Ergon Energy Corporation Limited

Submission on the *Draft Annual Benchmarking Report Electricity Distribution Network Service Providers November 2016*

Australian Energy Regulator

17 October 2016

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1. INTRODUCTION

Ergon Energy Corporation Limited (Ergon Energy) welcomes the opportunity to provide comment to the Australian Energy Regulator (AER) on its *Draft Annual Benchmarking Report, Electricity Distribution Network Service Providers – November 2016 (2016 Draft Annual Benchmarking Report)*. This submission is provided by Ergon Energy in its capacity as a Distribution Network Service Provider (DNSP) in Queensland.

It is noted that in developing its Draft Annual Benchmarking Report the AER has been reviewing and undertaking analysis of the 2014-15 regulatory year responses to the Economic Benchmarking Regulatory Information Notice (EB RIN) issued. Answers to questions raised by the AER as well as any other anomalies or errors relevant to Ergon Energy's 2014-15 EB RIN have been provided in this response. Over and above this, Ergon Energy has the following key areas of concern:

- there has been no significant evolution or refinement of the AER's approach despite significant feedback and commentary provided by NSPs and their consultants;
- views as to the relative efficiency of DNSPs continue to be formed on the basis of simplistic, limited benchmarking tools with insufficient analysis and consideration of operating environment factors; and
- network design, and changes in SAIDI and as well as accounting practices can be significant influences on year to year variations in the AER model productivity results. Data quality and other anomalies are also important considerations.

Generally, Ergon Energy continues to advocate benchmarking as a valuable tool that can provide insight to the relative performance of businesses. However, it is noted that Ergon Energy may never be 'perceived as a "high" performer under the AER's current model specifications due to the inherent physical challenges of operating a rural network over a large area. Whatever changes Ergon Energy makes to (reduce) Opex, and regardless of any benefit of circuit length in the output, our low customer numbers, high SAIDI and higher total capacity of network required to transport electricity over long distances will continue to bias the outturn benchmarking results under the AER's current approach. These physical barriers to "high" performance must be considered in any conclusions made from analysis such as that in the AER's draft Annual Benchmarking Report.

Furthermore, development of a mature dataset and an approach that is of sufficient quality to reliably inform stakeholders of the relative efficiency of DNSPs, takes much time and refinement. Alternative approaches derived via (ongoing) engagement with a broad section of the industry - both service providers and consultants/academics – must be considered by the AER in this regard.

Should the AER require, Ergon Energy is available to discuss or provide further detail regarding the issues raised herein.

2. COMMENTS ON DRAFT REPORT

Ergon Energy makes the following comments relative to the AER's 2016 Draft Annual Benchmarking Report, associated memorandum from the AER's consultant (Economic Insights (EI)) and provided (xls) workbooks. In the time available, where Ergon Energy has identified anomalies and/or errors in the data, these have also been raised herein.

2.1. Econometric Approach and Specifications

It is noted that the AER's draft report and approach are analogous to prior years and the same benchmarking techniques and model specifications continue to be employed. Partial Productivity Indicators (PPIs) are used to support the results of Multilateral Total Factor Productivity (MTFP) and Multilateral Partial Factor Productivity (MPFP) indices (for both Capital and Operating) and the selected inputs and outputs remain unchanged[1] albeit, information has been updated for most recently received DNSP data (2014-15).

Material matters identified by DNSPs and their consultants appear to have not been addressed and no notable development or evolution in the AER's benchmarking has occurred. The AER continues to focus on MTFP as the primary technique[2] to compare '*DNSP's overall efficiency at providing electricity services'* and *'track changes in efficiency over time'.*

The AER notes (in the draft Report) that it continues to invest in refining its benchmarking techniques, given they form a critical part of the exercise in assessing the efficiency of DNSPs' regulatory proposals during Determinations. However, most of the AER's consultation on benchmarking occurred during the development of its Expenditure Forecast Assessment Guideline (EFAG) under the Better Regulation Program.

An appropriate benchmarking regime should employ an ongoing and rigorous testing and evaluation program. The AER should refer to the substantive body of material provided to date but also, be open to considering alternatives by engagement with a broad(er) section of the industry - both service providers and consultants/academics.

2.2. Econometric Modelling

The types of productivity comparatives and gaps inferred by the AER's draft benchmarking report relies on the model specifications being correct and the input and output variables being truly reflective of the inputs and outputs associated with electricity services. Yet, the drivers of cost for networks change over time. Given the AER's model data now dates back up to ten years and the drivers of cost are very different to what they were at that time, it is appropriate that the assumptions underlying the selection of model variables are rigorously reviewed and debated broadly.

