19 June 2019

Mr Chris Pattas
General Manager, Distribution
Australian Energy Regulator
GPO Box 520
Melbourne Victoria 3001

Dear Chris

RE Information and Communications Technology Expenditure Assessment Review

TasNetworks welcomes the opportunity to make a submission to the Australian Energy Regulator (**AER**) as part of the AER's Information and Communications Technology (**ICT**) Expenditure Assessment Review. As the Transmission Network Service Provider (**TNSP**), Distribution Network Service Provider (**DNSP**) and jurisdictional planner in Tasmania, TasNetworks is focussed on delivering safe and reliable electricity network services while achieving the lowest sustainable prices for Tasmanian customers.

Over the past two decades, ICT has emerged as an enabling technology for electricity network businesses which can provide a platform for the delivery of new and innovative services, enhancements to existing services, and the delivery of existing services at lower cost. Expenditure on ICT by TasNetworks has, for example, recently delivered:

- web-chat capabilities that enable our customers to interact with customer service personnel online;

- a new website offering increased functionality, such as the capacity to report power outages and faulty street lights; and

- the capacity to notify customers about outages or remind them about vegetation clearance issues on their property via SMS, rather than using phone calls and mail outs (also a cost saving measure).

Expenditure on ICT has also enabled TasNetworks to comply with changes to the regulatory framework, such as the *Power of Choice* metering reforms, and TasNetworks, like other networks, is investing considerable resources in preparing for future regulatory changes including Five Minute Settlement, Global Settlement and complying with the Distributed Energy Resources (**DER**) register information guidelines. Further, ICT is only going to become more critical into the future as articulated in the Energy Networks Australia (**ENA**) and CSIRO Electricity Network Transformation Roadmap.

With ICT being such an important component of non-network expenditure, TasNetworks is supportive of the AER's efforts to improve the methods it uses to assess the expenditure of DNSPs on ICT. In principle, we welcome changes which better align the AER's methodology for assessing ICT expenditure with the practices employed in relation to expenditure on network services and the shared distribution network. Amongst the elements of the AER's proposed methodology, we support the proposal to distinguish between recurrent and non-recurrent ICT expenditure and for each category of expenditure to be assessed using a different methodology.

However, we have concerns regarding aspects of the way in which those assessments would be carried out under the approach outlined in the AER's consultation paper. In particular, we have reservations about the proposal to apply benchmarking when assessing recurrent ICT expenditure.

As the AER's annual econometric benchmarking of network businesses has shown, benchmarking of such disparate businesses is a challenging exercise and the results produced by benchmarking models can be highly sensitive to the models' specifications. This means that the comparisons produced using benchmarking are likely to be less an indicator of inefficiency than they are differences in the operating environments in which businesses operate or – in the case of ICT spending – the priority given by different businesses to investing in things like automation or the online or mobile delivery of customer services and where systems are in their life-cycle.

The impact of choices about business structure, such as the extent to which a DNSP outsources its field work, will also have an impact on ICT expenditure. And the rate of change in DNSP's ICT expenditure highlighted by the AER in its consultation paper is going to make the use of benchmarking more difficult, in that benchmarking arguably works best during periods of stability.

Benchmarking DNSP's expenditure on ICT also ignores consideration of the benefits derived from that expenditure and the ICT maturity difference amongst businesses. For example, a DNSP which has invested heavily in ICT may benchmark poorly against peers that have invested comparatively less, even though the benefits delivered might justify the additional outlay. The effort invested by the AER in attempting to identify and quantify the operating environment factors that influence networks' operating and capital spending suggests that, without similar efforts, benchmarking is unlikely to provide meaningful insights into the level of recurrent ICT spending that might be considered prudent or defensible for a DNSP operating in the circumstances in which it finds itself.

We also have reservations about both of the AER's proposed approaches to non-justified non-recurrent ICT proposals, where the project has been assessed by the AER as being prudent and efficient, but the DNSP has not been able to demonstrate that the financial benefits of the project have been incorporated into the DNSP's overall forecast. In TasNetworks' view, neither the application of the self-funding principle nor a productivity adjustment in this circumstance would be consistent with the principles that underpin incentive based regulation.

