Major Energy Users Inc.

Australian Energy Regulator

Forecasting productivity growth for electricity distributors

Draft Decision Paper

Submission by

The Major Energy Users Inc

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The content and conclusions reached in this submission are entirely the work of the MEU and its consultants.

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1. Introduction

The Major Energy Users Inc (MEU) welcomes the opportunity to provide its views to the issues raised in the AER draft decision paper about forecasting productivity growth in electricity networks.

This aspect is a core element in the use of the AER base-step-trend approach to setting the opex allowances in the regulatory process for networks. There is a fundamental view implicit in the AER draft decision paper; that the incentives provided in the regulatory approach (specifically the efficiency benefit sharing scheme – EBSS) are sufficient to ensure the opex used in the base year is efficient and needs only "fine tuning" to reflect what will be efficient in the future by adjusting for

- Inflation of costs
- Productivity improvements
- Step changes in the laws and rules
- Change in size of the network

The MEU considers that the AER has attempted to generate a set of guidelines to provide some certainty to networks and ease the burden of regulation but the MEU considers that the AER needs to do more than "fine tune" the process to ensure that consumers are not paying more for the network services than they should. In the competitive markets, the market drives firms to ensure their costs are efficient, whereas for networks the AER has to try and replicate these market pressures to ensure allowances are efficient through regulation.

As the electricity networks are all capital intensive operations, to assist the MEU in providing this response, it has contacted its members who are all firms which also have capital intensive operations in order to identify what are the tools they use to ensure their forecast opex allowances budgeted for the future are efficient. This response is based on their feedback and reflects their views.

1.1 About the MEU

The MEU represents the interests of large energy consumers operating in the NEM and in other jurisdictions. The MEU comprises some 30 major energy using companies in NSW, Victoria, SA, WA, NT, Tasmania and Queensland. MEU member companies – from the steel, cement, paper and pulp, automobile, tourism, mining and the mining explosives industries – which are all capital intensive major manufacturers in the NEM and in other jurisdictions, are significant employers of labour and contractors where they have their operations, and are located in many regional centres, including Gladstone, Newcastle, Port Kembla, Albury, Western Port, Mount Gambier, Port Pirie, Kwinana and Darwin.

Analysis of the energy usage by the members of MEU shows that in aggregate they consume a significant proportion of the gas used domestically and electricity generated in Australia. As such, they are highly dependent on the competition that applies to the provision of gas and electricity, the retail functions needed to enable the competition to apply and to the transport networks to deliver efficiently the energy so essential to their operations.

Many of the members, being regionally based, are heavily dependent on local suppliers of hardware and services, and have an obligation to represent the views of these local suppliers. With this in mind, the members of the MEU require their views to not only represent the views of large energy users, but also those of smaller power and gas using facilities, and even at the residences used by their workforces that live in the regions.

The companies represented by the MEU (and their suppliers) have identified that they have an interest in the **cost** of the energy as well as the associated network services as this comprises a large cost element in their electricity and gas bills.

A failure in the supply of electricity or gas effectively causes every business affected to cease production, and MEU members' experiences are no different. Thus the **reliable supply** of electricity and gas is an essential element of each member's business operations.

With the introduction of highly sensitive equipment required to maintain operations at the highest level of productivity, the **quality** of energy supplies has become increasingly important with the focus on the performance of the energy transmission and distribution networks, because the transport systems control the quality of electricity and gas delivered. Variation of electricity voltage (especially voltage sags, momentary interruptions, and transients) and gas pressure, by even small amounts, now has the ability to shut down critical elements of many production processes. Thus member companies have become increasingly more dependent on the quality of electricity and gas services supplied.

Each of the businesses represented by MEU has invested considerable capital in establishing their operations and in order that they can recover the capital costs invested, long-term **sustainability** of energy supplies is required. If sustainable supplies of energy are not available into the future, these investments will have little value.

Accordingly, MEU members are keen to address the issues that impact on the **cost, reliability, quality** and the long term **sustainability** of their gas and electricity supplies.

The members of MEU have identified that in addition to the need for strong competition in the competitive parts of the energy supply chains, energy transport plays a pivotal role in the energy markets. This role encompasses the

ability of consumers to identify the optimum location for their investment in their facilities, and provides the facility for generators and gas producers to also locate where they can provide the lowest cost for energy supplies. Equally, consumers recognise that the cost of providing the transport systems are not an insignificant element of the total cost of delivered energy, and due consideration must be given to ensure there is a balance between the competing elements of price versus reliability, quality and long term security;

The MEU recognises there is tension between the four elements of cost, reliability, quality and long term security and therefore makes its comments in this submission in full knowledge of the need for managing this tension.

1.2 Benchmarking

For the electricity networks, the AER has attempted to measure changes in productivity through its benchmarking of the different networks, and to a limited extent, imposing on networks the productivity exhibited by the most efficient network.

