16 April 2012

570 George Street
Sydney NSW 2000
All mail to GPO Box 4009
Sydney NSW 2001
T +61 2 131 525
F +61 2 9269 2830
www.ausgrid.com.au

Ms Jill Irvine
Electricity Network Inquiry
Productivity Commission
GPO Box 1428
Canberra City ACT 2601

Submitted via email to electricity@pc.gov.au

Dear Ms Irvine,

Electricity Network Regulation Inquiry

Ausgrid welcomes the opportunity to provide a submission to the Productivity Commission's Electricity Network Regulation Inquiry (the Inquiry). In principle, Ausgrid supports the application of robust benchmarking techniques to test for the efficiency of network performance and to inform regulatory decisions provided that it takes into account different network characteristics, operating environments and circumstances.

Ausgrid observes that there is currently no regulatory barrier to the use of benchmarking under the National Electricity Rules (NER) by the Australian Energy Regulator (AER). The evidence from the AER's regulatory determinations to date does not indicate that it has been restricted in practice in its use of benchmarking under the NER. As a result, there may be limited value in the Commission duplicating reviews currently being undertaken on the National Electricity Market (NEM) regulatory framework.

We believe that the Commission could add the most value by examining and reporting on the extent to which benchmarking can be meaningfully applied in the context of regulating monopoly distribution network service providers (DNSPs) operating in the NEM. As such, the Commission could give consideration to the effectiveness of available benchmarking techniques and develop criteria for effective benchmarking based on statistically robust and logical analysis, and commensurate with the circumstances.

We believe this should be a primary goal of the Inquiry as the use of the benchmarking in regulating the NEM has been problematic in its application to date. This is because individual benchmarking techniques are limited in their explanatory power, and cannot fully account for the differences (and drivers) in costs between DNSPs.

Generally speaking, we consider that benchmarking should consider a broad range of relevant information and encompass a variety of techniques. Its primary role should be as a regulatory tool for the AER to target further in-depth reviews of elements of a DNSP's regulatory proposal as required. It should not be used as a basis for substituting a DNSP's own forecasts for the AER's forecasts, particularly as it is the DNSP that bears all of the network security of supply risk. Here we believe the Commission can add value by providing guidance to the AER on how benchmarking can fit into an overall assessment of a DNSP's regulatory proposal.

Comments addressing some of the questions posed in the Issues Paper are provided in the attachment to this letter. If you have any queries or wish to discuss this matter in further detail please contact Keith Yates .

Yours sincerely

Neil Gordon
Acting / Executive General Manager System Planning and Regulation

Attachment – Ausgrid Response to Issues Paper Questions

Attachment to the Productivity Commission Issues Paper – Electricity Network Regulation Inquiry

Question
Chapter 1 – Scope of the Inquiry
Given the various ongoing reviews and the consultations associated with them, how can the Commission best add value? Do these reviews have the same broad objective as the Commission or are they more narrowly focused?
Ausgrid submits that there may be limited value in the Commission duplicating reviews currently being undertaken on the National Electricity Market (NEM) regulatory framework (listed in table 1 of the Commission's issues paper). We consider that the Commission can add value by focussing its review on: • The limitations and effectiveness of current benchmarking techniques. • Examining and reporting on the extent to which benchmarking can be meaningfully applied in the context of regulating monopoly Distribution Network Service Providers (DNSPs) operating in the NEM. • Developing criteria for effective benchmarking based on statistically robust and logical analysis, commensurate with the circumstances.
Chapter 2 – The National Electricity Market
Are there any other major regulations or policies that affect the electricity market that need to be considered when undertaking benchmarking or in understanding any of the possible obstacles to investment in interconnectors?
Broadly speaking, the characteristics of the electricity market make it difficult for output productivity comparisons with most other industries. For example, Ausgrid a NSW DNSP has entered a period of asset renewal to maintain existing electricity supply. This means that output productivity measures will be misleading in comparison to DNSPs which are expending capital to meet new growth. In this respect, we note that the Commission has released a staff working paper entitled 'Productivity in Electricity, Gas and Water: Measurement and Interpretation'. This paper cites four key factors as possible causes for the negative growth in multifactor productivity in the electricity sector since the late 1990s: growing relative peak demand, cyclical investment, unmeasured quality improvements to output (such as a shift to greater undergrounding of electricity cabling), and a shift to higher cost supply sources in response to climate change. Broader regulations and policies across companies and jurisdictions are also an important consideration as they can make meaningful comparisons problematic. This is because DNSPs are subject to different jurisdictional obligations in terms of customer connection contestability, service standards, planning standards and reliability requirements (for example, Ausgrid has a jurisdictionally imposed stringent N-2 planning requirement for the Sydney CBD