The Efficiency Benefit Sharing Scheme (**EBSS**) and Capital Efficiency Sharing Scheme (**CESS**) are both based on the principle that while the DNSP's prudent and efficient expenditure is recovered from end users of the network, both the DNSP and its customers share in any cost savings and efficiencies realised by the DNSP. Excluding the cost of a 'non-justified' non-recurrent ICT proposal from a DNSP's regulated revenue allowance, however, would see the DNSP incurring the full cost of the ICT project(s) in question and still returning a share of the benefits to customers, as if the project had been funded by end users through the DNSP's revenue allowance.

Alternatively, applying a broad productivity adjustment to the overall proposal to account for intangible benefits assumes that all the benefits of non-recurrent ICT projects are quantifiable, which in many cases is not going to be the case. There are many ICT projects for which it is not possible to build either a positive Net Present Value (**NPV**) based on quantitative assumptions or demonstrate savings, risk mitigation or uplifts in productivity, despite the projects' prudency, its efficiency or support from customers. In fact, for some compliance relative projects the selected option represents the least negative NPV option.

ICT projects are going to play an important role in delivering the 0.5 per cent annual operating expenditure productivity growth rate applying to DNSPs. To impose an additional uplift in that rate because a DNSP has not been able to quantitatively demonstrate how its proposed expenditure would be higher if a particular investment in ICT does not go ahead in the forthcoming regulatory period is likely to lead to many prudent and efficient ICT projects not proceeding, and place delivery of even the 0.5 per cent growth in productivity at risk.

These and other issues are discussed in more detail in the attachment to this letter (**Attachment A**). TasNetworks also endorses the issues raised by the ENA in its submission to the AER with regard to ICT expenditure assessment.

TasNetworks is of the view that regulation should only be targeted at problems of sufficient magnitude to justify incurring the associated regulatory costs. On this basis, we would encourage the AER to intervene in the regulation of ICT expenditure in as light handed a way as possible, so as not to divert DNSPs from the search for more cost efficient and innovative ways of operating their businesses and providing services to customers.

Once again, we thank the AER for the opportunity to contribute to the development of the methodology to be used by the AER to assess ICT expenditure by DNSP. To discuss the views expressed in this submission or opportunities for further collaboration between TasNetworks and the AER on the subject of ICT expenditure assessment, please contact Chantal Hopwood, Leader Regulation, at Chantal.Hopwood@tasnetworks.com.au or on (03) 6271 6511.

Yours sincerely

Wayne Tucker

General Manager Regulation, Policy and Strategic Asset Management

Attachment A

Question 1: *Do you agree with the RIN categories of ICT expenditure? Are there others we should request DNSPs to report? Does it make more sense to disaggregate ICT into its 'recurrent' and 'non-recurrent' components?*

Ausgrid presented their ICT capex forecast into the categories 'Comply', 'Protect (cyber)', 'Maintain' and 'Adapt' that are based on purpose. Would stakeholders find these categories more useful than our suggested recurrent and non-recurrent categories?

TasNetworks supports the AER's proposal to distinguish between recurrent and non-recurrent ICT expenditure, as well as the proposal for each category of expenditure to be assessed using a different methodology. Apart from being simpler than dividing ICT expenditure into a larger number of categories, the distinction between recurrent and non-recurrent expenditure seems to more closely align with the breakdown of network expenditure between operating and capital expenditure.

The AER's Regulatory Information Notices, (RINs) distinguish between four categories of ICT capex: ICT asset extensions, ICT asset remediation, ICT asset replacement and ICT capability growth. Of these, ICT capability growth is arguably the closest conceptually to the non-recurrent ICT category proposed by the AER for the purposes of assessing ICT expenditure forecasts. However, the other three categories could all conceivably capture recurrent and/or non-recurrent ICT expenditure, meaning that the proposed ICT assessment methodologies could not be applied to expenditure data submitted along the same lines as the ICT RIN categories.

On this basis, as well as for reasons of simplicity, it would make sense to align the RIN categories with the two categories of ICT expenditure proposed in the AER's consultation paper about ICT expenditure assessment. We also note that for TasNetworks, the disaggregation of ICT expenditure is already a more complex exercise than it is for other DNSPs, due to the fact that TasNetworks operates both Tasmania's transmission network, distribution network and its communications network, and incurs ICT expenditure that relates to both networks.

