15 February 2018

Ms Michelle Groves
Chief Executive Officer
Australian Energy Regulator
GPO Box 520
MELBOURNE VIC 3001

Dear Ms Groves

Review of Operating Environment Factors for Distribution Network Service Providers

Energex Limited (Energex) and Ergon Energy Corporation Limited (Ergon Energy) appreciate the opportunity to provide a submission to the Australian Energy Regulator (AER) on a draft report prepared by Sapere Research Group and Merz Consulting in relation to the AER's review of operating environment factors (OEFs) used in analysing the operating expenditure productivity of distribution network service providers for economic benchmarking purposes.

Energex and Ergon Energy welcome the AER's review of OEFs and are supportive of the intention to provide greater consistency in their application. However, while we appreciate the need for refinement of the AER's current approach, we consider that care should be taken to ensure that the OEFs continue to accurately reflect the relativities between networks. Consequently, Energex and Ergon Energy have provided feedback on a number of the proposed recommendations as well as suggestions as to how the AER's approach could be improved to more accurately focus on the factors that are within the control of distribution network service providers.

Energex and Ergon Energy would also welcome being involved in any further engagement with the AER and other stakeholders in its review of OEFs.

Should you require additional information or wish to discuss any aspect of the attached submission, please do not hesitate to contact either myself on (07) 3851 6416 or Trudy Fraser on (07) 3851 6787.

Yours sincerely

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Review of Benchmarking Operating Environment Factors

Joint submission to the Australian Energy Regulator

16 February 2018

Part of the Energy Queensland Group

ABOUT ERGON ENERGY

Ergon Energy Corporation Limited (Ergon Energy) is part of the Energy Queensland Group and manages an electricity distribution network which supplies electricity to more than 740,000 customers. Our vast operating area covers over one million square kilometres – around 97% of the state of Queensland – from the expanding coastal and rural population centres to the remote communities of outback Queensland and the Torres Strait.

Our electricity network consists of approximately 160,000 kilometres of powerlines and one million power poles, along with associated infrastructure such as major substations and power transformers.

We also own and operate 33 stand-alone power stations that provide supply to isolated communities across Queensland which are not connected to the main electricity grid.

ABOUT ENERGEX

Energex Limited (Energex) is part of the Energy Queensland Group and manages an electricity distribution network delivering world-class energy products and services to one of Australia's fastest growing communities – the South-East Queensland region.

We have been supplying electricity to Queenslanders for more than 100 years and today provide distribution services to almost 1.4 million domestic and business connections, delivering electricity to a population base of around 3.4 million people via 52,000km of overhead and underground network.

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1 INTRODUCTION

The Australian Energy Regulator (AER) has commenced a review of the operating environment factors (OEFs) used in analysing the operating expenditure productivity of network service providers for economic benchmarking purposes. To assist in the review process, the AER has engaged Sapere Research Group and Merz Consulting (Sapere-Merz) to provide independent technical advice on the material differences in operating environments that exist between the various Distribution Network Service Providers (DNSPs) participating in the National Electricity Market (NEM). On 11 December 2017, the AER published a draft report prepared by Sapere-Merz.

The AER has requested that interested parties should make submissions on the draft report by 9 February 2018. Energex and Ergon Energy's comments are provided in sections 2 and 3 of this submission. We are available to discuss this submission or provide further detail regarding the issues raised.

As members of Energy Networks Australia (ENA), the peak national body for Australia's energy networks, Energex and Ergon Energy have also contributed to and are supportive of the issues raised in the ENA's submission on the draft report.

2 GENERAL COMMENTS

Energex and Ergon Energy welcome the AER's review of economic benchmarking OEFs and are supportive of the intention to provide greater consistency in their application across DNSPs. Economic benchmarking can be a useful technique for DNSPs to compare their efficiency with peers, forecast future growth and expenditure requirements and assist DNSPs in their approach to the AER's regulatory proposal process. However, the usefulness of benchmarking as an indicator of efficiency can be impacted by significant differences in operating environments and the fundamental drivers of costs for Australian DNSPs. Care must therefore be taken to ensure that the approach taken by the AER to OEFs leads to reliable and meaningful comparisons between DNSPs.

