Ref: C2076156

11 October 2017

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Dear Mr Weir

Response to 'Draft Annual Benchmarking Report, Electricity distribution network service providers, November 2017'

Essential Energy appreciates the opportunity to provide comments on the AER's 2017 Draft Annual Benchmarking Report (the 'draft report' or 'ABR').

Benchmarking is considered by Essential Energy as a valuable tool that can provide meaningful insights into the relative performance of network businesses. However, benchmarking is also a tool that must be 'sense checked' using a bottom-up approach, to ensure that the selected model parameters are representative of the actual business being reviewed.

The econometric benchmarking modelling fails to adequately consider customer density or cost per kilometre of line. More specifically, placing a large weighting on customer numbers as a driver of costs materially disadvantages distributors providing services to rural, regional and remote customers who are required to operate and maintain a disproportionately high amount of assets to provide services to relatively few customers. Less than five customers are supplied per kilometre of line for Essential Energy, meaning that the primary cost drivers are the number of assets and the size of the area in which those assets are located. Examples of asset related costs that are independent of the number of customers supplied include asset inspections, asset defect rectification, and vegetation management, and clearly the underlying capital cost of the network has a material impact.

Essential Energy notes the improvements in the Draft 2017 Annual Benchmarking Report but is also concerned at the significant repetition of approach and the findings of the 2016 report. We remain concerned that the AER continues to draw conclusions on the relative efficiency of DNSPs based on a predominant focus on cost per customer, and suggests the analysis and benchmarking tools should be further expanded to ensure customer density is adequately reflected in outcomes.

Essential Energy's view is that further development of the AER's benchmarking approach is required in response to the findings of the Australian Competition Tribunal and the Federal Court of Australia for the NSW and ACT 2014-19 distribution determinations. As such, Essential Energy would prefer to see further refinement of the benchmarking processes and data sets to encompass a more comprehensive approach that is supported by bottom up assessments that take into account logical drivers of cost.

Initiatives with the potential to enhance subsequent benchmarking reports include:

- The consideration and inclusion of all operating environment factors;
- The selection of relevant predominant cost drivers for different DNSPs. For example, customer numbers are not a predominant driver for a rural DNSP. Currently, relatively small changes in the input weightings, for example circuit length can drastically alter the benchmark relative positions;
- Less reliance on international datasets which will allow greater use of the significant data sets available to the AER through its Regulatory Information Notice (RIN) templates;
- The undertaking of additional (Partial Performance Indicator) PPI analysis to highlight the diversity between DNSPs. Whilst in theory DNSPs can be benchmarked, the differences in the scale, network characteristics and density of Australian DNSPs makes true comparisons difficult when customer density is the only measure against which DNSPs are compared;
- Trend lines and correlation coefficients (R^2) for the current year and the prior year should be added to the PPI figures. The use of valid benchmarking approaches in the regulatory determination process should see the R^2 value getting closer to 1 over time[1];
- Better explanations, that provide context and explanation, for the findings in the report – especially in relation to rural DNSPs. Wording suggestions for this 2017 report are contained in Attachment 1 to this letter;
- Additional benchmarking measures, such as 'Opex per kilometre of line' and 'Repex as a portion of RAB';
- Consultation with stakeholders to identify ways to improve the ABR and expand its scope, including the use of other benchmarking models and datasets;
- Independent peer reviews and consultation with stakeholders of the model outcomes.

Expanding the approach to include these factors would give validity to the difficult exercise of benchmarking the small sample of heterogeneous Australian DNSPs using econometric benchmarking techniques. These points are addressed in more detail in Attachment 2.

It is recognised that it will take time to develop a dataset and benchmarking approach that is of sufficient quality that it may reliably inform stakeholders of the relative efficiency of Australian DNSPs. In the absence of reliable benchmarking between DNSPs we consider a more prudent approach to benchmarking in the current context is to benchmark individual businesses over time. This would avoid the over-reliance on comparative benchmarks that are not sufficiently well developed to form views as to a firm's relative efficiency.