Question 2: *What other methodologies can we use to benchmark ICT capex? What are the benefits and disadvantages of each approach? What other benchmarking normalising factors do you consider appropriate? For example, Regulatory Asset Base (RAB) could be used as a proxy for asset size.*

Note: TasNetworks notes that the AER's intent, as articulated in the consultation paper, is to benchmark recurrent ICT expenditure, and that it intends doing so at the total expenditure (opex + capex) level. Question 2 is framed in terms of the benchmarking of ICT capex but we have assumed in our response that the question relates to recurrent totex. We also note the absence of substantive detail regarding the approach the AER envisions taking in relation to the benchmarking of recurrent ICT expenditure, which makes providing specific feedback difficult.

While understanding of the AER's desire to use totex in order to account for differences between DNSPs in their use of leasing as opposed to asset purchase, or the procurement of ICT assets versus ICT subscription services, TasNetworks considers that any benchmarking involving even recurrent ICT capex is made problematic by the inherently lumpy nature of that expenditure. Despite the typically shorter service life of many ICT assets, when compared to network assets, a five year benchmarking cycle is unlikely to 'iron out' that lumpiness. Even ICT opex can be lumpy, with many non-recurrent ICT projects having an impact on recurrent ICT spending in the years following, often in the form of a step-change in operating expenditure.

The rapidity of technological change and the impact of new technologies and business models is also difficult to forecast. For example, the impacts that the internet of things, robotics and virtual reality technology will have on the delivery of network services over the next five years are not yet clear. But it is clear that all three will change the services on offer from DNSPs, as well as the way in which they conduct business and operate their networks. So, while a five year review period may not be sufficient to adjust for the lumpy nature of ICT capex, using a longer benchmarking time frame risks comparing recurrent ICT expenditure forecasts with past expenditure that has been superseded by advances in technology.

TasNetworks would like to see consideration given to a range of alternative benchmarking methodologies before the AER settles on an approach, including techniques like the use of rolling averages to reduce the lumpiness of historical recurrent ICT totex, while at the same time weighting the assessment for recency, or the application of an escalation factor (above CPI) to ICT expenditure benchmarking analysis.

TasNetworks does not support the benchmarking of recurrent ICT costs on the basis of customer or employee numbers as a means of accounting for variations in the relative size of each DNSP. While some ICT expenditure, such as software licensing can, to an extent, relate to organisational scale (where a DNSP might pay a fixed amount plus a scaling factor based on user license numbers), this is not the case for ICT expenditure more generally. In TasNetworks' experience, compliance related expenditure, for example, tends not to differentiate between small and large DNSPs, however scale might be measured.

Customer numbers and employee numbers are rarely drivers of ICT expenditure, and rather than adjusting for economies of scale, using employee or customer numbers as a denominator in any ICT benchmarking exercise is likely to only reflect existing scale economies. We note that the ENA has proposed a number of alternatives to the use of customer and employee numbers and TasNetworks concurs with the ENA that more work is needed to identify valid bases of comparison between networks.

We are also of the view that compliance related expenditure should be excluded from the benchmarking of recurrent ICT expenditure, because of its frequently lumpy and unpredictable nature, and the fact that it is not usually driven by DNSPs.

The rate of change in DNSP's ICT expenditure highlighted by the AER in its consultation paper is going to make the use of benchmarking more difficult, in that benchmarking arguably works best during periods of stability. As we have already noted, the scope of business solutions and customer services has expanded due to technological advances, which has contributed to increases in both recurrent and non-recurrent ICT expenditure that makes observations of past spending a less reliable guide to the prudency and efficiency of plans for future expenditure.

TasNetworks acknowledges that the issues raised above highlight the challenges in undertaking the task of benchmarking DNSPs' ICT TOTEX and that there is unlikely to be a single, objectively correct metric that enables indubitable comparisons to be made between past and future ICT expenditure. Nonetheless, we are of the view that careful assessment of alternative benchmarking techniques is required in order to avoid adopting techniques that yield insights which are of limited value, and ensure that the most robust methodology possible is employed. Accordingly, TasNetworks would welcome further consultation between the AER and DNSPs on this matter.

Question 3: *We note the difficulty in assessing the efficiency of implementing a compliance driven step-change ICT projects. What information do you consider is required to assess the efficiency of these projects?*

TasNetworks concurs with the AER that assessing the efficiency of compliance driven ICT projects is a difficult exercise. Given that it can most often be difficult to build positive NPV cases for compliance projects, TasNetworks agrees with the ENA that the focus in assessing compliance driven ICT projects should not be on NPVs (noting that NPV ignores qualitative factors) and that the information required by the AER to assess compliance driven projects should be less detailed than for other ICT projects.

