AER assumes; and
- The interest rates that the networks pay for their debt are significantly lower than the rates assumed by the AER

These differences result in the networks' actual debt costs being around 25-30% lower than the 'cost of debt' allowances provided by the AER.

7.2.2.5 The Networks' Actual Total Returns

In light of the network's extraordinary profitability levels, it is not surprising that investors are queuing up to invest in Australia's electricity networks and are valuing them well above their RAB valuations.

7.2.2.5.1 The Recent TransGrid Sale

In November 2015, a number of investment consortiums attempted to purchase the NSW transmission network (TransGrid), which was sold (99 year lease) for $10.3 billion – a sale price that amounted to 165% of TransGrid's regulatory asset base (RAB) value.

Throughout the recent TransGrid revenue determination process, 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 – claiming that it would result in lower investment in the network and a significant increase in TransGrid's financing risks.

The extraordinary sale price achieved by TransGrid makes a mockery of those claims.

As all informed investors and industry analysts are aware, the statements that Australia's electricity networks make to regulators, policy makers and consumers are very different to their statements to investors.

A review of the *Spark Infrastructure* equity investment prospectus outlines why investors are queuing up to pay such large premiums above the networks' regulatory values. [24]

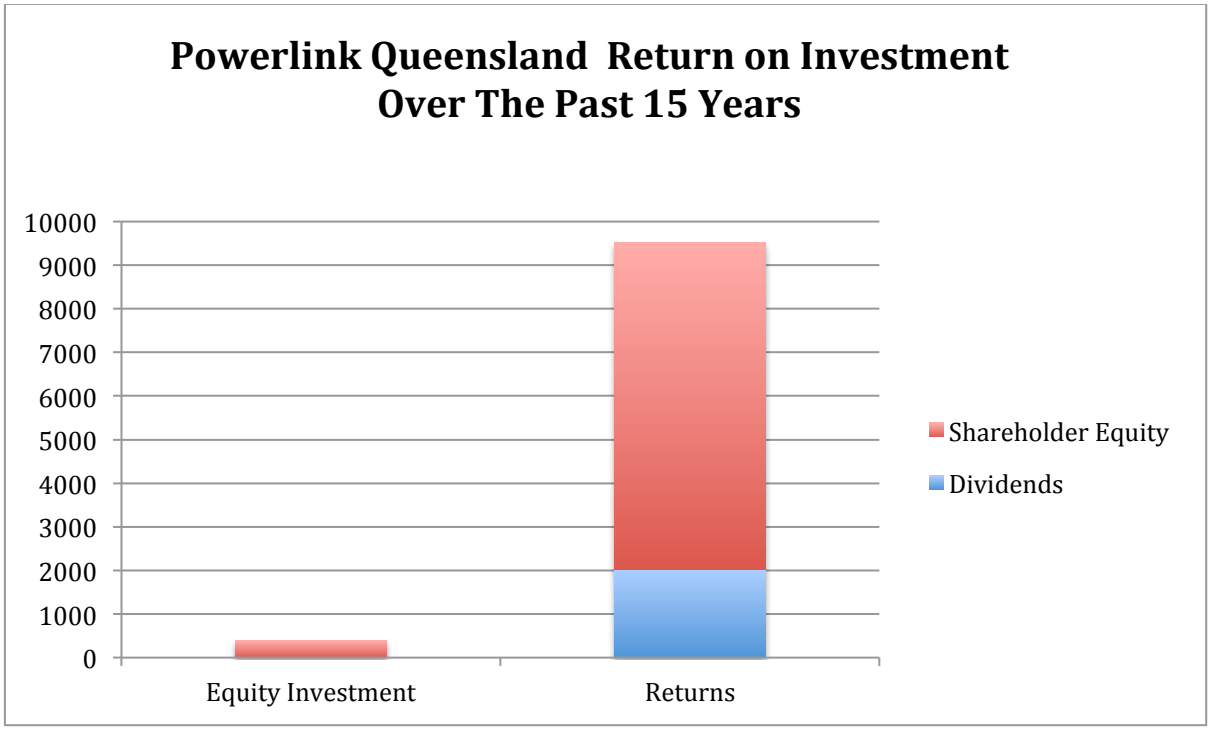
Informed investors and industry analysts were not in the least surprised that TransGrid sold for 165% of its regulatory value, as they know that the regulator is providing investors with 'return on equity' allowances at around 4 times the level that they actually require to invest in the networks.

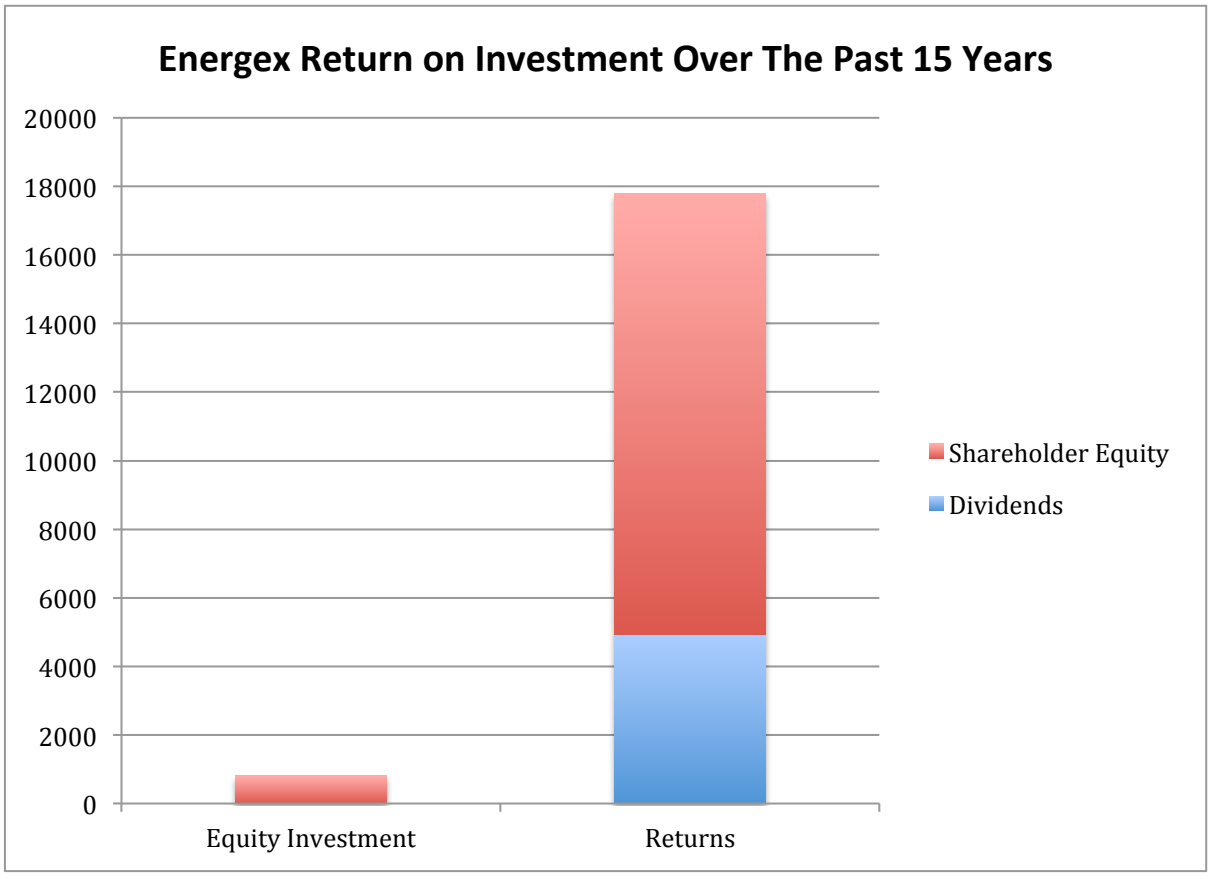
7.2.2.5.2 The Queensland Networks' Actual Total Return on Investment

The TransGrid sale price provides a very strong indication of the current market value of the Queensland electricity networks.

The charts overleaf illustrate that the total returns (income plus growth in shareholder equity) that the Queensland government has accrued from its investments in Powerlink Queensland and Energex over the past 15 years.

[24] Spark Infrastructure - Equity Investment in TransGrid and Equity Raising, 25 November 2015





- Shareholder Equity is calculated as Current Business Value less Current Debt
- Current Business Value has been calculated as 165% of RAB, as per the recent TransGrid sale

The above charts illustrate that:

- The Queensland Government's $401 million equity investment in Powerlink Queensland has accrued total returns of around $9.4 billion – i.e. 23 times the equity investment
- The Queensland Government's average equity investment of $814 million in Energex over the period has accrued total returns of $17.8 billion - i.e. 22 times the equity investment

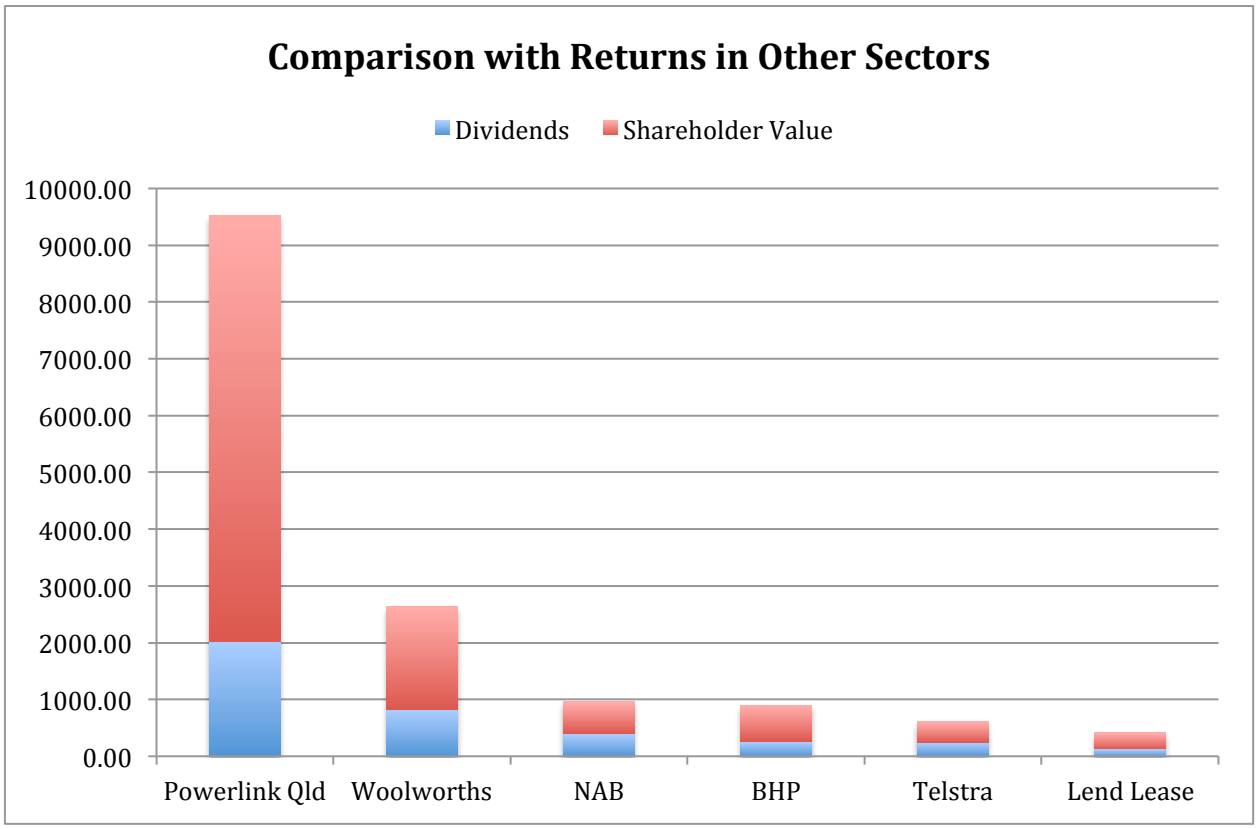
It is important to note that the Queensland networks are unlikely to have actually invested their reported "share capital". Consequently, the networks' actual 'return on equity' ratios are likely to be higher than the above ratios. [25]

It is also important to note that the above returns do not include the other pecuniary benefits that the Queensland government has realised from its network investments (i.e. tax receipts, debt fees). Adding those returns would also further increase the above return ratios.

7.2.2.5.3 Comparing Powerlink's Returns With Real World Returns

These are clearly extraordinary returns and represent many multiples of the returns that have been achieved by Australia's best performing ASX50 entities over the period.

The chart below compares the returns that the Queensland government is realising from its ownership of Powerlink with the returns that it would have been achieved if it had invested in blue chip stocks in other sectors of the Australian economy.



[25] Assets or Liabilities – The Need To Apply Fair Regulatory Values To Australia's Electricity Networks, Hugh Grant, 5 May 2016

The above chart illustrates that over the past 15 years, the Queensland government's investment in Powerlink Queensland has accrued returns of:

- 23 times the returns achieved by the Australian construction sector (Lend Lease)
- 15.5 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 comes close to those returns.

These returns are being realised despite Powerlink being the most inefficient transmission network in the National Electricity Market (NEM).

7.2.2.6 Proposed Solution

As the AER is aware, the AER's debt and equity base assumptions (i.e. 60% and 40% of RAB) are not rule requirements and the current rules do not present any impediments to the AER applying different assumptions.

In order to address the above inconsistencies, CCP4 considers that the AER needs to apply its percentage returns to capital bases that are more reflective of the networks' actual investments, e.g.:

- A debt base of around 55% of Powerlink's RAB
- An equity base of around 10% of Powerlink's RAB

The AER has been provided with the above recommendation a number of times over the past two years. [26]

CCP4 urges the AER not to confuse the issue as it has in its previous responses to those recommendations, by suggesting that CCP4 is seeking the removal of RAB indexation.[27]

To be clear, CCP4 is not challenging the rule requirement for the RAB to be indexed. Rather, CCP4 is simply recommending that the AER applies its calculated percentage returns to capital bases that are more reflective of the networks' actual investment, thereby ensuring consistency with the methodology that the AER applies when estimating the required percentage returns.

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[26] AER Consumer Challenge Panel CCP4 (Hugh Grant) Presentation on Powerlink Queensland's 2018-22 Revenue Proposal, April 2016
AER Consumer Challenge Panel CCP2 (Hugh Grant) Submission on the AER's preliminary 2015–20 revenue determinations for Energex and Ergon Energy, September 2015
AER Consumer Challenge Panel CCP2 (Bruce Mountain) submission on the AER preliminary decisions and revised proposals from Energex, Ergon Energy and SA Power Networks, July 2015

[27] The AER has responded to the critiques by referring to its Draft and Final Access Arrangement decision for APA GasNet Australia (2013) which outlined how the AER's return on capital allowances would differ for an unindexed RAB

If the AER disagrees with CCP4's recommended solution then it is incumbent upon the AER to explain its rationale for the above inconsistency – i.e. why does the AER considers that it is appropriate to apply percentage returns that investors require on uninflated capital bases to inflated capital bases?

It is also incumbent on the AER to explain how its return on capital determination methodology is meeting the National Electricity Objective (NEO) when it is clearly resulting in the networks achieving returns on capital well in excess of the returns being achieved by firms operating in competitive sectors that face much higher risks than the network businesses.

7.3 The AER's Weighted Cost of Capital (WACC) Parameters

7.3.1 Return on Equity

The AER's recent decisions have applied an equity risk premium of 4.55%, based on a market risk premium (MRP) of 6.5 and an equity beta of 0.7.

This is similar to the equity risk premium that the AER provided to the electricity networks during the previous regulatory period – **i.e. in the midst of the Global Financial Crisis.**

CCP4's perspectives on the AER's return on equity parameters are outlined below.

7.3.1.1 Market Risk Premium (MRP)

The AER's recent decisions have applied a Market Risk Premium (MRP) of 6.5%.

Over the past three years the AER has received numerous submissions from a broad range of stakeholders outlining that the regulatory framework for Australia's monopoly energy networks provides an extremely low business risk environment, demonstrating that the market risk premium (MRP) should be set at the bottom of the AER's guideline range (i.e. 5.0% or below).