Essential Energy also raises some data queries in Attachment 3.

If you would like to discuss this response further please contact Natalie Lindsay on (02) 6589 8419.

Yours sincerely

Gary Humphreys
Executive General Manager Regulation & Innovation

[1] Whilst in the 2014 ABR the AER noted that it did not include trend lines as that would assume a certain relationship between inputs and outputs that is unknown and could therefore be misleading, by interpreting the results in the ABR as it does, the AER is implicitly implying a relationship

Attachment 1 – Suggested improvements to the draft report

Executive Summary and sections 1 and 2

The Executive Summary and Sections 1 and 2 are blank in the draft report. Prior year's drafts of the report have included these sections. Given many stakeholders may only read these sections of the report, the wording in these sections is important. We would appreciate the opportunity to comment on these sections prior to the publication of the final benchmarking report.

Section 3.1.1 Industry MTFP

- In its present form, this section implies that DNSPs continued to spend money through to 2015 in the face of declining demand, when there have in fact been external influences that have contributed to this divergence. As such, this section should include a summary of the external drivers (outside of DNSPs control) that have contributed to historical declining outputs and inclining inputs, for example:
  - solar penetration (aided by generous government rebates) and its relative non-impact on peak demand
  - political and regulatory pressures, such as NSW' licence conditions and Victoria's Black Saturday vegetation management changes
- We also suggest the addition of the following statement:

  "Historically, the decline may also be driven by the fact that the output variables used in the model may not necessarily reflect the current cost drivers of network services. Energy throughput and demand were growing incrementally in the earlier years and this may have led to a greater correlation in output change and input change than now exists for the industry."

Section 3.1.2 MTFP by state

- This section could be improved by summarising the major external factors that have impacted the historical MTFP by State. As above, these would include solar penetration and other regulatory and political influences which would be available in each DNSPs regulatory submission. The current wording merely describe Figure 9 and provides minimal context or explanation of the drivers influencing the results.

Section 3.1.3 Individual DNSP MTFP results

- As above, the current wording provides minimal context or explanation of the drivers influencing the results. An important observation is made above Figure 10 which mentions that operating environment factors (OEFs) are not captured by the MTFP model and could explain the MTFP result. This important statement must also be mentioned in the Executive Summary of the report.

Section 3.1.4 Observations for 2015-16

- Table 2 in this section should also present the five-year rolling average MTFP result. This would align the averaging period with:
  - The data in Table 3 of section 4.2 of the report
  - The average inputs and outputs presented in section B of the report
  - The PPI analysis presented in section C of the draft; and
  - The length of regulatory determinations.

Section 3.2.2 Econometric opex modelling

- Figure 13 is using the average from the 2006-16 period. The length of this period advantages DNSPs who may have been underspending in earlier years and disadvantages DNSPs who may have made savings in recent years. Instead, a five-year rolling average should be used to align with the length of a regulatory period and the other analysis presented in the ABR (as raised in our previous submission point above). Using a five-year average will also ensure that averages are better aligned with more recent expenditure levels.
- This section should specify the ratios of inputs to outputs used in each model. Whilst the ratios are included in the Economic Insights memo, they are important enough to be included in the ABR itself.

Section 4 Interpreting the benchmarking results

- The inclusion of this section compared to prior year's reports is welcomed.
- We suggest the inclusion of additional charts relating to external influences, for example the growth of solar PV by state (or DNSP) and its relationship to peak demand included here.

B Inputs and outputs

B.1.1 Customer numbers

- This output measure would benefit from the inclusion of the following statement:

  "Whilst customer numbers are a driver of DNSP services, the number of assets required to service those customers is equally important. On this basis, urban distributors who can make use of limited poles to run additional circuits are advantaged, whilst rural distributors with very low customer density will be disadvantaged as they necessarily require many more assets (and time) to service very few customers. So, whilst customer numbers may be considered an output, the costs of installing and providing on-going services to those customers (that is the number and spread of assets) plays an equal role. The weighting given to these two factors will necessarily impact the benchmarking results for different types (urban versus rural) of DNSP."

