TasNetworks
Delivering your power

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12 October 2015

Chris Pattas
Australian Energy Regulator
GPO Box 520
Melbourne Victoria 3001

Attention: Andrew Ley

Dear Chris

RE Draft 2015 Annual Benchmarking Report for distribution network service providers

Thank you for the opportunity to comment on the draft 2015 Annual Benchmarking Report for electricity distribution network service providers. The availability of better information about the relative performance of regulated networks is a potentially useful tool for stakeholders, including consumers, wanting to engage in the regulatory process. TasNetworks is supportive of the use of benchmarking as a basic measure of productivity and efficiency and is keen to work with the Australian Energy Regulator (AER) to improve the effectiveness of its benchmarking, for the benefit of all stakeholders.

With that in mind, we are concerned that the metrics presented in the draft benchmarking report for 2015 present an assessment of TasNetworks which is not consistently representative of the business' performance. This has the potential to lead TasNetworks' stakeholders to draw inappropriate conclusions about TasNetworks' efficiency, which may cause them to approach their assessment of TasNetworks' upcoming regulatory proposal for its distribution network with inaccurate preconceptions about TasNetworks' performance.

Our concerns centre on the derivation of the Multilateral Total Factor Productivity (MTFP) measure and the Partial Factor Productivity for capital, which in the draft report imply that TasNetworks is the least productive distribution network service provider (DNSP) in the National Electricity Market (NEM). This is at odds with other productivity and efficiency scores previously calculated for TasNetworks by the AER and its consultants, Economic Insights, as well as the findings of independent benchmarking commissioned by TasNetworks.

To illustrate, in 2014 TasNetworks' operating expenditure (Opex) on its distribution network was assessed as being close to the efficiency frontier adopted by the AER for the purposes of its revenue determinations for DNSPs in New South Wales and the Australian Capital Territory. TasNetworks' raw Opex efficiency score saw it rated as the sixth most efficient DNSP in the NEM, based on eight years' worth of data to 2012-13.

TasNetworks recently applied the same Stochastic Frontier Analysis methodology favoured by the AER for the assessment of Opex efficiency to an analysis of its total expenditure. Using the same data that informed the *Economic Benchmarking Assessment of Operating Expenditure for NSW and ACT Electricity DNSPs* undertaken by Economic Insights in November 2014, TasNetworks' raw efficiency score improved by ten percentage points. With both capital and operating expenditure taken into account, TasNetworks was elevated to a ranking as the fourth most efficient DNSP.

Even the initial MTFP modelling undertaken in July 2014 by Economic Insights on behalf of the AER rated TasNetworks as the seventh most productive DNSP. This contrasts starkly with the MTFP measures for TasNetworks which appear in the 2014 Annual Benchmarking Report and the draft 2015 Annual Benchmarking Report.

The decline in TasNetworks' capital partial factor productivity (PFP) over recent years also appears inconsistent with the decrease in TasNetworks' capital expenditure since 2010. The apparent disconnect between a PFP derived using proxies for capital expenditure and the capital expenditure actually incurred by the businesses raises questions about the validity of using the capital PFP to make inferences about the efficiency of TasNetworks' capex.

TasNetworks has invested considerable effort in understanding the causes of these contradictory results. That investigation has shown that TasNetworks' poor MTFP and capital PFP scores are largely attributable to the inability of the AER's modelling to properly take into account the impact that the quantum, location and density of demand in Tasmania's rural areas have on several key network inputs which inform the AER's calculations, namely overhead lines and transformer capacity.

Overhead lines

The MTFP measure for DNSPs includes six inputs, two of which relate to the overhead lines used by each DNSP to connect its customers, with MVAkms being used as a proxy for the quantity of assets employed. In the current iteration of the MTFP model, overhead lines are divided between subtransmission and distribution lines on the basis of their voltage. This was not always the case, however, with a change having occurred in the benchmarking model's specification between Economic Insights advising the AER of its preferred model in July 2014 and the release of the inaugural Annual Benchmarking Report in November 2014.

TasNetworks has previously raised this issue with the AER in a letter to the AER's General Manager of Networks (Investment and Pricing), Chris Pattas, sent on 28 August 2015. But, in summary, it appears that the change in the treatment of overhead lines (and to a lesser extent underground cables) as an input to the model has inadvertently created a bias which materially disadvantages TasNetworks and significantly lowers its MTFP score. The decision by the AER to delineate between subtransmission and distribution lines, using a voltage of 33kV as the demarcation point, means the MTFP model effectively penalises TasNetworks for operating a network almost totally comprised of lines with a capacity of less than 33kV, and a network with little in the way of subtransmission.

