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Dear Sebastian,

**Re: Draft Annual Benchmarking Report – Electricity Distribution and Transmission**

AusNet Services welcomes the opportunity to make this submission in response to the AER's draft 2016 distribution and transmission benchmarking reports.

AusNet Services remains supportive of benchmarking as a useful indicator of the relative efficiencies of networks. This can play a valuable investigative role in regulatory decision making as well as inform stakeholders of how networks compare against one another.

The results in the 2016 draft benchmarking reports indicate there is opportunity to make a number of significant model specification improvements in both the distribution and transmission MTFP models.

In particular, the specification of outputs in the transmission MTFP model can be improved. Given TNSPs are now entering the second round of regulatory determinations since the introduction of productivity benchmarking, it is timely to review the transmission MTFP model to ensure stakeholders have access to robust and meaningful benchmarking. AusNet Services therefore suggests it would be important to complete this review before the 2017 Transmission Benchmarking Report is prepared. AusNet Services would welcome the opportunity to provide input to such a review.

In relation to distribution, AusNet Services considers the model's exclusion of safety outcomes as an output continues to penalise networks that have and will incur significant expenditure due to legislative obligations aimed at minimising the risk of bushfire ignition. An approach to including reduced safety risk as an output is suggested in this submission.

AusNet Services would welcome the opportunity to discuss the issues raised in this submission further with AER staff.

If you have further questions regarding this submission, please contact Rob Ball on 03 9695 6281 or robert.ball@ausnetservices.com.au.

Yours sincerely,

Anh Mai
**Manager Economic Regulation**

# AusNet Services' Submission on the 2016 distribution and transmission benchmarking reports

## 1. Summary

This submission responds to the AER's draft 2016 distribution and transmission benchmarking reports which reflect 2015 RIN data.

AusNet Services supports the use of benchmarking to provide high level insights into the relative efficiencies of networks. This can play a valuable investigative role in regulatory decision making as well as inform stakeholders of how networks compare against one another.

However, as results are highly sensitive to model specification and operating environment factors, productivity benchmarking is not a precise tool, and is better suited to providing trends and high-level observations than it is to being used deterministically. It is also important to consider the results of alternative approaches in interpreting benchmarked performance.

AusNet Services' submissions to previous benchmarking reports[1] discussed the need to continually refine the benchmarking models employed by the AER to ensure they are robust and produce results that, to the extent possible, are truly reflective of the relative efficiency and productivity of networks.

This submission suggests the following refinements that should be dealt with through detailed reviews of the distribution and transmission models:

- Incorporating improved community safety as an output in the distribution model and
- Reviewing the output specification and weightings of the transmission model.

These are addressed in more detail below.

In addition, there are matters which are specific in nature in relation to the specific method and data underlying the 2016 draft transmission benchmarking results which AusNet Services submits should be addressed before the final report including:

- Correctly accounting for AusNet Services' connection points in the transmission model.

Each of these issues is discussed further below.

## 2. Distribution benchmarking model specification

### *Community safety as a distribution output*

Safety is a critical component of providing distribution services. Maintaining and improving safety performance is a driver of significant expenditure for many distribution businesses, particularly AusNet Services given the high bushfire risk inherent to its service area.

Since 2010, bushfire safety legislative requirements have led AusNet Services to invest heavily in reducing the risk of bushfire ignition. This is planned to continue over the next decade, and drives asset base and operating expenditure (e.g. vegetation management) growth, which in turn, negatively impacts performance under a productivity model which does not recognise the outputs of this expenditure.

This issue applies predominantly to distribution networks, rather than transmission networks, due to the significant expenditure some distributors incur reducing the risk of bushfire ignition.