Of note, considering that the physical assets currently installed in each network is an attribute of the design which has been shaped over many decades and is not something that is within management control to change materially; that the customer numbers and the demand and consumption they place on the network are largely organic; and that reliability is largely inherent to

[1] There is a noted change in use of non–coincident maximum demand as the basis for forming the ratcheted maximum demand instead of coincident maximum demand. The impact (if any) of this is still being investigated.
[2] Other regulators combine the outcomes of many models and different techniques in an attempt to eliminate singular model bias.

the network design legacy, location and environment, the only MTFP model variable that management have any substantial amount of control over is operating expenditure (refer section 2.3.2.3., Operating Expenditure).

Analysis suggests that the level of opex required for Ergon Energy to reach upper levels of the AER's ranking table of MTFP results is unrealistic. Furthermore, many have highlighted that the AER's top down techniques ignore the possibilities of capex and opex trade-offs[3]. Analysis of the relationship between the AER's MTFP scores and the proportion of total expenditure that opex constitutes for each network, reveals an apparent relationship between higher opex ratios and low MTFP scores.

Ergon Energy questions if the AER's modelling presents a true reflection of the absolute and relative productivity performance of DNSPs. An overall assumption (for example) that any increase in opex and/or the quantity and rating of physical assets (inputs) should be matched by a proportionate increase in energy throughput, customer numbers, ratcheted peak demand, circuit length and/or decrease in customer minutes off supply (outputs) is debatable. Increases in opex driven (for example) by new requirements, ageing assets and vegetation management, will not in itself result in an increase in customer number, circuit length, demand etc. The driver of these increased costs goes undetected by any MTFP model and is perceived to be a decline in productivity.

Ergon Energy and its consultants note that an apparent decline in perceived industry productivity could just as likely be driven by the unsuitability of the AER's output variables, in reflecting the current cost drivers of network services. Furthermore, in earlier years when the output variables (energy and demand in particular) were increasing incrementally, the greater correlation in output change and input change can be misinterpreted as a stronger causal relationship than exists in reality. Coincidental small, incremental increases in large numbers should not be mistaken for a causal relationship.

Conclusions that '*Productivity is declining because the resources used to maintain, replace and augment the networks are increasing at a greater rate than the demand for electricity network services'* assume that the selected output variables are appropriate proxies for the costs incurred by a DNSP, and, that the relationship between changes in costs and the output variables in the units of measurement used is appropriate. This is explored further in comments made relative to 2014-15 performance, in later sections, but for example, the multiplicative nature of kilometres of high voltage (HV) assets and substantially higher (capacity) ratings can serve to skew results - small amounts of HV assets can drive significantly higher input index values. The inclusion of reliability using customer minutes off supply has similar issues, with large rural networks most affected by this issue (refer section 2.3.2.4, Reliability).

The AER also infers that the "productivity gap" in TFP analysis can be used as a measure of comparison of "most" and "least" productive DNSPs. However, many argue DNSPs' positioning on the ranks has more to do with model specification issues and bias raised, than any relative productivity performance. The AER attempts to overcome the influence of environmental factors with post-modelling adjustments[4]. However, the comparison of performance between businesses

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[3] capex is not included in the model specification and the capitalisation of opex does not impact the capital stock variables that are included in the MTFP model

[4] other regulators normalise costs prior to modelling (i.e. remove non-comparable costs from the inputs)

using MTFP models (which cannot account for such factors) demonstrates an inherent bias and alternative models should be tested and analysed.

2.3. Economic Benchmarking Data Set

2.3.1. General Concerns

Ergon Energy firstly notes that (as per prior years) the Draft Annual Benchmarking Report does not appear to meet the requirements of National Electricity Rules (NER) clause 6.27 which specifically requires the AER to publish an annual report which covers a 12 month period. Importantly, whilst a time series can be of value, as noted above, a DNSP's position can change significantly over time and the most recent results of a business should not be skewed by expenditure outcomes in previous regulatory years (or regulatory periods). This can produce misleading results as to what a particular businesses' current position is relative to its peers.

2.3.2. Inputs and outputs

Two of the single biggest drivers of bias in the AER's model specification remain the design differences between networks and accounting practice differences between firms. The latter is highlighted somewhat in commentary provided in section 2.3.2.2 Operating Expenditure, while the network design issue is explored further below. Changes in SAIDI and accounting practices (cost allocation methodologies; capitalisation policies) for a DNSP can also be cited as significant influences on year to year variation in the AER model productivity results. The fixing of errors or recasting of data are also being addressed by DNSPs and the influence of data quality, particularly over time, should be analysed.

The greatest challenge in attempting to benchmark is to derive a data set that fairly and even-handedly allows comparisons between DNSPs that are not operating in the same environment. Variations in data quality and approaches between networks, and variation over time for individual networks, casts doubt over the AER's ability to infer productivity between networks and over time, with confidence.