to ensure security of supply). More broadly, individual circumstances such as topography, urban density, level of sub-transmission assets, and age of assets on the network will result in different cost structures that make high level comparisons misleading. In this respect, we note that accounting policies such as treatment of shared costs are substantially different amongst DNSPs and will often be a reason for apparent differences in costs. Moreover, DNSPs have vastly different network configurations, for instance Ausgrid has a transmission network as well as its distribution network.

It should be noted that prior to the establishment of the NEM many networks operated as part of a vertically integrated electricity business which may have left latent capacity, design and operation issues for the network business.

Chapter 3 – What is benchmarking?

Partial indicators

What are the best (and worst) aggregate measures of performance, and why is this so? In which contexts (Australia and elsewhere) have these been most credibly been used?

There is no single metric that can measure the overall performance of a DNSP. Take for example the following metrics:

- Total cost per customer/lot frontage: may be appropriate for urban or rural network comparison but would not cater for significant differences in load and urban density, which are major drivers of investment.
- Measures of capital utilisation: can often be outside the control of the DNSP and may be driven by the 'lumpiness' of individual customer loads.
- Replacement as a ratio of remaining life: is a potential measure of premature retirement of assets. However, it may actually be driven by design issues with particular types of assets. For example, older types and makes of underground cable that may need to be replaced before their nominated design life.
- Short run actual operating costs: are heavily influenced by the overall age and condition of network assets and can be significantly impacted by major external events such as storms and abnormal equipment failure rates. These factors would need to be considered if this measure was to be useful.
- Level of demand management initiatives adopted: can depend on the circumstances of a DNSP. If a DNSP is in a period of significant replacement and modest growth, the marginal cost of augmentation is quite low and can make it difficult for demand management options to be competitive with a network solution.
- Reliability: is ultimately the key measure of the performance of a network and a DNSP. Once again, major events such as storms, the network design (planning standards/network type CBD/Rural/Urban) and the condition of the network have a major influence on this measure. Reliability is currently incentivised under the AER Service Target Performance Incentive Scheme (STPIS) framework.

As there is no single metric it is often appropriate that benchmarking be undertaken on a disaggregated basis.

Are there criteria beyond those identified in box 1 that are useful for discriminating between good and bad benchmarking tools and approaches?

The most commonly cited challenges in benchmarking Australian DNSPs are:

- The small number of DNSPs within the AER's jurisdiction, making meaningful statistical analysis difficult;
- the diversity of the conditions that each of the DNSPs operate in;
- the range of network sizes that each DNSP manages; and
- the lack of historical data of a consistent quality.

The AER acknowledges these difficulties, yet has relied upon two particular types of benchmarking analysis, ratio analysis and regression analysis, without adjustment to allow for variances across DNSPs. Ausgrid suggests that the criteria for assessment developed by Frontier Economics[1] for the UK electricity regulator OFGEM may be an appropriate reference point for discriminating between benchmarking approaches. The Frontier Economics criteria are:

- Robustness: the benchmarking process and the resulting performance assessment must be regarded as robust by the operators and peer reviewers. A technique that produces results that are not sufficiently robust will be of little use in a regulatory context and will struggle to stimulate information revelation.
- Transparency: if benchmarking methodologies are clear it will aid the ability of all stakeholders to understand the rationale for the selected approach. It will also be clear to the operators what conduct is being encouraged.
- Promotion of efficiency: benchmarking techniques should promote not just efficient cost management, but also strike an appropriate balance between low costs and desired outputs. Benchmarking methodologies should also minimise the extent to which they distort incentives to favour one cost type over another.
- Consistency with the wider regulatory framework: benchmarking should foster the high level objectives of the wider regulatory regime and strike an appropriate balance between different objectives. Benchmarking should also encourage operators to innovate while providing appropriate protection from unnecessary expenditure for customers.
- Reasonableness of data requirements: any benchmarking technique will only have merit if the necessary data exists to populate it.
- Adaptability: given the likelihood of material changes in the availability and relevance of certain data over time as network roles evolve, there is merit in pursuing a benchmarking technique that can adapt and remain fit for purpose.
- Resource cost: approaches that impose significant additional cost on the regulator and the regulated operators should only be adopted if they deliver materially better information.