Despite those submissions, the AER has continued to apply an MRP of 6.5%.

CCP4 urges the AER to have greater regard to stakeholders' critiques of its MRP determination approach.

7.3.1.2 Equity Beta

The AER's recent decisions have applied an equity beta of 0.7 - i.e. the top end of the 0.4-0.7 range outlined in the AER's *Rate Of Return (ROR) Guideline*.

Over the past three years the AER has received a number of submissions from a broad range of stakeholders that have strongly challenged the AER's approaches to estimating equity beta.

Many of those submissions referred to Professor Olan Henry's April 2014 expert report [28], commissioned by the AER as part of its Better Regulation Program, which provided compelling evidence that the AER should be applying an equity beta of 0.4 or lower.

[28] Henry O. T., Estimating Beta: An Update, April 2014

Of the nineteen calculations on which Professor Henry based his recommended range, most of the calculations were clustered at the lower end, with fourteen calculations between 0.3 and 0.5.

Importantly, Professor Henry's results included networks that were regulated under a 'price cap' – i.e. it includes networks that were subjected to volume risk. However, the AER is now applying 'revenue cap' regulation to all of its revenue determinations, thereby insulating the networks from any volume risk. This further strengthens the argument for an equity beta of 0.4 or below to be applied.

CCP4 strongly asserts that the AER has not provided any substantive evidence that supports its decision to apply an equity beta significantly higher than Professor Henry's estimate of 0.4.

7.3.2 Return on Debt

Powerlink is proposing a 'return on debt' allowance of 5.2%.

This represents a debt margin (nominal debt less the nominal risk free rate) of around 2.5%, which is:

- Similar to the debt margin that the AER provided to Australian networks for the previous regulatory period **– i.e. during the Global Financial Crisis**
- Over twice the debt margin that was provided by the ACCC for the 2002-07 regulatory period
- Around five times the debt margin currently being provided by Ofgem for the UK networks

Over the past three years the AER has received numerous submission providing detailed critiques of the AER's approaches to estimating the networks' return on debt allowances.

The key criticisms are highlighted below.

7.3.2.1 The Use of BBB+ Ratings

The AER claims that it has used BBB+ ratings in the development of its return on debt allowances.

However it is well understood that due to limitations in the availability of Australian BBB+ data, in practice BBB ratings are used. Consequently the AER's return on debt determinations have predominantly been based on more expensive debt ratings – i.e., the AER is providing significantly higher return on debt allowances than appropriate.

7.3.2.2 The AER's Lack of Consideration of the Networks' Actual Debt Costs

It is well understood that the Australian electricity networks' actual borrowing costs are much lower than the costs assumed by the AER, resulting in the networks realising billions of dollars in 'windfall profits'.

The AER considers that its approach to determining the networks' return on debt allowances drives the networks to implement more efficient financing practices. However, if the networks do implement more efficient financing practices, the benefits do not flow to consumers. This means that consumers are paying a premium to incentive better financing practices, but never realise the benefits of the outcomes of improved financing practices.

Various stakeholders, including the AER Consumer Challenge Panel, have repeatedly criticised the AER for not considering how the actual costs of debt incurred by the networks compares with the AER's theoretical debt costs.

CCP4 considers that the AER needs to have greater regard to those critiques.

CCP4 also concurs with CCP3's recent recommendation that the AER should benchmark the networks' actual debt costs to inform its 'return on debt' allowances. [29]

7.4 Summary of CCP4's Perspectives on the AER's Return on Capital Determination Methodology

The AER's Return On Capital Determination Methodology Does Not Appropriately Consider The Impacts Of RAB Indexation

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

In essence, 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 investments. However, the AER calculates its 'return on capital' allowances by multiplying those percentage returns to artificially inflated capital bases resulting in the AER providing return on capital allowances well above the required levels

CCP4 recommends that the AER revises its return on capital determination methodology by applying its percentage returns to capital bases that are more reflective of the networks' actual investments, i.e.:

- A debt base of around 55% of Powerlink's RAB
- An equity base of around 10% of Powerlink's RAB

Deficiencies With The AER's WACC Parameters

- CCP4 requests the AER to have greater regard to stakeholders' critiques of its MRP estimation approach and to apply an MRP at the lower end of the AER's range (i.e. 5.0% or below)
- CCP4 requests the AER to have greater regard to stakeholders' critiques of its equity beta estimation approach and to apply an equity beta at the lower end of the AER's range (i.e. 0.4 or below)
- CCP4 requests the AER to have greater regard to stakeholders' critiques of its 'return on debt' estimation approach and to determine a return on debt allowance for Powerlink that is more reflective of the debt costs that Australia's electricity networks actually incur

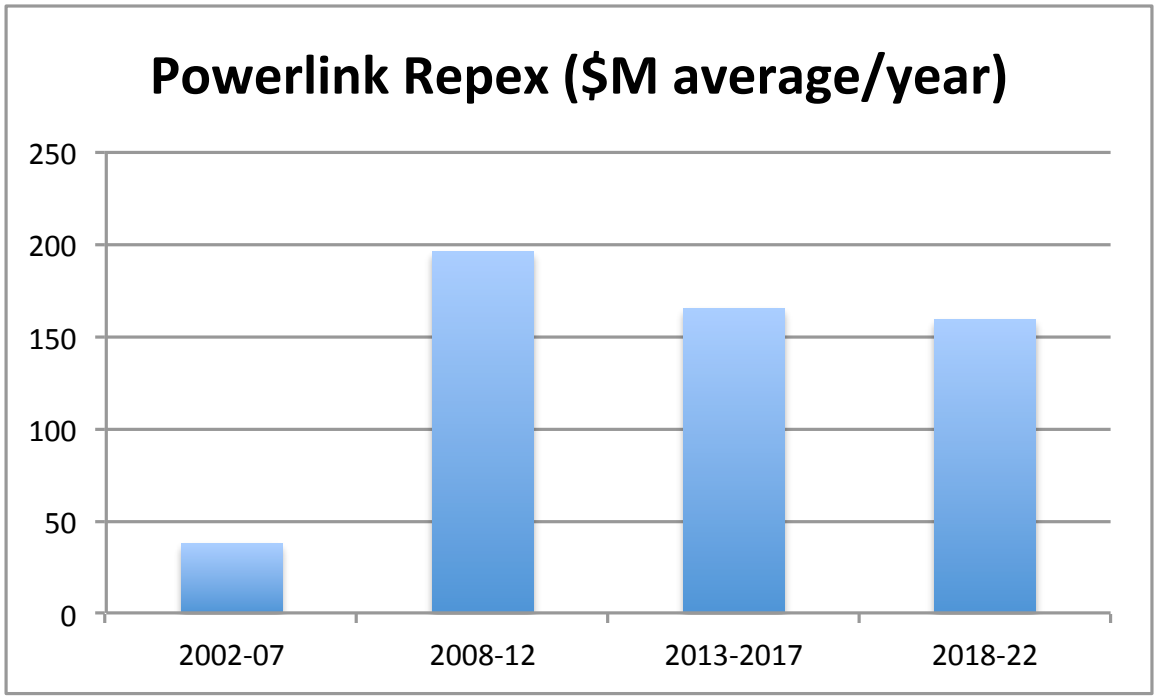
CCP4 considers that a fuller consideration of the above evidence will result in the AER determining significantly lower return on capital allowances that would better meet the National Electricity Objective, whilst still delivering generous returns to Powerlink.

[29] CCP3 Submission on the AER's Preliminary Determinations for the Victorian Distribution Networks

8 Replacement Capex

8.1 Powerlink's Historical Repex Spend

The chart below compares Powerlink's proposed repex with its actual repex spend over the previous three regulatory periods.



Source: Powerlink

Analysis of Powerlink's repex allowances and actual repex spend over the previous three regulatory periods identifies the following:

- Powerlink is proposing an average annual repex spend of around 4 times its actual spend during the 2002-07 regulatory period – which was around 20% above the level that the regulator (the ACCC) considered to be reflective of Powerlink's efficient long-term repex needs
- Powerlink's non-load capex has consistently been much higher than the other transmission networks
- Powerlink's dramatic increase in its repex spend over the 2008-12 regulatory period amounted to:
  - Around five times its repex spend during the 2002-07 period
  - 21% above its repex allowance for the period
  - 40% above the level recommended by the AER's consultant (PB) for the period
- The AER accepted Powerlink's proposed 2013-17 repex in full, much to the dismay of numerous stakeholders who outlined that Powerlink had materially overstated its repex needs [30]

[30] EUAA Submissions to Powerlink's Revenue Proposal, the AER's Draft Decision and Powerlink's Revised Revenue Proposal
Wesfarmers' Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision
The Energy Consumers Group (the Group) Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision
TEC Submissions to Powerlink's Revenue Proposal, the AER's Draft Decision and Powerlink's Revised Revenue Proposal
PAGE Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision

- CCP4 considers that the AER did not properly scrutinise Powerlink's 2013-17 repex proposal due to the AER being overwhelmed in responding to Powerlink's extraordinary load capex proposal (which proposed a load capex allowance of over 7 times Powerlink's actual spend during the period)
- Powerlink's actual 2013-17 repex spend confirmed the views of various stakeholders that Powerlink had proposed an amount well in excess of its actual repex needs for the 2013-17 period [31]
- It is clear from Powerlink's $229m repex spend during the first year of the current regulatory period (2012/13) and from its public statements at that time, that Powerlink was intending to fully spend its 2013-17 repex allowance, until it was directed by the Queensland government not to do so following the release of the highly scathing IRP review report in May 2013

8.1.1 Powerlink's Proposed Replacement Capex

Powerlink is proposing to spend a total of around $800 million in repex for the 2018-22 period, which would represent the continuation of Powerlink's extraordinary high repex spend levels.

CCP4 has a number of concerns with Powerlink's repex proposal, including:

An Over-Reliance on Top–Down Forecasting

- Poweink's repex forecasts are predominantly top-down, and do not provide sufficient information on the need for the proposed repex projects
- An appropriate mix of top down and bottom up forecasting is required to demonstrate the prudency and efficiency of Powerlink's proposed repex projects
- Powerlink's top down forecasting approach is overly reliant on the use of Powerlink's historical repex costs, which have not been demonstrated to be efficient

Inadequate and Overly Conservative Risk Management/Risk Assessments

- Powerlink's repex forecasts are based on risk-averse and excessively conservative risk assessments that systematically overstate project risks and costs
- Powerlink's risk assessments are predominantly qualitative in nature (e.g. Powerlink has not quantified or appropriately demonstrated risks associated with network performance)
- Powerlink's reliability performance (and the extraordinary bonuses it has achieved from the STPIS scheme) support the view that Powerlink's repex spend levels have been excessive
- The residual lives of Powerlink's assets are considerably higher than those of other networks
- Powerlink assumed asset lives are much shorter than the asset lives assumed by the other networks
- There are major disconnects between Powerlink's policy and practice as identified by the AMCL review of Powerlink's risk and prioritisation process (inadequate risk assessments, over-reliance on subjective judgment, insufficient understanding of actual failure modes, lack of integration with investment approval and asset management frameworks, etc.) [32]

[31] EUAA Submissions to Powerlink's Revenue Proposal, the AER's Draft Decision and Powerlink's Revised Revenue Proposal
Wesfarmers' Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision
The Energy Consumers Group (the Group) Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision
TEC Submissions to Powerlink's Revenue Proposal, the AER's Draft Decision and Powerlink's Revised Revenue Proposal
PAGE Submissions to Powerlink's Revenue Proposal and the AER's Draft Decision

[32] Appendix 5.08 of Powerlink's Revenue Proposal

Inadequate Justifications

- Powerlink's proposed repex program and projects are very poorly justified
- Powerlink has failed to identify the outcomes (e.g. system performance outcomes) that its major repex spend would deliver
- Inadequate provision of cost-benefit analyses
- Inadequate demonstration of the prudency or efficiency of the proposed repex programs and projects

Non-Credible Assumptions

Powerlink's repex proposal is based on unreliable assumptions, overstated benefits and assumptions that are heavily biased towards over-estimating its repex requirements, e.g.:

- Powerlink's assumed standard asset lives are much shorter than the asset lives being achieved by other networks, with Powerlink's standard asset lives being typically 15 years shorter
- Replacing Powerlink's proposed standard asset lives with the asset lives being achieved by other networks will confirm that Powerlink's actual residual asset lives are much higher than its estimated residual asset lives
- It is based on the application of excessive unjustified labour escalation rates

Not Justified On Asset Condition Information

- Powerlink's repex proposal provides very scant asset condition information. Rather, it is heavily reliant on unsubstantiated statements suggesting that its assets are ageing
- Powerlink's proposed repex projects and programs are predominantly based on the use of asset age as a proxy for asset condition

Insufficient Consideration Of Powerlink's Major Repex Spend Over The Past Decade

- Powerlink's repex proposal does not reflect the impact of its major repex spend over the past two regulatory periods
- Powerlink's overspend of its 2008-12 repex allowance effectively 'pre-installed' a large proportion of its future repex needs

Insufficient Consideration Of Excess System Capacity And Declining Asset Utilisation

- Powerlink's repex proposal does not appropriately consider its growing level of excess system capacity
- Powerlink's repex proposal does not appropriately consider the impact of its very low asset utilisation levels
- Powerlink has not appropriately considered the impact of its low asset loading in its estimates of residual asset lives

8.2 Deficiencies with AER's Repex Assessment Methodology

The AER applied four techniques to its recent repex assessments.

- Trend Analysis
- Predictive Modeling
- Technical Reviews of the networks' approaches to forecasting, risk management and governance
- Consideration of asset health indicators

The AER has received various submissions over the past 2 years that have strongly criticised its repex assessment methodology and outlined the urgent need for improvements to the methodology.

Those key concerns are outlined below in the context of the AER's assessment of Powerlink's repex proposal.

8.2.1 Trend Analysis

The AER has received various submissions outlining deficiencies in the AER's approach to the use of trend analysis in its recent repex determinations, including:

An Over Reliance On Short-Term Rather Than Long-Term Trend Analysis

- The AER has predominantly determined its recent repex allowances on the basis of short-term, rather than long-term, trend analysis
- Essentially, if repex in the past two regulatory periods was higher than the networks' long-term average spend, the AER's trend analysis has concluded that the same amount of repex is required in future, whereas the reverse is true
- This is resulting in the AER continuing to provide excessive repex allowances

Insufficient Assessment Of The Efficiency Of The Networks Previous Repex Spend

- The AER's recent repex determinations have had insufficient regard to the prudency or efficiency of the networks' recent repex spend levels
- The AER is required to determine efficient repex allowances, rather than basing its allowances on the networks' recent repex spend levels, which have not been demonstrated to be efficient

Insufficient Scrutiny Of The Networks' Repex Allowance Overspends

The AER's recent determinations have acknowledged the importance of considering the extent to which the networks' previous repex has pre-installed its future repex needs, e.g.: [33]

"We have also considered whether the service provider's replacement practices from the last regulatory control period did more than maintain safety, reliability and security of the distribution system, such that applying the business as usual approach for asset replacement may result in replacement practices that provide for expenditure over and above what is necessary to satisfy the capex objectives".

However, that extremely important consideration has not been appropriately taken into account in the AER's recent repex determinations.

[33] AER recent replacement capex determinations

As outlined above, Powerlink significantly over-spent its 2008-12 repex allowance, resulting in the "pre-installation" of a proportion of Powerlink's future repex needs, yet the AER did not consider that overspend in its determination of Powerlink's 2013-17 repex allowances.

8.2.2 Predictive Modeling (The AER's Repex Model)

The AER uses predictive modeling (the AER's repex model) to estimate 'business as usual' repex.

The AER's repex model aims to predict the volume of assets that may need to be replaced over the next 20 years – based on the number and age of assets in commission, the assumed asset replacement ages and their corresponding unit costs.

Importantly, the AER's repex model is heavily reliant on the use of asset age as a proxy for asset replacement drivers. [34]

That is a deeply flawed assumption and a major deficiency in the AER's repex model.