[1] See AusNet Services' submission to the 2014 draft transmission benchmarking report, 22 August 2014

In its 2016 distribution benchmarking report, the AER has stated that it does not expect safety obligations to impact future levels of productivity:[2]

> *'Going forward we do not expect these drivers will contribute to further productivity declines. This is borne out by our benchmarking which indicates that productivity of the Victorian DNSPs improved in 2015.'*

This attributes undue weight to sectoral productivity improvements in 2015 against the historic trend. It also ignores the legislative obligation on Victorian DNSPs to roll-out Rapid Earth Fault Current Limiters (REFCLs). The REFCL program is expected to significantly improve community safety outcomes in Victoria. However, the cost of this program, to be primarily delivered by AusNet Services and Powercor between 2016 and 2021, is expected to require capital expenditure in excess of $200 million for AusNet Services alone.[3]

While the improved safety outcomes of the REFCL program will not be reflected as outputs in the AER's current MTFP model, the program will materially impact inputs. Specifically, the delivery of the program will lead to RAB growth, increasing the cost of capital input,[4] as well as increased physical capital inputs (e.g. additional feeder at some REFCL sites). Additional networking planning, delivery and operational resources will also be required during the REFL deployment, driving increased operating expenditure.

These changes will, all else equal, lead to deterioration in AusNet Services' productivity relative to its peers that are not subject to similar safety obligations. While DNSPs in other jurisdictions may be subject to legislative obligations that require safety-driven expenditure, AusNet Services considers the Victorian bushfire safety obligations set out above are particularly onerous.

To address the clear mismatch within the current model between safety related inputs and outputs, the AER should consider the inclusion of improved safety, or reduced safety risk, as an output in its MTFP model.

There is potential to design an output reflecting bushfire safety performance. This could involve assigning a baseline level of bushfire risk to each network having regard to geographic and climatic risk factors and potential fire loss consequence. An output measure could reflect any deterioration or improvement in bushfire risk having regard to, for example, actual fire starts.

The availability of robust and consistent data is a key consideration when assessing the suitability of an output for inclusion in the MTFP model. In Victoria, there is robust bushfire risk data which is reported in a consistent manner to establish f-factor benchmarks and determine performance.

Accordingly, AusNet Services considers that the inclusion of bushfire risk reduction as an output, potentially through the use of relevant f-factor data, warrants consideration. AusNet Services would welcome the opportunity to assist the AER with refining the distribution MTFP model so that safety outcomes are reflected in the measured outputs.

[2] AER, 2016 draft DNSP benchmarking report, October 2016, p.25

[3] AusNet Services, *Revised Regulatory Proposal 2016-20*, January 2016, p.3-23

[4] Referred to as Annual User Cost (AUC) by Economic Insights

## 3. Reviewing the transmission MTFP model

With the completion of the first round of transmission reviews since the introduction of productivity benchmarking, AusNet Services considers that it is timely to conduct a detailed review of the AER's transmission MTFP model.

The NER compels the AER to have regard to its benchmarking reports in making regulatory decisions. The benchmarking must therefore be meaningful and credible.

As recognised by the AER, benchmarking models are simplifications of reality and hence will always have shortcomings. However, the usefulness of the transmission MTFP model is particularly constrained by the output specification it currently relies on. In particular, AusNet Services has concerns with the model's specification with respect to the reliability and connection capacity outputs. Each of these issues is discussed further below.

Maintaining the current transmission MTFP model, with its current extreme sensitivity to the reliability output and adoption of connection as an output risks a diminution in the robustness of regulatory determinations that rely on the benchmarking analysis as an assessment technique.

To ensure the next round of transmission revenue resets are informed by robust benchmarking analysis, AusNet Services suggests a review of the transmission MTFP model be completed prior to the 2017 transmission benchmarking report. AusNet Services would welcome the opportunity to provide input to this review.