We would also submit that the Commission should consider criteria which address the regulatory risks of benchmarking which are clearly articulated by Graham Shuttleworth[2].

Shuttleworth submits that because benchmarking techniques are open to the exercise of subjective judgements by the regulator they expose regulated companies to substantial risk that cost recovery will be denied for unpredictable and subjective reasons. The resulting lack of predictability and objectivity is not conducive to the provision of efficient regulatory incentives. He states that benchmarking imposes regulatory risk in the following ways[3]:

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[1] Frontier Economics. RPI-X@20: The future role of benchmarking in regulatory reviews – A final report prepared for OFGEM. May 2010. London.
[2] Shuttleworth, G. Benchmarking of electricity networks: practical problems with its use for regulation, Utilities Policy 13 (2005) 310 – 317. NERA Economic Consulting Stratford Place, London.
[3] Ibid, p 316

- Choice of technique: Regulators can choose from among a number of different benchmarking techniques without offering companies any basis upon which to verify whether the results are accurate. Shuttleworth submits that even using a number of different models will provide no greater predictability. Moreover, the gap between observed costs and benchmarked costs (the residual) merely measures the extent to which the selected model has failed to explain costs, and not the extent to which companies are inefficient. It is therefore incorrect to ascribe the residual to inefficiency, or to describe the benchmark as a measure of efficient costs. On that basis, it provides no grounds for disallowing certain costs or anticipating rapid rates of cost reduction.
- Choice of variables and model: Different models which use different variables (cost drivers) can yield different results and impose different targets for cost reduction on any single company.
- Burden of proof: Companies face a substantial burden of proof if asked by the regulator to identify the factors which explain the residual. This task would require each company to identify ways in which it differs substantially from other companies. In other words, it would require detailed knowledge, not only of its own business, but also of all other businesses in the data set which represents a practical impossibility.

Shuttleworth[4] concludes that 'as an interim step in an investigative procedure, benchmarking may help regulators to appraise large volumes of data on costs and outputs. However, benchmarking techniques are not robust and cannot replace detailed investigation of costs.

Any attempt to rely entirely on benchmarking to set revenue allowances is bound to involve subjective and arbitrary choices. For the sake of transparency and stability in regulation, therefore, it will be necessary to regard benchmarking as an investigative technique, not an alternative method of setting revenues'.

Other commentators such as Professors Yarrow and Littlechild (referenced in the 2012 AEMC directions paper[5]) state that a regulator should take into account the actual circumstances of the DNSP when it benchmarks. However, there are likely to be some circumstances of DNSPs which it would be inappropriate to consider in benchmarking, such as financial decisions of the owner of the NSP. Ausgrid submits that the Commission could provide guidance on this issue.

Using benchmarks to assess regulatory performance

Are there examples where regulatory benchmarking has been used in electricity networks in Australia or overseas?

The National Electricity Rules (NER) allows use of benchmarking in economic regulation of network businesses. The AER should and does use various benchmarking techniques as a part of its process for the assessment of a DNSP's regulatory proposal. However, these techniques should be guided by the following principles:

- The techniques should be robust from a logical and statistical perspective. For example, they should not rely on poorly constructed benchmark data to draw conclusions or inferences. An example of this is the AER's use of network scale escalators used to determine the

[4] Ibid, p317
[5] AEMC. AEMC Directions Paper - National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012 National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, p 23, March 2012.

appropriate growth in total operating expenditure forecast. The AER did not take into account relevant differences between DNSPs such as age of network assets (which influence the efficient level of maintenance costs) and capitalisation policies.

- The AER should be required to provide a clear description (including underlying methodology and data) of how it has used the techniques in making its decision.
- The AER should be transparent about the techniques it is likely to use, and should develop regulatory best practice guided by consultation with DNSPs.
- A meaningful benchmark analysis would examine the data from several perspectives, so as to form an opinion on the relative efficiency of DNSPs.