Unfortunately, each network provides reasons why its network is different to the others and therefore the productivity achieved by one cannot be replicated by another. The MEU accepts that each network is different but so too are the various firms making the same product in a competitive market, yet consumers do not consider that they should pay more for a product from one firm because of its unique production approach than from another firm which might have a quite different approach to providing the same product. This means that opex productivity can be compared relatively well and that the productivity generated by one network can be used to set the productivity of another.

Additionally, the MEU considers that the unique features of electricity network regulation give networks the ability to significantly increase their productivity through the amount of capex (especially IT, replacement and reliability capex) allowed compared to firms in the competitive environment where capex is more heavily constrained. Having access to more readily available capital[1] with which to increase productivity should result in electricity networks having higher productivity than that measured more widely. This means that electricity networks should be exhibiting higher productivity growth than most other firms. Yet this is not being seen.

For many years, the MEU and other consumer advocates sought for there to be benchmarking of opex so that it would be easier to identify if the opex each network sought was tested against its peers. The AER has introduced its benchmarking assessments and these are welcomed. But the AER

[1] The MEU notes that as the regulatory system allows networks to effectively guarantee a return on capital allowed by the AER, it is much easier for networks to access capital compared the competitive sector where returns are not guaranteed.

benchmarking does not measure the productivity gains made by overseas networks and remains merely a comparison tool between just those networks the AER regulates, which reduces its effectiveness to some degree.

The results of the benchmarking carried out by the AER were used in 2014 to drive productivity growth of the NSW based electricity networks and what is clear is that, despite the NSW networks bitterly complaining that the opex allowance set by the AER was too aggressive, the networks demonstrated that they had a considerable ability to significantly reduce their network opex when pressure was applied by the AER.

This shows that there are considerably more productivity improvements possible to be achieved despite a view that the more efficient networks are near the efficient frontier.

The draft decision highlights that benchmarking of the gas networks shows that they have a higher productivity than electricity networks and that what has been achieved in the gas networks provides a template for what the electricity networks could achieve[2].

The MEU points out that the current approach to benchmarking the networks amongst themselves is that they all operate under the same regulatory rules and AER guidelines. This means that if the rules and AER guidelines are not driving the networks to the efficient frontier, then the networks are not getting the pressure on them to drive them to be more efficient. The outcome of the NSW networks productivity performance demonstrates that increased pressure can achieve better outcomes for consumers.

The MEU is of the view that no electricity network is at the efficient frontier for opex productivity, and that over recent years the AER has generally not required productivity increases merely exacerbates this reality.

1.3 Data sources for opex productivity

There have been concerns raised over the years (and even at the time the AER guidelines were developed) as to how well the Economic Insights (EI) build up reflects the reality of network opex productivity. This section analyses the ABS and EI data to assess the reasonableness of the approach used by the AER to measure productivity and its year on year growth.

Opex productivity improvements come from a number of sources, including new technology and IT, better tools, smarter ways of doing the same task, new plant

[2] The AER seems to imply that the gas networks are at the efficient frontier which the MEU doubts, on the basis that these gas networks do not have competition to drive them to the efficient frontier. However, the data indicates that they are closer to that point than the electricity networks.

and equipment, replacement capital investments and through incentives. However, all of these are over-ridden by the competitive pressure needed to hold or increase market share of the products and services being provided by a firm.

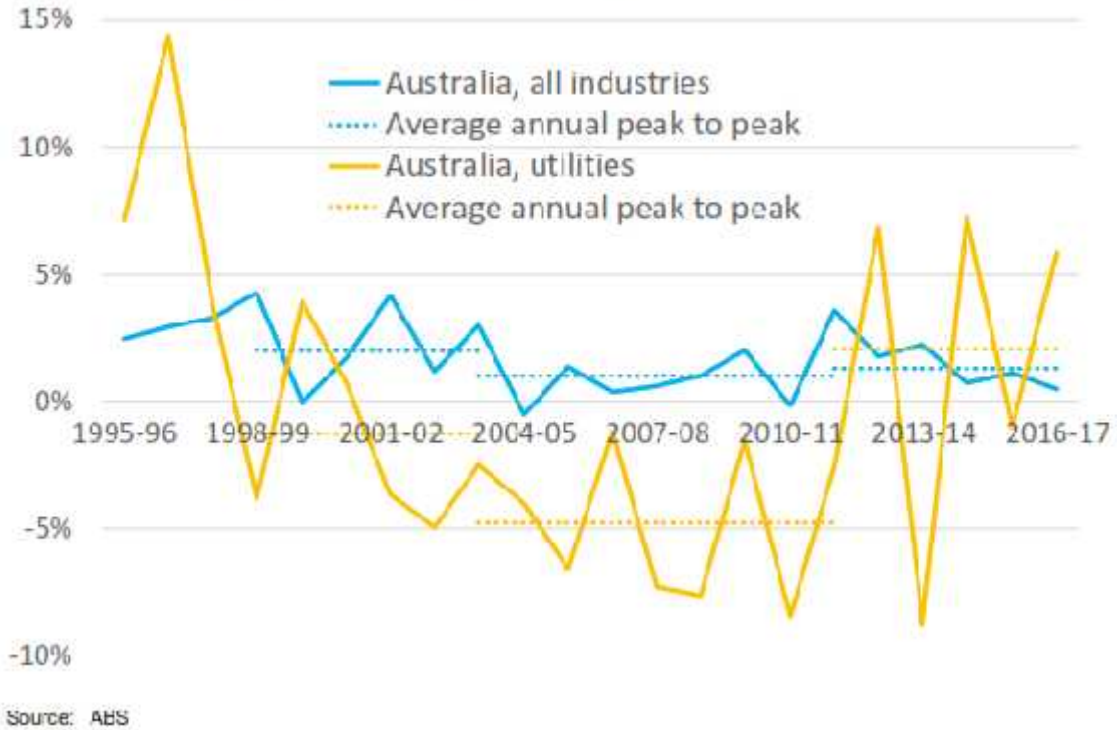
There is a view that opex productivity across Australia had stalled and that the various measures used to assess opex productivity indicated that if anything, productivity had regressed and that compared to historic productivity, operating costs have gone "backwards" in recent years. What is concerning about these measures is that no one has provided a sensible explanation as to why this might have occurred. In its draft decision paper the AER observes (page 5)