The AER's predictive modeling also assumes that the networks' recent repex practices are reflective of efficient future requirements.

As outlined above, that is also a deeply flawed assumption. Whilst the AER uses its category analysis data to benchmark prices for specific activities, it does not benchmark the networks' replacement practices, relying only on the network's actual replacement practices. This means that the networks are allowed to implement their own replacement rates regardless of whether those rates are prudent.

Furthermore, CCP4 asserts that the AER's repex model was never intended to be a deterministic model and it is therefore inappropriate for the AER to have placed such a heavy reliance on its repex model results in the setting of the networks' repex allowances.

Overall, CCP4 considers that the AER's repex assessment model is overly reliant on acceptance of the networks' past asset replacement practices and their historical repex spend levels.

8.2.3 Powerlink's Assumed Asset Lives

The AER has received various submissions that have highlighted major variances with the networks' assumed standard asset lives.

As outlined in the table below, Powerlink assumes much shorter asset lives than the other transmission networks.

Estimated service lives of new assets	Transend	ElectraNet	TransGrid	Ausnet	PL
Overhead transmission assets	57	52	50	69	50
Underground transmission assets	46	40	45	60	45
Switchyard, substation and transformer assets	41	48	40	48	35
"Other" assets with long lives	33	24	15	14	29
"Other assets with short lives	4	5	10	5	6

Source: AER RINs Data

[34] AER, electricity network service providers, Replacement expenditure model handbook, November 2013, p. 10

CCP4 also notes that Powerlink's assumed asset lives are shorter than many of the distribution networks' assumed asset lives, especially for substation equipment where expected lives vary between 36 years and 73 years with a median 45 years.

It is clear that Powerlink is systemically understating its asset lives and consequently, prematurely replacing its assets.

This has major implications for Powerlink's proposed repex, depreciation, and 'return on capital' allowances.

The AER has also received various submissions that have asserted that the AER is providing the networks with far too much discretion in the setting of "standard asset lives', and that the AER needs to enforce greater consistency in the determination of "standard asset lives" across all networks.

8.2.4 Technical Review

It is anticipated that the AER will engage an external consultant to perform a technical review of Powerlink's repex proposal.

In light of the deficiencies with Powerlink's repex proposal outlined above, it is recommended that the scope of the technical review should incorporate:

- A detailed assessment of the prudency and efficiency of Powerlink's proposed repex programs and projects, including:
  - A critical assessment of the outcomes (e.g. system performance outcomes) that the programs and projects will deliver
  - Cost/benefit analyses of the repex programs and projects and Identification of projects that are either unjustified or should be deferred
- An assessment of Powerlink's risk assessments and cost-benefit analyses
- An assessment of the disconnects between Powerlink's policy and practice identified by the AMCL review of Powerlink's risk and prioritisation process (inadequate risk assessments, over-reliance on subjective judgment insufficient understanding of actual failure modes, lack of integration with investment approval and asset management frameworks, etc.) [35]

8.2.5 Asset Health Indicators and Comparative Performance Metrics

The AER's recent repex determinations have repeatedly emphasised the criticality of the networks' repex allowances being determined on the basis of actual asset condition information.

However, the AER's repex assessment methodology does not appropriately consider asset condition information.

Rather, the AER's repex assessment methodology only applies some cursory observations of two very high-level "asset health" indicators:

- Trends in the remaining service life
- Trends in asset utilisation

[35] Appendix 5.08 of Powerlink's Revenue Proposal

Importantly, those observations have not materially affected the AER's recent repex determinations, which as outlined above, were overly dependent upon the use of asset age as a proxy for asset condition.

It is well understood that asset age is a very simplistic indicator and not a credible determinant of "asset health". Credible asset replacement justifications need to be based on robust assessments of asset condition, together with risk assessments that transparently identify the risks of replacement versus alternative options (e.g. revised maintenance strategies, asset refurbishments and other risk mitigation options).

Such assessments have not been performed in Powerlink's repex proposal or in the AER's recent repex determinations.

8.2.5.1 Trends in the Remaining Service Life of Network Assets

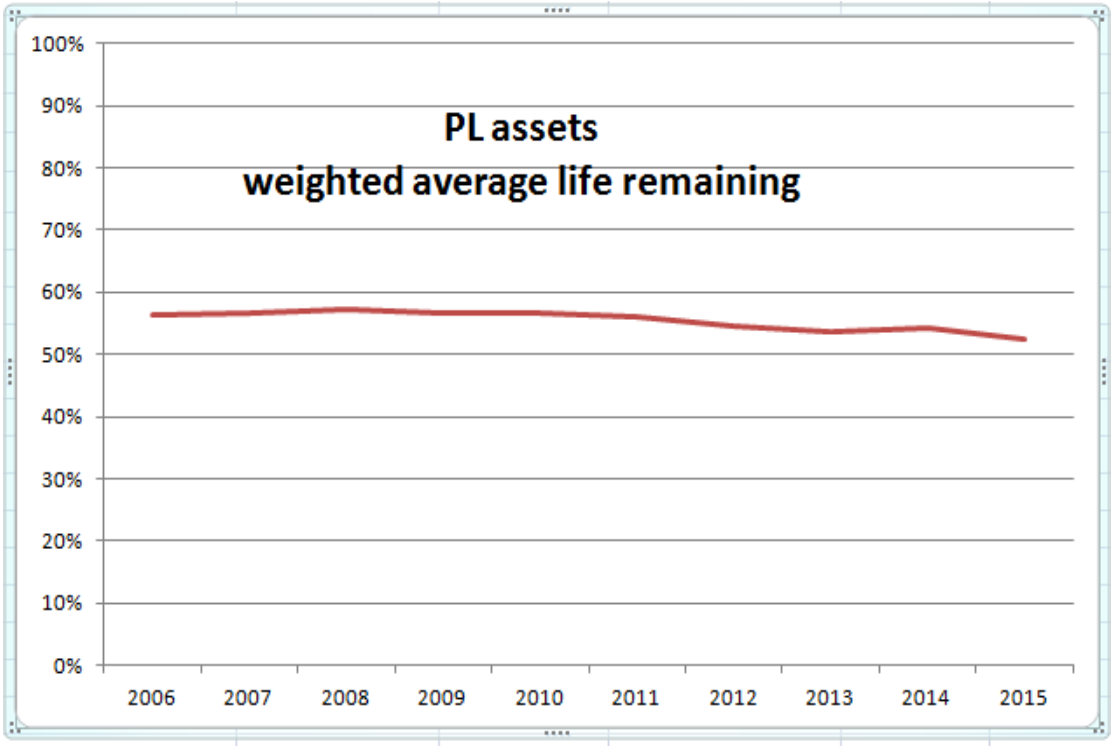
The AER's repex assessment methodology involves a trend analysis of the networks' residual asset lives.

The chart below illustrates that the large majority of Powerlink's assets have more that 60% of the lives yet to be used, supporting the view above that there is little need for as much repex as was used in past periods. In fact, no repex could be incurred in the next regulatory period and the remaining asset lives would still be more than 50% of the estimated lives.

Asset class	Expected Asset life (years)	Residual Asset life (years) at 2017	% life remaining
Overhead lines	50	30.2	60%
Underground lines	45	19.8	44%
Lines (refit)	30	28	93%
Substations primary plant	40	27.1	68%
Substations secondary systems	15	10.2	68%
Comms (civil works)	40	16.9	42%
Communications other assets	15	11.4	76%
Network switching centres	12	7.5	63%
Commercial buildings	40	29.6	74%
Computer equipment	5	3.8	76%
Office furniture and miscellaneous	7	4	57%
Office machines	7	4.8	69%
Vehicles	7	5	71%
Moveable plant	7	4.5	64%

Source: Powerlink Revenue proposal, tables 10.1 and 10.2

The chart below, derived from Powerlink's RINs data illustrates that Powerlink weighted residual asset lives have been stable over the previous regulatory period.



Source; EB RIN, CCP4 analysis

However, those residual asset lives are based on Powerlink's assumed standard asset lives which, as outlined above, are much shorter than the asset lives being achieved by other networks.

Replacing Powerlink's proposed standard asset lives with the asset lives being achieved by other networks will confirm that Powerlink's residual asset lives are much longer than claimed by Powerlink and consequently Powerlink's proposed repex is materially overstated.

8.2.5.2 Asset Utilisation Trends

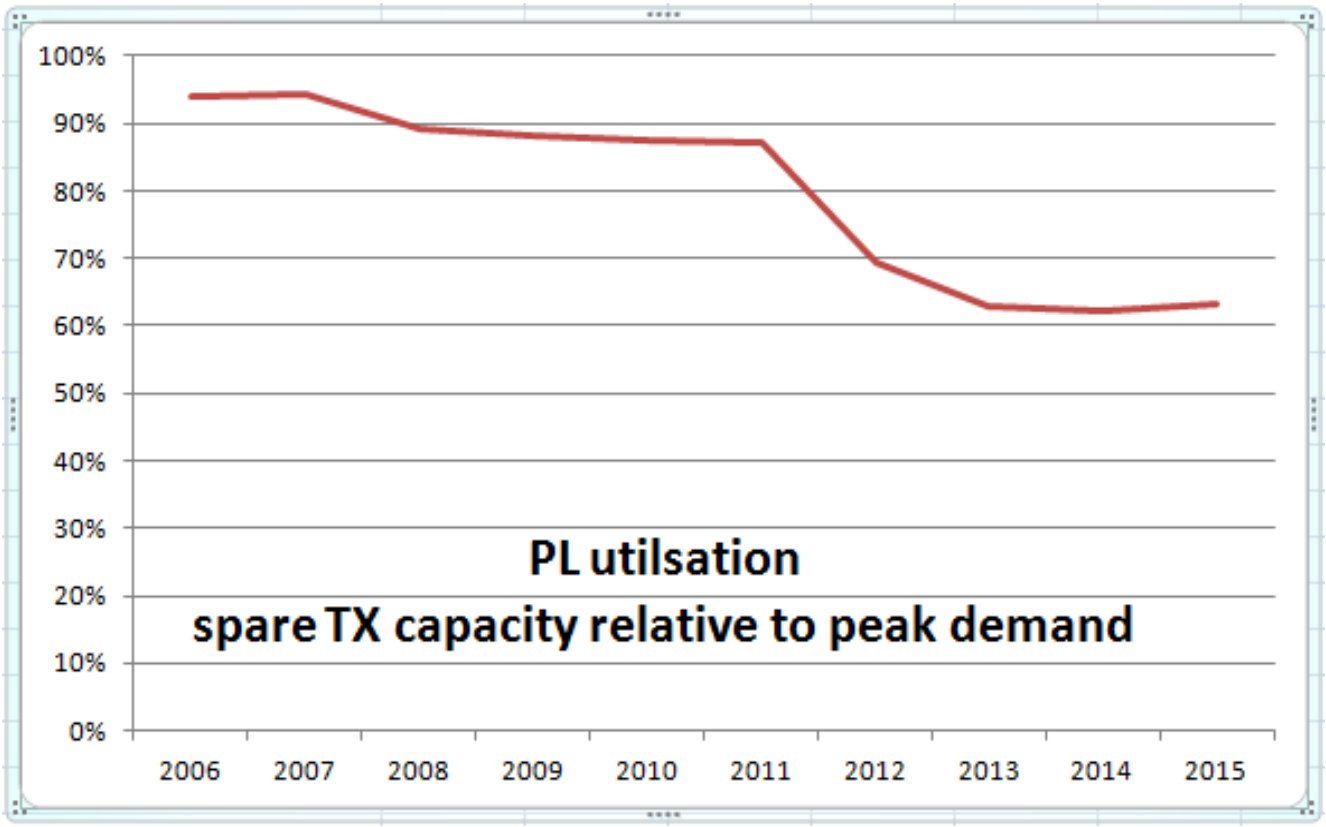
The AER's recent determinations have claimed that its repex allowances are informed by an analysis of trends in asset utilisation.

Powerlink's excessive investments over the previous regulatory periods have resulted in very high levels of excess system capacity and major declines in its asset utilisation levels.

As the AER Economic benchmarking RIN does not seek an estimate of the utilisation of the TNSPs' assets (in contrast to the DNSP RIN) CCP4 has assessed the amount of transformer cold spare capacity (EB RIN page 6 table 6.1.6) and related it to peak demand (EB RIN page 5).

CCP4 recognises that this cannot be considered to be reflective of the overall utilisation of Powerlink's assets, but it provides an important indication of the extent of Powerlink's asset utilisation, as transformer capacity is most commonly the limiting factor in the network.

As outlined in the chart below, under that measure, Powerlink's assets are exhibiting a significant reduction in asset utilisation.



Source: CCP4 analysis

Powerlink's very low asset utilisation level means that its assets are more lightly loaded compared to previous periods and will result in its assets ageing at reduced rates, further increasing its residual asset lives.

This has not been reflected in Powerlink's repex proposal.

Nor has it been appropriately considered by the AER in its recent repex determinations.

CCP4 considers that asset utilisation is much more material to the determination of the networks' efficient capex needs than the AER's recent repex assessments have determined.

The AER needs to perform a detailed assessment of Powerlink's asset utilisation levels and the implications for efficient repex allowances for the 2018-22 regulatory period.

8.2.5.3 CCP4's Recommendations Regarding The AER's Repex Assessment

On the basis of the above critiques, CCP4 considers that Powerlink's proposed repex is materially overstated.

CCP4 also considers that the AER's repex assessment approach is too high level, overly reliant on acceptance of the networks' past asset replacement practices and will not apply the degree of rigour required to fully address the major deficiencies with Powerlink's repex forecasts identified above.

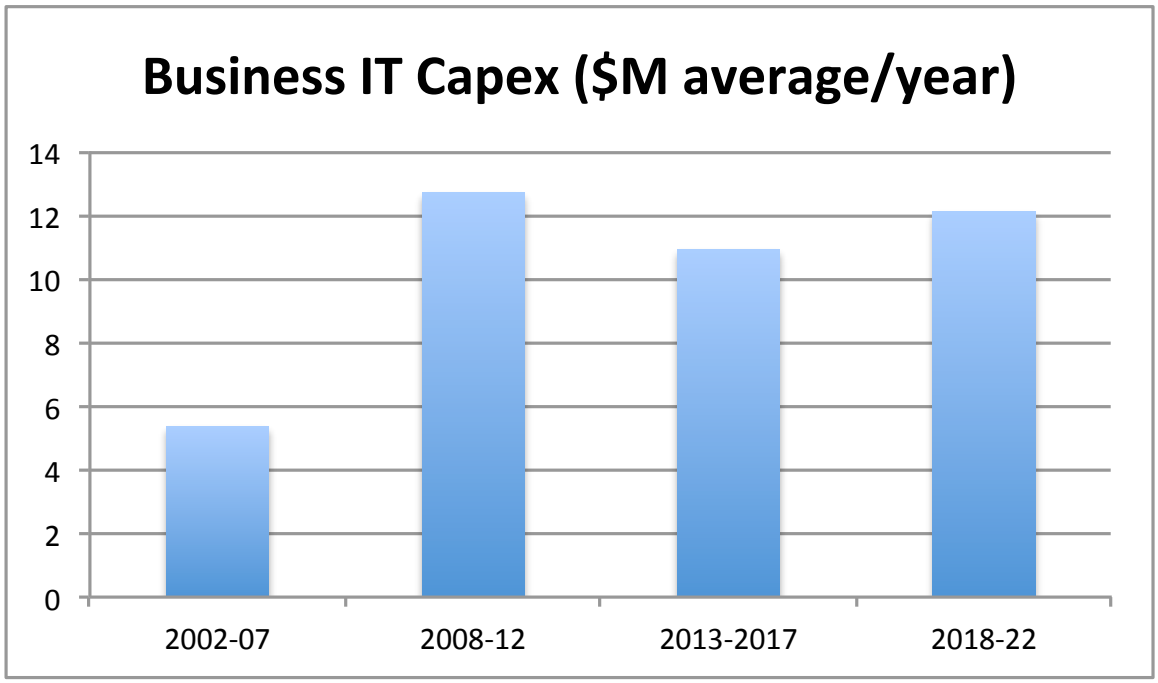
CCP4 therefore recommends that the AER needs to refine its repex assessment methodology, having greater regard to:

- Powerlink's very poor capital efficiency and excessively high regulatory asset base (RAB)
- The implications of Powerlink's very high excess capacity level
- The implications of Powerlink's very low asset utilisation levels
- A critical assessment of the outcomes (e.g. system performance outcomes) that Powerlink's proposed repex programs and projects will deliver
- Determination of efficient repex allowances rather than basing its allowances on Powerlink's recent repex spend levels which have not been demonstrated to be efficient
- Detailed assessments of the prudency and efficiency of Powerlink's proposed repex projects
- Replacing Powerlink's proposed standard asset lives with the asset lives being achieved by other networks
- A review of actual asset condition information - ensuring that asset replacements are justified on the basis of robust assessments of asset condition together with risk assessments that identify the risks of replacement versus alternative options
- Ensuring that alternative options to asset replacement (e.g. revised maintenance strategies, asset refurbishments, life extensions, and other risk mitigation options) are appropriately considered
- An assessment of the extent to which Powerlink's previous replacement capex programs have 'pre-installed' its replacement capex requirements for the next regulatory period
- Ensuring that re-use strategies are more appropriately considered

9 Business IT Capex

9.1.1 Powerlink's Historical Business IT Capex Spend

The chart below compares Powerlink's proposed business IT capex with its actual spend over the previous three regulatory periods.