In our view, the AER should consider how the techniques fit into an overall assessment design. For example, a well integrated assessment approach may comprise the following steps:

1. A DNSP would submit detailed information supporting the basis of its expenditure proposal.
2. The AER would examine the process used to develop the forecasts including the procedures, policies and strategies of the business.
3. The AER may develop statistically robust and generally logical high level analysis to test elements of the proposal. The technique would seek to account for differences between DNSPs if it uses 'comparison' techniques such as benchmarking.
4. Where the AER finds that a cost category is outside the range of other DNSPs (rather than simply the DNSP with lower costs), it would seek to review the details in support of the proposed expenditure.
5. When undertaking its detailed review, the AER would need to consider the evidence put forward by the DNSP, actual data or circumstances of the business (for instance failure rates, or the consequence of failure)

An example of where the AER successfully integrated a top down and detailed review was in the Aurora draft determination[6]. The AER developed the 'repex model' to perform a high level test of whether a DNSP's costs for an asset category were higher than expected when compared to historical replacement, or typical replacement age of other DNSPs. While the repex model is a weak predictor of actual requirements (as it is based on age rather than condition) it provided the AER with the ability to target its resources on reviewing aspects of the proposal that may contain systematic errors. As part of the review, it found that Aurora replaces poles earlier than other DNSPs, and sought to undertake a detailed examination of the reasons for this decision.

Are there any other broad benchmarking approaches not discussed above, and where and how have these been used?

Generally speaking, we consider that benchmarking should consider a broad range of relevant information and encompass a wide variety of techniques. While we have not examined OFGEM's health index in great detail, we note that a more qualitative and diverse approach would provide the AER with a broader perspective of the aspects of the DNSP's regulatory proposal it should target as part of a detailed review. This does not mean however that

[6] AER Draft Distribution Determination Aurora Energy Pty Ltd 2012-13 to 2016-17. November 2011.

the AER should use benchmarking tools/techniques that are statistically invalid or erroneous in logic. Poor analysis may result in the AER pursuing the inappropriate parts of the proposal as part of its detailed review, or may lead to it thinking there is a problem when none exists. For this reason, we consider that the AER should develop tools that are clearly shown to be logical and statistically robust.

In this sense, we consider the Commission can add value by identifying benchmarking tools/techniques that are 'fit for purpose' for use by the AER. For example, high level benchmarks of total capital expenditure (without consideration of individual DNSP circumstances and cost drivers) are not 'fit for purpose' but tools such as testing the replacement age of asset categories may enable the AER to use benchmarking more effectively.

Chapter 4 – But is benchmarking practical?

Is imperfect benchmarking still useful?

How do existing network suppliers assess the efficiency and performance of their own businesses and how do they use these results? Could these results have relevance to regulatory benchmarking, and if not, why not?

Ausgrid will often use industry information to confirm whether its existing business practices are efficient. Importantly this involves investigations of our policies and procedures (for instance our replacement strategies) to ensure that they remain best practice against current industry trends.
We also test our unit costs with peer distributors by seeking competitively tendered quotes from the marketplace. The key point is that Ausgrid uses industry information as a 'test' to identify if we need to undertake a further examination of our costs. Of particular interest to Ausgrid (and other DNSPs) is to seek to understand the drivers of cost differences between DNSPs through the ISSR framework discussed below.

To what degree could the AER use international benchmarking?

Regulatory frameworks are generally designed for price control within a country or state and reflect the local market and economy. This makes meaningful comparison of electricity networks on an international basis a challenge. However, we[7] contend that the operation and management of electricity networks in large cities across the world have more in common with each other from the perspective of the physical operating environment than might exist between networks that operate domestically under a common regulatory framework.

The case for benchmarking on an international level is aided by a more recent and increasingly important phenomenon - globalisation. The term global city has been in use for several decades, but it is in the most recent decade that recognition of the importance of global cities in the world economy has gained momentum. The reliance on the connectivity between global city nodes for information and financial transactions is now widely accepted as a keystone in the world economy, and the raw material for those transactions is electricity.

As the connection between these global city nodes grows, the importance of the electricity supply in one particular city extends beyond its own electricity network and into the other economic nodes. The paradox is that whilst the information connection medium between the cities becomes less reliant on

[7] Based on some analysis by Huegin Consulting Group. Benchmarking: Frontier & Efficiency 2012.

physical infrastructure and therefore more portable, the electricity supply it relies upon remains firmly rooted to the streets and sub-terrain of the cities that host it. The importance of electricity supply in global cities is generally recognised by regulators through the setting of more stringent reliability and security of supply criteria for urban areas. However the recognition of the importance of supply to one node in the context of the global network has not yet found its way into regulatory benchmarking efforts.

Due to the monopolistic nature of electricity networks, each DNSP faces a set of cost drivers that is to some extent unique to their locale. Each DNSP also has limited control over some of these cost drivers and therefore limited opportunity to modify their influence or presence. That is, there are factors that influence each network and its operation to varying degrees that may have either an internal or external locus of control. For this reason, comparison of network businesses is challenging, it is even more challenging for international businesses as they operate under different regulatory, economic and political regimes. What the international businesses operating in global cities have in common, however, is an understanding of the additional challenges of operating in a global city.