> "…we have not been satisfied that the negative productivity growth we were seeing reflected business as usual circumstances."

The MEU agrees but the AER attributes the networks' loss of productivity to increased regulatory burdens but does not provide any supporting evidence that either this is the case or that the increased regulatory burden reflected the quantum of the loss of productivity seen. Neither has the AER considered that the way it measures productivity of the networks might be at fault.

The AER provides an intriguing chart displaying ABS data quality adjusted labour productivity (figure 3) comparing "all industries" to "utilities", which includes the electricity networks but also a number of other services provided by "Utilities"

Figure 3 Quality adjusted labour productivity



Source: ABS

A key question is the extent to which the electricity networks contributed to the observed downturn, recognising that the ABS utilities index includes electricity, gas, water and sewerage operations[3] covering some 520 businesses[4] of which the electricity distribution networks comprise just 15 firms (NEM networks plus WA and NT). Specifically, the index includes LPG reticulation, electricity generators and retailing of electricity, gas and water as well, so the index is not specific just to electricity (and gas) networks, effectively reducing its usefulness in identifying specific causes for the outcomes seen.

This means that while the utilities index might provide some guidance as to how the sector might be tracking overall, to attribute any potential cause to a relatively small component of the index (eg increased regulatory burdens seen by electricity networks) does not mean that this is a primary cause for the entire sector outcome. Further, it is challenging to see how the productivity measured for such a diverse range of firms can be considered to represent a numerically very small proportion of the index such a electricity networks.

The MEU considers that there is little reason just to benchmark electricity networks against the Utilities index as the Utilities index exhibits not only considerable volatility but it includes productivity from industries that are not as capital intensive as electricity networks and which do not have the natural advantages that electricity networks have in receiving ready capital to increase labour productivity through the independent regulatory assessment for new capex allowances.

What the MEU finds interesting is that productivity across Australia (ie all industries) almost never is less than zero (the productivity assumed by the AER for networks in recent years) but that the average growth in productivity over the past two decades is between 1% and 2%. This implies that benchmarking electricity networks against the wider Australian productivity growth would require an average productivity growth by the networks of more than 1% pa.

The MEU points out that the ABS data reflects the average, implying that some firms are achieving much more than this level. MEU members point out that they see international competition being more fierce than that seen domestically, as the domestic market is characterised by many sectors being dominated by oligopolies which reduces the domestic competitive pressure. ACCC chairman Rod Sims implies this in a speech in October 2016[5]. This means that firms subject to international competition have to achieve greater

[3] See http://www.abs.gov.au/AUSSTATS/abs@.nsf/66f306f503e529a5ca25697e0017661f/C53AC7FF6B897047CA25697E0018FBAA?opendocument