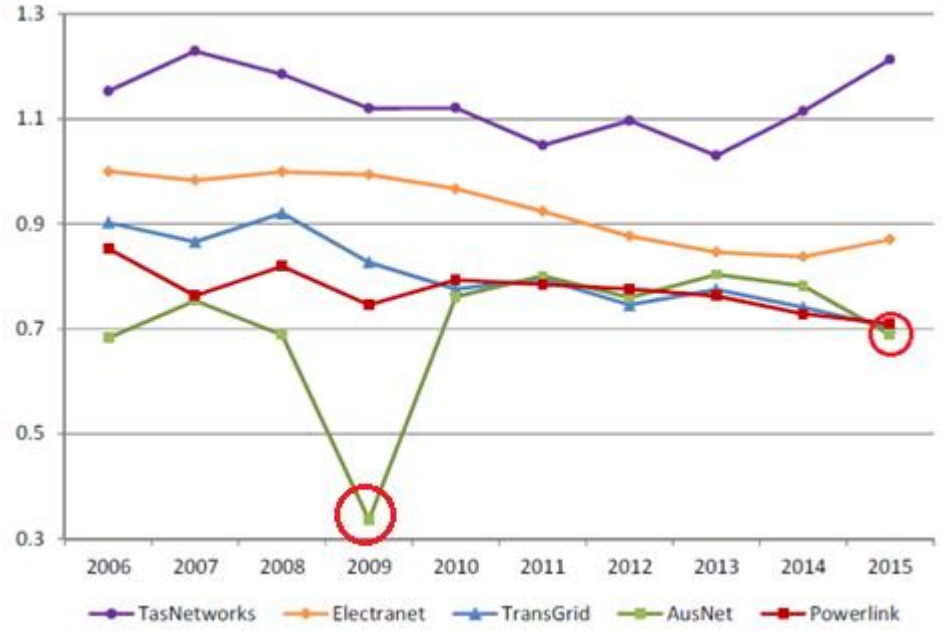
### *3.1 Reliability and the weight placed on it as an output*

Customers reasonably expect a high degree of reliability from transmission networks and, therefore, reliability is an important output of transmission networks. However, the current MTFP model is highly sensitive to individual transmission outages, which can 'swamp' individual TNSP productivity outcomes.

For example, in 2009, AusNet Services' MTFP score fell by around 50%, largely as a result of a 500kV transformer failure at South Morang Terminal Station during record high temperatures. Industry wide MTFP fell by 13% in the same year, largely due to this event.

Similarly, but to a lesser extent, the decline in AusNet Services' MTFP score in 2015 was largely a result of a loss of supply incident involving an outage on a transmission line connecting a major 500kv customer. This event resulted in a twentyfold increase in energy not supplied compared to the previous year, a 12% decline in AusNet Services' MTFP, and a fall in ranking from third to last, as shown in the following figure.

**Figure 1: Individual TNSP MTFP, 2006-15**




Source: AER, draft 2016 transmission benchmarking report

The above events demonstrate that the current specification of the MTFP model is placing a disproportionate weight on reliability.

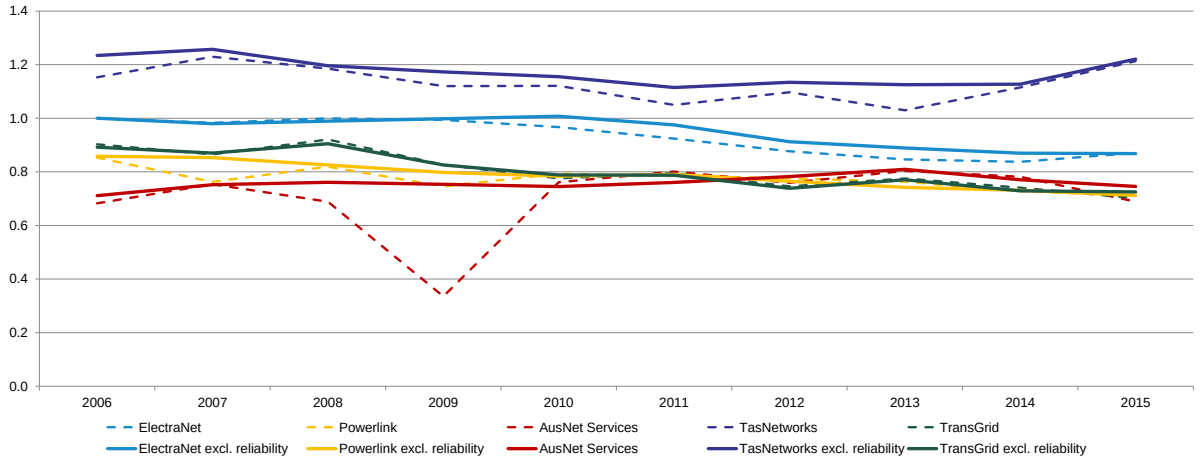
Due to the significant consequences of a transmission outage, the Victorian transmission network is designed and maintained to a high reliability standard. Accordingly, transmission reliability incidents are of low probability and high consequence, and are often due to the failure of a major asset or external circumstance (e.g. a storm event). Reducing the likelihood of these events to zero would require significant capital expenditure which is unlikely to be in the long-term interest of customers.