It is important to recognise in benchmarking that electricity networks in global cities have inherited a design legacy because of the historical layout of the roads and streets, many of which have changed very little in over one hundred years. In global cities, the transport infrastructure is particularly tightly coupled with the electricity network (it is relied upon to gain access to many of the assets in the network) but it also presents a rigid template that acts as a constraint to the planning, design and installation of new or replacement equipment. The increasing complexity and unavoidable inefficiencies driven by urban congestion are very rarely addressed by regulatory benchmarking models and should be considered by the AER. This is particularly important for Ausgrid which operates in Sydney's CBD, considered by the Global Power City Index 2010[8] as Australia's global city.

Is there value in 'rough and ready' benchmarking models and how would these be used?

Due to the subjective nature of benchmarking, there is an inherent danger in using 'rough and ready' benchmarking models as a sole source of analysis, particularly if it used as a basis for substituting the DNSP's own forecasts for the AER's forecasts .

As discussed later in this paper, high-level benchmarking can be misleading if doesn't account for differences in cost drivers. Academics like Veronica Irastorza state that 'rregulators who attempt to simplify the methodology to render it more manageable risk making arbitrary judgments that confuse inefficiency with heterogeneity and that are potentially harmful to companies who cannot "improve" their way out of fundamental differences in circumstances. Even if implementation problems are solved, benchmarking can result in lower rates in the short run, but with increased financial risk for the companies and underinvestment that create problems in the long run.'[9]

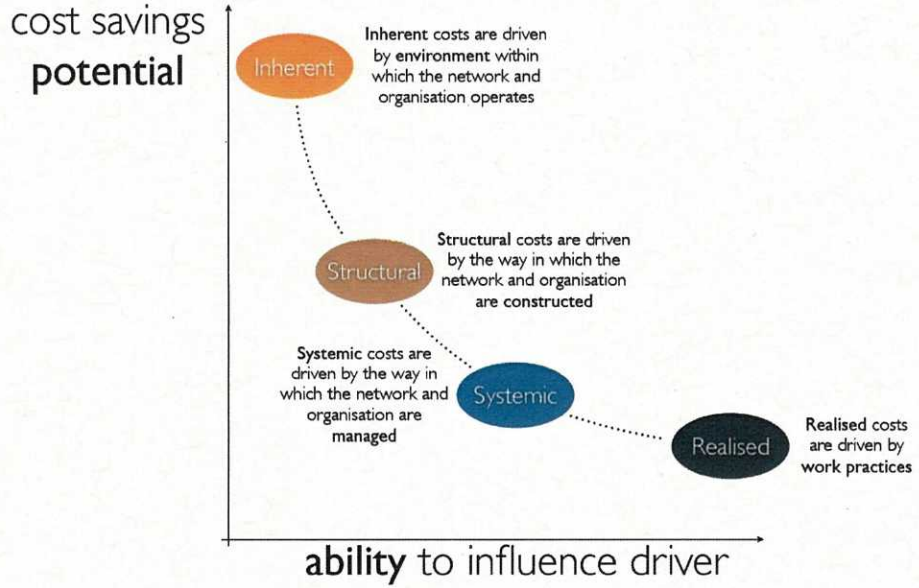
[8] Institute for Urban Strategies, the Mori Memorial Foundation, Global Power City Index 2010.

[9] Irastorza, V, Benchmarking for distribution utilities: a problematic approach to defining efficiency, Electricity Journal, December 2003

What are the most important control factors for benchmarking network businesses (for example, lot frontage, asset vintage, topography, weather variations, customer types, reliability standards, ratio of peak to average demand, and any strategic behaviour by generators and retailers)? What matters less?

A useful framework for reviewing control factors and cost drivers is the ISSR framework developed by Jones, Booze and Kroenberg[10]. This framework recognises that some costs for a company are driven by:

Inherent: the environment in which the network and organisation operates e.g. climate and geography.
Structural: the way in which the network and organisation are constructed e.g. network design and depot locations.
Systemic: the way in which the network and organisation are managed e.g. business processes and sourcing policies.
Realised: work practices e.g. workforce efficiency and reliability.



The inherent costs while offering the highest cost savings potential are virtually impossible for a DNSP to influence. Accordingly, these costs should be excluded from benchmarking.