An analysis of Powerlink's IT capex spend over the previous three regulatory periods identifies the following:

- Powerlink is proposing an average IT Capex repex spend of around 2.5 times its actual spend during the 2002-07 regulatory period – a spend level that the regulator (the ACCC) considered to be reflective of Powerlink's efficient long-term needs
- Powerlink's business IT capex has consistently been much higher than the other transmission networks
- The business benefits of Powerlink's high IT capex spend over the past 10 years have not been demonstrated

9.1.2 CCP4's Concerns With Powerlink's Business IT Capex Proposal

CCP4 has a number of concerns with Powerlink's Business IT capex proposal, including:

Software/Hardware Refresh Program ($22M)

Powerlink's justification for this major expenditure program is limited to two sentences:

"The Software / Hardware Refresh program aims to maintain Powerlink's existing Business IT hardware and software assets to ensure they are reliable and fit for purpose.

The program seeks to replace and refresh existing hardware as it reaches end of life and manage the software upgrades required, to ensure consistent delivery and conformance to Enterprise Architecture and industry standard standards"

In light of the Powerlink's major IT expenditure over previous regulatory periods, CCP4 considers that Powerlink needs to provide much more detail on the business case for such a major expenditure program.

Spatial Business Intelligence and Analytics ($7.5M)

It appears that Powerlink already has a number of business intelligence (BI) applications.

Powerlink's proposal does not demonstrate how a further business intelligence tool will deliver business benefits or improve Powerlink's efficiency.

CCP4 considers that the AER needs to consider the outcomes of Powerlink's previous business intelligence expenditure before considering further expenditure.

ERP Modernisation Expenditure ($4.1 M)

In light of Powerlink's major levels of ERP spend over the past two regulatory periods, it is not clear why there is a need for ERP modernisation.

Powercor and Energy Australia both have significant investments in SAP applications, but have not proposed such "modernisation" expenditure.

CCP4 considers that such expenditure is already included in Powerlink's proposed software/ hardware refresh program.

Enterprise Integration ($3.2M)

It appears that Powerlink has previously received significant funding for enterprise integration.

Again, CCP4 considers that this expenditure is already included in Powerlink's proposed software/ hardware refresh program.

Insufficient Demonstration of Business Benefits

Powerlink's IT Capex proposal does not demonstrate the business benefits it has realised from its major IT expenditure over the previous decade.

Furthermore, there appears to be some significant duplication of expenditure for Powerlink's proposed IT programs and its proposed recurrent software/ hardware refresh program.

9.1.3 The AER's Non-Network Capex Assessment Process

CCP4 has a number of concerns with the AER's non-network capex assessment process, including:

Inadequate Trend Analyses

The AER's recent category analysis has only compared the networks' proposed capex against their recent record-high spend levels.

As outlined above, Powerlink's business capex spend over the past two regulatory periods was much higher than its previous spend level

The AER is required to set its non-network capex on the basis of efficient levels – not on the basis of the networks' recent record high spend levels.

CCP4 considers that Powerlink's business IT capex spend during the 2002-07 regulatory period is a better reflection of Powerlink's future needs

Project Reviews

The AER's project reviews have only been triggered if the networks' proposed spend for a particular category was materially higher than its expenditure for the category during the previous regulatory period

The AER's project reviews are very high level, thereby only resulting in the AER challenging the networks' most obvious ambit claims

CCP4 considers that this lack of scrutiny has resulted in the AER 'waving through' many unjustified projects

Insufficient Demonstration of the Business Cases for the Proposed Projects

As outlined above, Powerlink's business IT capex projects are very poorly justified, with inadequate provision of cost benefit analyses or demonstration of how the capex will benefit consumers

CCP4 considers that the AER's assessment process does not apply the level of scrutiny required to address such poor project justifications or to properly scrutinise the prudency or efficiency of the networks' proposed project costs

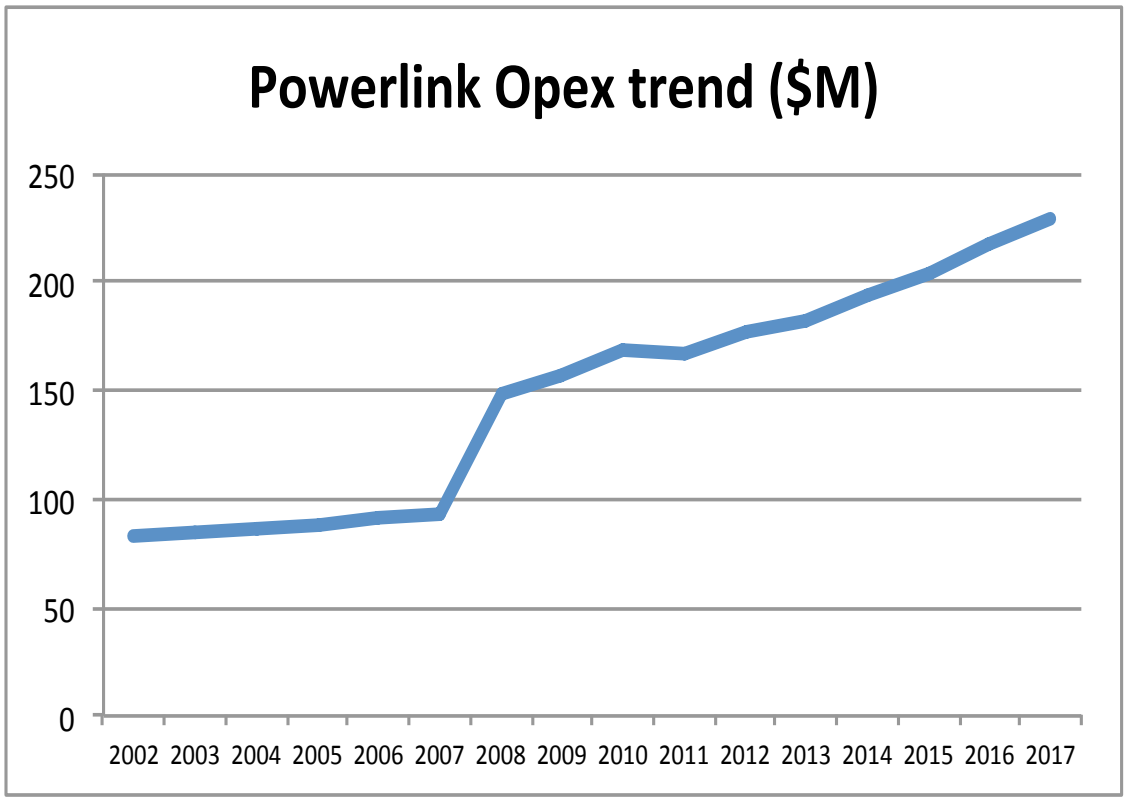
Insufficient Integration of Opex Benefits into the AER's Proposed Opex Allowances

The AER does not integrate the expected opex reductions arising from non-network capex projects into its opex allowances

CCP4 considers that new IT systems should only be implemented when there is a clear benefit to consumers and that the benefits are integrated into the networks' opex allowances

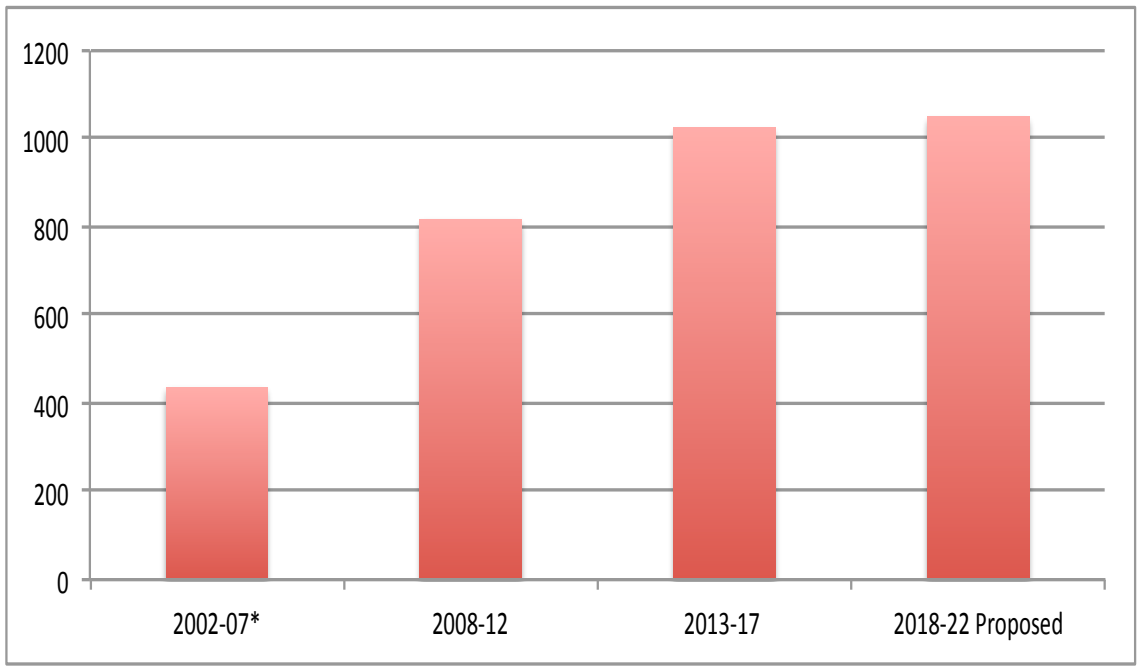
10 Operating Expenditure

The chart below outlines that Powerlink's operating expenditure increased sharply since 2007, with its 2016 opex spend being over 230% of its 2007 opex spend.



Source: Powerlink

The chart below outlines that Powerlink is proposing record-high opex for the next regulatory period.



* 2002-07 figures pro-rated to 5 years (rather than 6 years) for comparison purposes

10.1 Powerlink's Historical Opex Trend

An assessment of Powerlink's opex spend over the previous regulatory periods identifies that:

- Powerlink's opex increased sharply since 2007, increasing by an average of around 11% per annum, during which Powerlink's key system outputs reduced
- Powerlink's opex growth was much higher than the opex growth of the other transmission networks, both in absolute terms and when normalised for changes in system outputs
- Powerlink's 2016 opex spend is over 230% of its 2007 opex spend
- Powerlink is proposing a record-high opex spend for the next regulatory period
- Powerlink's proposed opex is around three times its opex spend over the 2002-07 regulatory period – a spend level that was above the level that the ACCC considered to be reflective of Powerlink's efficient long-term opex needs

10.2 Powerlink's Opex Forecasting Approach

CCP4 has a number of concerns with Powerlink's opex forecasting approach, including:

- It fails to demonstrate the efficiency of Powerlink's proposed base year opex
- It does not incorporate the opex reductions that should be realised from Powerlink's major capex programs over previous regulatory period (e.g. opex reductions that arise from reduced asset ages and reduced asset utilisation)
- Powerlink's underlying assumptions have a systemic bias to materially overestimating its opex needs

10.3 The AER's Opex Assessment Approach

The AER intends to adopt the *base-step-trend* approach to its determination of Powerlink's opex allowances, i.e.:

- **Determination of the efficient base year opex**
- **Application of step changes** – adjusting the base year expenditure to account for forecast cost changes over the regulatory period due to new regulatory obligations
- **Determination of rate-of-change factors** - determination of escalation factors to take account of changes to efficient opex over the regulatory period due to price, output and productivity changes

10.4 Determination of Efficient Base Year Opex

The most critical element of the AER's opex assessment is the determination of efficient base year opex.

The AER has received various submissions over the past two years that have outlined that its *base-step-trend* approach is overly dependent upon trend analysis and an inappropriate acceptance of the networks' historical costs as being efficient - i.e. it does not demonstrate the efficiency of the networks' base year opex.

10.4.1 The Need To Apply Benchmarking To The Determination Of Efficient Base Year Opex

The Rules formally require the AER to undertake benchmarking to assess the relative efficiencies of the networks and to have regard to the outcomes of its benchmarking in its determination of efficient opex allowances. [36]

In its recent revenue determinations, the AER applied benchmarking to determine the efficient base year opex for the distribution networks, but not for the transmission networks.

CCP4 considers that the AER has not justified its reasons for not applying benchmarking to the determination of efficient base year opex costs for the transmission networks.

10.4.1.1 The Information is Available

10.4.1.1.1 The AER has Comprehensive Opex Benchmarking Information

The AER develops its Transmission Benchmarking Reports using data collected from its regulatory information notices (RINs). This data has been compiled in accordance with the AER's consistent information requirements and it includes data that has been verified by the TNSP's chief executive officers and is independently audited. The data has also been subject to rigorous testing and validation by the AER and Economic Insights.

As stated by the AER:[37]:

"We consider that the benchmarking analysis presented in this report is reasoned and comprehensive. We have collected data on all major inputs and outputs for transmission businesses, and we consider the data used is robust. The PPIs present expenditure against known drivers, and the MTFP specification by Economic Insights is consistent with established literature"

As outlined by Economic Insights: [38]

"While no dataset will ever be perfect, this data is the most consistent and thoroughly examined dataset of the transmission networks yet assembled in Australia"

10.4.1.1.2 The TNSPs' have Comprehensive Opex Benchmarking Information

For many years the Australian TNSPs have selectively used the outcomes of a broad range of benchmarking reports to support their opex efficiency claims.

For example, TransGrid's and TasNetworks' recent revenue proposals selectively referred to the outcomes of the following benchmarking reports:

- International Transmission Operations and Maintenance Study (ITOMS)
- International Transmission Asset Management Study (ITAMS)
- Mercer Human Resource Effectiveness Monitor 2012
- UMS Corporate Overheads High Level Comparative Assessment
- The Huegin Transmission Benchmarking Study 2013 Report

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36 NER Clause 6A.6.6 (e) (4)

37 AER Annual Transmission Benchmarking Report 2014

38 Economic Insights, Economic benchmarking assessment of operating expenditure for NSW and Tasmanian electricity TNSPs, November 2014, p. 3.

A review of the TNSPs' previous regulatory submissions identifies that they have selectively referred to over 40 benchmarking studies in support of their opex efficiency claims.

Powerlink's previous regulatory proposals consistently made highly selective use of the ITOMS benchmarking results to demonstrate its opex efficiency.

For example, as stated by Powerlink in support of the use of benchmarking for its 2013-17 revenue proposal: [39]

"International Transmission Operations and Maintenance Study (ITOMS) is a widely accepted (both nationally and internationally) measure for transmission network cost and performance which benchmarks of the order of 30 businesses across the Asia Pacific, Europe, North America and Scandinavian regions"

"Over a number of years, Powerlink has consistently benchmarked as providing high levels of network performance at low cost"

The AER's previous regulatory decisions have acknowledged that the opex benchmarking results presented by the TNSPs have informed its opex determinations to some extent.