In the case of electricity distribution, some networks, including AusNet Services, have achieved substantial reliability improvements through targeted network investment (e.g. Distribution Feeder Automation),[5] creating tangible benefits for distribution customers. Accordingly, a measure of reliability (ie, customer minutes off supply) is an appropriate inclusion in the distribution MTFP model due to the ability of networks to influence reliability levels, and the less significant consequence of a distribution outage.

In contrast, AusNet Services does not consider the current impact of major transmission outages on MTFP results to be reflective of underlying productivity achieved in a given year, as demonstrated by 2009 and 2015. AusNet Services has modelled historical MTFP with reliability excluded from the model specification. The figure below compares these MTFP results with those presented in the AER's 2016 transmission benchmarking report.

[5] DFA technology instantly pinpoints a fault on a powerline and automatically operates remote-controlled switches to safely re-route the electricity supply around the fault to restore power to the majority of customers. The process is completed usually under a minute, radically reducing the duration of outages.

**Figure 2: TNSP MTFP including and excluding reliability**




Source: AusNet Services analysis

This modelling shows that excluding reliability smooths out each TNSP's time series, without changing the trajectory of each TNSP's productivity. Importantly, excluding reliability makes the results less prone to volatility, as evidenced by the AusNet Services data.

AusNet Services considers that moderating the effects of reliability would result in a MTFP model that is more reflective of the underlying productivity achieved in any given year and, therefore, better achieves the intended purpose of benchmarking.

One approach to remedy this issue may be to apply a cap to the reliability output. This could be in the form of a cap on the weight given to reliability in a given year, or a cap on the 'raw' energy not supplied itself. The level of this cap should strike a balance between ensuring TNSPs are incentivised to manage reliability, noting the limitations of transmission network operators in this respect, and measuring productivity in a robust manner. Moderating the effects of reliability in this way would ensure that the impact of individual transmission outages do not undermine the value of the other outputs delivered in the relevant year, nor the overall productivity outcome.

It would also align with the principle applied by the AER when it introduced a cap on unplanned outages in version 5 of the transmission STPIS, which was in part to ensure that transmission networks continue to have an incentive to manage reliability following the occurrence of a major unplanned outage.

AusNet Services would welcome the opportunity to discuss the treatment of reliability in the model further with the AER.

### *3.2 Connection capacity as a transmission output*

AusNet Services considers that the inclusion of connection capacity as an output in the MTFP model is highly problematic and, therefore, warrants detailed scrutiny and reconsideration.

Firstly, using the voltage (kV) of each connection point to form a measure of connection capacity is flawed. The capacity of a connection is determined by the transformer capacity at that connection. However transformer capacity is accounted for as an input in the MTFP model.

The actual output at each connection point is the demand being serviced and the energy throughput. However these are already accounted for in the MTFP model.

We understand that to some extent, connection point numbers are used in the absence of customer numbers (which are an output in distribution). However, instead of simply counting connection point numbers or using actual end use customer numbers, in transmission, connection points are weighted by voltage to derive a connection output.