[10] Jones, M. Booze, Kronenberg E. Scherer. ISSR: What drives your program costs? Booze Allen & Hamilton inc. 2010.

Structural and systemic costs should also be treated with caution. In particular, recent debates in the media regarding differences in ownership and planning standards and their perceived influence on electricity costs in NSW compared to Victoria are not helpful as they do not properly take into account structural and systemic drivers of cost. This is because size, topography, generation of supply distances, fuel mix, investment drivers and cycles and the historical development of networks all impact on costs.

For example:

- Proportion of sub-transmission assets: DNSPs with this mix will have higher costs for a given level of capacity delivered.
- Age of assets: will impact on maintenance costs and replacement volumes.
- Available capacity: will impact on the ability to defer capacity investment.
- Demand growth: will influence level and location of capacity investment.
- Topography: influences the design of assets on the network.
- Maintenance requirements and asset age: influences capital and operating expenditure decisions.
- Urban density/ location: impacts on metrics such as cost per customer.
- Property values: influences the level of spend on new network assets.
- State economic growth: will drive connection and growth expenditure.
- Load mix of residential, commercial and industrial: will influence the configuration of the network;
- Type of new connections: spot loads will require investment in new connection, even if overall load demand is low.

As a result of these differences, high-level benchmarking that compares costs of supplying an individual customer is likely to be highly unreliable. For these reasons we believe that benchmarking analysis should be directed at identifying anomalies in a DNSP's regulatory proposal, such that the AER can target its detailed review at these areas.

What are the consequences of errors in benchmarking? To what extent do these costs vary for positive versus negative errors? How could the costs of any errors be reduced?

Ausgrid notes that poor benchmarking analysis may result in a DNSP not being provided with sufficient allowances to maintain the safety, security of the network, and to meet its regulatory obligations. An example is if the AER rejects a replacement program on the grounds of high level benchmarking despite evidence to show that the failure of the asset is likely, and that the failure would result in injury or a catastrophic consequence. Under this scenario, the DNSP unfairly accepts the risk for the AER's decision.

To what extent would it be helpful to give the AER some discretion in deciding how much weight should be given to benchmarking and other tools when making regulatory determinations?

In principle, Ausgrid supports the application of robust benchmarking techniques to test for efficiency of network performance and to inform regulatory decisions provided that they take into account different network characteristics and operating environments. However, we do not support the AER having discretion to use benchmarking information to substitute in place of Ausgrid's own forecasts, particularly as it the DNSP who bears all of the network security of supply risk.

In addition the discretion of the AER to use benchmarking must be appropriate to the circumstances. In his advice to the AEMC on the proposed NER rule change, Professor Stephan Littlechild[11] states:

'I am asked whether there would be any benefit in a rule that requires the regulator to undertake benchmarking. I would say that it would be good regulatory practice for a regulator to consider what if any insights benchmarking could provide in the particular price control under consideration, and to take this into account where appropriate. But as just noted, the circumstances of individual networks can vary greatly, and in my experience there is always an element of unexplained variation where judgement is required. To require the regulator to undertake benchmarking therefore runs the risk of forcing the regulator to attach more weight to benchmarking than the circumstances allow. The difficulties experienced by the Dutch electricity regulator may be an example of this. (Nillesen, P.H.L. and Pollitt, M.G. (2007) "The 2001-2003 electricity distribution price control review in the Netherlands: regulatory process and consumer welfare." *Journal of Regulatory Economics*, 31(3): 261-287)'.

The importance of testing rival explanations

What are the principal reasons for the apparent decline in the productivity of the electricity networks and for the associated increases in electricity prices? In particular, what have been the effects of rising input prices, past underinvestment, building ahead of use, rising peak demand, underground cabling and requirements for reliability requirements? To what extent have investment responses to the above factors been economically efficient?

We consider that benchmarking is being hailed as the solution to curtail price rises. For the reasons described above, we consider that benchmarking as currently deployed is limited in its explanatory power and that there may be adverse consequences of poor benchmarking. We submit that there are inherent, structural and systemic reasons for the price rise. For example, a key driver of increased network prices was the need for a significant step change in capital expenditure. The step change in Ausgrid's case was a result of two factors:

1. A large replacement program: a large proportion of Ausgrid's network was built between 1965 and 1980 and its age was therefore approaching or above 40 years old at the time of Ausgrid's 2008 regulatory proposal for the 2009-14 period.