TasNetworks has tested the MTFP model's sensitivity to network composition, by applying the split between distribution and subtransmission lines from other Australian distribution networks to TasNetworks' overhead lines as an input to the MTFP model. Changing this one

variable sees TasNetworks' 2014 ranking improve from least productive to as high as fourth, depending on the DNSP selected.

The sensitivity of TasNetworks' MTFP score to a different model specification and to different network compositions demonstrates why great caution needs to be exercised when interpreting and publishing raw benchmarking scores. As things stand, the MTFP score for TasNetworks in the draft report is not only misleading, but largely meaningless, in terms of its ability to promote greater productivity on the part of TasNetworks.

Network voltages within an established service area are typically a legacy issue over which a DNSP has little control, and the specification of Tasmania's distribution network is a product of historically lower load density than is encountered elsewhere within the country. Given the impact that TasNetworks' low network voltages have on its MTFP score, there is no course of action available to TasNetworks that would lift its MTFP score close to the productivity frontier, without also upgrading much of its network to 33kV lines, something for which there is no operational or commercial imperative.

It is also important to note that voltage is not always a reliable indicator of function. TasNetworks' only subtransmission lines operate at 33kV, for example, and we even have some 22kV feeders effectively performing a subtransmission function. Yet, there are many instances where 33kV and even 66kV lines perform distribution functions in other networks.

Transformer capacity

Transformer capacity has also had a material negative impact on TasNetworks' MTFP score, as well as its partial factor productivity of capital because the low levels of customer and load density in TasNetworks' largely rural service area gives rise to a transformer related operating environment factor (OEF) which is not captured by the AER's models.

Like other predominantly rural networks, TasNetworks has a significant number of transformers located on rural feeders which are underutilised in terms of their capacity. On average, transformers on TasNetworks' long rural feeders serve only 3.5 customers each, compared to 41 customers for transformers on urban feeders, and there are nearly 3,500 transformers on long rural feeders which serve only a single customer. Many transformers in rural settings also have to be over-sized in order to accommodate start-up currents on motors in installations such as dairies, irrigation pumps and sawmills.

Even though TasNetworks will have installed the smallest transformer available in most instances, the use of minimum specification transformers, combined with a range of standardised sizes selected for reasons of economy and efficiency, results in low levels of transformer capacity utilisation on rural feeders. Over 96 per cent of TasNetworks' transformers on long rural feeders are operating at less than 20 per cent of their capacity, while 88 per cent of transformers on short rural feeders are running at below 40 per cent of capacity.

Using conservative estimates of the transformer capacity on rural feeders which is not being utilised due to the aforementioned considerations, TasNetworks' transformation capacity as a capital input into the MTFP model is potentially overstated by as much as 44 per cent (approximately 1,875 MVA). As a result TasNetworks appears much less efficient in terms of its raw MTFP and capital PFP scores than it arguably is, at least in comparison with exclusively urban networks.

However, the AER's benchmarking model is penalising TasNetworks for providing a least cost customer solution by installing a single small, standardised transformer when meeting its obligation to provide network services to customers. While it is true that TasNetworks requires more transformer capacity to produce the outputs taken into account by the AER's benchmarking, this should not be interpreted as inefficiency, because it is the result of the environment within which TasNetworks operates in and the fact that the model doesn't recognise the obligation to provide network services as an output and a significant driver of costs. This issue also suggests that the use of ratcheted peak demand as an output may not be a good proxy for system capacity, given the apparent disconnect between TasNetworks' transformer capacity as an input and demand as an output.

The lack of load in rural areas also means that there is inherent redundancy (over capacity) included in TasNetworks' MVAkms measurement, which means that TasNetworks will look less productive than it actually is on any output per MVAkms metric, even though this is the result of customer location rather than any inefficiency on TasNetworks' part.

To demonstrate the impact that unutilised transformer capacity has on TasNetworks' MTFP score, if this spare capacity is removed from the transformer capacity that informs the MTFP model, TasNetworks' raw MTFP score for 2014 increases from 0.840 to 0.973. Similarly, TasNetworks' capital PFP improves from 0.656 to 0.828 once allowance is made for this unavoidable extra capacity.