As currently specified in the MTFP model, counting connection points and weighting each connection point by its voltage results in significant differences in the 'connection capacity' output quantities between TNSPs that largely reflect the historic boundaries between transmission and distribution networks in each jurisdiction. These boundaries can differ materially in respect of the exit voltage of the transmission network and, therefore, lead to arbitrary and significant differences in the connection output.

For example, Powerlink's large number of 132kV exit connection points reflects the relatively high exit voltage of its network relative to AusNet Services, which primarily has distribution connecting at 66kV. These differences drive the substantive difference between the voltage weighted connection point outputs of each TNSP – approximately 9,000 (AusNet Services) compared with 17,000 (Powerlink) in 2015 – and hence to the productivity scores of each network.

The relativity of this output result is in contrast to other measures of output, such as energy throughput and maximum demand, which do not differ to nearly the same extent between AusNet Services and Powerlink. Further, the numbers of electricity customers served in Victoria and Queensland, which are ultimately the reason both transmission networks exist, are in stark contrast to the voltage weighted connection outputs presented above. In 2015 AusNet Services served 32% more end use customers through its network than were served in Queensland, with Queensland having 2.1million customers compared to Victoria's 2.8million.

Furthermore, connection capacity is not a significant output in that TNSP costs are not dominated by the provision of connection capacity. Instead, meeting demand whilst ensuring the security and reliability of electricity supply to customers is the driver of TNSP costs.

The AER's approach to counting connection points also penalises AusNet Services for the historical decision to split up the Victorian distributions into five networks to encourage indirect competition, and promote efficiency, between distributors. Multiple connection points at 66kV on AusNet's network which service different distributors are only counted as one.

The above problems suggest that the current model's inclusion of connection capacity may be an inappropriate measure of transmission output. It is not clear that connection capacity reflects a true output and therefore, should have such a substantive impact on the relative productivity presented in the AER's benchmarking report. The connection output has been provided the second highest weight of all the individual outputs (28%), while maximum demand, a critical output of a transmission network and driver of cost, is weighted less at (22%).

When assessing outputs for inclusion in its MTFP model, Economic Insights' considered the following criteria:[6]

1) *the output aligns with the National Electricity Law and National Electricity Rules objectives*
2) *the output reflects services provided to customers, and*
3) *the output is significant.*

Connection capacity does not perform well against these criteria. In particular, transmission networks ultimately exist to provide electricity services to end-users, which is reflected in the NER expenditure

[6] Economic Insights, *Economic Benchmarking Assessment of Operating Expenditure for NSW and Tasmanian Electricity NSPs*, November 2014, p.7

objective of "meet or manage the expected demand for prescribed transmission services." While end-users do not directly receive prescribed transmission services, they are the ultimate beneficiary and driver of these services.

Accordingly, AusNet Services considers that the AER should give due consideration to the removal of connection from the transmission MTFP model.[7] Connection could be replaced by the number of end-user customers in each TNSP's service area, which, despite not being a direct output of transmission networks, is a more appropriate measure of a product provided by transmission networks.

AusNet Services would be happy to discuss and explore alternative approaches to the specification of the transmission TNSP model with the AER and the sector.

## 4. Data and method matters to be addressed in the final benchmarking report

### *4.1 Counting transmission connection points*

AusNet Services submits the latest MTFP dataset incorrectly accounts for entry and exit connection points on our network by only counting one transmission node identifier (TNIs) in the case where multiple TNIs exist to connect multiple parties to the transmission network at that location.

The AER's benchmarking report states that:[8]

> *"Where a single node services multiple distributors or a distributor and a generator, and hence has multiple TNIs, we have only counted this node once."*

AusNet Services considers that this approach does not consistently measure inputs and outputs across jurisdictions. It also penalises AusNet Services for the historic design and privatisation of the Victorian electricity grid.

The AER has stated that its approach is necessary to be consistent with other TNSPs that service fewer DNSPs. However, by including all DNSP connection points for other TNSPs, but not for AusNet Services, the AER is in fact taking an inconsistent approach to measuring inputs and outputs.