The ACCC's regulatory determinations also acknowledged that its opex allowances were informed by benchmarking information provided by the TNSPs.

Clearly the required data and information for benchmarking the TNSPs' opex is readily available and the AER has the information gathering powers to obtain whatever information it requires.

10.4.1.2 AusNet Services Asserts That The AER's Benchmarking Results Prove That It Is Much More Efficient Than Powerlink

All of the transmission networks have engaged Huegin Consulting during this round of resets to assess their opex efficiency.

AusNet Services' current revenue proposal claims that Huegin's analysis of the AER's benchmarking results validate the efficiency of its proposed opex and proves that it is much more efficient than the other transmission networks, stating that: [40]

*"Huegin's analysis of OPFP demonstrates that AusNet Services has delivered higher rates of opex productivity growth than its peers and **well above the industry average**"*

*"Economic Insights explains that an adjustment for step changes further improves historic performance, with AusNet Services **achieving substantially better rates of improvement than the industry average**"*

*"AusNet Services' **strong track record of outperforming the industry average** with respect to productivity gains is prima facie evidence that its base year opex is efficient"*

By contrast, Powerlink has used the same consultant (Huegin) to attempt to argue why the AER should not apply benchmarking to its assessment of Powerlink's opex efficiency.

[39] Powerlink's "Response to Submissions" on its 2013-17 revenue proposal, 30 August 2011
[40] AusNet Services' 2017-22 Revenue Proposal

In doing so, Powerlink is directly contradicting its consistent claims over previous regulatory periods that the benchmarking results demonstrate its operational efficiency. By contradicting those claims and attempting to refute the value of benchmarking, Powerlink is in effect stating that the extensive costs that consumers have funded for its participation in numerous benchmarking studies (including the extremely expensive international ITOMS benchmarking study) has been wasteful expenditure. Consequently, those costs must not be included in Powerlink's efficient base year opex.

The TNSPs' sharply conflicting claims regarding the conclusions of benchmarking and their sharply conflicting conclusions from the use of the same consultant demonstrates why the AER needs to take control of the TNSP benchmarking agenda and ensure the consistent use of benchmarking in its determination of efficient opex costs for Powerlink.

10.4.1.3 Various Studies Have Demonstrated Material Inefficiencies in Powerlink's Opex

Various studies and analyses have demonstrated material inefficiencies in Powerlink's opex.

All of those studies have demonstrated that over the past 2 regulatory periods, Powerlink's opex has grown at a much higher rate than the other transmission networks, during a period when Powerlink's system outputs have remained flat or declined.

For example, In October 2012 the EUAA undertook a TNSP benchmarking analysis which identified that Powerlink demonstrated the lowest level of opex efficiency of the five NEM transmission networks. [41]

Some key relevant findings of that study included:

"In Queensland operating expenditure increased significantly, whereas the operating expenditure of the TNSPs in other states remained reasonably constant. *Per MWh delivered, there is a significant difference between the lowest and the highest"*

"Even for TNSPs with comparable levels of delivered energy, operating expenditure per MWh differs significantly. ***For example in Queensland twice as much operating expenditure per MWh delivered is recovered than in Victoria"***

"The provision of transmission network services in Victoria has been consistently better than in other states *in respect of regulated revenues, the size of the regulated asset base, and the level of operating expenditure and capital expenditure"*

10.4.1.4 The AER's Benchmarking Results Identify Material Inefficiencies in Powerlink's Opex

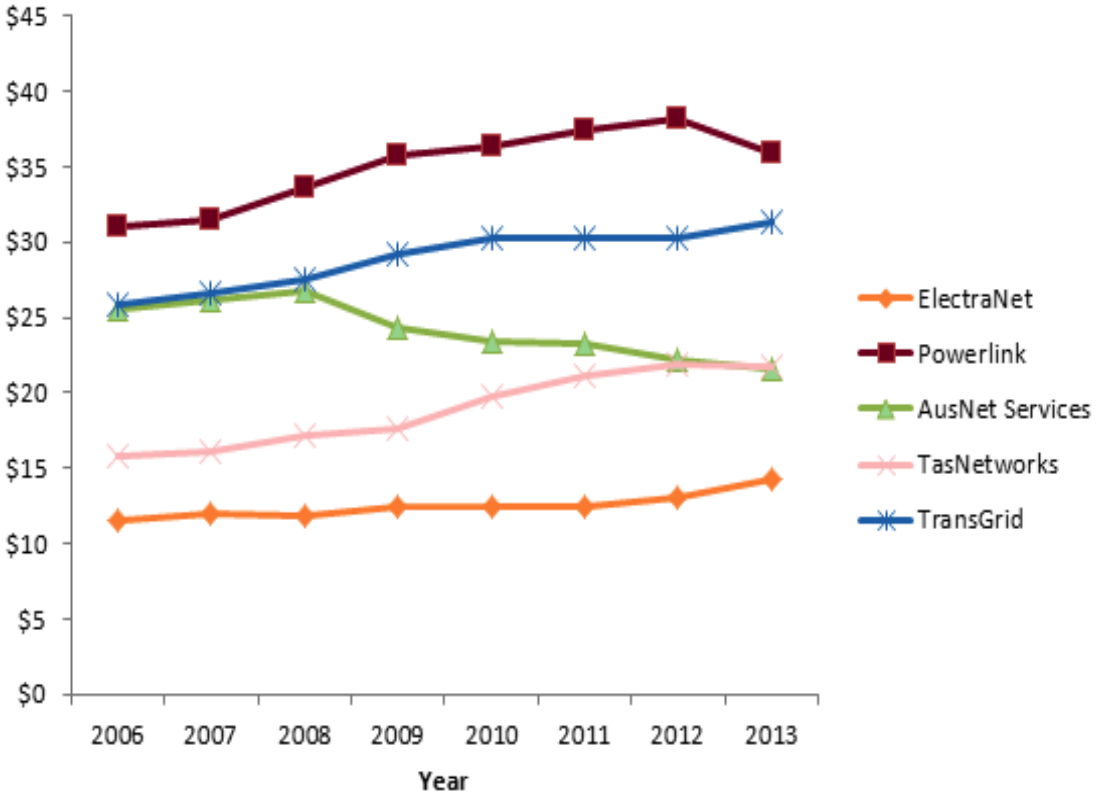
The charts overleaf outline that:

- Powerlink has the highest asset cost (of which opex forms a part) of the five NEM TNSPs at around 3 times the cost of the least expensive TNSP
- Powerlink's opex per MVA of downstream capacity is much higher than the other TNSPs – as stated by the AER – *"Powerlink performs poorly on opex per MVA of downstream transmission capacity, as it did on the equivalent total cost metric"* [42]

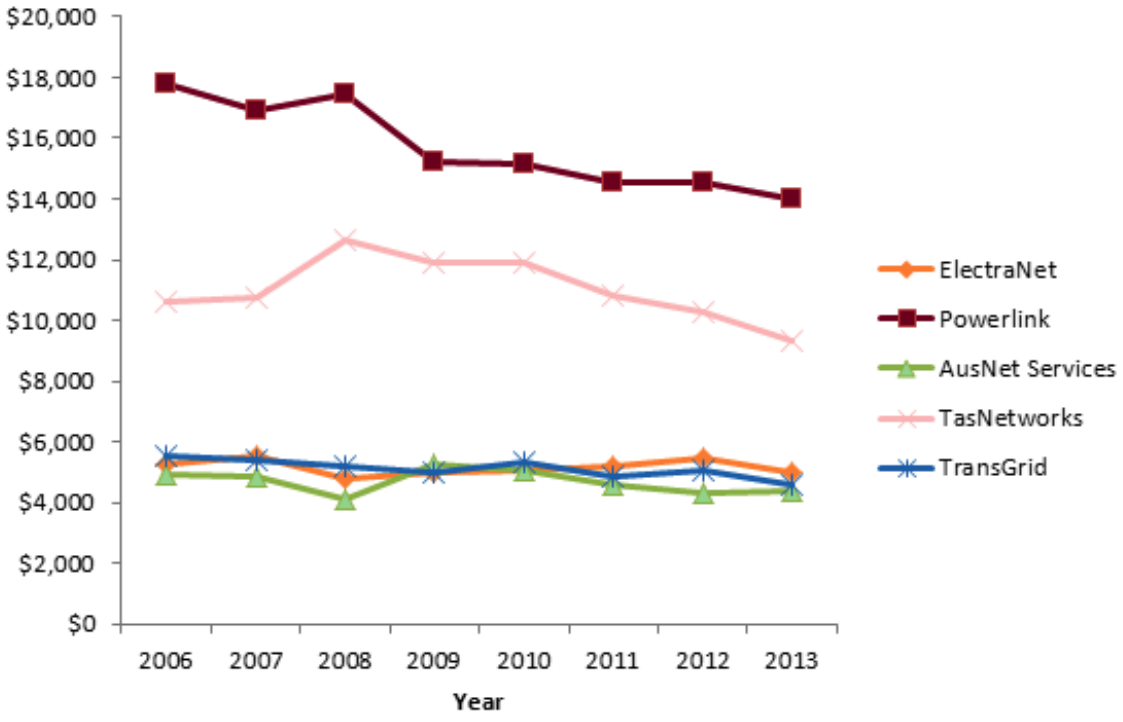
[41] A comparison of outcomes delivered by electricity transmission network service providers in the National Electricity Market, EUAA 2012

[42] AER Transmission Benchmarking Report 2015

Asset cost per total entry/exit point voltage ($2013)

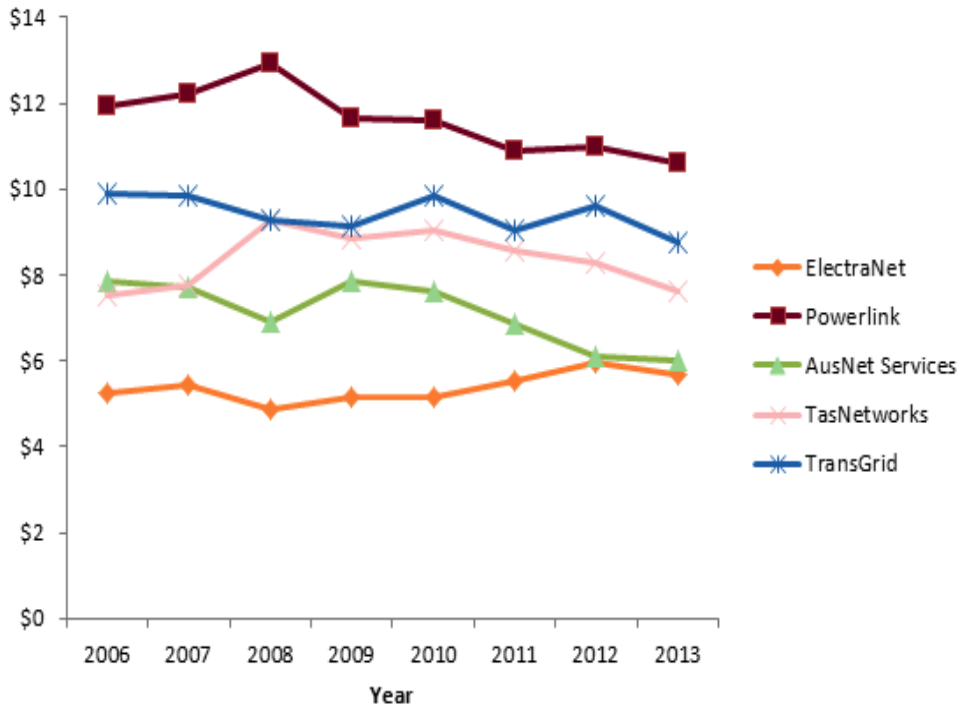


Opex per MVA of downstream transmission capacity ($2013)



The chart below compares the transmission networks' costs in terms of opex per total entry/exit point voltage. It illustrates that on that measure, Powerlink is the most expensive TNSP at over twice the cost of the least expensive TNSP.

Figure 11 Opex per total entry/exit point voltage ($/kV, $2013)



10.4.1.5 The AER Has Not Justified Its Decision to Not Use Benchmarking

CCP4 considers that the AER has not justified its decision not to apply benchmarking in its determinations of efficient base year opex costs for the TNSPs in the current round of revenue determinations.

In its recent TNSP determinations the AER has indicated that its key reason for not having regard to its transmission benchmarking results was due to the relatively small number of Australian transmission networks.

CCP4 does not find this convincing. Other international regulators have used benchmarking results much more deterministically with similar or smaller numbers of benchmark comparisons.

Further, CCP4 considers that this rationale contradicts the AER's previously stated positions on the purpose of collecting RINs data and its intended application of benchmarking. The AER has always known that the number of transmission entities, yet it proceeded with the TNSP benchmarking studies on the understanding that benchmarking would be applied. To now place unnecessary restrictions on the application of benchmarking is not acceptable. [43]

[43] CCP4 also notes that due to similarities in transmission and distribution assets, there is an extended data set that can be reasonably applied to all networks

Furthermore, the AER's reluctance to apply benchmarking to its assessment of the TNSPs' opex has not prevented the TNSPs from participating in numerous benchmarking studies (including extremely expensive international benchmarking studies) and using the results of those studies to support their opex efficiency claims.

CCP4 considers that the AER's real reason for not applying benchmarking to the TNSPs' opex determinations is due to resource constraints. This suggests that the AER should focus its scarce resources on identifying the most material opex inefficiencies. CCP4 accepts that there may be some instances where the data is inconclusive on certain aspects of opex performance for some networks. However, that does not apply in the case of Powerlink as there is extensive evidence that Powerlink demonstrates the lowest operational efficiency of the five NEM transmission networks.

Consequently, CCP4 considers that the AER should focus its scarce resources on applying benchmarking to the determination of Powerlink's efficient base year opex.

10.4.1.6 Benchmarking Can Be Supplemented By Other Techniques

Benchmarking is a proven and essential technique in regulatory practice. Ofgem (UK) has applied it extensively for over 20 years, and implemented it much more deterministically with a data set that was nowhere near as developed as the AER's current benchmarking data.

The AER does not need to be totally reliant on benchmarking in its determination of efficient base year opex costs, but it is obliged to apply it.

In its recent opex determinations for the distribution networks, the AER supplemented its benchmarking with other assessment techniques. The AER can apply a similar approach to the Powerlink opex determination.

10.4.2 The AER's Base Year Opex Assessment Approach Does Not Determine Efficient Opex

In the absence of applying benchmarking, the AER's base year opex assessment for Powerlink will be heavily dependent upon a trend analysis of Powerlink's historical opex, which as outlined above has been demonstrated to be materially inefficient.

Rather than determining efficient levels of base year opex, the AER's base year opex assessment approach actually focuses on seeking evidence that the networks' base year opex levels are <u>not</u> "materially inefficient".

Those deficiencies were demonstrated in the AER's base year opex assessment for TransGrid, which was actually inconclusive regarding the efficiency of TransGrid's base year opex.

Rather, the AER's actual conclusion was that (in the absence of benchmarking) it was unable to demonstrate evidence of material inefficiency.

That is clearly very different from concluding that the TransGrid's opex was efficient.

10.5 Rate of Change

The table below outlines Powerlink's proposed percentage rate of change factors over the next regulatory period.

Powerlink Proposed Real Annual Rate of Change Factors (Per Cent, Real)

	2017/18	2018/19	2019/20	2020/21	2021/22	Average
Price Change	0.4	0.6	0.7	0.8	0.9	**0.7**
Output Change	0.3	0.1	- 0.1	-0.1	0.2	**0.1**
Productivity	-1.2	-1.2	-1.2	-1.2	-1.2	**-1.2**
Total Rate of Change	**-0.5**	**-0.6**	**-0.6**	**-0.5**	**-0.2**	**-0.5**

10.5.1 Labour Price Change

10.5.1.1 Powerlink's Labour Price Forecasts

As outlined in the table below, Powerlink has proposed annual real labour price growth factors of between 0.6-1.5% with an average factor of 1.12%.