B.1.2 Line length

- This heading should be rephrased as "Circuit line length" to be consistent with the heading on page 48.
- This output measure should also include the following statement after the second paragraph:

  "This measure will advantage urban distributors who run multiple circuits on the same poles (that is, this measure will make the size of an urban distributors network appear larger than it really is), and disadvantage rural distributors who have fewer multiple circuits and must also run lines, often over very long distances, to service just a few customers."

- The third paragraph is misleading in its interpretation of system capacity. We suggest the following rewording (additions/adjustments in **bold type**):

  *"In economic benchmarking metrics and PPI metrics, we use circuit length because, in addition to measuring network size, it also approximates the line length dimension of system capacity. System capacity **may represent** the amount of network a DNSP must install and maintain to supply consumers with the quantity of electricity demanded at the places where they are located. **However, for large, rural DNSPs the amount of network that must be installed and maintained to supply consumers has a much greater correlation with customer density and network sparsity than customer demand or system capacity.***

Figure 2 shows each DNSP's circuit length, on average, over the five years from 2012 to 2016. ***Further graphical representations of customer density for DNSPs is contained in section D of this report.****"*

B.2 Inputs

> The second paragraph in this section (where physical measures are mentioned) should include the following statement:

"This measure will disadvantage rural distributors as:

- *They may be required to install asset components with a greater capacity (and at greater cost) than required demand to account for the voltage drop that occurs as electricity travels vast distances; and*
- *The minimum size of assets available in the market may exceed the actual level required by customers. This is especially the case in areas with very sparse populations."*

C. Partial performance indicators

> The third paragraph ends with words explaining why customer density has been used. We have suggested some graphics that should be included in the report highlighting customer density by DNSP – see our comments relating to section D below. As such, we also suggest the following sentence be added to the end of this paragraph:

"The network maps shown in section D of this report may help readers visualise the customer density impacts, particularly for rural DNSPs".

> Rather than just stating that "per customer" metrics disadvantage rural DNSPs and "per km" metrics are more favourable to them and then selecting "customer density" as the solution in the third paragraph, it would be more useful to readers of the report if the ABR presented each of the four graphs in this section **against each of these three measures**. This would provide a broader range of benchmarking analysis for stakeholders to consider and allow readers to make their own interpretation using the various measures.

Such an expansion of the approach would be particularly beneficial given the diversity of the DNSPs being compared. For example, CitiPower services 327,000 customers in a 157km^2 area whereas Essential Energy services 867,000 customers (1.6 times more than CitiPower) in a 737,000km^2 area (4,693 times larger than CitiPower). We do not believe it is possible to benchmark these two entities appropriately using only the one measure of customer density, especially given that customer density is a function of line length and customer numbers that fails to take other spatial factors and their associated costs into account - for example the number of buildings/depots required and additional time spent travelling to and from network locations.

C.3 Total cost per customer

> We suggest the following paragraph be added to the first paragraph in this section:

"As previously mentioned, large rural DNSPs will be disadvantaged using the per customer measure as they operate and maintain more assets on a per customer basis. This is coupled with the fact they are often required to install asset components with a greater capacity (and at greater cost) than required demand to account for the voltage drop that occurs as electricity travels vast distances and that the minimum size of assets available in the market may exceed the actual level required by their customers. This means that customer numbers are not the most significant output

for rural distributors for whom 60 to 70 per cent of operating costs are directly related to the number of assets[2]"

- The second paragraph under Figure 6 implies that Ergon and Essential Energy spend almost double the cost per customer of other relatively low customer density DNSPs. If more assets are required to serve fewer customers (as is the case with very low customer density networks) the costs to serve these customer is not linear as customer density reduces. In simplistic terms, Ergon Energy and Essential Energy have roughly half the customer density of South Australia Power Networks and Powercor but double the cost per customer – put another way, twice as many assets are needed to serve customers in Essential Energy's area compared to SAPN and Powercor which means twice the cost when converted to a per customer basis.

