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Chris Pattas
General Manager – Network Operations and Development
Australian Energy Regulator
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Dear Chris

Expenditure forecast assessment guidelines for electricity distribution and transmission

Jemena Limited (**Jemena**) welcomes the opportunity to respond to the Australian Energy Regulator's (**AER's**) issues paper on the expenditure forecast assessment guidelines for electricity distribution and transmission (**expenditure guidelines**).

Jemena is the owner of Jemena Electricity Networks (Vic) Limited (**JEN**) in Victoria and Jemena Gas Networks (NSW) Limited in New South Wales. Jemena also has ownership interests in the United Energy electricity distribution business in Victoria (34%) and the ActewAGL electricity distribution partnership in the ACT (50%). Accordingly, Jemena has a strong interest in the outcome of this consultation.

At a high level, Jemena is primarily concerned that the expenditure guidelines should provide stakeholders with incremental information on how the AER interprets and intends to use the additional discretion provided to it by the recent rule changes. As such, a good guideline would:

1. explain how the AER interprets the operating and capital expenditure objectives set out in rules 6.5.6(a) and 6.5.7(a)
2. explain how the AER interprets the capital and operating expenditure factors set out in rules 6.5.6(c) and 6.5.7(c)
3. set out decision rules on which techniques the AER intends to apply to assess different types of proposed expenditures and how.

The above would enhance the transparency, certainty and predictability of the regime. This would allow for a smoother and more efficient process, where all stakeholders, including the AER, can better organise their resources to focus on the important areas of work, given the approaches the AER proposes to use.

Jemena fully supports:

1. The joint submission made by Victorian distribution businesses on 15 March 2013 and the report by Castalia Ltd, which focuses, at a high level, on the characteristics of a good guideline and provides useful lessons learnt from existing guidelines that are considered best practice.

2. The submission from the Energy Networks Association (**ENA**) on 8 March 2013, which provides both, high level, and detailed comments on the issues paper, including answers to many of the questions set out in the issues paper

Rather than re-state the points made in those submissions, Jemena's submission seeks to only provide incremental information and views from Jemena on specific issues by exception. Jemena's incremental comments focus on:

- Attachment A and questions that relate to economic benchmarking techniques (20-44), and
- Attachment B and questions that relate to category analysis.

If you wish to discuss this submission, please contact Warwick Tudehope, Manager Network Regulation on (02) 9455 1551 or at warwick.tudehope@jemena.com.au

Yours sincerely

Robert McMillan
General Manager Regulation
Jemena Limited

Attachment A and Economic Benchmarking Questions

Appendix A and questions 20 to 44 in the issues paper focus on economic benchmarking (**EB**) where, as defined and described by the AER, "[EB is] benchmarking that applies economic theory to examine the efficiency or change in efficiency … of the firm as a whole" [1]. The issues paper goes on to propose that, rather than consider a single EB technique, the AER should consider all available techniques—the "holistic" approach.

Although recent changes to the NER have clarified the role of benchmarking, there is no explicit provision for EB as defined by the AER to be used in the assessment of NSPs' building block proposals. However, there is scope for EB to be developed and results reported in the context of the annual benchmarking report and, through that report, for EB to be used as a diagnostic tool to assess the relative efficiencies of NSPs. While the AER must have regard to the most recently published annual benchmarking report when assessing NSPs' proposals, operating and capital expenditure must ultimately be benchmarked separately. At the same time, the AER must have regard to the substitution possibilities between operating and capital expenditure among other things.

It is well accepted that data currently available for Australian NSPs is not comprehensive or reliable enough to support the use of EB as a deterministic tool in setting regulatory allowances, and that it will be several years at least before an appropriate data set can be assembled. One or more selected EB techniques can be evaluated and specified concurrently with data collection following a process such as that recommended by the AEMC at the conclusion of its review into the use of total factor productivity (**TFP**) for the determination of prices and revenues[2]. That process is the proper mechanism for resolving the technical questions in the range 20 to 44 in the issues paper, and probably others.

Given the place of EB in the current regulatory framework and the length of time it is likely to take to develop EB techniques to the point where stakeholders are satisfied that the results can be relied upon, it is unnecessary and premature to be canvassing their use in the context of developing a guideline on expenditure assessment that is to apply from November 2013. It is certainly premature to be settling now on answers to the technical questions in the range 20 to 44 in the issues paper, many of which deal with matters on which experts in the field are known to disagree. EB should be developed and implemented through the annual benchmarking report where the first report must be published by 30 September 2014. In Jemena's view that is likely to be an evolutionary process that will extend over a number of years.