2. Investment to meet the NSW Design, Reliability and Performance (DRP) licence conditions: a key trigger of growth related investment was the DRP licence conditions which mandated minimum network security and limit load at risk.

We note that the Commission's staff working paper 'Productivity in Electricity, Gas and Water: Measurement and Interpretation' identifies structural factors which may be permanently raising input requirements in the industry (though in some cases bringing an increase in the quality of outputs).

More information on price increases can be found in the Energy Networks Association (ENA)'s submission to the Consultation on the AEMC Directions Paper (Economic Regulation of Network Service Providers) due 16 April 2012. Additional, complementary information specific to Ausgrid's circumstances can be found in our submission to the same review.

[11] Littlechild S. Advice to the AEMC on Rule Changes. 11 February 2012, p16.

To what extent have Garnaut, Mountain and Littlechild identified genuine inefficiency in electricity networks?

Ausgrid assumes that the Commission is seeking comment on recent and widely published reports which include:

- Mountain, B.R., May 2011. *Australia's rising electricity prices and declining productivity: the contribution of its electricity distributors*. Energy Users Association of Australia, Melbourne.

- Garnaut, R., *Update Paper 8: Transforming the electricity sector*. Garnaut Climate Change Review.

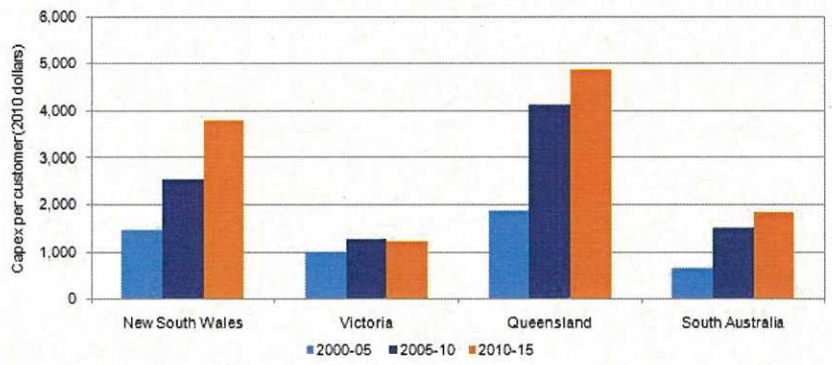
These reports suggest that differences in expenditure between DNSPs in different states are symptomatic of "gold plating" of the network; and gold plating is a function of ownership type, with government owned entities investing more money than is required in order to increase the return on assets.

Huegin Consulting Group has provided Ausgrid with a critique of these reports. Huegin state that these reports incorrectly assume that all DNSPs are homogenous and that they rely on a variety of ratio and regression analyses to support their hypotheses regarding the efficiency of electricity distribution. In particular, these reports acknowledge the limitations of ratio analysis, yet both rely upon it (particularly capital expenditure per connection) as the premise that supports their conclusion of the relationship between over investment and ownership.

The Garnaut report in particular states that:

"The existing financial incentives for state owned network providers to over invest coupled with the political cost of any failure in the network managed by a state owned company, have the potential to overwhelm any countervailing incentives to minimise operational costs. The comparison of costs between Victoria, where the network providers are in private hands, and New South Wales and Queensland, where the network providers are in state hands, is at the very least a compelling piece of evidence to support this contention

The graphic that accompanies the above statement in the Garnaut report has been sourced from Energy Users Association of Australia (EUAA) and is reproduced below.



Source: EUAA 2010.

Whilst the graphic presented may appeal to some sectors of the media, the claim that it supports the hypothesis that privately owned electricity distribution businesses are more efficient is tenuous. Notwithstanding the fact that such a hypothesis requires the reader to believe that capital expenditure per customer is a universal measure of efficiency, it also requires the belief that the only difference between Victoria and NSW and QLD in particular is the ownership structure. In reality, the number of customers connected to a distribution network only drives a proportion of the capital expenditure. The distribution of those customers is another important driver that has been ignored in the analysis presented. Victoria, NSW and QLD have significantly different population densities and this is reflected in the average connection density of the networks in those states.

The relationship between the 2010-15 capital expenditure per connection and the average connection density for each of the eastern states is a much more convincing and intuitive relationship than ownership structure. Connection density is just one of the factors that have not been considered by these reports that hypothesise that ownership is the major contributor to efficiency. There are also many jurisdictional differences such as reliability targets and the timing of their introduction, the legacy of previous decisions by regulators and reporting differences as a legacy of the previous state based regulation framework that are important to consider.

