TasNetworks
Delivering your power

Tasmanian Networks Pty Ltd
ABN 24 167 357 299
PO Box 606
Moonah TAS 7009

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Tony Weir
Assistant Director, Networks
Australian Energy Regulator
Level 38, 360 Elizabeth Street
Melbourne VIC 3000

Dear Tony

RE TasNetworks response to 2017 AER draft benchmarking report for distribution networks

Thank you for providing an advance copy of the Australian Energy Regulator's 2017 Draft Benchmarking Report (the Report) for distribution network service providers and for the opportunity to comment on the Report before its public release in November of this year.

In response to the 2015 and 2016 Draft Benchmarking Reports, TasNetworks lodged submissions with the AER which argued that the measure of Multilateral Total Factor Productivity (**MTFP**) contains an inherent bias which penalises TasNetworks for operating a network with few subtransmission lines. The AER acknowledged that this is the case, and in the final benchmarking report for 2015, published the following qualification.

> *TasNetworks, however, could be considered an outlier compared to its peers in terms of system structure, which influences its MTFP score to some extent. Compared to other DNSPs, TasNetworks operates substantially less high voltage subtransmission assets and has a comparatively high proportion of lower voltage lines. Therefore, Economic Insights advises that some caution is required in interpreting TasNetworks' MTFP score, given its comparatively unusual system structure.*

At the time, TasNetworks 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 saw TasNetworks' ranking improve from last to as high as fourth, depending on the Distribution Network Service Provider's (**DNSP**) network composition selected.

A similar qualification appeared in the 2016 benchmarking report. The 2017 draft report, however, contains no explanation on the above matter and on an MTFP basis, TasNetworks is noted to be one of the worst performing networks amongst its peers.

We remain concerned that the metrics in the benchmarking report present an assessment of TasNetworks which is not representative of our business' performance. This has the potential to lead our stakeholders to draw inappropriate conclusions about TasNetworks' efficiency, which may cause them to approach their assessment of our upcoming Revenue Proposal for both the transmission and distribution networks with inaccurate preconceptions about the business' performance.

As far as we are aware, there have been no changes made to the MTFP or capital Partial Factor Productivity models used to produce the metrics in the AER's benchmarking report to better account for the characteristics of TasNetworks' system. We are, therefore, seeking to have the AER reinstate the qualification that appeared in previous benchmarking reports about the inability of those models to accurately represent our system's "unusual" structure.

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 our long rural feeders serve only 3.5 customers each, compared to 41 customers for transformers on urban feeders. We also have around 3,500 transformers on long rural feeders which serve a single customer each. Many transformers in rural settings have to be over sized in order to accommodate start-up currents associated with motors in dairies and sawmills, as well as irrigation pumps.

TasNetworks has previously raised this issue with the AER (in 2015 and 2016), arguing that the obligation to connect rural customers, and the operating efficiencies associated with the use of standardised transformer sizes when doing so, gives rise an operating environment factor (**OEF**) which is not captured by the AER's models. As a result, the unavoidably low levels of customer and load density in our largely rural service area have a material negative impact on our MTFP score, as well as our Partial Factor Productivity of capital. The effect is even more pronounced when comparing our productivity with the performance of exclusively urban networks, which adds weight to the argument for an OEF applying to TasNetworks.

At the time we first raised this issue with the AER, we were able to demonstrate that, based on conservative estimates of the under-utilised transformer capacity on our rural feeders, our transformer capacity as a capital input into the MTFP model was potentially being overstated by as much as 44 per cent. However, the AER's economic consultants, Economic Insights, rejected the case for a transformer capacity related OEF, noting that "*TND's distribution transformer capacity almost tripled between 2006 and 2014...* [while] *other metrics such as line length, customer numbers, energy delivered, demand reported and distribution substation and transformer asset value have not increased in a similar fashion.*"

Prompted by the AER's recent questioning, we have revisited this issue and investigated the historical time series of transformer capacity that was provided to the AER in 2013 by TasNetworks' predecessor in Tasmania, Aurora Energy. Based on that investigation, we can confirm that the numbers previously provided to the AER are materially understated – progressively more-so the further back in time the series goes. This means that the apparent growth in our transformer capacity which led Economic Insights to conclude that TasNetworks had been installing additional capacity without good reason to do so did not actually occur.

The revised transformer capacity figures provided in Attachment A show that our transformer capacity has grown at a modest rate since 2006. While the higher transformer capacity numbers for 2006 to 2009 are likely to downgrade TasNetworks' performance in those years against the MTFP and capital Partial Factor Productivity measures, in the interests of consistency we believe that our past performance against these metrics should be recast for the upcoming 2017 benchmarking report.

We are also of the view that the revised numbers demonstrate that the significant unutilised transformer capacity present in our distribution network is neither a recent phenomenon nor the result of unwarranted capital expenditure by TasNetworks or Aurora Energy before it. On this basis, we believe the AER should reconsider the existence of an OEF for TasNetworks.