It is also important to ensure that—to the extent the AER intends to introduce EB as a deterministic tool with direct impact on expenditure allowances or revenues—a paper trial is run before full implementation. This will allow for the proper calibration of any new EB tool. It is important that a new tool with material potential value implications for both businesses and customers are confirmed as being robust and fit for purpose, before being fully implemented.

The place of EB in the current regulatory framework

The recent rule changes have clarified how the AER must consider benchmarking when assessing NSPs' building block proposals:

[1] AER, Issues paper, p. 46.
[2] AEMC 2011, *Review into the use of total factor productivity for the determination of prices and revenues, Final Report*, 30 June 2011, Sydney, section 3.

- The AER is to develop and publish an annual benchmarking report with the first to be published by 30 September 2014[3]
- The most recently published annual benchmarking report and the benchmark operating (and capital) expenditure that would be incurred by an efficient NSP is one of the factors that the AER must have regard to when assessing an NSP's operating (and capital) expenditure forecasts.[4]

The NER require that an NSP's annual revenue requirement be determined using a building block approach[5] and benchmarking now has a clear role in assessing the principal components that go towards the annual revenue requirement, namely the NSP's forecasts of operating expenditure and capital expenditure. However, benchmarking is not the only factor that the AER must have regard to in making its assessments: it is still just one of a number of operating expenditure factors and capital expenditure factors.

Importantly, there is no provision for EB techniques, as defined in the issues paper, to be used deterministically to set the annual revenue requirement. In particular NER ss. 6.5.6(e)(4) and 6.5.7(e)(4) require that operating and capital expenditure be benchmarked separately so EB cannot be used for that purpose if, as defined, its purpose is to assess the performance of the business as a whole. Other benchmarking techniques must be used for the separate assessment of operating and capital expenditure. However, there would appear to be no restriction on EB techniques being developed and applied in the context of the annual benchmarking report which the AER must also have regard to when assessing NSPs' operating and capital expenditure forecasts.

The current state of development of EB in Australia

Between July 2008 and December 2011, the AEMC consulted on a proposed rule change from the Victorian Department of Primary Industries that would have offered TFP regulation[6] as an alternative to building blocks mechanism for setting an NSP's price path.

In the course of that consultation, the AEMC undertook a separate but related 'review into the use of total factor productivity for the determination of prices and revenues'. The AEMC found that, at the time of its final report, relevant pre-conditions were not met for TFP to be applied deterministically as envisaged by the proposed rule change, and went on to map out a process of data collection, testing and analysis that would be necessary to support a definitive decision on the suitability of TFP regulation. Importantly, the AEMC formed a view that

> at least 8 years of robust and consistent data will be required to establish a TFP growth rate that could be used in a TFP methodology for price and revenue determinations.[7]

The Productivity Commission is presently considering the use of benchmarking in the context of a review of electricity regulation more generally and, in its draft report, reaches similar conclusions to those of the AEMC—that at present:

> there is little scope for aggregate benchmarking to service as a sound basis for the regulatory determination or revenue allowances. Nevertheless there are longer-term prospects for more sophisticated benchmarking … Subject to the development of improved

[3] NER s. 6.27.
[4] NER ss. 6.5.6(e)(4) and 6.5.7(e)(4).
[5] NER s. 6.4.3.
[6] Under the proposal, an NSP could elect to transfer to TFP regulation where the level of the NSP's prices would be determined at periodic reviews by reference to the NSP's actual costs, and the rate of change of prices would be set by reference to the historical trend in industry TFP.
[7] See AEMC 2011, *Review into the use of total factor productivity for the determination of prices and revenues, Final Report*, 30 June 2011, Sydney, p. 23.

> data, reliable (and corroborated) models, and better-designed incentive arrangements, there may be greater scope to give more weight to aggregated benchmarking.

and

> In any of the next rounds of regulatory determinations the AER should not use aggregate benchmarking as the exclusive basis for making a determination. Instead the AER should use such aggregate benchmarking results as a diagnostic tool in responding to business cost forecasts.[8]

The AER appears to accept these views:

> Benchmarking plays an important role in providing the regulator various tools with which to assess the efficiency of expenditure proposals. Such tools need to be developed and refined with network businesses and other stakeholders over time, recognising that new approaches require some burden in data collection and in compliance monitoring to ensure high quality information is provided to the regulator. It may be the case that some approaches are tried, with the consent of network businesses, yet are ultimately abandoned as they may not be capable of producing robust results.[9]

We also note Economic Insights' statement that, "[compared with TFP,] non-TFP methods all require a larger number of observations to be available before they can be reliably implemented" and that all EB methods have similar data requirements in terms of the variables that must be measured.[10] This would suggest that it will be some time after results are available for TFP—where the AEMC concludes that 8 years' data is required—before non-TFP methods can produce reliable results.