The Queensland distribution networks have evolved to operate in different and challenging physical environments when compared with other DNSPs operating in the NEM. For instance:

- Ergon Energy's distribution area covers 97 per cent of the State of Queensland, with around 70 per cent of the network's powerlines considered rural. This network not only covers large distances (over one million square kilometres) but has a very low customer density compared to other DNSPs, a relatively large amount of sub-transmission network and a large proportion of network which is radial in design. Ergon Energy's operating environment is significantly influenced by harsh environmental and climate factors, including tropical cyclones.

- Energex's distribution area (South East Queensland) is characterised by significant high density major urban areas serviced by over 52,000 km of overhead and underground distribution lines. Energex is also influenced by severe weather events, with South East Queensland having one of Australia's highest incidences of lightning strikes and commonly experiencing wind gusts in excess of 80 kilometres per hour which can expose the network to significant damage.

In addition to cyclones and severe thunderstorms, Queensland's climatic conditions also feature high rainfall areas with rapid vegetation growth; periods of sustained high temperatures and/or high humidity; salt spray in exposed coastal areas, resulting in reduced asset life due to corrosion; bushfires; and flooding. The challenges of distributing electricity within Queensland can therefore attract a number of additional cost drivers that affect both network and non-network expenditure.

Energex and Ergon Energy appreciate that the challenging operating environment of the Queensland distribution networks continues to be recognised by the AER and in the Sapere-Merz analysis. However, we note that Energex and Ergon Energy will be the businesses that are most affected by the proposed changes in OEF methodology[1], particularly with regard to:

- the unresolved vegetation management OEF which is a significant OEF for the Queensland networks;
- the proposed changes to the calculation method used for the severe storms OEF category; and
- the potential miscalculation of the sub-transmission OEF due to inconsistent definitions.

Together these OEF categories represent approximately 90 per cent[2] of the AER's historical OEF adjustment for Energex and 67 per cent[3] of the larger total OEF adjustment that has previously applied to Ergon Energy (as per Table 5 of the Sapere-Merz report).

While Energex and Ergon Energy appreciate the need for refinement of the AER's current approach, our primary concern is that the OEFs should still accurately reflect the relativities between networks. Consequently, we have some concerns with a number of the proposed recommendations and offer some suggestions as to how the approach could be improved to more accurately focus on the factors that are within the control of DNSPs, rather than implicitly attribute any unexplained differences to 'inefficiency' (as is the case in the AER's models).

Notwithstanding this, we recognise that shortcomings could be identified in any benchmarking due to the constraints of the chosen mathematical approach. This means that it is unlikely that the AER will be able to reach a conclusive, enduring and universally agreed list of OEFs for Australian distribution networks.

Several matters were raised with the AER during our previous regulatory determinations that still remain material and relevant additional cost drivers for the Queensland networks.[4] Rather than repeating those matters or raising a large number of additional concerns in this

[1] Sapere-Merz, *Independent Review of Operating Environment Factors used to adjust efficient operating expenditure for economic benchmarking*, December 2017, p. vii.

[2] Accounting for 9.3% of the total 12.2% AER OEF adjustment for Energex in Table 5 of the Sapere-Merz report.

[3] Accounting for 12.4% of the total 18.6% AER OEF adjustment for Ergon Energy in Table 5 of the Sapere-Merz report.

[4] Refer to the Huegin Consulting reports submitted during the 2015-2020 determination process for Energex and Ergon Energy, publically available on the AER's website.

submission, we suggest that a more pragmatic, effective and accessible approach to benchmarking would be to:

- Exclude factors that are already universally 'market tested' from operating expenditure benchmarking to ensure that benchmarking outcomes are not distorted by the efficient cost differences that may arise within competitive procurement processes in different regions.
- Where the AER seeks to rely on the benchmarking outcome, provide greater guidance on determining the relative weighting given to benchmarking results versus revealed costs and other relevant supplementary information (such as alternative models or Category Analysis findings).
- Take greater account of the factors that provide inherent benefits (rather than costs) to some networks over others. This extends to having appropriate regard to the impact of reporting differences (such as the 'balancing items' reported in the Category Analysis Regulatory Information Notice (RIN) and recognising differences in capitalisation policies) in more detail to ensure that the economic outcomes are not distorted by different accounting treatments.
- Where econometric models are used to estimate a base year operating expenditure value, a range of available estimates should be considered rather than a single point estimate. While we recognise the limitations with respect to the choice of input variables (due largely to the inclusion of international data), there is no reason for the AER not to consider the different range of operating expenditure estimates generated from the Least Squares Cobb-Douglas and Translog models. The use of a range of estimates would bring AER benchmarking practices in line with recent tribunal decisions both in Australia and overseas.[5]