In summary, we would ask the AER to:

- reinstate the qualification that appeared in previous benchmarking reports about the inability of the benchmarking models to accurately represent our system's "unusual" structure, in terms of the voltages of our distribution and subtransmission lines;
- qualify the benchmarking results presented in the 2017 annual benchmarking report with an appropriate caveat explaining the transformer capacity issue and its impact on our productivity and efficiency metrics;
- reconsider the case for an OEF in relation to TasNetworks' transformer capacity, noting that the data previously provided was materially flawed; and
- re-calculate TasNetworks' productivity scores in past years for the 2017 annual benchmarking report, based on the revised transformer capacity data provided in Attachment A.

In addition, we received questions from the AER on 4 October 2017, regarding TasNetworks' historical opex, energy throughput and transformer capacity on the distribution network, answers to this information request have been provided in Attachment A.

TasNetworks recognises the investment being made by the AER in its benchmarking of electricity network businesses. Accordingly, we would welcome the opportunity to work with the AER, and Economic Insights, in order to address the issues raised in this submission and improve the ability of the AER's benchmarking models to represent Tasmania's distribution network.

Once again, thank you for the opportunity to comment on the AER's draft 2017 Annual Benchmarking Report for distribution network service providers. To discuss the views expressed in this submission, please contact Chantal Hopwood, Revenue and Pricing Regulation Team Leader, on 6271 6511 or at chantal.hopwood@tasnetworks.com.au.

Yours sincerely

Kirstan Wilding

Leader Regulation

Attachment A – Responses regarding historical time series

Opex

AER question

TND's opex fell by around 18% in 2012 and then by a further 16% in 2015. We understand the move to re-amalgamate TND and TNT is likely part of the explanation but it would be useful to understand how these relatively large opex reductions were achieved and if there is a wider explanation.

TasNetworks' response

The reduction in operating expenditure (**opex**) which occurred in 2012-13 was partly a result of a restructuring which occurred within Aurora Energy (**Aurora**) in 2011-12. The restructuring saw an increase in opex in 2011-12 due to the payment of redundancies. Opex in 2012-13 was then lower than in the preceding year, partly due to savings achieved by the new businesses structure, but largely because the redundancies in 2011-12 had inflated Aurora's opex for that one year.

The redundancies cost Aurora almost $20 million in 2011-12 and a further $2.3 million in 2012-13. This can be seen in the profile of management costs provided below and the impact this had on overall opex.

In 2012-13, in addition to the costs associated with the restructure, there was also a severe bushfire event in January 2013 which led to higher Guaranteed Service Level payments to customers as well as fault and emergency related expenditure.

The 2014-15 reduction in opex was driven by savings achieved as a result of the merger and a concerted drive to find general operating efficiencies in the new business. The following excerpt is taken from TasNetworks' annual report for 2014-15.

> *A strong focus during 2014-15 was our ongoing challenge to reduce the impact of the network component of prices on electricity costs. We focussed on generating operational efficiencies and were successful in reducing the recurrent cost base of the business by $25.9 million in addition to the initial $8 million of cost reductions achieved on the establishment of our business.*
> [TasNetworks Annual Report 2014-15, page 7]

The following table is a compilation of the annual expenditure reported to the AER by TasNetworks in response to successive economic benchmarking Regulatory Information Notices, extracted from Table 3.2.1 in each response template. The redundancy costs incurred by Aurora Energy are reported under "Other Non-Network Division Management costs".

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
3.2.1 - OPEX CATEGORIES	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
NEM & contestability related costs	1,218	2,095	3,600	4,505	4,634	4,014	2,965	1,073	1,619	1,151
Other Non-Network Division Management Costs	0	0	0	0	0	3,923	17,489	2,564	1,772	498
Other Operating Costs (Not allocated to the Distribution)	0	0	0	0	0	0	0	0	-	-
Total Non-network divisional management	7,022	10,811	11,884	13,569	13,720	18,721	30,952	13,287	12,025	9,736
Total opex	48,654	50,855	53,356	62,068	75,122	74,983	84,473	70,737	74,151	64,148

Energy throughput

AER question

Over time, TND's energy throughput has generally shown small variations while TNT's energy throughput has been more erratic. What might account for the difference?

TasNetworks' response

The energy throughput for the transmission network varies largely in response to the level of energy transferred across Basslink. The following statistics, published by the Office of the Tasmanian Economic Regulator in its *Energy in Tasmania Report 2015-16,* illustrate the significant impact that energy transfers over Basslink can have on the energy throughput for the transmission network in total.

Electricity Industry	2013-14	2014-15	2015-16
National Energy Market information[2]			
Tasmanian demand (GWh)	10 720	10 513	10 487
Basslink[2]			
Imports (GWh)	20	2 203	1 097
Exports (GWh)	3 113	772	473

Source: *Energy in Tasmania Report 2015-16*, Office of the Tasmanian Economic Regulator

Tasmanian demand is reasonably consistent in the three years presented in the above table. However, in 2013-14 Basslink delivered net exports of 3,093 GWh, over and above the level of on-island demand. On this basis, our transmission network would have had an energy throughput of 13,833 MWh in that year.