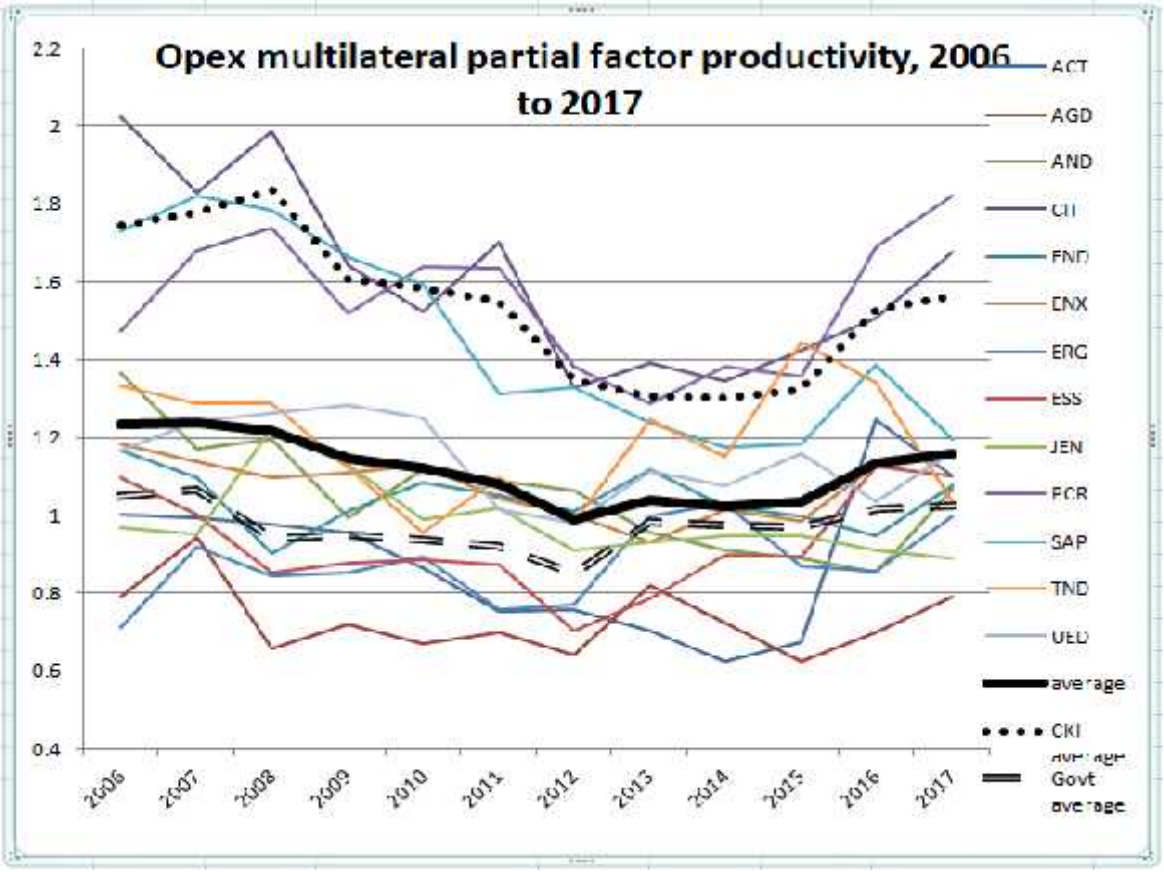
[4] See http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/8226.0Explanatory%20Notes12003-04?OpenDocument

[5] See https://www.accc.gov.au/media-release/accc-chairman-discusses-the-increasing-concentration-in-australia%E2%80%99s-economy-0

productivity growth than that seen more generally in the Australian domestic market,

To assist in addressing this anomaly the MEU compares the chart of networks' performance as measured by "opex multilateral partial factor productivity, 2006-2017" (using the data from Economic Insights DNSP report page 17) to replicate the AER figure 2 Opex multilateral partial factor productivity, 2006 to 2016

Added to the chart is a simple arithmetic average (not weighted[6]) of the individual productivity factors for each network. The MEU has also shown on the chart the simple average of the three networks owned by CKI and Spark[7] (Citipower, Powercor and SA Power Networks)[8], and for all government owned networks (Queensland, NSW[9] and Tasmania).