Overall we consider that improving the accuracy and interpretation of the benchmarking approaches, coupled with greater clarity over how the outcomes will be applied by the AER, is a welcome step towards improving the customer outcomes from the Australian regulatory framework. Where DNSPs have greater certainty as to how the AER will assess our revenue proposal against our peers, we can focus our efforts on delivering customer benefits through operating and investment efficiencies rather than documenting complex regulatory justification.

[5] The Australian Competition Tribunal recommended a broader range of modelling be used if the estimates are to be relied upon. Internationally, the Dutch appeals tribunal has ruled against the regulators decision to rely on a single benchmarking model. See CBb (2015), Interim Judgement (Tussenuitspraak) on matters 13/855 and 13/865, Industry Appeals Tribunal (College van Beroep voor het bedrijfsleven), 11 August 2015, reference ECLI:NL:CBB:2015:272, available at Rechtspraak.nl.

3 RESPONSES TO SPECIFIC ISSUES RAISED

Energex and Ergon Energy provide the following commentary in relation to the Sapere-Merz draft report and the specific areas where DNSPs' views are sought.

Issue	Energex and Ergon Energy Response
Sub-transition and Licence Conditions *DNSP views are sought on the proposal to consider sub-transmission and licence conditions as a single OEF category, and the inclusion of transformer capacity as well as lines capacity in the quantification.*	In light of the potential for duplication, Energex and Ergon Energy are generally supportive of the proposal to consider sub-transmission and licence conditions together as one OEF category, but make the following comments for further consideration: • It is noted that the draft report has defined 'distribution assets' as including 33kV assets (i.e. 'DNSP assets operating at a threshold of 33kV and below'[6]) while 'sub-transmission' has also been defined as including 33kV assets (i.e. 'All assets operating at or above 33kV'[7]).[8] For benchmarking purposes it is critical that definitions are consistent to ensure comparability of results. As the vast majority of 33kV assets are considered to be sub-transmission in Queensland, we recommend that the definition of 'distribution assets' should be amended to read 'DNSP assets operating at a threshold of less than 33kV'. An incorrect definition may influence OEF results to the detriment of Queensland DNSPs while inconsistent definitions will result in invalid comparisons for the sub-transmission asset density and operating expenditure calculations (refer to Figures 2 and 3 of the draft report). • It is important that the calculation for this category must consider the impact of the Queensland dual function asset derogation and account for the fact that New South Wales and Australian Capital Territory DNSPs have some assets in a separate transmission asset

[6] Sapere-Merz, p. vii.

[7] Ibid., p. x.

[8] We recognise that the apparent inconsistency may arise from SA Power Network's use of 33kV assets for distribution purposes in the Adelaide CBD.

Issue	Energex and Ergon Energy Response
	base while Victorian DNSPs do not have dual function assets at all. We consider that these factors mean that the impact of jurisdictional licence conditions is not '…fully accounted for in the sub-transmission OEF estimate'.[9] To correct for this factor, it may be appropriate to include an additional adjustment (or OEF) to account for the Queensland networks. • Inclusion of capacity measures is welcomed as it will partially correct the issue with previous productivity benchmarking that only allowed for utilisation measures (which is appropriate for measuring overall productivity but is less suited to assessing the relative efficiency of operating and capital inputs). Capacity measures take into account the assets that a network has to maintain based on the development history and jurisdictional obligations they have historically responded to, not just simply how much of the network is used today. However, networks such as Ergon Energy's have a larger number of smaller capacity sub-transmission assets. Previous work by Energy Market Consulting Associates supported the view that operating expenditure in these networks was more driven by the number of assets than the total utilisation or capacity. Consideration should also be given as to whether a correction for installed capacity, or number of assets, is best applied as an OEF or within the specification of the Economic Insights econometric benchmarking models (in place of ratcheted maximum demand).
Vegetation Management *DNSP views are sought on proposals toward the future quantification of the vegetation candidate OEF*	Vegetation management accounts for a significant proportion of distribution network operating expenditure and is influenced by a wide range of environmental factors that may vary year-to-year, including rainfall, local tree species and climate factors. As such, Energex and Ergon Energy make the

[9] Sapere-Merz, p.28.