Question 4: *What do you consider a sufficient business case for an ICT project should include?*

In principle, TasNetworks considers that the information required by the AER to assess the prudency and efficiency of non-recurrent ICT projects (and other non-network capital expenditure) should be similar to the information provided in support of network related capital projects.

As part of TasNetworks' most recent regulatory proposal, we submitted Investment Evaluation Summaries for a range of ICT projects, as well as projects in the capital works programme relating to network assets. The Investment Evaluation Summary (**IES**) format used by TasNetworks includes:

- an overview of the project;

- the identification of risks that will be addressed on by the project;

- a detailed justification for the capital project including options analysis;

- additional details about the preferred option;

- estimates of the costs associated with each of the options evaluated in the IES;

- quantification of the tangible benefits of the project for the business and customers;

- identification of any intangible benefits for both the business and its customers that would be delivered by the project;

- details of the assumptions used in preparing the IES; and

- a comparison of the Net Present Value for each option evaluated in the IES.

TasNetworks considers this level of detail to be appropriate for the purposes of seeking regulatory approval, although it should be noted that the effort expended in developing a business case for TasNetworks' internal approval process can vary based on the assessment of risk and the dollar value of the project. As such, the supporting information detailed above – which is similar to the business case elements put forward by the ENA in its submission – should be regarded as a best case scenario, rather than the minimum standard.

Providing the same level of detail for every non-recurrent ICT project put forward as part of a regulatory proposal would potentially require TasNetworks to provide more information to the AER than was required to inform its own evaluation of certain, typically smaller projects. On this basis, TasNetworks suggests the use of a threshold project value to determine the non-recurrent ICT projects for which DNSPs should submit a business case to the AER, in much the same way as threshold values are used to determine the requirement for a Regulatory Investment Test.

We also note that much of the information included in an IES, including project costings, is developed in conjunction with ICT vendors, often at considerable cost to TasNetworks. The involvement of vendors in the preparation of ICT business cases, sometimes multiple vendors, clearly has benefits in

terms of the accuracy of costings and the precision of the analysis underpinning the business case. But it does add materially to the already significant internal costs which are incurred when developing a business case for an ICT project.

The use of a test for the requirement to submit a business case to the AER for a non-recurrent ICT project will also help limit the costs associated with preparing regulatory business cases for ICT projects, so that it does not become prohibitive and stifle the pursuit of more cost efficient and innovative ways of providing services to customers.

Question 5: *What is your opinion on us requesting DNSPs provide post implementation reports from historical ICT investments?*

TasNetworks currently undertakes post implementation reviews (**PIR**s) for ICT capex projects, although the level of evaluation can vary, depending on considerations such as the:

- cost of the project;
- benefits the project was expected to deliver to the business and its customers;
- ramifications of the project from a compliance perspective; or
- significance of the project in terms of risk.

The consultation paper states that PIRs will be used to quantify the benefits delivered by ICT projects and compare them with the benefits quantified in the original business case for that project. We note, however, that both the costs and benefits involved with a non-recurrent ICT project can be spread across multiple years and, indeed, regulatory periods.

This means that, depending on the timing of individual projects in relation to the regulatory cycle, it may not be possible to provide the AER with meaningful insights into the delivery of ICT projects – even major ICT projects – during the regulatory control period leading up to a new determination. In some cases, it is likely that any comparison of outcomes with a project's business plan may be limited to consideration of the costs and benefits that were scheduled to have been delivered by the review date, rather than an evaluation of the project in its entirety.

In our experience, PIRs are typically not provided to the AER in relation to network capex proposals or projects and TasNetworks does not consider that there is a prima facie case to treat ICT projects any differently.

However, if PIRs are to be provided by DNSPs for non-recurrent ICT projects, TasNetworks recommends:

- that the AER adopt an approach to the ex post evaluation of ICT projects which reflects the projected timing of expenditure and the realisation of benefits set out in a project's business plan;
- the use of a project value threshold – potentially the same test used to determine the requirement to submit a business case for a non-recurrent ICT project – to determine the ICT projects for which a PIR is required; and
- that information about past ICT projects would be best gathered through Reset RINs, rather than on an annual basis.