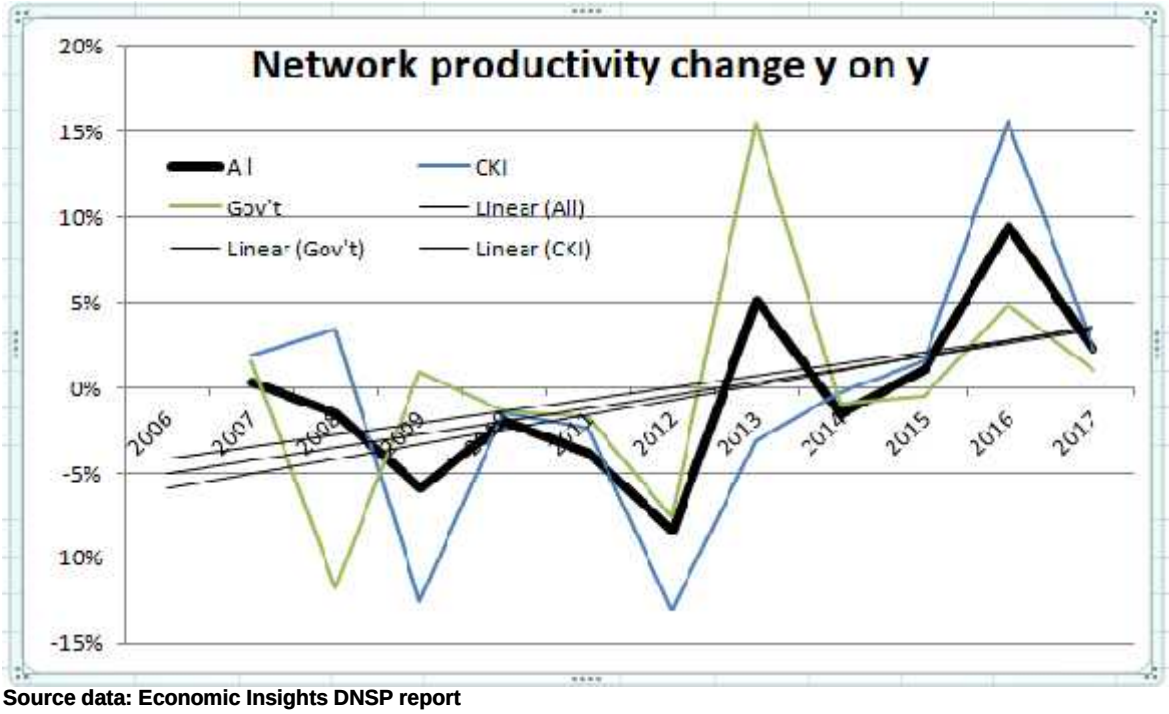


Source data: Economic Insights DNSP report

[6] If weighting was appropriate the MEU would suggest that annual opex for each network might be used.
[7] The MEU notes that United Energy Networks is now effectively associated with CKI but for most of the period of benchmarking, United was separate from the CKI networks
[8] The MEU notes that these three networks cover a wide range of terrains and age, and can be seen as typical of all distribution networks in the NEM
[9] Noting that until recently, all NSW networks were government owned)

What this shows is that the networks associated with CKI/Spark are all in the highest productivity range and the government owned networks are all less than the average of all networks. This provides an indication that the efficient frontier for network productivity is significantly higher than is assumed by the AER and that there is no reason to limit the productivity growth to be limited to that seen for Australia wide all industries at this time.

Using the same data, the MEU has plotted the year on year change in productivity for all the networks, the CKI/Spark networks and government owned networks



Source data: Economic Insights DNSP report

This chart does not replicate the year on year movement of productivity for ABS Utilities but more so the All industries as shown in the ABS data. What is also intriguing is that the changes in productivity between the SKI/Spark networks (the most productive) tends to move counter to the movements of the government owned networks[10].

What is also intriguing is that the trend lines for all three series of data shows significant correlation, indicating that the current level of productivity has trended to be close to 4% pa implying that the AER option 3 of 1% pa productivity growth is significantly under estimated.

Using this data as the basis shows that the AER approach of not using the productivity growth implied by the ABS data from the Utilities index in recent

[10] While there is insufficient data to draw any more clarity, the MEU queries whether this apparent counter cyclic movement is related to the timing of the regulatory reviews for the network groupings.

years was correct, but the AER should have used the higher productivity growth of 1-2% that was typical of the Australia all industries productivity growth. It also shows that any downward adjustment in the future growth is not required to reflect low productivity in previous years. In fact, by using zero productivity growth in the past was actually detrimental to consumers and an upward adjustment is in order to reflect this reality.

The MEU also notes that over time, there has to be some correlation between real wage growth measured on a national scale and productivity. Real wage growth is only sustainable if there is an increase in productivity to pay for the increase. The MEU recognises that, in the short term, real wage growth might be low (as it currently is) while productivity increases are being seen, but when measured over the long term, this wages growth provides supporting evidence to demonstrate the productivity of labour more generally.

The following chart provides the quarterly movement of the public sector real wage price index over time. The MEU selected the public sector wage price movements as, for much of the time, the bulk of employees were working for government owned monopoly networks. It also needs to be noted that even those networks that were not government owned were (and still are) monopolies and therefore not exposed to any private sector competition; none were exposed to international competition.

Source: RBA data

What is clear is that while there is some significant volatility, the average real public sector wage performance over the 30 years of data shows that there is nearly a 1% premium in growth in wages, implying that productivity over the long term is of a similar value.

1.4 Feedback from MEU members on opex productivity

To test the assumption as to whether productivity should be applied at the "all industries" level and whether using zero growth in productivity in recent years was appropriate, the MEU sought feedback from its members as to how they address the issue of continuous improvement and productivity growth.

MEU members not only operate in the Australian market, they are all also exposed to overseas competition. Being exposed to overseas competition from imports for the same products they make requires them to ensure each firm is operating at the efficient frontier for all aspects of their operations including their opex. Further, most of them also have similar operations in overseas countries and so each is benchmarked internally against the best in each firm's fleet of production facilities.

While MEU members allow each facility to provide a view on what their opex costs might be for the coming budgetary period, decisions are made at a head office level on what is acceptable based on the price of the products they sell, priced so that they will not lose market share and potentially might gain market share. Each firm is aware that their competition will be making similar adjustments to their cost structure so this is also taken into account when setting opex allowances.

Labour is the key element of the assessment of future prices as this comprises the majority of all variable costs after the cost of feed stocks for a capital intensive firm where debt and equity are such high proportions of the total cost[11]; for energy intensive manufacturing, energy commonly ranks after the payroll.

Each facility manager is assessed for their incentives on how well they achieve the set opex target and other targets[12].

For MEU members, the ability to use capex to reduce opex is quite constrained as, for most firms in a competitive environment, capital is limited[13] as they recognise that raising new equity. Any capital available is usually first focused on ensuring that safety and environmental issues have priority for any available capital. After this, capital is allocated to "stay in business" and for high return new products needed to achieve this outcome. Any capital used for "stay in business" must also achieve savings in other areas, especially opex in order to justify the use of the capital.