In 2014-15, however, the energy flows over Basslink resulted in net imports of 1,431 GWh. The throughput of our transmission network would have been 11,285 MWh, which is 2,548 MWh (18.4 per cent) less than in the previous year.

The turnaround between years is not dependant on changes in on-island demand and is driven by the trading of energy over Basslink, which in itself is a function of the prevailing hydrological conditions in Tasmania and Hydro Tasmania's trading strategies.

In 2015-16 Basslink also experienced a well-documented outage from 20 December 2015 to 14 June 2016, which impacted significantly on the energy conveyed over the interconnector and, therefore, the throughput of our transmission network.

TasNetworks notes that energy throughput is one of the five outputs used in the AER's MTFP benchmarking model for transmission networks. As demonstrated above, changes between years in the energy throughput of our transmission network are not necessarily a function of TasNetworks' performance, yet the variations in energy throughput will impact on the AER's measures of our business' productivity and efficiency.

Transformer capacity (Distribution network)

AER question

Could you provide a description of what drove the large increase in the transformer input for the distribution network from 2006 to 2009.

TasNetworks' response

The time series of transformer capacity to which the AER refers dates back to the response submitted by TasNetworks' predecessor, Aurora, to the AER's 2006-13 economic benchmarking RIN. This was the first occasion that Aurora had been required to respond to a regulatory information notice of this scale and it would appear that the data wasn't as well understood then as it is now. As a result, the connected capacity extracted from our records only contained a subset of the transformers in our distribution network.

In response to the AER's recent questioning, we have reviewed the data – which shows a counterintuitive growth in transformer capacity around our distribution network. Those investigations have shown that the historical transformer capacities submitted to the AER in 2013 are greatly understated, becoming progressively more-so the further back in time the series goes.

The reason for the inaccuracy lies in the reliance of the query used in 2013 to extract transformer capacity information for the period 2006 to 2013 on the *Date active* field held in our geographic information system (GIS) for each transformer. The GIS currently serves as the master system for distribution asset data and holds an *Installed date* and a *Date active* field for each asset. The *Date active* field records the date that an asset is registered in the GIS while the *Installed date* reflects the date an asset was commissioned. These two dates are normally within 14 days of each other and the *Date active* field is used as a substitute for the installation date in cases where the quality of the *Installed date* field is questionable (e.g. superfluous dates in the past or future) or null values.

A changeover in GIS systems in 2008 meant that for many assets – including transformers – the *Date active* value recorded at the time the transformer capacity query was run in 2013 was the date the record was migrated into the new GIS. This means that the query that was used to extract transformer capacity information for the period 2006 to 2013 – although logically sound for assets installed after the GIS changeover – failed to identify a significant number of transformers that were in service during the period 2006-2008, as it relied on the *Date active* field instead of the *Installed date* field.

Re-running the queries of our asset records produces a markedly different, and consistent, time series of transformer capacity over the period 2006 to 2013. Those updated numbers are shown on the following page in Table 2, with the original transformer capacities supplied to the AER in 2013 shown in Table 1 for comparison.

Issues with asset data quality are being addressed as part of TasNetworks' Asset Management Information Systems improvement program and a project is underway to prepare and cleanse asset data for migration into a new enterprise resource planning (**ERP**) system. This system is scheduled to go live in February 2018 and will become the new master system for both TasNetworks' transmission and distribution asset data, as well as the source of future RIN reporting.

Table 1 – Transformer capacity data (2013)

			2006	2007	2008	2009	2010	2011	2012	2013
6.2 Transformer Capacities Variables		Unit								
Table 6.2.1 Distribution transformer total installed capacity										
DPA0501	Distribution transformer capacity owned by utility	MVA	1,194.9	2,155.3	2,609.0	3,132.7	3,220.2	3,305.8	3,414.6	3,445.9
DPA0502	Distribution transformer capacity owned by High Voltage Customers	MVA	136.8	136.8	136.8	181.9	150.4	119.3	157.2	150.3
DPA0503	Cold spare capacity included in DPA0501	MVA	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4

Source: *Aurora 2006-13 - Economic Benchmarking RIN - financial and non-financial information*

Table 2 – Revised transformer capacity data (2017)

			2006	2007	2008	2009	2010	2011	2012	2013
6.2 Transformer Capacities Variables		Unit								
Table 6.2.1 Distribution transformer total installed capacity										
DPA0501	Distribution transformer capacity owned by utility	MVA	2,722.8	2,842.5	2,965.2	3,069.6	3,227.5	3,313.6	3,422.3	3,454.6
DPA0502	Distribution transformer capacity owned by High Voltage Customers	MVA	136.8	136.8	136.8	181.9	150.4	119.3	157.2	150.3
DPA0503	Cold spare capacity included in DPA0501	MVA	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4