Powerlink Proposed Real Labour Price Change Factors (Per Cent, Real)

	2017/18	2018/19	2019/20	2020/21	2021/22	Average
Labour Price Change	0.6	0.9	1.2	1.4	1.5	1.12

Powerlink's labour price change factors are based on:

- Powerlink's existing enterprise agreement
- A report that Powerlink commissioned from BIS Shrapnel on Wage Price Index (WPI) forecasts for the Electricity, Gas, Water and Waste Services (EGWWS) and the Queensland construction sector
- Labour cost forecasts published by Deloitte Access Economics (DAE)

It is important to note that Powerlink's opex allowances for the current regulatory period incorporated labour price change factors that were much higher than the actual labour price cost increases incurred by Powerlink – i.e. Powerlink's opex allowances for the current regulatory period were based on labour cost increases that Powerlink did not incur. [44]

10.5.1.2 The AER's Labour Price Forecasting Methodology

In determining its recent labour price change factors for TransGrid and TasNetworks, the AER adopted the average of Deloitte Access Economics' and Independent Economics' wage price index (WPI) forecasts for the Electricity, Gas, Water and Waste Services (EGWWS) industry.

This resulted in the AER applying an average annual real labour price escalation factor of 0.66% for the next regulatory period – i.e. around half of Powerlink's proposed escalation factor.

[44] Powerlink 2018-22 Revenue Proposal, Table 6.6, Page 72

10.5.1.3 The Electricity Network Sector Is In Contraction

Neither Powerlink's nor the AER's labour price forecasting approaches reflect the specific drivers of the electricity network sector.

The electricity network sector is currently in a major contraction phase due to declining demand for its services, whereas the other sectors covered by the above forecasts are not.

Industries in contraction do not face <u>real</u> labour price increasing drivers

There is currently minimal wage pressure within the Australian economy. The mining boom has passed and skilled labour is readily available.

Deloitte Access Economics (DAE) expects utility sector wages growth to fall in the near term. DAE also notes that the skill shortages that underpinned strong wage growth in utilities in the past decade have diminished.[45]

Similarly, the RBA recently produced a report – *"Why is Wage Growth So Low*" [46], which outlines that:

"Wage growth has declined markedly in Australia over the past few years"; and

"At the same time, stronger growth in labour productivity has worked to contain growth in labour costs"

The AER needs to use labour price forecasts that are specific to the electricity network sector.

Such forecasts will confirm that Powerlink's labour costs should be reducing, rather than increasing.

10.5.1.4 Powerlink's Inefficient Labour Costs and Workforce Practices

As labour costs account for the majority of Powerlink's opex, it is anticipated that the AER will engage a consultant to perform a review Powerlink's labour and workforce practices.

It will be important for that review to consider the findings of the *Queensland Government Independent Review Panel (IRP) on Network Costs,* [47] which identified that Powerlink's inflexible enterprise agreement is driving excessive labour costs and inefficient workforce practices, e.g.:

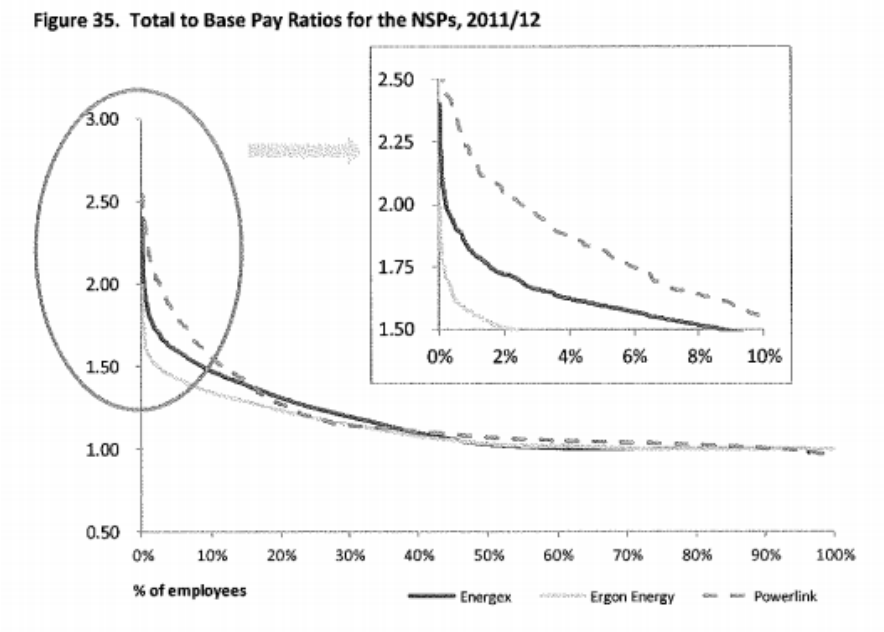
- *"The capital programs and operating costs of the GOCs have **increased sharply and unsustainably**"*
- *"The three NSPs have all commenced programs to improve the efficiency of their operations and reduce both indirect and direct costs. The Panel acknowledges that these programs will yield results but believes that **additional impetus is needed to produce the level of savings required to restore affordability for customers"***
- ***"The need for cultural change as a driver for operational improvement** and refocus on cost effective outcomes that meet customer expectations"*
- *"Across the three companies, **647 employees earned in excess of 1.5 times their base pay….27 employees earned twice their base pay in 2011/12.** The Panel considers that such high ratios are likely to result in lower levels of productivity"*
- *"Contract resources are used inefficiently……**internal resources are being under-utilised**"*

[45] Deloitte Access Economics, *Forecast growth in labour costs in NEM regions of Australia*, 23 February 2015, p. 44.
[46] Jacobs, David, and Alexandra Rush. "Why Is Wage Growth So Low?" *RBA Bulletin, June* (2015): 9-18.
[47] Queensland Government Independent Review Panel on Network Costs Final Report

- *"The start times of work crews are often not matched to the requirements of particular projects.* ***A rigid adherence to these start times means that there is a mismatch, leading to reduced productivity*** *and possibly longer outage durations"*
- *"Each of the three network businesses has autonomous fatigue management policies with different rules governing the timing and duration of rest periods……****the differences in fatigue management policies*** *complicate crew scheduling and joint workforce management* ***leading to response delays, inefficiencies and potential safety issues****"*

The IRP was particularly critical of Powerlink's poor management of its labour costs. For example, in relation to the management of overtime costs, the chart below outlines the Queensland networks' excessive *total to base pay* ratios, and that Powerlink's ratio was the highest of the three Queensland networks.

Figure 35. Total to Base Pay Ratios for the NSPs, 2011/12



The AER must not allow Powerlink to continue to treat inefficient enterprise agreement outcomes as a "pass through".

10.5.2 Output Change

The table below outlines Powerlink's proposed average annual output escalation factors over the next regulatory period.

Average Annual Output Change Escalation Factors

	2017/18	2018/19	2019/20	2020/21	2021/22	Average
Total Output Growth	0.3 %	0.1 %	- 0.1 %	- 0.1 %	0.2 %	**0.1 %**

The AER's determination of output change factors for the TNSPs is based on outputs and cost elasticities as follows:

- Energy delivered – 21.4 per cent
- Ratcheted maximum demand – 22.1 per cent
- Weighted entry and exit connection points – 27.8 per cent
- Circuit length – 28.7 per cent

10.5.2.1 Energy Throughput

Powerlink's proposal acknowledges that its forecast growth in energy throughput is driven by the forecast growth of LNG load concentrated in the Surat Basin, which is predominantly non-regulated load.

To take this into account, Powerlink has reduced the additional Surat Basin LNG load in its energy throughput data between 2015/16 and 2017/18. Powerlink pro-rated this energy throughput data in line with the proportions of regulated and non-regulated capital expenditure associated with developing the assets to serve the LNG load.

Whilst Powerlink's proposed approach represents a departure from the AER's standard approach for assessing output growth, it appears reasonable and is supported by CCP4.

10.5.3 Productivity

10.5.3.1 Annual Productivity Change Factor

The AER's benchmarking report outlined that Powerlink had the largest productivity decline in 2014 with a fall of 4.9 per cent. [48]

Powerlink is proposing to apply an annual productivity change factor of 1.2% per annum over the 2018-22 period.

In its recent determinations for TransGrid and TasNetworks (Transend), the AER applied an annual productivity change factor of 0.86%, based on the electricity transmission industry average productivity performance over the 2006-13 period.

The AER decided to apply that factor, despite:

- TransGrid achieving a productivity factor of 1.47 over the period
- Analysis from Economic Insights that found that different treatment of step changes would result in the average productivity factor being between 1.29 - 1.43 per cent.[49]

All of Powerlink's directly connected customers operate within capital intensive industry sectors that have consistently delivered much more significant productivity growth during the past decade.

[48] AER Transmission Benchmarking Report 2015

[49] Economic Insights, *Economic benchmarking assessment of operating expenditure for NSW and Tasmanian Electricity TNSPs*, 6 November 2014, pp 19-20.

CCP4 considers that there is no justification for the electricity transmission sector to continue to deliver lower productivity outcomes than other comparable capital-intensive industry sectors.

In essence, the AER's productivity factor estimate is based on an assumed 'business as usual' scenario - i.e. that the TNSPs' poor productivity performance over recent years will continue over the next 5 years.

CCP4 asserts that that there are a number of reasons for the TNSPs' poor productivity performance over the past decade - particularly the AER's provision of excessive opex allowances, which has been a strong driver of inefficient labour practices and poor productivity outcomes.

Such factors must not be used to justify poor productivity outcomes in future years.

Whilst the AER considers that the EBSS incentive provides sufficient incentives to minimise opex costs, the fact that other industries have reduced their opex more significantly than TNSPs indicates that the incentives are not as effective as required.

10.5.3.2 The Interaction Between Labour Prices and Productivity

Two of the rate of change factors – *labour price change* and *productivity* are inextricably linked.

It is well understood that, over the long term, labour price growth adjusted for labour productivity closely tracks the Consumer Price Index (CPI). For example, Professor Borland demonstrated that, on average from 1997–98 to 2009–10, CPI plus labour productivity matched the average weekly ordinary time earnings (AWOTE).[50]

In general, employers only allow labour costs to rise above CPI if they are accompanied by offsetting productivity improvements. The AER's labour price forecasts therefore need to be assessed in conjunction with its productivity forecasts.

Clearly, the AER needs to apply a productivity factor higher than Powerlink's proposed factor (i.e. 1.2), to avoid further ongoing declines in Powerlink's productivity over the next 5 years.

CCP4 concurs with the recent conclusion of CCP3 that the AER's insufficient consideration of the interaction between productivity and labour price change factors is failing to drive the productivity improvements required to ensure the electricity networks' long-term viability. [51]

CCP4 therefore urges the AER to determine an appropriate combination of labour price and productivity change factors aimed at driving Powerlink's productivity back into line with the levels being achieved by other capital intensive industry sectors.

[50] Labour Cost Escalation: Choosing between AWOTE and LPI, Professor Jeff Borland, March 2012

[51] CCP3 submission on the AER's Preliminary Determinations for the Victorian distributors

10.6 CCP4's Key Concerns with the AER's Opex Determinations

In summary, CCP4 considers that Powerlink's proposed opex is well above the efficient level and consequently the AER is required to develop substitute opex forecasts.

CCP4 makes the following recommendations regarding the AER's determination of efficient opex allowances for Powerlink:

The AER's Base Year Opex Determination

- The application of the AER's "revealed cost" method to the determination of base year opex will not address the material inefficiencies embedded in Powerlink's proposed base year opex.
- Powerlink's base year opex should be set on the basis of benchmark efficient costs, not on the basis of Powerlink's historical costs, which have been demonstrated to be materially inefficient
- The AER's base year opex determination also needs to have greater regard to:
  - Powerlink's poor productivity performance over the previous two regulatory periods
  - The fact that Powerlink's opex growth over the past 10 years has been much higher than the opex growth of the other TNSPs, both in absolute terms and when normalised for changes in system outputs
  - The opex reductions that Powerlink should be realising from its major capex programs over previous regulatory period (e.g. opex reductions that Powerlink should be realising from its lower asset ages arising from replacing new for old assets and its reduced asset utilisation levels)

Labour Price Change

- The AER needs to determine efficient labour price forecasts that consider the specific drivers of labour prices in the Australian electricity network sector
- Those forecasts need to take into account:
  - The electricity network sector is currently in a major contraction phase - industries in contraction do not face real labour price increasing drivers
  - The evidence that demonstrates that Powerlink's current labour costs are excessive
  - The evidence that demonstrates that Powerlink's labour and workforce practices are inefficient
  - The interaction between labour price change and productivity change – i.e. real labour price increases need to be compensated by offsetting productivity improvements

An appropriate consideration of the above issues will confirm that Powerlink's labour prices should be reducing rather than increasing.

Productivity

- The AER must not assume that Powerlink's poor productivity performance over recent years will continue over the next 5 years
- The AER needs to apply an appropriate combination of labour price and productivity change factors to drive Powerlink's productivity back into line with the levels being achieved by other asset intensive industry sectors

11 Powerlink's Consumer Engagement Program

CCP4 has reviewed Powerlink's overview of its consumer engagement activities associated with its 2018-22 revenue proposal. CCP4 members also attended some of Powerlink's consumer engagement activities to obtain an appreciation of Powerlink's approach to consumer engagement.

CCP4 notes the seven objectives of consumer engagement developed by Powerlink for its consumer engagement activities. In particular, CCP4 notes Powerlink's objective of engaging at the "Involve" level, although CCP4 does not consider that Powerlink's consumer engagement activities to date have achieved that objective.

When comparing Powerlink's consumer engagement program with those of its peers, CCP4 notes some limitations in Powerlink's activities which are discussed below.

Program Design

CCP4 considers that the Powerlink's consumer engagement program was well considered, the frameworks developed are of a high standard and complement the program well.

However, CCP4 considers that Powerlink's execution of the program was somewhat limited.

In particular, CCP4 considers that Powerlink should have considered the 'reach' of its program to gather information from a broader variety of consumers that are more reflective of the diversity of Powerlink's consumer base.

Whilst it appears that Powerlink is of the view that it was important to focus its consumer engagement activities on 'depth' rather than 'breadth', CCP4 considers that obtaining a broader variety of views would have been more valuable for Powerlink.

CCP4 considers that Powerlink's focus on 'depth' has unnecessarily limited its consumer feedback and that a better balance between breadth and depth would have resulted in consumer feedback that is more representative of the interests of Powerlink's consumer base.

Powerlink's Engagement Plan

CCP4 notes Powerlink's claim that its has "taken a long term view" to its engagement approach with the intention of ensuring that its engagement activities are better utilised to inform decision making as part of its "business as usual" operations.

CCP4 acknowledges the six key activities outlined within Powerlink's consumer engagement program.

- Face to face engagement
- Powerlink Customer and Consumer Panel
- Demand and Energy Forecasting Forum
- Transmission Network Forum
- Area Plan Forum
- Stakeholder briefings and industry presentation

Further, CCP4 notes Powerlink's use of online engagement, including the delivery of a "Transmission Pricing Webinar" and the use of a specific area in Powerlink's website dedicated to the stakeholder engagement process.

CCP4 acknowledges Powerlink's use of an external consultant to analyse engagement activities by other energy network businesses as a means of ensuring that Powerlink's consumer engagement activities were informed by learnings from others.

Program Review

CCP4 views that all networks should continually review their consumer engagement activities to ensure they remain fit for purpose, meet industry standards, and are responding appropriately to the changing nature of the NEM and consumers' views and beliefs.

CCP4 notes that customer involvement and satisfaction with Powerlink's consumer engagement has been measured through the use of feedback forms. CCP4 considers that such feedback is important, but also notes that such feedback is qualitative with the feedback being measured in terms of what consumers expected, and that consumers' expectations are influenced by what has occurred previously. CCP4 considers that the way this feedback changes over time will better inform on the effectiveness of Powerlink's consumer engagement program.

CCP4 acknowledges the challenges faced by networks as they undertake their consumer engagement activities and the difficulties with designing consumer engagement programs that adequately identify and engage the diverse nature of the consumer cohorts.

With this in mind, CCP4 is of the view that Powerlink has commenced its consumer engagement program positively and that it should deliver better and more comprehensive outcomes in future.