[11] The cost of debt is essentially fixed for significant periods as is the target cost of equity which supports the share price

[12] These include those for safety (facility and personnel), environmental outcomes, use of capital, staff turnover, etc

[13] Raising new equity usually negatively impacts the share price and most firms are geared at a level that new debt would increase costs for all debt held

This means that any capital that might be used specifically to provide an opex reduction has to have a very short payback – typically 2-4 years, and this investment only would occur if there was spare capital available.

MEU member firms also comment that the costs for IT are closely monitored and any IT investment must deliver tangible cost reductions, usually in opex, so that the prices for their products can be reduced[14].

As most of the MEU members have associated activities with overseas facilities providing similar products to those produced by the MEU member, a core measure for ensuring opex efficiency is to assess and compare costs in other countries. While the firms are aware that there are exogenous inputs that influence the amounts of opex (eg the cost of energy, exchange rates, etc) the firms also use non-cost comparators to assess the relative efficiencies. Specifically, they have a number of measures they use relative to specific outputs. These measures include the labour hours used for specific but common tasks but also for other inputs. As most MEU member firms are energy intensive, other measures include the amounts of gas and electricity used per unit of output as well as the amounts of feedstock that is converted to saleable product. These measures are used to ensure that any facility that is lagging in reaching the efficient frontier on each measure has a target that is expected to be met in the short to medium term. If a facility is unable to meet its efficiency levels than that facility is considered for closure and the product(s) it makes are provided from other local facilities or imported from overseas.

MEU members also advise that as tools to set a starting point for reaching the efficient frontier, the future opex is assessed in one and/or two ways

- Labour per unit of production for next year must be less than last year. This is often extended to mean that even if increased output is to be achieved, the labour costs must not increase

- The opex allowance for next year must be the same as last without any adjustment for inflation. That is, the opex must be the same in nominal terms as last year and that if there are any increased costs driven by exogenous inputs (eg cost increases of electricity or gas) savings in other areas must be found to compensate for these increases.

Once a starting point has been identified, then other considerations (eg what a selling price for a product has to be for maintaining market share, etc) are then applied to the starting point to ensure that the productivity growth is sufficient for the needs of the firm.

[14] The MEU highlights that it has consistently argued in network revenue resets, the claims for IT capex by the networks must deliver either valuable benefits for consumers or to reduce the cost of the services provided by networks. The MEU considers that arguments from networks about the need to increase IT are not sufficiently tested by the AER in their decisions

It is clear that MEU member firms see that just maintaining the current level of productivity each has is not sufficient (ie just applying zero productivity growth is not an option) and that continuous improvements in productivity are essential. As one MEU member firm puts it –

> "We have to continually improve our productivity just to stay still. A failure to achieve any opex productivity growth ultimately means closure of the facility".

1.5 MEU conclusions on productivity

There is no doubt that the electricity networks are not at the efficient frontier of productivity and that the regulatory process is not driving them to be the most efficient they can be.

The analysis of the ABS and the Economics Insights data shows that the assumption that zero growth in productivity in recent years was acceptable is not supported by the data and there is no reason to reduce future growth in productivity to reflect any catch up.

Based on the MEU member feedback, the MEU is of the view that as a minimum, there should be no inflation adjustment made to the opex allowances – ie that there is an intrinsic assumption that productivity growth should be, as a minimum, the same as inflation.

Further, the AER needs to undertake a closer analysis to identify the impacts on productivity through capital investment (especially replacement, IT and reliability capex) as these should increase productivity. As a coarse measure, the MEU suggests that the AER should expect that these investments should have a simple payback of 2-3 years and that the resultant savings are additive to the expected productivity[15].

The MEU also considers there is value in the AER discussing with the senior management of large capital intensive firms operating in the competitive sector about how these firms impose productivity increases in their operations. While such information will be qualitative, it will provide the AER with a better understanding of how the AER might be able to impose the pressures of competition onto the monopoly networks so that the allowed opex reflects the impacts of competition

As a final measure, the MEU considers that the AER should investigate the productivity of electricity networks in overseas jurisdictions and apply this information to setting targets for the NEM networks. The MEU accepts that such

[15] The MEU points out that to some extant the AER has realised that this occurs. The AER has highlighted that undergrounding of cabling delivers a significant increase in productivity and the MEU considers that the same benefits come from other forms of capex as well

benchmarking cannot be carried out on a cost basis but it should follow the practices of MEU members where non-cost benchmarks are used across national borders.

2. Comments on proposed options

The MEU addresses each of the options proposed by the AER and provides observations about each. These observations plus the commentary in section 1 and response to AER questions on each have influenced the development of the MEU conclusions about how best to factor productivity into the forecast for labour growth in network revenue resets.

2.1 Option 1

Option 1 is maintaining the status quo and continuing under the current approach. As the AER points out, there are a number of disadvantages in continuing the current approach; the MEU agrees with the AER conclusions.