The AER's proposed approach

The AER proposes to adopt an "holistic" approach to the assessment and application of EB techniques. That is, the AER proposes to evaluate and perhaps apply all identified EB techniques. While this may be an academically interesting and perhaps a logical extension of the very thorough review published jointly by the ACCC and the AER in 2012[11] there is a serious question whether it is an appropriate approach in the current regulatory context.

- As things stand, EB techniques can only be used as a diagnostic tool in assessing NSPs' relative efficiency: they cannot be used deterministically.
- There is little if any support within Australia, internationally, or in the independent literature[12], for EB to be used deterministically as a mechanism for setting aggregate regulatory allowances, at least in the short to medium term. If any technique is to be used in that way in Australia, TFP is the likely front-runner but, even then, it is unlikely to be adopted without some provision for periodic reviews and re-sets to costs: TFP may be used to set the rate of change of prices, but the level of prices will be set by other means e.g. under the Victorian Department of

[8] Productivity Commission 2012, *Electricity Network Regulatory Frameworks*, Draft Report, Canberra, p. 291.
[9] AER, *Submission on Productivity Commission's Electricity Network Regulatory Frameworks Draft Report,* November 2012, p. 6.
[10] Lawrence, D., and Kain, J., *Outputs and Operating Environment Factors to be Used in the Economic Benchmarking of Electricity Distribution Network Service Providers*, Briefing Notes, 20 February 2013, p. 4.
[11] ACCC and AER, *Benchmarking Opex and Capex in Energy Networks*, Working Paper No. 6, May 2012.
[12] See for example, Shuttleworth, G., *Benchmarking of electricity networks: Practical problems with its use for regulation*, Utilities Policy 13 (2005) 310–317.

Primary Industries' rule change proposal, the level of prices would have been set by reference to the NSP's actual costs.[13]

- Having the results of multiple techniques available will only lead to an unproductive debate about how the results should be interpreted and which if any can be relied upon—in the certain knowledge that none of the results will be "correct".

It is clear that there is no scope within the current regulatory framework for EB to be used deterministically; however, we agree that when EB has been developed to the point where all stakeholders can have confidence in the results, it could be a useful diagnostic tool to assess the relative efficiencies of business. It is also likely that simply publishing EB results in annual benchmarking reports will create pressure on poorly performing businesses to improve their performance i.e. competition by comparison.

The discussion of benchmarking techniques should take place in the context of preparing the annual benchmarking report as required by NER s 6.27, and s6.27(b) in particular. That process should in turn take account of the findings of the Productivity Commission in relation to benchmarking (when published)[14]. We have noted above that the Productivity Commission concludes in its draft report that, at least for the short to medium term, benchmarking is suitable only as a diagnostic tool i.e. as an adjunct to other assessment techniques[15]. We are therefore concerned at the AER's statement that:

> Benchmarking would support us in assessing the extent to which NSPs are responding to the incentive framework, thereby reinforcing the revealed cost approach and base, step and trend methods. Where NSPs are not responding to the incentive framework, it may be more appropriate for us to make use of benchmarking techniques in forming a view about the proposed forecast expenditure, with less reliance on the base step and trend approach.[16]

This statement, coupled with question 5 in the issues paper, carries the implication that the AER proposes to rely on benchmarking to form a view that an NSP is not responding to the incentive framework and then, having formed that view, may use benchmarking directly as a basis for setting allowances for significant components of costs.

Given the current state of development of benchmarking in Australia, particularly at the aggregate level, Jemena submits that it cannot be used alone to form a definitive view about a particular NSP's performance let alone as a basis for setting an aggregate allowance. At best it may be used in conjunction with other techniques as a diagnostic tool to assess the relative efficiencies of NSPs and to identify aspects of costs that may require more detailed assessment.

We also disagree with the implication of question 5 that benchmarking might in some way be a substitute for incentive mechanisms. Incentive regulation was devised precisely because of the problem that confronts the regulator – that efficient costs for a business cannot be identified by inspection or analysis. By de-linking revenue and costs for a period, the business has the incentive to improve its efficiency and reveal its efficient costs.