In summary, Huegin state that while ratio analysis provides some useful information about the differences across DNSPs, its application to benchmarking efficiency is limited without consideration of:

- Differences in the scope of services included in the expenditure (the numerator of the ratio);
- Differences in the drivers of cost; or
- Expenditure ratios that should not be compared on a per annum basis.

An additional critique of the abovementioned reports of Mountain and Littlechild can be found in the ENA's submission to the Consultation on the AEMC Directions Paper (Economic Regulation of Network Service Providers) due 16 April 2012.

Chapter 5 – The interaction of benchmarking with the regulatory framework

The process for approving future investment and operating expenses

Do the current Rules limit the use of benchmarking? If so, how do they do so, to what extent, and what would be the appropriate remedy?

As discussed in the AEMC's directions paper[12] the evidence from the AER's determinations to date does not indicate that it has been restricted in practice in its use of benchmarking under the Rules. Rather, the AER has actively had regard to benchmarking analysis as recently as its determination for Aurora Energy. Other examples can be found in the AER's final regulatory determinations for Ergon Energy, Ausgrid (formerly EnergyAustralia) and the Victorian DNSPs.

What restrictions, if any, should apply to the AER's use of benchmarking or other analytical tools?

Due to the limitations of benchmarking discussed above, it should only be used as a tool to target the AER's in-depth review. It should not be used as a basis for substituting the DNSP's forecasts for the AER's. The danger in fostering an over-reliance on regulatory benchmarking is that it can have the perverse effect of directing DNSPs efforts to re-design its network and business models to accommodate the regulator which ultimately may not be in line with common engineering principles of distribution system planning and network design[13].

In terms of restrictions for the AER, we would submit that the Commission consider the recent AEMC inquiry into the potential introduction of a Total Factor Productivity methodology (a methodology which relies on benchmarking data). The AEMC concluded that it was not satisfied that a TFP could meet the National Energy Objective (NEO). We would argue that the reason it did not proceed was because of ill-considered purpose. For example, there were proposals to proceed with a benchmarking data collection exercise before a definitive conclusion on the merits of TFP (and its ability to meet the NEO) was established. A more pragmatic approach would have been to make a full assessment of the TFP methodology and its purpose, design a model and then gather appropriate data to populate the model, rather than undertake data collection that is wide in scale and lacks clear focus.

Ausgrid contends that a similar danger exists in the AER's current benchmarking in particular, its over-reliance on the collection of Regulatory Information Notice (RIN) data collected without a clear explanation of its purpose. Collecting data is resource intensive and can lead to regulatory burden (i.e. create inefficiencies for DNSPs required to collect and report it). It is therefore crucial that the purpose of the benchmarking data is defined from the outset and that it is 'fit for purpose' and commensurate with the circumstances.

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[12] AEMC Directions Paper - National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012 National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, p 23, March 2012.

[13] Honkapuro, S. and Partanen, J. 2006. Efficiency benchmarking in the economic regulation of the distribution companies. Proceedings of the NORDAC 2006, Nordic Distribution and Asset Management Conference, Stockholm, Sweden

35. Should the AER select the best performer as the benchmark, or choose a benchmark close to, but not at the frontier? What criteria could be used to determine the threshold between unreasonable and reasonable costs?

Ausgrid is concerned that the AER has proposed in its recent rule change request to the AEMC to remove the NER requirement for it to give consideration to the circumstances of a DNSP. The AER has explained its reasoning as follows: *"…. it is proposed to delete the criteria relating to the circumstances of the relevant NSP. Good benchmarking practice requires that the characteristics of the individual network be taken into account in the normalisation of the data, including matters such as network topography. However, this is different to taking into account the circumstances of the individual owner of the network. The imprecise language used in the current rules may limit the AER "s ability to apply comparative analysis and benchmarking in identifying efficient costs."* [14]

While we note that the AEMC[15], including its consultants Yarrow and Littlechild, appear to reject this proposition, it is concerning that the AER would raise it. We consider that this NER provision is a vital part of the framework directed at ensuring that each DNSP is provided with efficient investment and expenditure allowances. DNSPs are subject to a range of different obligations and circumstances that drive efficient expenditure decisions that are prudent in the circumstances of the DNSP.

[14] Ausgrid submission on AEMC consultation on rule changes proposed by the AER and Energy Users, December 2011.

[15] AEMC Directions Paper - National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012 National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, p 23, March 2012.