The MEU considers that the status quo approach has resulted in consumers incurring considerable harm and having to pay significantly more for the networks services than they should. In particular, the MEU does not consider that the current approach has imposed much pressure on the networks to increase their productivity in order to reach the efficient frontier. The MEU points out that when the NSW networks did have such pressure applied, their response was significant and rapid, leading to a considerable reduction in opex.

The MEU is strongly of the view that the status quo approach does not reflect the intent of the rules of the NEO, and change is needed.

2.2 Option 2

Option 2 identifies that the increase in undergrounding of assets in the networks results in a reduction in opex.

Intuitively, the MEU agrees that this would be expected. To some extent, the benefits of undergrounding should be seen in the same vein as the impact of technology advances as these should only be implemented if they result in lower costs for the services provided.

Equally, the MEU observes that the decisions to underground cabling are not driven so much by total cost but by other factors as undergrounding is in total more expensive than using aerial cabling.

This means that undergrounding is only part of the set of activities that should be recognised as improving opex productivity. The MEU likens this observation to that of, for example, improving IT. There is an expectation of consumers that IT investments are acceptable if they result in increased productivity which delivers lower costs for consumers.

The MEU does not support setting a target for productivity growth just to the proportion of undergrounding that occurs. The MEU sees that the AER should not just limit itself to assuming that increases in productivity comes from just one source, but will come from multiple sources and that the impact of these other sources will add to an increase in opex productivity.

2.3 Option 3

Option 3 combines option 2 with the observation that gas networks are showing increased productivity that is not being seen with the electricity networks.

The MEU observations in 2.2 apply to this option, but while the MEU accepts that gas networks are exhibiting more productivity growth than electricity networks[16], there is an assumption that gas networks are at the efficient frontier and therefore their productivity growth is all that can be achieved. The MEU considers that the gas networks also have further to go to improve productivity.

The MEU has a view that option 3 has value if it is seen to be a floor from which all networks can further improve and where the expected improvements in productivity from capital investment (eg in IT, replacement and reliability) are then added to this base value for productivity.

The MEU notes that the productivity growth level identified in this option is less than that generated by the average long term productivity seen across the ABS measure for all industries and similar to the movement of the long term wage price index growth for the public sector published by the RBA[17].

This supports the MEU contention that the 1% productivity growth implied by option 3 should be a "floor" for the productivity allowance for all networks

2.4 Option 4

Option 4 is to use the average of the electricity network industry MPFP growth from 2012. The MEU considers this approach does not drive networks to the efficient frontier. As noted in section 1.3 above, the MEU considers that MPFP growth could be used but not as an average expectation.

The MEU considers that a better approach, based on MPFP growth, needs to be structured so that it drives networks to increase their productivity in order to reach the efficient frontier. The MEU suggestion is that the target productivity growth needs to reflect the top quartile performance (rather than the average) and that networks below the average of the top quartile have their productivity set to achieve that top quartile level. Networks in the top quartile of productivity

[16] Implying that electricity networks should be able to emulate their gas network colleagues
[17] See particularly commentary in section 1.3 above

would have a productivity target based on a more widely based target, such as the long term national average increase in productivity.

2.5 Option 5

Option 5 posits using a forecast of labour productivity growth developed by some external entity or entities.

The MEU has a concern with this approach as it is not clear how the forecast productivity growth is calculated and on what basis. While these types of assessments are developed independently, it needs to be recognised that they are not exact and are effectively subjective analyses along with all other forecasts.

The AER has used these forecasts in the past to build in productivity growths (such as developed by Deloitte Access Economics and BIS-Shrapnel in their wages models), but there is no certainty that they provide a more accurate forecast than any other tool. In fact, the AER has in the past tested the forecasts from these models against actual outcomes, and found there is some significant inaccuracies when forecasts are compared to actual outcomes.

The MEU does not consider that these tools are sufficiently robust to use as the only mechanism to set a forecast for productivity growth as they are effectively a “better informed guess” rather than an exact science.

The MEU does not support this option but recognises that it can be used to provide some support for option 6.

2.6 Option 6

Option 6 allows the AER to use all of the potential tools and decide an outcome from a range of inputs. However, this approach devolves to the AER considerable discretion on how to determine an outcome.

The MEU considers that if this approach is taken, then the AER needs to provide some guidance as to how it will apply the different outcomes from the different approaches.

2.7 MEU conclusions

While the MEU is of the view that option 6 is a preferred approach, it considers that the primacy of the data input must come from the network productivity benchmarking approach the AER has already implemented.

The MEU provides some caveats to this approach

- The Benchmarking tool developed by the AER with Economic Insights needs to be adjusted to reflect the concerns about the weightings as is identified in the MEU response to question 5 below
- The AER should require all networks to reach the average productivity of the top quartile of networks from the outturn benchmarking. The MEU considers that using the top quartile is essential as this provides a clear target so the lesser performing networks have a driver to move towards the efficient frontier.
- For networks in the top quartile, they should have applied a productivity improvement requirement that reflects wider measures such as detailed in the MEU comments under option 3.
- As pointed out by the MEU members, they require productivity improvements to offset capital investments made for replacement, IT and reliability. The AER should enhance the "floor" productivity expectation which results from capex in replacement, IT and reliability
- As highlighted by the experience of MEU members, there is a need that there must always be some level of real productivity growth embedded into the forecast as this imposes a requirement for continuous improvement.
- While the MEU proposal suggests a "floor" productivity growth factor, be calculated, this should be informed by not only domestic efficiency measures, but by overseas non-cost measures as well.