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[13] Victorian Department of Primary Industries, *Proposed rule change to the Australian Energy Market Commission to permit the use of the 'TFP Approach'*, May 2008, Attachment A, pp. 9—11.

[14] The Productivity Commission provides a detailed and balanced discussion of benchmarking and its application in the Australian context in Productivity Commission *2012, Electricity Network Regulatory Frameworks, Draft Report*, Canberra, Volume 1. The Commission's final report is expected in April 2013.

[15] Productivity Commission 2012, *Electricity Network Regulatory Frameworks, Draft Report*, Canberra, p. 269, and AEMC 2011, *Review into the use of total factor productivity for the determination of prices and revenues*, Final Report, 30 June 2011, Sydney, p. ii.

[16] AER, Issues paper, p. 16.

The current regulatory framework specifies the building block method for determining a revenue requirement and from that, a price path. However the incentive properties of the price path are independent of the level at which that path is set. For example, using benchmarking in place of the revealed cost methodology to determine a building block will no doubt result in a different value for the building block but it will not alter the incentive properties of the resultant price path.
However, there is a real risk that, if benchmarking is applied mechanistically, NSPs' revenue requirements will be underestimated contrary to the revenue and pricing principles. This is especially likely given the current state of development of benchmarking and the subjective judgements involved in its application.

The issues paper poses 25 questions (numbers 20 to 44) in relation to EB techniques many of which go to fundamental issues of theory or application. The fact that these questions need to be asked at all highlights the immaturity of benchmarking practice for regulatory purposes and the significant issues that arise in any attempt to reduce the performance of something as complex as a network business to a single measure. In many cases the questions involve binary choices between competing theoretical positions and/or expert views so that the answers will, in the end, involve subjective judgements. The choices made will have a material effect on how the AER approaches EB, the costs involved in producing and analysing data and, importantly, the results that it produces.

But all that is premature. The AEMC has concluded that there must be a data collection phase extending over several years before reliable estimates of industry TFP can be produced. The same will be the case for the other EB techniques canvassed in Appendix A. Reliable EB results will not be available for use in the next round of reviews at least and, as noted above, it is likely to take longer to produce reliable results for non-TFP techniques than for TFP. It is therefore inappropriate to be considering the use of EB for the next round of reviews and unnecessary to deal with EB in the context of developing the guideline.

Inputs and Outputs

Chapter 5 in Appendix A deals with the important question of what are the inputs and outputs of a network business. As noted previously, we believe it is premature to be settling now on answers to many of questions 20 to 44, however we are in a position to make some general observations.

Most recently in Australia, this question has been the subject of much debate in the context of the AEMC's assessment of TFP regulation as an alternative to the building block approach. Economic Insights (one of the AEMC's consultants) favours physical measures for capital inputs and the inclusion of "functional" outputs such as network capacity, in outputs.[17] On the other hand, Pacific Economics Group (**PEG**), who have been long term advisers to the ESC in Victoria, argue that capital inputs should be measured in financial terms and that the theoretical basis for TFP measurement requires that only billable measures be included as outputs, and that they should be weighted by revenue shares.[18]

The fact that experts disagree so strongly on matters that are so fundamental is of particular concern because the results of benchmarking and how they are interpreted depend significantly on how the inputs and outputs are defined. For example, Economic Insights reviewed the sensitivity of TFP growth estimates to different specification choices using electricity distribution data for Victoria and found that a wide range of TFP growth

[17] Lawrence, D., Diewert, W.E., and Fallon, J., *Total Factor Productivity Index Specification Issues, Report prepared for Australian Energy Market Commission*, 7 December 2009.
[18] Pacific Economics Group, *Submission to Australian Energy Market Commission: Design Discussion Paper*, October 2009, p. 5.

rates can be obtained depending on the choices made. [19] Ultimately a choice must be made, but it must be made in the knowledge that the results of any benchmarking will be affected by that choice.

In Jemena's view it is premature to settle on measures of inputs and outputs and model specifications now, as the AER appears inclined to do. Significantly, and despite the comprehensiveness of its review, the AEMC did not reach a conclusion on these matters which are fundamental to the specification of the TFP model. Instead it recommended that the AER undertake a process of model development and evaluation and reporting that would run concurrently with data gathering.