Limitations of Powerlink's Consumer Engagement Program

While generally CCP4 considers that Powerlink's consumer engagement program has provided useful input to inform Powerlink's revenue proposal, CCP4 considers that there are aspects that Powerlink should seek to improve.

As outlined above, Powerlink has designed its consumer engagement approach to focus on "depth" rather than "breadth".

Powerlink used stakeholder mapping to identify with whom it needs to engage.

The discussion topics were selected based on feedback from external stakeholders and key Powerlink representatives. CCP4 has some concerns regarding the limited view provided by this approach as it provides Powerlink with the power to control what issues are discussed, rather than those which consumers consider most important

Powerlink focused primarily on face-to-face consumer engagement.

CCP4 has some concerns regarding the limitations on the breadth of engagement that was delivered.

In that regard, CCP4 points out that while Powerlink needs to address the needs of its direct connected customers (including the distribution networks) all electricity consumers are required to contribute to

Powerlink's revenue. CCP4 considers that Powerlink's focus on face to face consumer engagement has limited its ability to obtain a representative view of Powerlink's end consumer base.

Powerlink established its Customer and Consumer Panel in May 2015, with a representative membership of directly connected customers, advocates reflecting views from large and small consumers and industry representatives

The panel meets on a quarterly basis to provide a forum for stakeholders to provide their input to Powerlink's decision making.

CCP4 considers that such a forum provides a useful mechanism for Powerlink to identify issues where considerable detail is needed. However, CCP4 also recognises that such a forum is subject to the risk of "capture" and control by Powerlink of what is discussed at the forum.

Powerlink held a webinar forum to discuss pricing. CCP4 considers the above criticisms regarding Powerlink's Customer and Consumer Panel forum also apply to that forum.

In March 2015, Powerlink hosted a Demand and Energy Forecasting Forum with experts from a wide range of industries to learn more about new technologies and the impacts they may have on future electricity demand and energy

Feedback regarding the effectiveness of that forum was mixed, indicating that more work is required by Powerlink to move from the "inform" stage to its targeted "Involve" stage

In July 2015, Powerlink held its annual Transmission Network Forum with more than 100 stakeholders to discuss future development of its network. Feedback from that forum was also mixed, as per the demand and energy forecasting forum.

Based on its observations of Powerlink's consumer engagement, CCP4 considers that Powerlink needs to provide more context for the consumers involved as providing insufficient detail and/or context regarding the issues can lead to erroneous outcomes from the consumer engagement activities.

CCP4 considers that most consumers "don't know what they don't know" and are heavily reliant on Powerlink to provide sufficient information and context in order to provide informed feedback.

This provides Powerlink with the ability to not only drive the agenda for such engagements, but also to control the outcomes. Consequently, careful management of the consumer engagement process is necessary to ensure that Powerlink does not bias the outcomes.

CCP4 experienced examples of Powerlink's insufficient provision of context and information during its observation of Powerlink's consumer engagement activities.

Outcomes

While the development of a sound consumer engagement approach is essential, it is the outcomes that determine the extent to which consumer feedback has influenced the regulatory proposal.

CCP4 notes that price was the number one issue for Powerlink's consumers with all consumers expressing the need for lower prices.

It is therefore incumbent upon Powerlink to focus it consumer engagement activities on how Powerlink can deliver lower prices.

As outlined throughout this submission, the main reason for Powerlink's forecast price reductions is that interest rates have reduced compared to the previous regulatory period – i.e. Powerlink's forecast price reductions are not attributable to Powerlink's responses to consumer feedback.

Another core issue for consumers was the provision of information to enable consumers to assess the reasonableness of the Powerlink's proposed capex. For example, Powerlink sought feedback from its Customer and Consumer Panel in May 2015 about the criteria that could be applied to identify possible future investment needs for which additional estimated cost information should be provided in support of its Revenue Proposal.

Powerlink then took this feedback to a group of industry stakeholders at its Transmission Network Planning Forum in July 2015 to test whether any additional criteria should be considered. Based on the feedback from stakeholders, Powerlink has adopted the following selection criteria:

- The estimated cost of the possible future investment need is greater than $10m; or
- There is a potential non-network solution to the possible future investment need.

It would appear from the proposal that Powerlink has applied the above criteria.

CCP4 notes that Powerlink's consumers also indicated an interest in Powerlink providing a "deep dive" into its opex costs. Powerlink's revenue proposal is claiming that this "deep dive" led to significant analysis work by Powerlink (e.g. the line by line analysis of opex to identify aspects where improved efficiencies could be achieved). While CCP4 accepts that such analysis may have been performed, CCP4 considers that Powerlink's proposed opex does not reflect the degree of opex reduction that consumers expected.

Topics Impacting The Proposal And Discussed With Consumers

Powerlink has provided information in its revenue proposal regarding the discussions it had with consumers on capex (tables 5.2 and 5.6), opex base year (table 6.2) and aspects of pricing (table 16.1) - which Powerlink considers represents a summary of how consumer engagement has influenced its revenue proposal.

Those summaries are welcomed by CCP4 as they provide a recognition of consumer preferences and assist consumer to identify the extent to which their input was utilised by Powerlink.

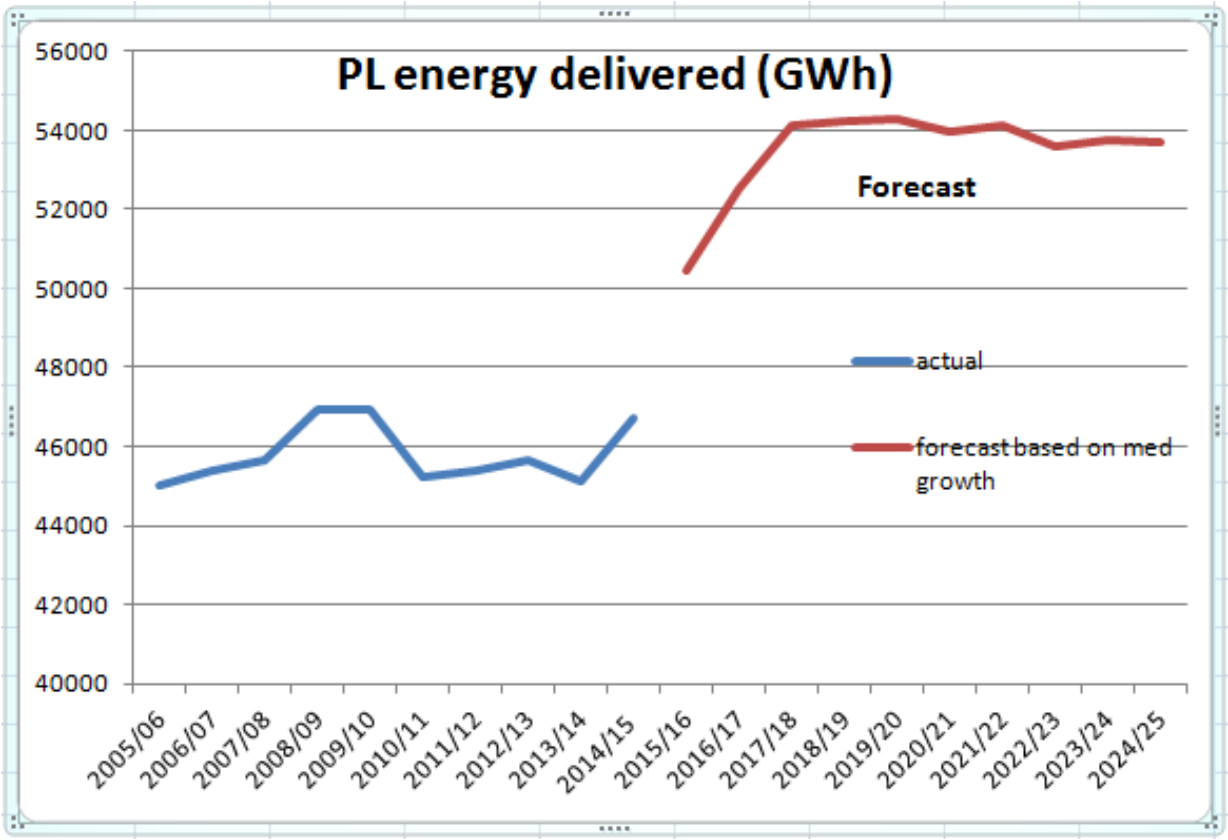
CCP4's Overall Assessment

Generally, CCP4 considers that Powerlink's consumer engagement program has commenced reasonably well, although there are a few aspects where it could be improved.

12 Demand And Energy Forecasting

12.1 Energy Delivered

The following chart illustrates Powerlink's actual energy delivered and its medium energy delivered forecast.

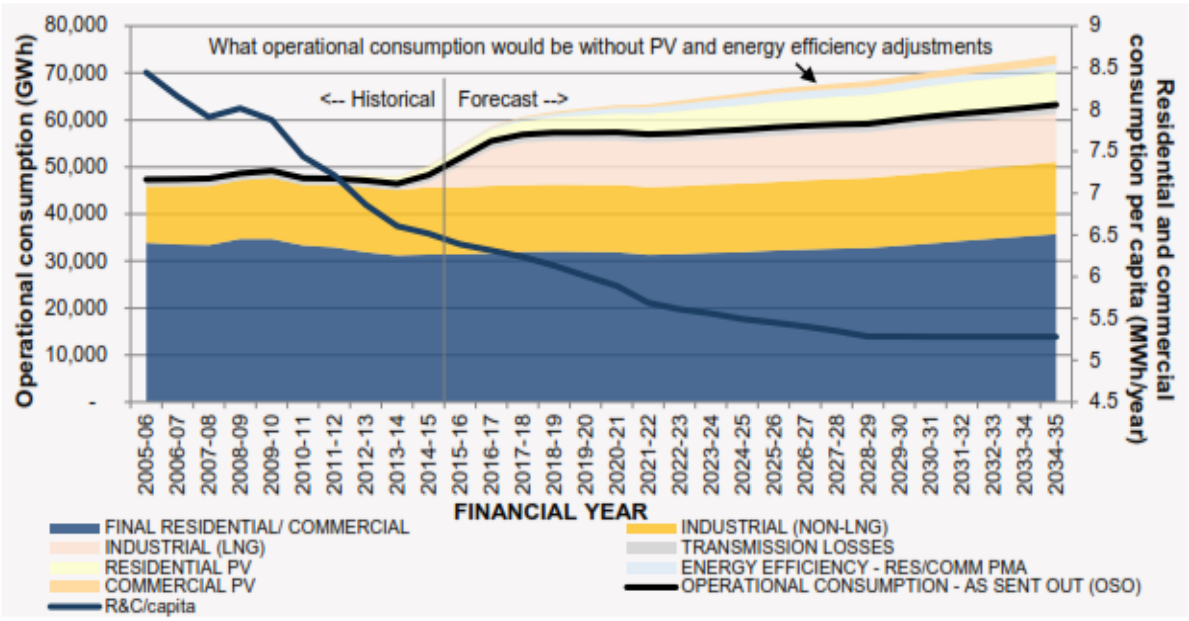


Source: Powerlink Annual Transmission Planning Report 2015

It illustrates that Powerlink is forecasting a step increase in consumption after a number of years of minimal annual variation. Subsequent to the step increase Powerlink is forecasting consumption to be flat for the remaining 7 years. Powerlink has attributed the forecast step increase to the supply of electricity to deliver gas to the LNG export facilities on Curtis Island.

AEMO (in its NEFR 2015) provides the following chart, which to some extent replicates Powerlink's forecast.

Figure 6 Operational consumption by key component in Queensland



Powerlink's forecast step increase in energy consumption has a significant impact on Powerlink's forecast prices - in particular Powerlink's forecast 27% price reduction in the first year of the next regulatory period.

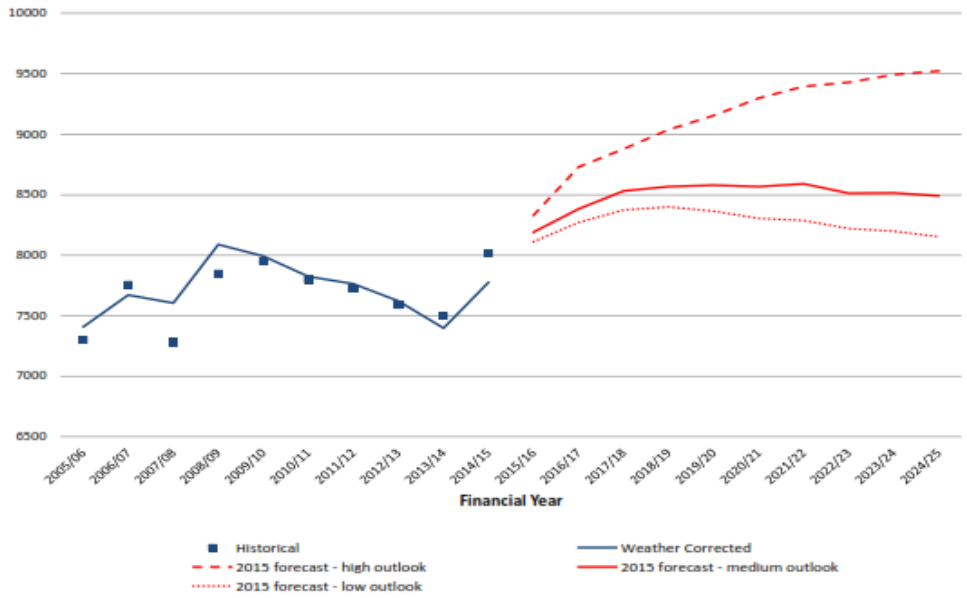
Powerlink is seeking a similar annual revenue at the start of the next regulatory period as the final year of the current period.

CCP4 therefore notes that Powerlink's indicative price path (Figure 11.1 of Powerlink's revenue proposal) should not be interpreted as arising from reduced costs. Rather, as outlined throughout this submission they are the result of interest rate reductions and forecast increases in LNG load.

12.2 Peak Demand

The chart below from Powerlink's revenue proposal outlines Powerlink's peak demand forecasts forecasts for the next regulatory period.

Figure 5.1: Summer peak electricity demand forecast (MW) - Powerlink



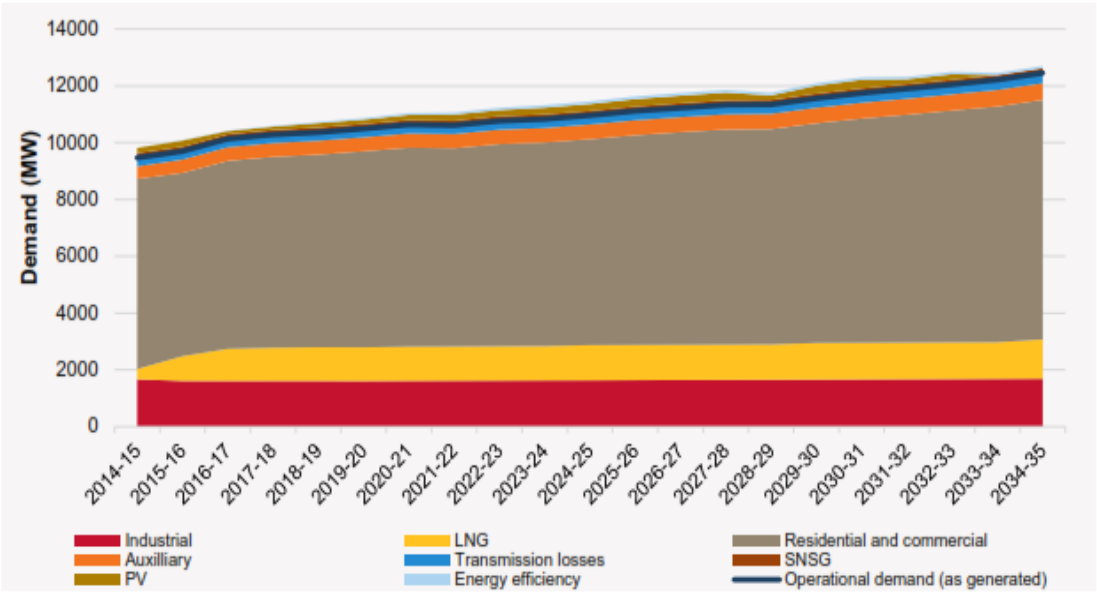
Source: Powerlink, Transmission Annual Planning Report 2015.