3. Responses to AER questions

The MEU provides the following responses to the specific questions raised in the Draft Decision Paper. The MEU has endeavoured to keep its answers as concise as possible and refers to the commentary in the preceding sections to amplify its reasoning. The MEU has elected not to respond to all of the questions in the consultation paper but where there is no response, the MEU points to the comments made in the text above.

	Description	MEU observations
1	**Are there any other sources of information, for example, any economy wide measures of productivity growth that we should take into account when we forecast opex productivity growth?**	See comments above
2	**Should all information sources be given equal weight or should we give greater or lesser weight to specific sources? If we should give greater or lesser weight to a specific information source, which source and why?**	As well as available data sets, the MEU considers that the AER needs to get better data from firms operating in the competitive market about how they set targets and budgets for the coming years to reflect the demands of the competitive market
3	**Do you agree that the time trend achieved by gas distributors is reasonably reflective of the time trend that electricity distributors can achieve? If not, do you think the gas results overstate or understate what can be achieved by electricity distributors? Why?**	As noted above, the MEU considers that the results from the gas networks provide evidence that the electricity networks are not at the efficient frontier, and "could do better". However, the MEU does not accept that the gas networks are at the efficient frontier and still need to be driven to further improve their opex productivity.
4	**Should we account for changes in the proportion of undergrounding when we forecast opex productivity growth?**	The MEU considers that all capex (including that for undergrounding) should reduce opex and this reflects the observations of firms operating in a competitive market and subject to greater capital

		constraints than the networks. The MEU does not consider that the AER recognises the reality of this and its failure to require opex productivity gains from investment reflects a lack of understanding of the issue by the AER. The MEU considers the AER needs to better understand how firms in the competitive sector have to continually improve their performance.
5	**Should we account for economies of scale when we forecast opex productivity growth? If so, on what basis should we forecast economies of scale?**	The MEU notes that the five measures used to provide a growth factor in the AER modelling are – throughput (12% impact), peak demand (28%), customer numbers (31%), line length (29%) and minutes off supply. While some of the measures have some a linear relationship with opex, not all of them do in all cases and the MEU considers that there are aspects where economies of scale are evident in networks. For example, • Energy throughput has little to do with opex. Opex does not increase on a hot day where throughput increases with a greater airconditioning load yet throughput does grow. • A substation rated at (say) 100 MW using three transformers will incur similar opex for a 150 MW substation which has thee transformers. The amount of opex does not increase by a factor of 50% merely because the rating increases by 50%. • Equally, the MEU does accept there are elements of opex (eg vegetation clearance) which increase with the line length where there is heavy vegetation. This observation is not universal as where there is no need for vegetation clearance (eg in open country), the opex does not increase linearly with line length. This has particular relevance in more remote areas where establishment costs are a major portion of the opex

		required for any activities. J Increase in customer numbers can influence opex but the denser the population in areas, the less the opex is linear with numbers, as providing for a large number of customers in a densely populated area (eg in set costs) is much less than where the customer density is much lower On balance, the MEU considers that opex will increase with a number of the measures used, but the increase is not linear as implied by the AER view that economies of scale do not impact opex. Therefore the MEU considers that there are economies of scale that do need to be applied.
6	**What is the best way to use quality adjusted labour productivity growth (both past and forecast) to inform our opex productivity growth forecast?**	The MEU considers that the AER would get a more comprehensive answer to this question if they asked it of senior managers of capital intensive firms operating in a competitive environment. At a simplistic level, while networks are not at the efficient frontier, the MEU considers that a fixed requirement for productivity gains each year should be applied to the opex and to ensure that the incentive regime (EBSS) is based on the productivity adjusted forecast opex. This would drive the networks to approach the efficient frontier over time To assist the networks to get to the efficient frontier, the AER should follow the approach proposed by the MEU in section 2.7 above.
7	**Are there any other forecasting approaches we should consider?**	See comments above
8	**Which option do you consider to be the best approach to forecast opex productivity growth**	See comments above

	for a prudent and efficient distributor? Why?	
9	**How much opex productivity growth do you think an efficient distributor can reasonably achieve? Why? What information are you relying on to inform this view?**	See response to question 6 and section 2.7 above
10	**Do you agree that we should apply the productivity growth forecast determined by this review process in our next regulatory determination for each electricity distributor? If not, how frequently should we update our forecast? Why?**	Yes. Not to do so would run counter to the NEO and the NER as both require the AER to set efficient levels of opex. The MEU considers that the ER should seek advice from senior managers of firms that are capital intensive and work in the competitive sector about how they adjust their productivity growth requirements over time.