CitiPower, Powercor Australia and

SA Power Networks

JOINT SUBMISSION TO AER ON DRAFT ANNUAL BENCHMARKING REPORT FOR ELECTRICITY DISTRIBUTION NETWORK SERVICE PROVIDERS

22 August 2014

1 INTRODUCTION

CitiPower, Powercor Australia and SA Power Networks (**the Businesses**) welcome the opportunity to make this submission to the Australian Energy Regulator (**AER**) in response to its Draft Annual Benchmarking Report for Electricity distribution network service providers provided on 5 August 2014 (**Draft report**).

The Businesses commend the AER on the consultative and transparent process it has undertaken over the past 18 months to develop its first Annual Benchmarking Report.

2 REPORT CONTENT

The National Electricity Rules (**NER**) require the AER to publish an Annual Benchmarking Report which describes the relative efficiency of Distribution Network Service Providers (**DNSPs**) over a 12 month period. The NER also requires the AER to have regard to the report in assessing DNSPs' operating and capital expenditure proposals.

The AER's Expenditure Forecast Assessment Guideline (**Guideline**) states it will use both economic benchmarking techniques, including Multilateral Total Factor Productivity (**MTFP**), Data Envelopment Analysis (**DEA**) and econometric modelling, and category level benchmarks to assess DNSPs' expenditure forecasts and potentially to develop alternative operating and capital expenditure forecasts.

Furthermore, the explanatory statement to the Guideline[1] states the AER intends to use econometric models to develop an alternative rate of change and opex forecasts which would then be compared to the DNSPs' forecasts.

The Draft report, however, only contains MTFP and high level partial ratios, hence it is now unclear what the AER will use to develop its proposed alternative rate of change assumptions and opex forecasts.

The Businesses recommend that if the AER still intend to develop DEA and econometric models then it should consult stakeholders on the models prior to using these in regulatory determinations.

The AER is undertaking a separate process for consulting on the development of category level analysis. The Businesses understand the category level analysis will not be included in the final Annual Benchmarking Report for 2014, but may be included in the second report in 2015.

3 LIMITATIONS OF BENCHMARKING

The high level nature of economic benchmarking means that the output variables included in the model are high level aggregate variables which have limitations in terms of the ability to reflect the true key drivers of network costs, for example it is spatial rather than peak demand which drives network investment and changes in aggregate energy throughput has no impact on network costs unless this corresponds with increases in peak demand.

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[1] AER, *Explanatory Statement Expenditure Forecast Assessment Guideline*, November 2013, pages 183, 193, 194.

Additionally, differences in DNSPs' costs and changes over time are often driven by external factors, including operating environment conditions such as geography and terrain, or regulatory obligations. While some of these external uncontrollable factors can be difficult to quantify for inclusion in empirical analysis, they still have significant impacts on the DNSPs' costs. Further, these unmeasured external factors that drive costs are not reflected in changes in measured output variables, and therefore incorrectly appear as reduced productivity.

It is important that the AER acknowledge in the Annual Benchmarking Report the limitations of benchmarking, including the:

- Difficulty in accurately identifying and measuring the true costs driver of a distribution network; and
- Presence of unmeasured uncontrollable operating environment factors may contribute to some of the observed differences between DNSPs and changes in DNSPs' measured productivity over time.

Notwithstanding the limitations, economic benchmarking models can provide the AER with useful high level information regarding the relative performance of DNSPs and how this changes over time. The NER requires the AER to have regard to the Annual Benchmarking Report in its assessment of DNSPs regulatory proposals. The Businesses recommend that the AER use the benchmarking outcomes informatively as a high level sanity check on the efficiency of DNSPs' actual and forecast expenditure.

4 MODEL SPECIFICATION FOR ANNUAL REPORT

The Businesses acknowledge there are many different possible model specifications which can be employed for the purposes of benchmarking. Economic Insights' report[2] and associated modelling demonstrates there are a number of different possible model specifications and the benchmarking outcomes are sensitive to the model specification employed. The sensitivity of benchmarking outcomes to model specification highlights the importance of only using the benchmarking results informatively as a starting point for assessing DNSPs' regulatory proposals and not applying the numerical outcomes deterministically.