  We believe this needs more explanation and suggest the following additional text:

  "This may be explained by the fact that their customer density is half that of these other relatively low customer density DNSPs and that a higher customer density is required to achieve true economies of scale. In addition, a larger number of assets is likely required to service their customers, as well as the need to often install more expensive assets based on market availability and the need to accommodate for voltage drops. To put this in context, CitiPower spends about $580 per customer to service 102 customers per km^2, where Essential Energy spends about $1,100 to service less than 5 customers per km^2.

  Further analysis and graphical representations of customer density for DNSPs is contained in section D of this report."

C.3 Total cost per km of circuit line length

- We do not agree with the second sentence in the first paragraph that says, "*This measure favours DNSPs with lower customer density as it spreads their costs over a longer network*." Whilst it is true that the use of circuit length will equate to a longer network over which costs may be spread, this statement applies equally to both rural AND urban distributors. In fact, it is arguable that it favours urban distributors even more than rural distributors given that their density allows for the running of many more circuits along the same set of poles. We would suggest the deletion of this sentence.
- As previously suggested, this section including the accompanying Figure E3, should present the 'total cost per customer', the 'total cost per kilometre of circuit line length' and the 'total cost against customer density'.
- In addition, this section should include analysis using **route line length** instead of circuit length especially given that route line length plotted against customer density has the highest correlation of all the PPI analysis.

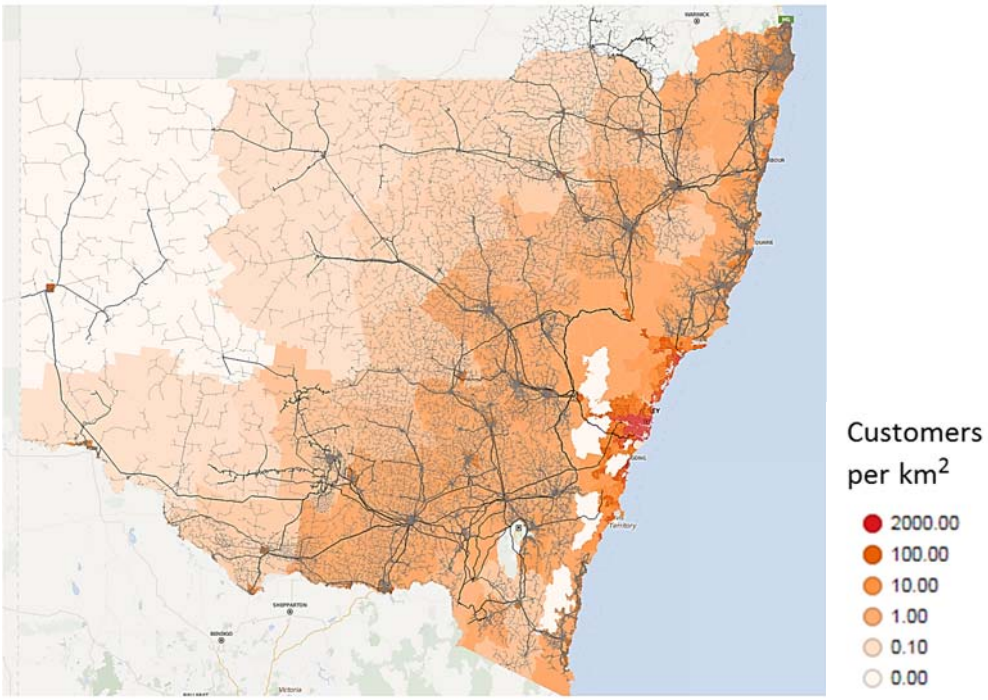
C.4 Partial Performance Indicator Trends by State