While it may be possible to apply EB techniques now by settling on the definitions of inputs and outputs and using currently available data as a starting point, stakeholders will have no confidence in the results. The development of EB techniques must be an evolutionary process which, in Jemena's view, is best conducted in the context of the annual benchmarking report.

Is installed capacity or observed peak demand the relevant measure of output?

On current evidence, Jemena favours the Economic Insights position on inputs and outputs which, in terms of outputs, is supported by the passage from Turvey cited on page 79 of the issues paper. It is clear to us that an NSP's principal functions are to provide connections and ensure that there is sufficient capacity to meet network users' peak requirements, whatever they are and whenever they occur, in all but extreme "1 in N" circumstances [20].

We note that benchmarking studies often use observed peak demand as a proxy for capacity. We see this as problematic in that it implies that an efficient business is one that has just enough capacity to meet actual peak demand. That may have superficial attraction but it is not achievable in practice and is not dynamically efficient—capacity can only be increased in finite increments and, when additional capacity is required, it is more efficient to install "excess" capacity to meet forecast demand growth for a period than to expand in frequent small increments. It follows that there will always be spare capacity in a network. At the same time, there will be local bottlenecks as local peak demand increases to the limit of capacity installed at some earlier date to serve that locality. For an established NSP, total installed capacity changes only incrementally from year to year in response to the forecast trend in maximum peak demand[21] and as local bottlenecks are addressed. It certainly does not change in response to short term variations in actual peak demand due to weather variations between years.

Actual throughput and actual peak demand are not significant cost drivers in the short term: the provision of capacity to accommodate forecast maximum peak demand is a much more significant driver of input requirements and costs. The distributor is (and must be) compensated for the incurred cost of providing prudently installed capacity notwithstanding the fact that actual peak demand will vary and may reach the limit of capacity only rarely.

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[19] Economic Insights, *Energy Network Total Factor Productivity Sensitivity Analysis, Report by Denis Lawrence to the Australian Energy Market Commission*, Canberra, 9 June 2009.

[20] Note that distribution businesses provide transportation services to network users who are most often retailers, and not directly to end users/consumers. It is the retailer rather than the distribution business that supplies the commodity (electricity or gas) to the end user.

[21] We distinguish between "forecast maximum peak demand" and "actual peak demand". For a given market structure, actual peak demand varies from year to year as a function of many factors including weather conditions and the day of the week on which those conditions occur. Forecast maximum peak demand is the basis for network design and takes into account the underlying trend in peak demand and the possible range of actual peak demand around that trend.

Based on the discussion on page 79 of the issues paper, it seems that there are really two concepts that need to be addressed in determining the efficiency of an NSP:

1. Is the level of installed capacity prudent and optimal given current and forecast growth in maximum peak demand and the quality and reliability standards that the business must deliver?

2. How efficiently is the business managing the capacity that it actually has installed and the expansion of that capacity?

A benchmarking analysis that has actual peak demand as an output effectively conflates the 2 questions and cannot distinguish between a business that has excessive capacity but manages it efficiently and one that has the right amount of capacity but manages it inefficiently, even though the reasons for their inefficiency are very different. The distinction is possible if the 2 questions are addressed separately and actual installed capacity is used as an output.

Benchmarking cannot assist in answering the first question which relates to dynamic efficiency. That question is answered by engineering assessment which would necessarily take into account demand management options (issues paper p. 79) and reliability standards which should in turn reflect customer preferences (issues paper p. 80). Having said that, we note that once expenditure has passed the prudency and efficiency test and been rolled into the regulatory asset base, there is no provision for it to be removed. There is no suggestion that that should be changed.

Benchmarking can only be useful in answering the second question which relates to productive efficiency. In that case, capacity is the relevant output.

Is throughput a relevant output?

Distribution businesses in Australia typically derive much of their revenue from charges that are based on throughput measures. Tariff structures, especially for small consumers, reflect practices that have developed historically when businesses were vertically integrated and in response to political and consumer preferences. For example, in the case of JEN, 72.9 per cent of forecast revenue for the current regulatory period is to be derived from usage charges i.e. $/kWh delivered. In terms of individual tariff classes, the proportion of forecast revenue obtained from usage charges is as low as 1.4 per cent for large industrial subtransmission customers and is 100 per cent for domestic off-peak.