Notwithstanding this, it is still very important to choose a model specification that best reflects DNSPs' cost drivers and does not systematically advantage or disadvantage DNSPs that have certain characteristics or operate in particular environments which are beyond management control.

In the Draft report the AER has chosen a model specification which it states does not disadvantage either urban or rural networks, and takes into consideration customer density.

The Businesses are concerned however that the model specification has not fully controlled for differences in customer density across DNSPs. Including both customer numbers and circuit length as outputs in the model does not fully control for customer density, because the model:

- Gives uneven weight to each output variable, 45 per cent weight on customer numbers and only 23 per cent weight on circuit length. This means DNSPs with more customers relative to line length (higher customer density) are going to have a higher output index; and

[2] Economic Insights, Memorandum to AER Opex Team, DNSP MTFP Results, 25 July 2015

- Includes overhead MVA-km and underground MVA-km as input variables. This means a DNSP with low customer density requires more line length to service its customers who are more sparsely located and, further, those lines are designed to operate at higher voltage, and therefore have higher capacity, in order to efficiently transport electricity across longer distances. When these two factors are multiplied together to calculate MVA-km the differences between DNSPs' input index is magnified.

  For example, the total quantity of the overhead MVA-km plus underground MVA-km input variables is 22 times larger for Powercor than CitiPower which is simply because Powercor requires 16 times more line length (overhead plus underground) to service its customers who are more sparsely located and the voltage and therefore capacity of those lines are higher. Approximately 50 per cent of Powercor's lines operates at 22kv with an approximate capacity of 8 MVA, while over 90 per cent of CitiPower's lines are either low voltage or 11kv with approximate capacity of 0.2 and 4 MVA respectively.

Intuitively, customer density is important for capturing the impact of the geographic spread of customers in a DNSP's service area. It is significantly more costly to service customers that are sparsely located.

Consequently, DNSPs with low customer density are disadvantaged relative to DNSPs with high customer density. This is most apparent in the Draft report totex and capex partial MTFP results as rural DNSPs generally appear less efficient than their urban counterparts in the same State.

The Businesses therefore recommend the AER undertake a second stage adjustment to the raw MTFP results to account for customer density. This process would involve:

- Estimating the coefficient on customer density by undertaking a regression of the raw MTFP scores against customer density for all DNSPs and years in the sample;
- Adjusting the raw MTFP scores for the coefficient on customer density multiplied by the difference between the sample average customer density and the respective DNSP's actual customer density.

An example of this second stage adjustment process is provided in Economic Insights, *International Benchmarking of Postal Service Productivity,* June 2009.[3]

It is recommended that the adjustment is undertaken and applied for totex, capex and opex MTFP.

[3] Available at: http://www.economicinsights.com.au/reports/Economic_Insights_Benchmarking_Postal_Systems_5Jun2009.pdf

5 DECLINING PRODUCTIVITY

The Draft report suggests that across the industry, productivity has been declining over time. The Businesses emphasise this outcome should not be inferred by the AER as declining efficiency.

As noted by Pacific Economic Group (**PEG**):[4]

> *"A negative productivity trend in a utility sector is not necessarily evidence that efficiency is declining in that sector. A variety of factors can cause input quantity to grow more rapidly than output quantity and thereby lead to negative, measured productivity trends."*

Observing declining productivity in MTFP model results can be a reflection of a number of factors including:

- Changes in operating environment that are independent of model outputs. For example changes in regulatory obligations which affect the way networks are managed and lead to increased input costs but do not lead to additional outputs. Some examples include: improvements in health and safety management; increased compliance reporting obligations; and the increased requirements relating to vegetation management. It is clear from the MTFP charts in the Draft report the requirement for Victorian DNSPs to shift to literal compliance with the vegetation clearance obligations has contributed to declining opex partial productivity in recent years.
- Other increases in input costs that are not reflected in model outputs. For example, actual labour cost growth for the industry, which is predominately determined through rigorously negotiated Enterprise Bargaining Agreements (which reflect labour market shortages for specialised electrical and engineering skills) has consistently exceeded the Electricity Gas Water and Waste (**EGWW**) Labour Price Index (**LPI**) which is used in the MTFP model as the price of labour. The divergence between actual labour cost growth and the EGWW LPI is a contributing factor to the perceived decline in industry productivity over time.
- Slow output growth which is being observed universally in advanced western economies and is beyond the control of DNSPs. In particular, energy throughput has been declining for the industry in aggregate since 2010. Reductions in system-wide energy throughput do not lead to reductions in DNSP's costs. DNSPs must provide and maintain the necessary capacity to meet peak demand location by location on the network rather than average demand. Additionally, the inclusion of maximum ratcheted demand as an output variable means that the productivity trends are influenced by the year in which peak demand on the network occurred. Productivity will appear higher in the year the peak demand occurs and then flatten off in later years.
- Changes in asset health and condition over time can require increased maintenance opex with no change in the physical measure of the capital stock and no change in the quantity of measured outputs. This contributes to perceived negative productivity over time.
- As noted by Economic Insights 2014, '*…the civil construction–oriented nature of distribution capital means the industry has gained less from computerisation cost savings than have industries which use a higher proportion of machinery and equipment instead of structures.'*[5]

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[4] PEG, *Review of Economic Insights Report: Electricity Distribution Productivity Analysis: 1996-2013*, August 2014.

[5] Economic Insights, Electricity Distribution Industry Analysis, 1996-2013, June 2014.

6 DATA ERRORS

To ensure the accuracy of any benchmarking analysis, economic benchmarking or category analysis, it is vital the AER:

- Double checks all of the data is being correctly sourced from each DNSP's regulatory information notice; and
- Ensure the basis on which the data has been provided is comparable across DNSPs and is appropriate for comparative analysis.

For example, the Businesses have identified that figures 5 and 6 of the Draft report are based on interruptions data inclusive of major event days, however the footnote states the data is exclusive of major event days.

Additionally, the Businesses have identified numerous errors and missing data in the category analysis data recently provided for DNSPs to review and comment. Whilst these observations do not directly impact on the AER's economic benchmarking analysis, it highlights a need for the AER to undertake appropriate quality checks on the data used for its benchmarking analysis.

7 RECOMMENDATIONS

The Businesses recommend for the final 2014 Annual Benchmarking Report the AER:

- Adjust the totex, opex and capex MTFP results for customer density;
- Acknowledge the limitations of benchmarking, including noting that further in-depth analysis of individual DNSPs' circumstances is necessary before making definitive judgements on DNSPs' relative efficiency;
- Acknowledge that declining productivity outcomes over time do not necessarily reflect a reduction in efficiency as there are a number of factors which cannot be controlled for in the analysis, in particular changing regulatory obligations which increase input costs without changing output volumes.
- Undertakes a quality check of the data used in the benchmarking analysis, if not done already.

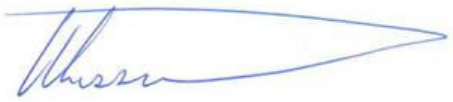
8 CONCLUDING REMARKS

The Businesses appreciate the opportunity to make this submission to the AER in response to the Draft Report and look forward to the publication of the final report on 30 September 2014.

The Businesses encourage the AER to continue to engage with stakeholders throughout the development of its economic benchmarking and category level analysis, including explaining whether it will be using alternative models to those consulted on for the purposes of assessing DNSP's regulatory proposals.

If you have any queries regarding this submission please do not hesitate to contact Megan Willcox on 03 9236 7048 or mwillcox@powercor.com.au.

Yours sincerely



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