It illustrates that similar to Powerlink's previous demand forecasts, despite the recent declining demand trend, Powerlink is forecasting a significant step increase in peak demand in the early years of the next regulatory period. Powerlink attributes the step increase to the supply of electricity to deliver gas to the LNG export facilities on Curtis Island.

Subsequent to the step increase in peak demand, Powerlink's medium and low growth forecasts are forecasting flat or declining demand over the remaining period.

AEMO (in its NEFR 2015) provides the following chart which replicates Powerlink's forecast to some extent.

Figure 12 Summer 10% POE maximum demand forecast by key components for Queensland



CCP4 notes that Powerlink is forecasting that its peak demand will increase by 800-1000 MW whilst requiring a relatively low level of load driven capex to accommodate the growth compared to Powerlink's forecasts for the previous regulatory period.

This indicates that Powerlink has, and will continues to have a major level of spare capacity due to its overinvestments in the previous regulatory periods.

CCP4 considers that Powerlink's proposed load driven capex of $10m is not just a reflection of Powerlink's needs for the next regulatory period, but most likely it is reflective of Powerlink's needs for subsequent regulatory periods.

13 Pricing

Powerlink advises that it has discussed with its customers the aspect of pricing for the services it provides and changing the manner in which the pricing is developed.

CCP4 recognises that the approach to transmission pricing is reasonably defined in the rules but it also recognises there are aspects where there are opportunities for transmission networks to change the pricing to better achieve a more cost reflective outcome, so that consumers pay for what they require the networks to provide.

The most critical aspect of transmission pricing is the current practice where TNSPs offer customers the lower of pricing for common services and non-locational TUoS based on volume of sales and peak demand. This is particularly important as most of Powerlink's directly connected customers are charged for these service elements based on peak demand and recognise that the costs of Powerlink's services are predominantly driven by peak demand.

CCP4 is aware that TransGrid has had considerably more extensive consultation with its customers than Powerink on this issue and, as a result, decided to move common services and non-locational TUoS to be only charged on the basis of peak demand. In reaching this decision, TransGrid recognised that some customers would be worse off but despite that, implemented the change over a transitional period.

CCP4 is also aware that AEMO pricing for transmission services only uses demand incurred during critical peak period times as it considers that to be a more representative approach to setting transmission prices.

By contrast, Powerlink has had minimal discussion with its customers on these two issues and sought feedback on other less important issues as illustrated in the table below (from Powerlink's revenue proposal).

Table 16.1: Powerlink response to feedback

Overall feedback	How Powerlink used the feedback?
Nominated/contract demand only locational TUOS prices • Mixed views	Continue to apply current nominated/contract demand and average demand locational TUOS prices.
CRNP or modified CRNP • No strong support from customers	Continue to apply current CRNP methodology.
50/50 locational/non-locational revenue split • Mixed views	Continue to apply current 50/50 split.
Price predictability • Some interest	Commit to further investigate and engage with interested customers as part of business-as-usual.
CRNP to LRMC • Mixed views	Commit to further investigate as part of business-as-usual.
Other changes • Investigate kVA based transmission charges • Common services/entry/exit services	Commit to further investigate as part of business-as-usual.

CCP4 member – David Headberry - attended Powerlink's webinar on pricing and its Customer and Consumer Panel discussion on pricing and noted that little time was devoted to discussion on the AEMO and TransGrid approaches.

What was equally concerning was that the discussion on the topics that were addressed was very time limited. Importantly, the options discussed were complex (especially CRNP/modified CRNP, CRNP/LRMC and locational/non-locational split) and the ability of customers to provide informed input was limited by insufficient information and inability to "deep dive" into the issues.

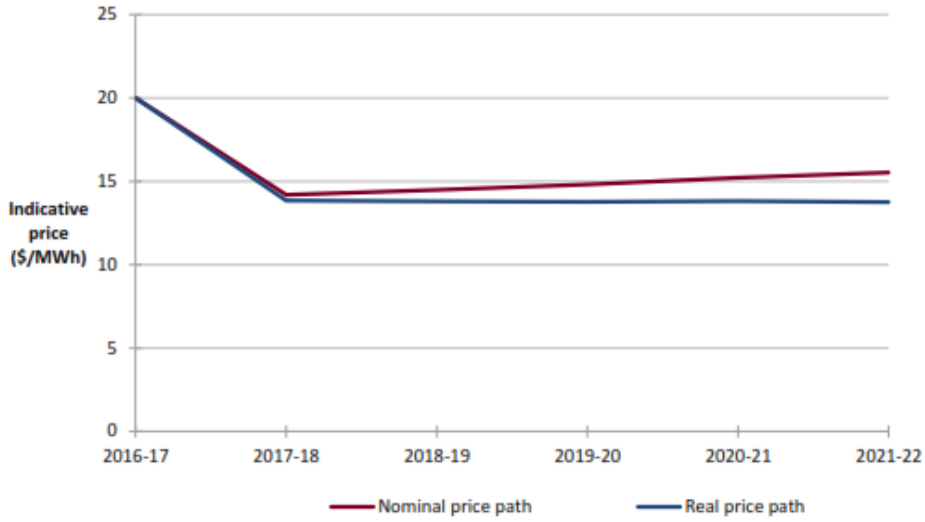
As noted above in the section on customer engagement, CCP4 considers that Powerlink's consumer engagement frameworks are sound but Powerlink's execution of the frameworks has not been delivered successfully.

CCP4 recognises that the Powerlink pricing structure meets the NER requirements but it has not delivered the best outcome to achieve the benefits delivered by other TNSP pricing approaches based on the same NER requirements.

Notional Pricing

In its revenue proposal, Powerlink provide the below chart outlining Powerlink's forecast price impacts impact of its proposed revenue.

Figure 11.1: Indicative price path from 2016/17 to 2021/22 ($/MWh)



CCP4 comments Powerlink's explanations of this chart are somewhat disingenuous as Powerlink attempts to create the impression that Powerlink has achieved considerable cost reductions savings in response to consumer feedback.

However, as outlined throughout this submission, the reason for the price reductions is reduced interest rates compared to the previous regulatory period.

14 Incentive Schemes

The incentive schemes applying to Powerlink - reliability (STPIS), opex (EBSS) and capex (CESS) are intended to provide an inter-related suite of incentives.

This means that a change to any one of them has the potential to cause a change in the power of the incentive and change the inherent relationships between the schemes.

Recent Changes To The Value Of Customer Reliability (VCR)

It has been suggested that the recent change to the Value of Customer Reliability (VCR) developed by AEMO, will impact on reliability as it will result in deferments of augmentation and replacement projects. CCP4 agrees that this will be a natural outcome as VCR is a core element used in the probabilistic calculation of the need for capex. Over time, a lower VCR will impact network reliability but the level of reliability already provided by Powerlink, exceeds the consumers reliability expectations, and the main cause of unreliability seen by most consumers is caused within the distribution networks.

Equally, CCP4 considers that the impact of changing VCR will be minimal in the short term as the bulk of assets providing the reliability were implemented on the basis of higher values of VCR, along with deterministic reliability settings used before probabilistic tools were used. Overall, reliability across Powerlink's network should be maintained as Powerlink's historic investment decisions were made on the basis of higher reliability standards.

As the STPIS reflects historic performance, the impact of the slight deferrals that will now apply through the use of a lower VCR will change over time to reflect the outcomes of a lower VCR.

CCP4 does not consider that the approach to setting reliability levels for the STPIS incentive need to be changed as a result of the lower VCR.

Compliance Versus Outcomes

CCP4 has noted that over time, the aspect of incentives has been more directed towards compliance and the outworkings of the models rather than outcomes.

CCP4 considers that the AER should, as well as ensuring the computations are correct and consistent with the schemes, assess what has been delivered by the schemes.

CCP4 has a concern that the bonuses that Powerlink has achieved from the schemes, especially the STPIS, have been excessive and that Powerlink has achieved unwarranted bonuses that are arising from the outcomes of Powerlink's excessive opex and capex expenditure.

CCP4 notes the observations by Powerlink regarding its STPIS outcomes:

Re service component (page 5):

"Powerlink's performance during the current regulatory period for peak circuit and reactive plant availability has consistently exceeded targets, while transformer availability performance was above target for three of the four years. Transmission line performance remained below the AER target for the period. Powerlink has continued its better than target loss of supply performance in relation to both large and small event thresholds."

Re market impact component (page 5)

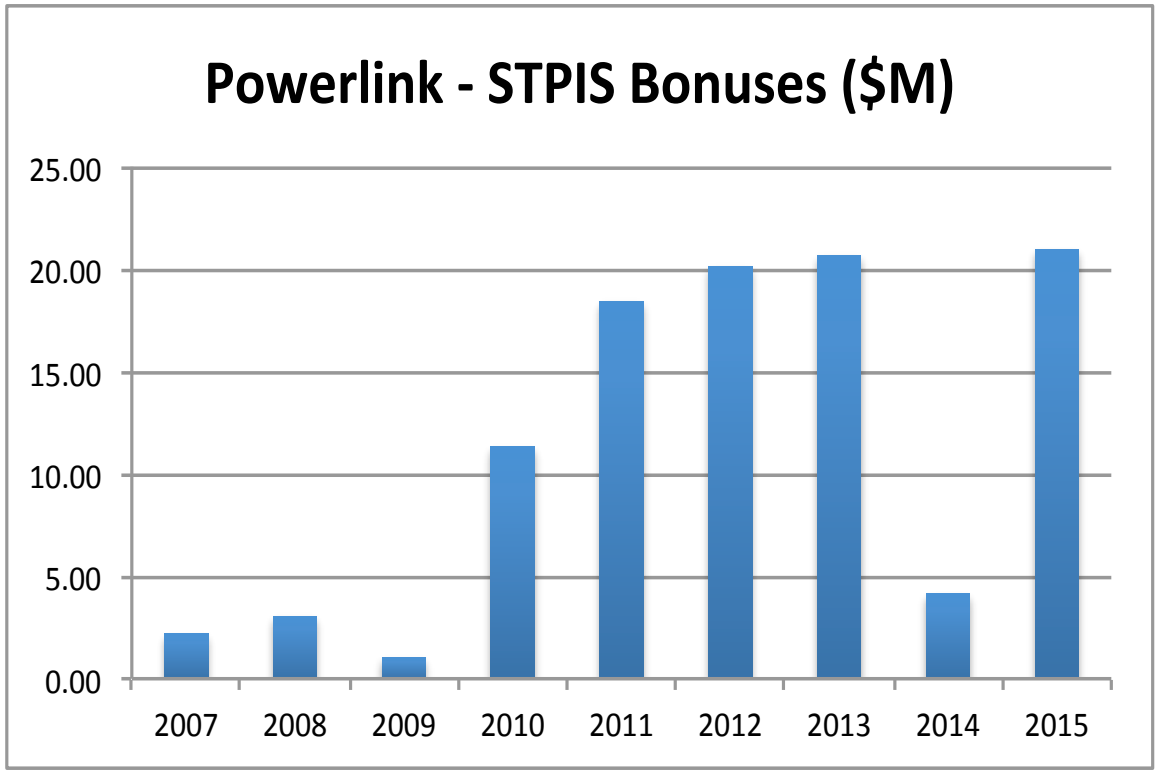
"For the majority of the current regulatory period, Powerlink's performance under the Market Impact Component (MIC) has consistently exceeded targets, which reflects the consistent application of established processes to minimise the impact of outage events on market participants in response to the incentive framework."

While CCP4 recognises the value of these outcomes to consumers, it also notes that there is an expectation that under a well balanced incentive scheme, there will be periods of underperformance if the targets are set appropriately.

The chart below outlines that Powerlink has consistently achieved very high bonuses from the Service Target Performance Incentive Scheme (STPIS).

It also highlights that the STPIS scheme is delivering highly asymmetric outcomes in favour of the Powerlink.

CCCP4 considers that the AER needs to set STPIS targets that deliver genuine efficiency and service performance improvements that are truly in consumers' long-term interests.



CCP4 also notes that during the period when Powerlink was achieving these extraordinary bonuses, the amounts provided for capex and opex were significantly higher than revealed by comparative benchmarking with other networks.

CCP4 notes that the approach to calculating the bonus/penalty adjustments is effectively mechanical, and so is setting the network performance targets for the for the STPIS service component.

By contrast, the setting of the EBSS and CESS targets is essentially a separate exercise from the incentive schemes yet these unrelated exercises have a major impact on all three incentive schemes, including the STPIS.

CCP4 sees the risks to consumers of the suite of incentive schemes is in the setting of the capex and opex allowances- any over allowance is setting the targets has the potential to deliver an unearned reward under the STPIS, while not impacting on the incentives implicit in the EBSS and CESS.

As a result, CCP4 considers that the AER needs to examine more closely the rewards achieved in the past by Powerlink under the STPIS when assessing Powerlink's opex and capex allowances.

Specific Comments on Powerlink Proposals

CCP4 notes that Powerlink considers that certain elements of its opex should be excluded from the EBSS. Version 2 of the EBSS specifically notes that uncontrollable opex which was previously excluded from the EBSS should be included in the opex for EBSS purposes. CCP4 agrees with version 2 of the EBSS that including uncontrollable opex in the EBSS is both appropriate and provides an incentive for the network to minimise its costs.

CCP4 does not agree with Powerlink having any exclusions for calculating the EBSS bonus/penalty.

CCP4 recognises that version 5 of the STPIS requires an automatic setting of the performance targets for the service component and the market impact component, and while there is some debate amongst consumers that the average of the previous 5 year performance might not be appropriate to set targets [52], CCP4 accepts that the STPIS version 5 should be applied in its entirety.

CCP4 notes that version 5 of the STPIS has removed the absurd approach to the network capability component where TNSPs had to find projects that had a value of 1% of MAR to deliver benefits. Powerlink has proposed three projects that it and AEMO consider meet the core requirements of the NCIPAP.

As CCP4 accepts that projects valued with a simple payback of 4 years or less are appropriate for the NCIPAP, the priority projects 1 and 2 would appear to meet its criterion for acceptance.

However, CCP4 is concerned that project priority 3 (load model enhancement and validation) does not have any payback identified. While CCP4 can see that the project could well have value, it questions whether it should be a NCIPAP project or should be carried out by Powerlink in its role as a TNSP operating in accordance with good industry practice.

Specifically Powerlink comments (page 14 appendix 15.03 public)

"As transmission lines reach end of technical life, Powerlink determines optimum network configurations. Re-investment decisions are informed by calculations of network capability which may involve dynamic load models."

This clearly indicates that this is work that Powerlink should be doing as a matter of course to ensure that its network is operating at an efficient level. CCP4 considers that such activity should not require an incentive to carry it out.

CP4 notes that including this project in the NCIPAP will deliver Powerlink the potential of a $440,000 bonus for doing what is essentially standard network management practice.

[52] Consumers probably have a preference for the targets to be based on a rolling assessment of the average of the most recent 5 year performance as this better reflects the impacts of actual opex and capex and tends to "wash out" the impacts of any excessive opex and capex allowances.

15 Pass Through Events

CCP4 notes that Powerlink has nominated additional pass through events in its proposal

Additional events sought by Powerlink to those specifically noted in the NER are:

- An insurance cap event
- A terrorism event
- An insurer credit risk event

CCP4 recognises that the AER has previously permitted such pass through events for other network service providers.

However, CCP4 is concerned that Powerlink has proposed its own definitions for these additional events.

Whilst CCP4 acknowledges that the AER has provided a precedent in this regard, we draw the AER's attention to the fact that firms in competitive sectors do not have the ability to pass through such costs to their customers, and on that basis CCP4 considers that they should not be allowed by the AER.

However, if the AER decides to allow these additional pass through events, CCP4 considers that the AER definitions for the pass through events should apply and that no changes should be permitted to those definitions.