Issue	Energex and Ergon Energy Response
(or set), encompassing the previous bushfire and division of responsibility OEF categories.	following observations regarding the quantification of the candidate OEF(s) for vegetation management: • Most vegetation management is outsourced on a contestable basis by DNSPs (as evidenced in Table 16 of the Sapere-Merz draft report);[10] • Regulatory Information Notice (RIN) data for vegetation management is immature and difficult to consistently quantify;[11] • Significant variations will arise from environmental and jurisdictional factors, such as: – High / low rainfall in any given year; – The competitiveness or attractiveness of the local contractor market, including the need for the widely dispersed rural DNSPs (i.e. Ergon Energy and Essential Energy) to consider the cost trade-off of contracting in several local markets with adopting alternative treatment method cycles due to greater travelling distances; – differences in jurisdictional obligations that are outside the control of the DNSP; and – the multiple interrelated drivers for vegetation management operating expenditure variance that have been identified by both Sapere-Merz and Economic Insights.[12]

[10] This is also recognised by Sapere-Merz who state: *'For most DNSPs, a high proportion of total vegetation OPEX is represented by payments to third parties. As a result, most of the variation in OPEX is considered to reflect real differences in expenditure between firms …',* p.49.

[11] Sapere-Merz, *'…EBRIN data on vegetation density is considered less mature than other EBRIN data, upon which the EI model and some other OEF estimates have been developed…'*, p. 54.

[12] For example, Sapere-Merz comments:

*'Economic insights advised that **it is difficult to quantify the extent that differential vegetation management OPEX is indirectly picked up** by the line length variable. **There is insufficient information to disentangle the various effects** related to line length, and the high correlation between output variables in the SFA model means that particular coefficients may not be interpreted in isolation',* p. 52 (emphasis added); and

*'…variations in vegetation density and growth rates, along with variations in regulation around vegetation management, **are together likely to be a material driver of variations in efficient vegetation OPEX**… …**It is probable that a vegetation management OEF candidate**… …**meets the OEF criteria** for a significant portion of DNSPs….*

Issue	Energex and Ergon Energy Response
	Despite these issues, vegetation management has carried substantial weight in the AER's decisions on the efficiency or otherwise of operating expenditure. Energex and Ergon Energy propose that a more effective treatment of the vegetation management OEF would be for the AER to place less reliance on refinement of Economic Benchmarking (EB) RIN data and more comfort in the fact that between 85 and 100 per cent of vegetation management operating expenditure is contracted to third parties. This approach would allow vegetation management to be subjected to 'lighter' regulation and reporting, reflecting that these services are delivered almost completely in contestable markets. As a result, the AER can rely on the market testing that has been undertaken for vegetation management costs. If further assessment is desired, a two-step process could be adopted that is similar to the AER's approach for assessing the efficiency of related party margins (as outlined in the AER's *Expenditure Forecasting Assessment Guidelines* 2013, pp. 13-14). This assessment process would involve questions equivalent to: • Did the DNSP have an incentive to agree to non-arm's length terms at the time the contract was negotiated (or at its most recent renegotiation)? • If yes, was a competitive open tender process conducted in a competitive market? Where these factors are satisfied, vegetation management can then be removed from total operating expenditure for benchmarking purposes, reducing the need to correct for many of the environmental 'differences' highlighted in previous determinations and the 'overlapping causal OEF candidates' identified by Sapere-Merz.[13]

*…**No quantification of a candidate vegetation management** OEF candidate (or set of OEF candidates) **has been able to be estimated at this time. The summary results**… …**have therefore been reported as nil**…', p.54 (emphasis added).