Prior to publication in September 2019 of the AER's final decision about its future ICT expenditure assessment approach, TasNetworks would appreciate more guidance about the information the AER is intending to acquire about past ICT projects to inform its thinking about future projects, how the AER intends to gather this information and whether the AER intends gathering this information for every non-recurrent ICT project undertaken by a DNSP (above the threshold value), or a sub-set of ICT projects. We would welcome the opportunity to work collaboratively with the AER in this regard between now and the AER's final decision.

Question 6: *What do you consider is required to demonstrate that DNSPs have incorporated benefits into its overall proposal?*

TasNetworks regulatory proposals for the 2017-19 and 2019-24 regulatory control periods both included voluntary efficiencies with a view to the business delivering an overall outcome that its customers would find acceptable. We note that those savings were accepted by the AER despite being non-specific, in that they were not attributed to a particular area of the business or a particular project or programme.

Isolating the impact that a particular ICT project might have on a DNSP's overall proposal would require a level of detail, in terms of a breakdown of opex forecasts, which is not typically prepared as part of developing a regulatory proposal. Further, while ICT will play an important role in achieving the annual productivity uplift required of DNSPs by the AER, it is not the only means by which productivity gains are achieved.

TasNetworks considers that a broader outcomes focus is, therefore, preferable to conducting a bottom up build of productivity gains in order to isolate the individual contributions that make up the savings and efficiencies incorporated into a regulatory proposal. On that basis, if the ICT business cases submitted to the AER demonstrate the prudence and efficiency of those projects and any tangible benefits have been quantified, if the DNSP's overall proposal is accepted by the AER then the benefits of those projects should be taken to have been incorporated into the overall proposal.

Question 7: *Which scenario - self funding or productivity improvement - would you prefer and why? Are there other scenarios we should consider?*

TasNetworks does not support the AER's proposal for the self-funding of ICT projects in cases where the DNSP has demonstrated the project to be prudent and efficient, but has been unable to demonstrate to the AER's satisfaction that the benefits are reflected in the DNSP's overall forecast.

Many otherwise prudent and efficient ICT projects may not generate benefits that are able to be reflected in DNSPs' overall forecasts. This is likely to be the case for some compliance driven projects, as well as cyber security related projects, neither of which will typically generate a positive NPV. Just as the absence of a positive NPV does not always mean that a particular ICT project should not go ahead, the lack of a demonstrable productivity lift or efficiency dividend that can be reflected in DNSPs' overall forecasts should not mean that DNSPs ought to be required to self-fund those projects, or that a productivity based adjustment should be imposed on their overall forecast.

We also consider that the application of the self-funding principle is not consistent with the principles that underpin incentive based regulation. The EBSS and CESS are based on the principle that, while the NSP's prudent and efficient expenditure is recovered from end users of the network, both the NSP and customers share in any cost savings and efficiencies realised by the NSP. Excluding the cost of a 'non-justified' non-recurrent ICT proposal from a NSP's regulated revenue allowance would see the NSP incurring the full cost of the ICT project(s) in question but still be required to return a share of the benefits to customers, as if the project had been funded by end users through the NSP's revenue allowance.

TasNetworks also does not support the imposition of a productivity adjustment to NSPs' overall proposals. We concur with the AER that there is a risk that the actual benefits delivered may not match the AER's adjustment to the forecast, just as there is a risk of double counting the benefits delivered by ICT projects in situations where an opex productivity adjustment is also being made. Like the ENA, we remain unconvinced that the use of an additional productivity adjustment is consistent with the principles of incentive based regulation.

Question 8: *We welcome stakeholder comments on the practical application of a productivity adjustment. If we were to include a productivity adjustment on the basis of ICT expenditure, how should it be incorporated? If so, how should we determine how large should this adjustment be? What aspects of a DNSP's forecast should it be applied to?*

In its consultation paper, the AER envisages making adjustments to specific aspects of a DNSP's proposal, based on the nature of the ICT investment that has been proposed by the DNSP. The examples provided cite scenarios like an ICT investment relating to demand management which leads the AER to make in an adjustment to augmentation expenditure on the network, and the AER making an adjustment to replacement capital expenditure forecasts for an ICT project that improves asset data.

TasNetworks shares the ENA's reservations about such an approach, as well as the concept of applying productivity adjustments to DNSPs' overall proposals on the basis of their ICT expenditure.