For example, four DNSPs, including AusNet Services' electricity distribution business, are connected to the Templestowe Terminal Station (TSTS) and four individual TNIs exist. Each connection has an individual connection agreement and service requirements. However, the AER has only counted a single TNI at Templestowe

The AER has not stated why this is the most appropriate way to measure AusNet Services' outputs, other than to 'ensure that the data is consistent with the data provided by other TNSPs that service fewer DNSPs'.[9] Presumably, the AER is referring to jurisdictions where terminal stations do not typically connect more than a single DNSP.

The connection assets at TSTS include a complex configuration with multiple transformers and circuit breakers which are required to provide adequate security and service the load of the four DNSPs connected at TSTS. Accordingly, while the capacity of the transformers and capital cost of these assets is counted as an input in the AER's MTFP model, the associated outputs – service to four connections – have not been counted as outputs.

[7] The issues set out above are of particular concern as AusNet Services is penalised by other areas of the model for the legacy design characteristics and investment decisions underpinning the Victorian transmission network. For example, the high proportion of high capacity lines included in AusNet Services' transmission network result in a high MVA-kms capital input, despite the fact that this capacity could be seen as a relatively more efficient approach to delivering transmission services. See AusNet Services' submission to the 2014 draft transmission benchmarking report, 22 August 2014

[8] AER, 2016 draft TNSP benchmarking report, October 2016, p.28

[9] Email from Andrew Ley, 7 October 2016

Furthermore, the existence of multiple connection points drives additional inputs for AusNet Services, including the operating costs associated with administering separate connection agreements with each DNSP.

In contrast, in other jurisdictions, AusNet Services understands that the AER has included all DNSP connection points as outputs.

If the AER wishes to achieve consistency between jurisdictions, which AusNet Services agrees is a desirable characteristic of a benchmarking model, it should include all of AusNet Services' DNSP connection points. Maintaining the current approach fails to account for the full range of outputs delivered by AusNet Services.

Further, AusNet Services considers the AER has incorrectly classified one of the 66kV TNIs at Brooklyn Terminal Station (BTS), where dedicated connection infrastructure has been established to provide connection for a major industrial customer. AusNet Services considers that the MTFP modelling should include this TNI in AusNet Services' output under the current approach to counting connection points.

AusNet Services would be happy to provide further information to the AER to calculate connection capacity for the purposes of finalising the benchmarking report, as well as the connection arrangements at BTS.

### 4.2 *Debt raising costs*

AusNet Services included debt raising costs in the operations costs reported in its 2015 electricity distribution regulatory accounts. This was done to provide transparency to the AER on the magnitude of AusNet Services' debt raising costs as part of the 2016-20 EDPR revenue reset process. Consequently, debt raising costs of approximately $2.6 million were also included in the operating expenditure amounts reported in the 2015 Economic Benchmarking (EB) RIN.

However, the operating expenditure amounts reported in AusNet Services' previous years' EB RINs were exclusive of debt raising costs, in line with the operations expenditure reported in the relevant years' regulatory accounts.

Furthermore, AusNet Services understands that other DNSPs do not report debt raising costs in the operating expenditure reported in their EB RINs.

Accordingly, to ensure consistency between AusNet Services' operating expenditure reported in 2015 and in prior years, as well as with the expenditure reported by other DNSPs, debt raising costs should be removed from AusNet Services' 2015 operating expenditure for the purposes of MTFP modelling.

AusNet Services has attached a revised EB RIN to this submission (**Attachment 1**) with debt raising costs excluded from the relevant templates to assist the AER in addressing this matter.

### *4.3 Customer density*

AusNet Services requests that the AER update the electricity distribution customer density calculations in the economic benchmarking DNSP dataset, which have not been updated to reflect the most recent circuit length data submitted by AusNet Services.

AusNet Services is happy to assist the AER in this matter if it requires further information.