As a more general observation, we note that gas transmission pipelines, which deal with a small number of large and commercially astute customers, typically derive most of their revenue from capacity-related charges. Likewise, the tariffs that electricity and gas distribution businesses charge large industrial customers are, for the most part, capacity based. Tariffs for small consumers are weighted towards throughput charges only because of established practice and preferences. As Economic Insights observe:

> Like all network infrastructure industries, a major part of DBs' output is providing the capacity to supply the product. In this sense, there is an analogy between an energy distribution system and a road network. The DB has the responsibility of providing the 'road' and keeping it in good condition but has little, if any, control over the amount of 'traffic' that goes down the road. … However, for convenience or historical reasons the DB may actually charge customers on a 'traffic' or throughput basis, even though the marginal cost of additional throughput is typically very low. This has often led to prices not being cost reflective.
> … It should be noted that [the distinction between "billed" and "functional" outputs] will typically not be necessary for competitive industries since competitive pressures will lead to

> prices for all outputs being relatively cost reflective. However, since energy distribution is a natural monopoly, there can be significant departures from cost reflective pricing across outputs.[22]

PEG's position is that outputs are those things that the business actually bills customers for. Accordingly, given current tariff structures for small consumers, PEG's approach would attach significant weight to throughput as an output. If that is the case then, all else equal, a DNSP with a high load factor relative to installed capacity would appear to be more efficient than one with a low load factor given that input requirements are only marginally affected by changes in throughput. That may appear to be a valid observation from an external, economy wide, perspective in that the high load factor asset is apparently more fully utilised. However, if the low load factor business were to seek to improve its measured efficiency by either limiting capacity or artificially inducing higher throughput then that would result in inefficiencies in the economy outside the business.

If a DNSP is to satisfy consumer demand at all times then it must have sufficient capacity available to meet that demand. Some of that capacity may be derived from demand management measures but, in the end, the NSP cannot control throughput and so the load factor will be what it will be.

It is wrong to infer from the way in which DNSPs bill for services that throughput is a significant output. The fact is that, irrespective of the basis for billing, DNSPs in effect commit to having sufficient capacity available to meet consumers' demand for energy whatever it is and whenever it occurs, in all but "1 in N" circumstances. DNSPs provide the capacity to deliver transportation services, and it is the retailers that provide the commodity i.e. throughput is a retailer output from the customer's perspective. It follows that the more relevant measures of utilisation and efficiency for a DNSP is how much spare capacity there is relative to forecast maximum peak demand and how efficiently the business is managing actual installed capacity.

That fact that throughput is not a relevant output is reinforced by the AER's historical practice when reviewing NSPs' proposals and setting allowances, especially for capex. Those allowances to date have been set by reference to forecast maximum peak demand: throughput is not a consideration in that process. Throughput enters the determination process only when it comes to translating the forecast building block revenue requirement into tariffs.

[22] Economic Insights, *Total Factor Productivity Index Specification Issues, Report prepared for the Australian Energy Market Commission*, Canberra, 7 December 2009, p. 3.

Attachment B and category analysis

This section sets out JEN's views on selected category analysis questions (question 45 onwards), where JEN has an incremental comment to that already made by the ENA.

Question 46 - To what extent do you think the expenditure drivers are correlated with each other? Given this level of correlation, should we examine the impact on expenditure of each one, or can this list be consolidated?

Jemena does not believe that this question can be answered without first collecting data for each driver and testing for correlations empirically.

Questions 47 - Do you think that the network segments outlined above provide a useful demarcation of the costs of customer-initiated network extension and/or augmentation? Do you think that there are significant cost differences in installing connection point assets and in network extensions between overhead and underground assets? What alternative asset type demarcations would be more appropriate?

While, conceptually, the network segments outlined make sense, it is difficult to obtain separate data on each segment that is sufficiently robust for intercompany comparisons. Much depends on the work practices in the field, as many of these works will be carried out together and not necessarily recorded separately by segment. Accurate reporting would require field staff to allocate their time on the spot between segments, with varying approaches likely adopted by different businesses, and with variations possible from depot to depot even in a single business. JEN currently has difficulty obtaining accurate disaggregated information on connection costs.

Yes, there are material differences between overhead and underground asset costs. This is why different cost recovery mechanisms are used for services like elective undergrounding, as opposed to routine overhead connection services.

Question 48 - Do you agree with separating customer-requested expenditure by connection point assets, extensions, and augmentations? Do you think total expenditure for each service (excluding new connections services) is a sufficient degree of disaggregation? Should further sub-categories be identified?