2.3.2.1. Network Design

As an input to its benchmarking analysis, the AER considers capital stock (assets) as the physical assets DNSPs invest in to replace, upgrade or expand their networks. However, one of the most significant differences between networks in the various jurisdictions in Australia is the legacy of the original engineering design of the transmission and distribution networks.

Specifically, networks in QLD, NSW and ACT have considerable proportions of very high voltage assets (110, 132 and 220 kV) in their network, whereas these assets are generally managed by the transmission networks in other jurisdictions. The use of MVA km of line assets (underground and overhead) as input variables in the AER's MTFP model discriminates against those networks with high voltage assets in their network, with the multiplicative nature of the variable (km times average MVA rating) exacerbating the problem due to the exponential nature of MVA rating increases with voltage increases. It should be noted other regulators[5] remove the costs associated with these extra high voltage assets from input data, whereas the AER makes adjustments in its econometric analysis using environmental factors.

[5] Ofgem, the UK regulator, and the Ontario Energy Board (i.e. a jurisdiction whose data the AER relies upon for its own benchmarking)

Feedback on the impact of this anomaly has previously been provided to the AER. In response, the AER has split the line asset variables into below 33kV and 33kV and above. However, this does not mitigate the impact in the MTFP analysis of the existence of those assets in some networks and may underestimate the contribution of these assets to low efficiency scores being produced.

2.3.2.2. Circuit Capacity and Lengths

Relevant to the above discussion - over the last regulatory period, Ergon Energy has made a concerted effort to improve the quality of its data. This has involved both the introduction of new corporate systems and extensive data cleansing, and resulted in changes in some measures over time, though data limitations have meant accurate recasting of historical information is not always possible.

Circuit capacities and lengths are two such Economic Benchmarking RIN variables affected by data cleansing and renewal. Such variability has been noticed by the AER in its analysis, who has questioned why the capacity of Ergon Energy's overhead sub transmission lines (i.e., 33kV and over) (DPA0307 to DPA0312) fell significantly in 2013-14 but returned to its 2012-13 level again, in 2014-15.

Ergon Energy is now close to having a data set which can be used to accurately baseline its current performance and be used to judge future improvements. The movements or trends do not specifically reveal changes in efficiency or productivity by Ergon Energy in carrying out its core network services. Importantly, changes in the annual values reflect a move to higher quality of data through better systems and more granulation of detail available, or alternatively, corrections to data provided.

For example, Ergon Energy found a discrepancy in its historical treatment of the vertical sag component for calculation of circuit length in Template 3.5 Physical assets, Table 3.5.1.1 Circuit Lengths (overhead) in the EB RIN and corrections were made to the 2014-15 year data - this revealed an impact of an approximately 5% reduction in total overhead circuit kilometres reported. It is expected that prior years values would experience a similar reduction in overall values. However, whilst data for 2013-14 is available to be recast, for earlier years estimation was required.

Of note - on review of all available DNSP data, it was observed that there have been significant movements in line lengths and capacities for many of the DNSPs, though some have remained exactly constant over long periods of time. This variation in data quality between networks, and variation over time in data quality for an individual network, casts significant doubt over the ability to infer productivity between networks and over time respectively using the defined measures.

2.3.2.3. Operating Expenditure

Ergon Energy has identified a possible error in the AER's file "EBT DNSP PPI 2015.xls" whereby, the variable DOPEX0201A Opex for Network Services from EB RIN table 3.2.2 *Opex consistency – historical cost allocation* is referenced for 2006 to 2010, whereas for 2011 to 2015 the EB RIN variable DOPEX0201 Opex for Network Services from table 3.2.1 *Opex consistency – current cost allocation* is used (all sourced from "06ERG.xls").

With changes in matters such as cost allocation methods, classification of services and accounting policies between regulatory control periods or even years (particularly with the reissue of RINs), it is understood that the AER should be consistently using Opex for Network Services (DOPEX0201) to allow comparability across time. The full flow-on effect of the use of DOPEX0201A in early years has not been evaluated by Ergon Energy, however corrections may be required.

The AER considers operating expenditure (opex) as an immediate and short term input into modelling of costs for provision of a DNSP's network services. In its analysis the AER has questioned the large increase in Ergon Energy's reported Opex for Network Services (DOPEX0201) in 2014-15 as compared to 2013-14.