[13] Sapere-Merz, p.53.

Issue	Energex and Ergon Energy Response
	This would enable the AER to provide a market monitoring and reporting role to allow commercial opportunities to more readily be assessed by potential new entrants in less competitive (or higher cost) markets.[14]
Taxes and Levies *DNSP views are sought on apparent inconsistencies in RIN returns with respect to taxes and levies and options for quantification of this OEF category in future.*	Energex and Ergon Energy agree with the assessment that there are significant inconsistencies between RIN returns with respect to taxes and levies. In Queensland, we are currently responding to these inconsistencies by aligning the treatment of taxes and levies (among other matters) in our respective RINs where practical, while maintaining transparency for regulatory purposes. Historically, the recognition of 'controllable' versus 'non-controllable' operating expenditure in comparisons of transmission networks and the need to correct for material jurisdictional differences (such as adjusting AusNet Services' transmission network figures for Victorian Easement Land Tax[15] and the impact of VENCorp/AEMO augmentation planning and contestable procurement functions in Victoria) provides a useful regulatory precedent for separately correcting for jurisdictional differences in comparisons of relative performance. A potential way forward would be to separately quantify all jurisdictional taxes and levies for each DNSP, regardless of how they are ultimately captured in operating and capital expenditure reporting (after application of the cost allocation method and capitalisation and accounting practices). This approach would enable the annual tax and levy burden on each DNSP to be assessed as a proportion of approved revenue.

[14] This could be assisted via AER support for the Energy Networks Australia co-ordination of initiatives to 'standardise' vegetation management terms of reference towards a common view of industry best practice. For example, definitions, operating environments, constraints and points of difference, operating models and approaches to facilitate comparison and sharing.

[15] AER, *Final Decision AusNet Services transmission determination 2017-2022 Overview,* April 2017, pp. 25-26.

Issue	Energex and Ergon Energy Response
Termites *By increasing compensation for termite OPEX, the proposed approach potentially mutes incentives for efficient investment in termite proof assets (e.g. concrete or steel poles). We would welcome comments on whether this is considered to be an issue and if so, potential options in response.*	Energex and Ergon Energy do not agree with Sapere-Merz's assessment that the termite OEF will mute the incentives for efficient investment in termite proof assets.[16] This is because it is not economically efficient or technically practical to replace most poles in the Queensland network with 'termite tolerant' assets, such as Stobie poles or steel or concrete poles. Similarly, the significant scale and remaining life of wooden poles means that Energex and Ergon Energy will continue to have a heightened risk of termite exposure resulting in ongoing treatment and more frequent periodic inspection cycles. Active management of wooden poles will therefore remain a material driver of operating expenditure for the foreseeable future. The incentives that already apply under the Efficiency Benefit Sharing Scheme (EBSS) provide sufficient benefit for the business to reduce these costs wherever it is more efficient to respond through capital investment in 'termite proof' assets. Under the design of the EBSS any realised efficiency benefits ultimately flow to customers through lower prices.
Unrecovered Vegetation Management operating expenditure *ActewAGL views are sought regarding the significance of incremental backyard reticulation costs includes arising from unrecovered vegetation management operating expenditure*	Energex and Ergon Energy note that a certain amount of unrecovered vegetation management work in situations where the responsibility technically resides with the customer should be expected as part of network operations. This is because the DNSP is ultimately responsible for the safe operation of the network and there are typically thousands of instances per year relating to vegetation management works where the administration costs of the recovery process outweigh the incremental treatment cost and any benefit from recovery. That said, Energex and Ergon Energy are minimising the financial impact on customers through education, call centre scripting and incorporating as much work into the cyclic program as possible. As previously noted, removing vegetation management from benchmarking and, if necessary, assessing the efficiency of the DNSP's procurement and contract management approach would also address this issue.

[16] Sapere-Merz, p. 34.

Issue	Energex and Ergon Energy Response
	The ENA's work on vegetation management would be an appropriate forum to consider changes in the treatment of vegetation management expenditure with input from all stakeholders.

4 OTHER MATTERS FOR CONSIDERATION

In addition to our response to the specific questions that Sapere-Merz has raised, Energex and Ergon Energy have provided further commentary below in relation to other critical issues.