No. Disaggregation even at this high level would likely be hard to compare between businesses without harmonising recording practices in the field for all businesses. Further disaggregation would be even more problematic. While all business do their best to obtain accurate information, at the end of the day, it is important to remember that workers in the field are electrical experts focused on the poles, cables and wires and may not appreciate the subtlety of regulatory cost allocation. For this reason, while disaggregated historical year-on-year data for one business will likely be consistent and appropriate for time series analysis, it is not likely to be comparable against other businesses at this detailed level.

Question 49 - Do you agree with separating new customer connections expenditure by the connection point, extension, and augmentation components? Do you think that the number of new connections, length of network extensions added, and size of capacity added are useful measures of the volume of work and expenditure required for new connection services? Should these categories be disaggregated into more detailed categories reflecting the type of work undertaken by the NSP to account for factors that drive changes in new connections expenditure over time?

No, as per above.

These measures are useful, but JEN is not in a position to comment whether these are the optimal measures to use.

No, as per above.

Question 52 - Do you think the above asset types are sufficient in capturing the cost differences associated with activities to address deterioration in asset condition? What other asset types may be suitable?

JEN uses a much more granular view of asset types for asset management. However, each distributor uses a different approach to classifying assets. JEN is not in a position to comment on whether aggregating assets to the level proposed by the AER would be appropriate, as this would necessarily lose some of the important detail that is used in making real-life asset replacement decisions.

Question 56 - Do you think the approach to using benchmarking and trend assessment for routine and non-routine maintenance is reasonable? Are there any alternatives which might be more effective?

Without understanding the modelling approach proposed by the AER, it is difficult for JEN to answer this question. However, JEN does not believe that a model could substitute active asset monitoring and asset management. It would be more difficult to use such approaches on non-routine maintenance than routine maintenance.

Question 57 - Given the relative predictability of maintenance cycles and activities, do you consider it feasible to construct a deterministic maintenance model, such as that described above?

No. JEN does not believe that a model could substitute active asset monitoring and asset management. If it could, businesses would already be using such models as the main tool for managing their maintenance.

Question 60 - Do you think expenditure on managing vegetation growth should be distinguished from expenditure on third-party stochastic events? Should expenditure on third-party stochastic events be distinguished into sub-categories?

JEN considers that the AER overestimates the predictability of vegetation growth, which itself is dependent on weather patterns. Without understanding how disaggregated data would be used, JEN is not in a position to comment on whether it is appropriate to separate these costs and to what level.

Question 62 - Do you think overheads should be separately reported, or included on a fully-distributed basis in the expenditure driver-activity-asset categories, or both?

JEN considers that overheads should be reported and assessed at an aggregated level, as all businesses will appropriately have different approaches to allocating overheads through to activities and assets. Business structures will also play a role in what costs can be reported as direct costs and what costs end up being allocated as indirect. It is therefore important to look at both direct and indirect costs together, rather than in isolation.

For example, a stand-alone electricity distributor is likely to be able to identify a higher proportion of costs as direct, compared to a business that is part of a wider integrated multi-utility group. However, a business that is part of a multi-utility group, will have access to economies of scale and scope. So, it is therefore possible that such a business will report higher overheads than stand-alone businesses, yet have lower total costs. This

would simply reflect that a larger proportion of activities are undertaken across multiple utility business units, rather than being constrained to only that specific electricity network.

Question 63 – How do you think overhead expenditure should be distinguished and assessed? How would you define any overhead expenditure sub-categories?

In the last price review JEN engaged UMS to provide opex benchmarking of it costs, including benchmarking of overheads. UMS is a leading provider of benchmarking analysis. UMS advised that disaggregation of overheads into subcategories is not useful, as such disaggregation is done differently by all businesses, due to different business structures. Overheads should therefore be assessed at an aggregate level and the assessment should always look at both overheads and direct costs holistically. The rationale for this is set out in our answer to question 62 above.

Question 65 – What categorisation of different inputs do you think provides a sufficient understanding of both how input prices may change over time, as well as how input prices may vary across geographical locations?

JEN prudently monitors the input prices in the market, as these are disclosed through procurement processes on a day-to-day basis. Effectively, input prices are set in a competitive market and Jemena uses competitive processes to procure those inputs. It would be unreasonable to expect any given NSP to outperform the market. To some extent, provided the proper competitive processes are followed, the outcome on cost of inputs is largely beyond an NSP's control. This should be taken into account in the forecasting methodology and in the assessment process.

Since past price changes are not indicative of future price changes, JEN does not see how collecting historical information on input prices would be beneficial. In the past, forward-looking models were used to forecast input price escalation and this is appropriate going forward.