- We do not see any benefit in the addition of this section to the report as it fails to again consider the external forces at play within each state, as well as the OEFs inherent within each DNSP that render such straight forward comparisons meaningless.
- Given Victoria has at least 50 per cent more customers per kilometre than the other states and the ACT has more than double the customer density of Victoria, it does not seem a valid statement to say that 'PPIs on a state basis provides less variability in customer density'. We would suggest deleting this section, especially as the previous section (C.3) uses coloured dots from which state results can be inferred.

[2] Relationship between Opex and Customer Density for Sparse Rural Networks; EMCa April 2015; pg.1

D. Map of the National Electricity Market

The map in this section is not particularly useful to readers as it is missing network coverage and population density. Providing such a map for each DNSP would provide a more meaningful visual to readers that may help explain some of the relative differences between DNSPs. An example, based on Local Government Area census population data, is shown below for Essential Energy's network area. NB. This map currently includes Transgrid's network (for which Essential Energy provides emergency response capability in remote locations), but this could be removed if required.



Attachment 2 – Benchmarking enhancements

Improving and expanding the benchmarking approach

- Additional models should be created to better accommodate the inherent variations between the DNSPs. For example:
  - It is not possible that the same mix of inputs and outputs that would apply to a very dense urban network (CitiPower) could also apply to a very sparse rural operator (Essential Energy).
  - The focus on customers as a key output measure is also harsh for rural operators for whom, even if customer numbers halved, would see very little decrease in their costs. This fact was supported by the AER commissioned EMCa report that clearly stated that 60 to 70 per cent of a rural operator's operating costs are directly related to their assets.[3] As a rural network becomes less dense, line length (assets) becomes a more dominant cost driver, yet such weightings are not considered in the AER efficiency models.
- The selection of inputs and outputs for econometric modelling will always favour some providers and induce bias against others. Slight changes in the model specification provide significantly different results and rankings.For example, under each of the three econometric models used, Essential Energy's AER determined base year operating expenditure is significantly different.
- Similarly, MTFP and MPFP measures can produce materially different results through minor adjustments to the inputs measured or the weighting of these inputs. This suggests a level of subjectivity in the model specification that could be addressed by using multiple models with varying input and output specifications and weightings or at least by treating the results with an appropriate level of caution. Any model that relies on total opex or capex that has not been normalised for differences (e.g. CAM, capitalisation, presence of subtransmission assets, etc.) cannot produce results that are comparable or meaningful.
- The MTFP model allows the AER to measure a DNSP's efficiency to the extent that the model specification reflect the actual inputs and outputs associated with the DNSP's services. The drivers of network costs have changed over the time horizon of the modelling. Changes in expenditure driven by new legal obligations, ageing assets or vegetation management are not linked to increases in energy throughput, customer numbers, ratcheted peak demand, or circuit length. Therefore, the model assumes that these increased costs are a decline in productivity as the specified variables do not accurately capture the drivers of these costs.
- We recommend more robust consideration be given to selection of input and output specifications which more closely align to the tasks a DNSP is obliged to perform and the services it ultimately provides to customers. We also recommend increased transparency as to the statistical and qualitative criteria used to select the preferred specification. We consider that assumptions used to select a specification should be explained in further detail, making particular reference as to how relative advantages and disadvantages have been considered – we have made some suggested wording changes in Attachment 1 to this letter.
- We understand that the benchmarking models can now operate without the inclusion of international data. This will allow the AER to expand the benchmarking variables to more closely align with the cost drivers of different DNSP businesses.
- The AER's top down techniques ignore trade-offs between operating and capital expenditures. The effect in the AER's analysis is that moving operating expenditure to capital expenditure results in a perceived efficiency gain.
- Essential Energy, operating as part of Networks NSW, provided extensive commentary on the AER's approach to benchmarking during the Better Regulation consultation process, the NSW/ACT 2014-19 distribution determinations and in response to the 2014 draft ABR. This material comprised numerous expert reports reviewing the AER's dataset, methodologies and application of benchmarking in detail. We refer the AER to this substantive body of material as it provides meaningful input as to how the AER could refine its approach over time.