4.1 Extreme Weather - Cyclones

Ergon Energy notes Sapere-Merz comment in relation to the cyclone OEF that:

> *'Our approach extends the previous analysis to include three subsequent cyclones up to the end of financial year 2015…*
>
> *… The present assessment may therefore be an under-estimate, and a fuller assessment could be made with equivalent cost data for all cyclones in the benchmark period.'*[17]

Ergon Energy confirms that it is willing to provide the additional information on cyclone costs within the benchmarking period and work with the AER and its consultants to support a more accurate calculation of the cyclone OEF.

4.2 Severe Weather – Storms

We note that the OEF for extreme weather events has been calculated using major events operating and maintenance expenditure (net of cyclone event expenditure). This is unlikely to be an appropriate proxy for expenditure incurred by networks that have a higher incidence of storm activity relative to other networks as it only includes expenditure incurred when a major event is recorded. The use of major event operations and maintenance expenditure will also ignore proactive operating expenditure incurred to prevent damage to the network and limit supply interruptions from storm-related activity.

Furthermore, Energex and Ergon Energy consider that the proposed approach does not account adequately for:

- the impacts of severe storms on networks with low customer density and large line lengths, for example Ergon Energy's and Essential Energy's networks, and the costs of response;
- the costs arising from the preparation for storm season;

[17] Sapere-Merz p.39.

- the remoteness of the Ergon Energy network and access restrictions that occur in rural areas during these events (such as flooding cutting off road access) and greater response times between depots; or

- the impact of multiple localised storms that do not meet the Major Event Day threshold, particularly the relatively frequent tropical storms that occur across Ergon Energy's network area.

Noting Sapere-Merz's observation that the issue of extreme storms is mainly centred in northern New South Wales and southern Queensland, the Queensland networks would be pleased to work with Essential Energy and the AER to develop a more appropriate measure that recognises these challenges.

As suggested by Sapere-Merz, Energex and Ergon Energy will also consider whether the methodology for the storms OEF could be improved by the use of probability-based climate data during its preparations for the forthcoming regulatory proposal.

4.3 The impact of spatial customer density

Energex and Ergon Energy note that a significant issue raised during the most recent New South Wales and Australian Capital Territory determinations was the appropriateness, or otherwise, of relying on a linear customer density (customers per circuit kilometre) over 'spatial' customer density (customers per square kilometre) in the AER's benchmarking. In practice, this approach does not take into account some of the factors that most acutely affect Ergon Energy's rural distribution network. This is because:

- the majority of 'circuits' in most networks are of three phase construction;

- in city and suburban areas, several circuits can run along the same route and (based on the 'route kilometre' versus 'circuit kilometre' figures reported in the EB RIN) the extent of under-strung circuits appears to vary considerably between networks;

- having multiple circuits on each route will provide an inherent advantage to networks that have a more compact and less geographically dispersed customer base; and

- a more dispersed customer base is inherently more expensive to serve than a spatially compact service area due to increased travel times, reduced opportunities to share specialist resources (fleet and personnel) and more limited opportunity to respond to operational issues through load transfers or network reconfiguration.

Some of these factors are recognised by Spere-Merz in its discussion on the severe storms OEF where it states that that:

> *'…the average OPEX per kilometre line length increases for remote and rural areas and is a minimum for the wholly urban CitiPower. This relationship is unsurprising and reflects the fact differences in the time required to restore services will be related to the distances emergency crews have to drive to failed assets.'* [18]

As a result, Energex and Ergon Energy suggest that further work should be undertaken to test an alternative 'spatial' customer density measure to take account of the 'difficult to quantify' factors that were previously acknowledged by the AER. This work could include:

- requesting the DNSP to provide a consistent proxy for the area serviced by their distribution network, for example, the area within 100 metres of a distribution line;
- evaluating whether this measure is a suitable alternative to the existing linear customer density measure, or whether it should be applied as a separate OEF to the most affected networks; and
- identifying which of the previous 'non-material' OEFs a specific adjustment for spatial density could address, thereby enabling further rationalisation.

[18] Sapere-Merz, p. 41.