It is important that, when dealing with any particular input, the AER uses a forecasting method that is fit for purpose. For example – for some inputs, commodities futures prices can be used, for others consensus expert forecasts may be the best option available, while in some cases the AER may need to start with a commodity future price and adjust for value-added activities that are required to produce the input from the commodity.

Question 66 – Do you consider optimism bias and/or strategic misrepresentation to be a material issue in the cost estimation for non-routine projects? Do you consider downward biases in cost estimation to materially outweigh regulatory incentives to over-estimate expenditure? To what extent do you consider there to be a consistent downwards bias in initial project cost estimates?

JEN considers that optimism bias is a material issue that should be examined. For example, in both the 2006-2010 and 2011-2015 price reviews, the relevant regulator materially cut JEN's capex forecasts. Hindsight has shown that, for 2006-2010, JEN's forecasts were more accurate, and actual spend was closer to JEN's own forecasts, than the regulator's. To date, in the 2011-2015 period, JEN has also found the quantum of required efficient investment is closer to JEN's proposal, than the AER's forecast used in the determination. In the long term, it is unsustainable for a business to continue to be undercompensated for investment that needs to take place. It is therefore important to ensure that the framework addresses optimism bias.

JEN does not consider strategic misrepresentation to be an issue under the current NER regime. Strategic misrepresentation would require a company officer to make a false

statutory declaration to the AER, which is highly unlikely, given the personal and professional implications of such conduct.

Question 67 – What should be our approach to cost estimation risk factors and addressing potential asymmetric estimation risk? Would techniques such as reference class forecasting be beneficial? How would any techniques to address asymmetric cost estimation risk interact with potential incentive schemes (for either opex or capex)?

JEN is not in a position to answer this question without substantial detailed analysis, which cannot be undertaken within the timeframe of this consultation.

Question 68 - Do you think our established approach to assessing debt and equity raising costs remains appropriate? What modifications or alternative techniques would you suggest?

JEN considers that this issue should be addressed in the development of the cost of capital guidelines, due to the important interlinkages with estimating the cost of capital.

Question 69 - Do stakeholders have any in-principle views on how demand forecasts should be derived and assessed?

JEN believes that approaches used in previous price reviews are sufficiently robust to be maintained.

Question 70 - Do you think that the network segments outlined above provide a useful demarcation of the expenditure incurred to address various expenditure drivers? Do you think that there are significant cost differences in building, repairing, or replacing network assets based on region in which the work is being done? What alternative asset type demarcations would be more appropriate?

JEN does not believe that this question can be answered without substantial empirical analysis.

Question 71 - For the purposes of comparative analysis of various expenditure categories, do have any views on how to best control for difference in approaches to cost allocation, capitalisation and outsourcing?

The best control for these issues is ensuring that costs are not disaggregated to an unnecessarily low level. The AER should benchmark disaggregated direct costs (where cost allocation plays a lesser role) and aggregated overheads (prior to them being allocated down to various cost categories).

Question 72 - Do you think our conceptual framework for the assessment of related party contracts is reasonable? What other techniques may be appropriate? Should we apply the same conceptual framework when assessing the efficiency of related party margins on an ex post basis?

JEN does not agree with the AER's conceptual framework, which has yet to be tested through review by the Australian Competition Tribunal. The AER's framework treats the related party contractor as through it is itself a regulated entity, rather than recognising that the contractor participates in a competitive market. JEN has previously proposed an alternative framework, which it believes is more appropriate. The key concept of JEN's proposed framework is whether the costs incurred by the regulated utility (and ultimately by customers) are higher or lower than those that would be incurred if an unrelated party contractor was used.

In short JEN's concerns with the AER's framework stemmed from:

- the failure of this aspect of the proposed framework to recognise that while the relationship between contracting parties, or the conditions under which the contract was negotiated, may mean that the parties had an incentive to agree to an 'artificially inflated' price, a more detailed consideration of the price and terms specified in the contract is required to determine whether the parties acted upon the incentive

- the counterfactual adopted by the AER for the purposes of assessing forecast operating and capital expenditure and its decision to disregard the potential for a contractor to be able to access economies of scale, scope and other efficiencies that would otherwise be unattainable by the DNSP

- the reliance placed by the AER on the EBSS to be used to reward a contractor for efficiencies achieved during the regulatory control period[23]

[23] Jemena Electricity Networks (Vic) Ltd, *Revised regulatory proposal*, 20 July 2010, section 6.3 pp. 73-82.