TasNetworks contends that it would be appropriate to adjust the data for all rural DNSPs to negate the impact that apparent excess transformer capacity has on their MTFP and capital PFP scores. Another option may be to distinguish between rural and urban transformers in the model, or on the basis of feeder type, in the same way that the model recognises subtransmission and distribution lines separately, notwithstanding the issues that appear to exist with the current execution of this approach. At the least, the fact that the MTFP model does not take into account this significant OEF should be acknowledged in the final benchmarking report, along with the materiality of its impact.

In conclusion, it is vital that the AER include more analysis of the metrics in the 2015 Annual Benchmarking Report than appeared in the 2014 report, including explanations of any outlying results or issues with the model. To simply interpret a low MTFP score as being evidence of inefficiency on the part of TasNetworks, for example, as was the case in the 2014 Annual Benchmarking Report, would represent a failure to consider the bias in the current MTFP model against a network with an atypical, if not unique composition.

The 2015 Annual Benchmarking Reports will be the last released before TasNetworks lodges its next regulatory proposal for its distribution network in early 2016. It is of considerable importance to TasNetworks, therefore, that the reports, in particular the report relating to distribution networks, accurately portray TasNetworks' performance, if the report is to in any way inform the AER's deliberations.

To that end, in Attachment A to this letter, TasNetworks has also provided feedback regarding a number of observations and assumptions made by the AER in the draft report which are either potentially misleading or prevent stakeholders from gaining meaningful insights into the respective performances of the DNSPs regulated by the AER.

TasNetworks recognises that benchmarking such complex and diverse businesses is a difficult and complicated task and acknowledges that the use of benchmarking in the Australian electricity supply industry is still in its infancy. Recognising the importance of the upcoming revenue determination to TasNetworks' and the community that it serves, we would welcome the opportunity to meet with representatives of the AER to discuss the issues raised in this submission and work towards a mutually acceptable resolution.

Once again, I thank you for the opportunity to comment on the AER's draft 2015 Annual Benchmarking Report for distribution network service providers. To discuss the views expressed in this submission and opportunities for collaboration between TasNetworks and the AER, please contact Kirstan Wilding, Leader Regulation, on 0416 221 274 or at Kirstan.Wilding@tasnetworks.com.au.

Yours sincerely

Ben Wagner

Acting General Manager Strategy & Stakeholder Relations

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Attachment A – TasNetworks' comments regarding content

Page no.	Subject	Draft report content	TasNetworks' comments
6-7	Network characteristics	While distributors differ in respect to scale of the services that they provide (known as outputs) and the mix of resources used to provide those services (known as inputs), our analysis is able to take these differences into account and provide a like-for-like comparison across businesses.	TasNetworks acknowledges the potential benefits of benchmarking for stakeholders, including customers. However, it does not consider that all of the benchmarking models used by the AER are sufficiently mature to be able to provide genuinely like-for-like comparisons between businesses, particularly given their diversity and the diversity evident in their operating environments. As highlighted elsewhere in TasNetworks' response to the draft 2015 Annual Benchmarking Report for distribution networks, there remain material operating environment factors which are unaccounted for in the MTFP and MPFP results presented in the draft report. TasNetworks has also demonstrated that there is an unintended bias in the AER's MTFP and capital PFP calculations which disadvantages TasNetworks because of the comparatively low voltages of its network and its limited use of sub-transmission, both of which are a response to operating environmental factors. While the AER advises on page 17 that "The presence of operating environment factors should be considered when comparing the results", unless those OEFs and issues with the benchmarking models are articulated in the report (and quantified) it is difficult to see how readers of the report can do so. TasNetworks agrees with the AER that it is not possible to incorporate every possible factor that might influence a distributor's costs in a benchmarking model. However, it is disingenuous to publish an annual benchmarking report – which other parties will rely on when forming a view about the relative efficiency of distributors – and suggest that readers can rely on the raw benchmarking scores on the basis that any OEFs not captured in the benchmarking models will be subject to ex post adjustment as part of the distribution determination process, particularly given the time that can pass between benchmarking reports and determinations.