Ergon Energy makes the following comments with regards to influences of reported Opex for Network Services over recent years. Such movements in reported Opex will have had a significant impact in the AER's modelling, yet do not serve to reflect changes in efficiency or productivity by Ergon Energy in carrying out its core network services:

- Preventative Maintenance reported in 2013-14 (and partially, 2012-13) was significantly lowered due to a move to aerial scoping for vegetation management and the "capitalisation" of the ROAMES first full flight cycle (in accordance with approved accounting procedures). The absence of the full value of ~$15m (overheads inclusive) for a cycle has artificially lowered Opex for Network Services in 2013-14 and in turn, influenced the perceived trend results for 2014-15.

- 2014-15 Opex for Network Services was also materially affected by weather and storm events. In all, the year represented a very active storm season producing 37,700 events, with the most significant being tropical cyclone Marcia. With a total event cost in the order of $30 million, pole defect remediation programs (P1 and P2), Failed In Service and Emergency Replacements works associated with Cyclone Marcia and other storm recoveries are reflected in material rises in both forced maintenance (~$10 million) and other network maintenance (~$11 million).

  Such "one-off" influences have served to "artificially" lower Ergon Energy's efficiency in 2014-15. Importantly, this material spend does not reflect a decline in efficiency or productivity by Ergon Energy in carrying out its core network services.

- Ergon Energy's 2010-15 Cost Allocation Method (CAM) recognised under or over applied overheads as *Other Operating Costs* where not material. Upon final reconciliation of the shared costs allocated through the overhead allocation process at the end of 2014-15, it was determined that an amount of $21.4 million had been over-applied. In accordance with Ergon Energy's CAM, this amount was determined to be not material and was not directly attributed or causally allocated – rather, the amounts were allocated entirely to the distribution business (negative opex).

  The impact of the changes between years in this variable alone (refer to reported DOPEX0112 data), has caused fluctuations in total opex for network services for Ergon Energy across years.

  Of note, Ergon Energy's 2015-20 CAM will see such amounts remain outside the distribution business (corporate) – a recast of historical information presented in Table 3.2.2 – Opex Consistency, will be required to reflect (amongst other things) this change in cost allocation approach for 2015-16 onwards.

  Importantly, alternative approaches to under/over recoveries in other DNSP approaches to cost allocation will also serve to limit true comparability of the AER's modelling in this regard.

- Not proceeding Network Initiated Capital Works of $28.6m was written off during 2014-15. This was primarily due to the relaxation of N-1 safety criteria and the Safety Net resulting in a number of projects considered no longer necessary. A residual amount was written off for the Blueprinting Phase of a Demand Management System Project for control centre automation as it was considered uneconomically feasible to proceed.

2.3.2.4. Reliability

One of the outputs selected by the AER as representative of the services provided by NSPs, reflecting our need to provide customers with access to a safe and reliable supply of network, is Reliability.

A significant driver of the perceived productivity decrease for Ergon Energy between 2014 and 2015 has been Ergon Energy's reliability inputs. Customer minutes off supply rose from approximately 165 million minutes in 2014 to approximately 205 million minutes in 2015, due to more severe storm seasons and weather events, not all of which were able to be excluded as Major Event Days (MEDS). As noted, there was also an associated increase in opex during the year which has serviced to magnify the perceived decrease in productivity (refer 2.3.2.2,Operating Expenditure).

Volatility in year on year SAIDI performance that is inherent in a network such as Ergon Energy's will cause fluctuations of the MTFP and PFP scores that are not associated with changes in productivity or efficiency. Reliability is problematic in its influence over modelling or several reasons:

- it is volatile and therefore moderate changes in SAIDI between years can outweigh all other changes in variables;
- the multiplicative nature of the variable (SAIDI times customers) means that large rural networks have much higher values for this variable;
- an increase in customers is "positive" from an output perspective. However, an increase in customers combined with a constant SAIDI (or even a slight to moderate improvement in SAIDI) will still cause a negative productivity statement (as more customers at the same SAIDI is more customer minutes off supply); Or in the case of Ergon Energy, actually understate the improvement in reliability. For example, between 2011 to 2015 Ergon Energy achieved a 13.5% improvement in decreased minutes per customer which was partially offset by an increase of 4.7% due to rising customer numbers (implying 'efficiency gains' have been understated by the current model).
- the cause of fluctuations in SAIDI is often exogenous and much harder to keep constant for large, rural, radial networks.

Furthermore, Ergon Energy notes that network reliability measures can be adversely impacted by:

- Events (days) where daily SAIDI/SAIFI reach close to MED thresholds, but are not sufficient to qualify as a MED. Such extreme weather event days have had a significant adverse impact on Ergon Energy's network reliability measures across all feeder categories over the years, especially the outage duration (SAIDI).
- While only making up a small proportion of Ergon Energy's customer base (approximately 11% for 2011-2015), the performance of long rural feeders have significantly impacted the reliability performance.

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