[3] Relationship between Opex and Customer Density for Sparse Rural Networks; EMCa April 2015; pg.1

- We also note that the AER's benchmarking approach more generally was subject to merits review with the Australian Competition Tribunal and judicial review by the Federal Court of Australia as part of the NSW/ACT appeal of the 2014-19 distribution determinations. We expect that future benchmarking reports will reflect the directions and feedback by both the Australian Competition Tribunal and Federal Court as appropriate.

Undertaking consultation

- The limited time provided for responding to the draft ABR does not allow sufficient time to review the extensive data provided for errors, anomalies, areas for further investigation or to propose alternative approaches.
- We would like to see the AER audit the RIN data provided to understand whether there is a consistent application of the AER's guidelines and instructions. Whilst DNSPs provide audited data there are numerous, legitimate approaches to classifying and accounting for categories of costs and complying with the AER's instructions. The AER should seek to understand whether the application of each DNSPs' respective CAM, various capitalisation policies and estimation methods result in material differences in the data. These issues should be addressed over time to ensure that any benchmarking conducted relies on data that has been prepared on a consistent basis.
- We would like to see the AER adopt a continuous improvement approach to benchmarking. This process would include discussions with Stakeholders, DNSPs, consultants and academics to refine the benchmarking approach and techniques. We would welcome the opportunity to participate in recurrent, regular workshops to help develop the AER's dataset, review and debate the selection of model variables and benchmarking methodology and to better understand and explain the results. The AER could compliment this with further written consultation to allow all stakeholders to respond to the issues raised in the workshops.

Compliance with the Rules

- A time series can provide a useful insight into a DNSPs performance and identify trends or one-off movements for further investigation. However, the use of an averaging period is inherently subjective and has the potential to conceal the current performance of a business. This is relevant to businesses that have improved their operating performance during the period, and to businesses that have increased their costs over time for compliance or other reasons.
- As such, we recommend that the report primarily focus on the most recent 12-month period as intended by the Rules. This information could be complimented by presenting average results side by side to provide a full view of a DNSPs current and historic performance.
- We also suggest that all averages used in the ABR be a five-year rolling average consistent with the length of a regulatory period and most of the tables and figures in the draft report.

Providing additional explanation

- If the AER wishes to include a view as to relative efficiency of DNSPs in its ABR, Essential Energy believe the ABR would benefit from further explanation of the relevance of model inputs and outputs for each DNSP and analysing data inputs to ensure accuracy and comparability across DNSPs. Furthermore, any results should be further analysed and interrogated to understand whether they are the result of relative efficiency, the operational and environmental differences between DNSPs or a combination of both.
- In its current form, the judgements drawn in the draft report may mislead stakeholders. We have therefore proposed some wording suggestions in Attachment 1 to this letter as clarification to some of these judgements.

Attachment 3 – Data queries

Not all asset categories from the Economic Benchmarking RAB sheet are included in the RAB composition tables in the DNSP AUC sheet

- The DNSP AUC sheet contains a RAB breakdown. The asset category related to “Meters” from the Economic Benchmarking RAB sheet is not included in any of the categories shown – we would expect it to be included as part of “Other” assets. This means that the “Other” asset category is understated as percentage of the RAB and the remaining asset category percentages are overstated.
- The 2006 through to 2015 data included the asset category “Easements” in the “Overhead 33kV and above” asset category. This has not been included in the 2016 data for Essential Energy. This means the historical data is about $100M overstated in each year.