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23	Multilateral total factor productivity for each distributor	CitiPower, Energex, Ergon, Essential, and Powercor all increased their MTFP performance in 2014.	Only Energex and Essential Energy increased their MTFP scores in 2014. This also renders the summary assessment that "the negative trend in productivity growth for the 2006 to 2013 period continued in all states except Queensland in 2014" as incorrect.
25	Partial factor productivity of opex	As explained in section 2.3, there may be OEFs outside the control of the distributors that are unaccounted for in the MTFP and MPFP results. The presence of operating environment factors should be considered when comparing the results.	Unless the OEFs and issues with the benchmarking models are articulated in the report (and quantified) it is difficult to see how readers of the report can do so.
26	Overall input measures – Opex by distributor	"...there is considerable difference in opex between the distributors with Ausgrid spending the most, approximately $540 million in 2014 and CitiPower spending the least..."	TasNetworks acknowledges that it is not possible to normalise for every possible difference between networks when benchmarking. However, without a normalisation factor this metric provides no meaningful comparison between the performances of the respective businesses, given that total cost is largely reflective of scale. As a time series for comparing a business's current performance to its own past performance, however, the metric has some value. Yet the draft report contains no commentary or analysis about DNSPs' operating expenditure over time – despite the AER noting elsewhere in the report the changes in MTFP scores between 2013 and 2014. Since 2012, a number of DNSPs, including TasNetworks, Essential Energy and Ergon Energy, have decreased their opex, for example, while the opex of others has remained largely constant. There are also significant differences between DNSPs in terms of the underlying trend in their operating expenditure that readers of the report are likely to be interested in understanding. The report would benefit, therefore, from the inclusion of explanatory material to assist stakeholders in interpreting Figure 16.

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27	Capex Figure 17	The NSW and QLD distributors have all decreased their capex between 2013 and 2014, albeit from much higher historical levels relative to their other peers.	As the draft report acknowledges, capex tends to fluctuate from period to period because of the long-lived nature of the assets. Therefore, while some, albeit brief, commentary has been provided in relation to DNSPs capital expenditure over time, it has been limited to a comparison of capex in 2014 with the previous year and is of little value. Such a short time-frame is at odds with the often 'lumpy' nature of capex and ignores the medium-term trends in individual DNSP's capex that are apparent from Figure 17.
29	Opex PPIs - Opex per MW of maximum demand compared to customer density	Figure 21 shows there is clear variability in opex per MW of maximum demand, with Endeavour and Energex performing well on this metric alongside the Victorian distributors (bar AusNet Services) and SA Power Networks. We expect the results to favour those distributors with higher customer density, because higher density networks have fewer assets per customer that must be maintained, irrespective of the maximum demand of the network.	TasNetworks does not agree with the conclusions drawn by the AER regarding the relative performance of DNSPs against this measure, other than there is clearly significant variability in opex per MW of maximum demand. Were the scatter plot in Figure 21 to be overlaid with a statistically valid line of best fit – and the variability of the results suggests that this is probably not possible – it is likely that TasNetworks would also be amongst the most efficient DNSPs, noting the proximity of its score to that of SA Power Networks and Powercor. The AER has also characterised Victorian DNSPs in general, with the exception of AusNet Services, as performing well against this metric, yet Jemena appears likely to fall above any line of best fit, regardless of its derivation. It is also arguable that any score within a reasonable distance of a line of best fit, whether above or below, is likely to represent an efficient performance, given the inherent imprecision of benchmarking. TasNetworks considers that it is not possible to interpret the results in Figure 21 without undertaking analysis of this type. Finally, the wide spread of results in Figure 21 also suggests that there is no significant causal link, and only modest correlation, between customer density and opex per MW, which means that this metric provides no meaningful insight into the relative efficiency of DNSPs.

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29-30	Opex per customer compared to line length (Figure 22)	We expect the results to favour those distributors with higher customer density, because higher density networks have fewer assets per customer that must be maintained, irrespective of the maximum demand of the network. Figure 22 shows opex per customer compared to route line length.	TasNetworks agrees with the AER that it is difficult to draw a meaningful conclusion from Figure 22, due to the significant variability in performance. Accordingly, TasNetworks proposes that this metric not be included in the final report on the basis that it doesn't further the AER's objective of providing stakeholders with information about the relative performance of regulated networks. This lack of correlation between route length and opex per customer also suggests that route line length is not a driver of performance against the opex per customer measure.
30	Asset cost PPI – Asset cost per MW of maximum demand compared to customer density (Figure 23)	The Victorian distributors except AusNet Services are the best performers in Figure 23.	Without comparison against a statistically valid line of best fit, the commentary that AusNet Services is not amongst the best performers against this metric is questionable in its validity. It is also quite possible that both SA Power Networks' and TasNetworks' performance against this metric might also fall below or near a line of best fit. Again, without statistical analysis of the scores attributed to each DNSP, it is simply not possible to draw meaningful conclusions from this scatter graph about the relative performance of regulated networks.