



Mr Martin Priest
Commercial Manager Networks
ActewAGL
GPO Box 366
Canberra ACT 2601

17 June 2014

QH10545

Dear Martin,

Vegetation Management Cost Pass-through application

Sinclair Knight Merz Pty Ltd (SKM), now Jacobs Group (Australia) Pty Ltd, was engaged by ActewAGL in late 2013 to provide advice and assistance in the preparation of a cost pass-through submission associated with increased operational and maintenance (O&M) costs, resulting from abnormally rapid vegetation and tree regrowth in 2011/12. The increase in vegetation management costs were as a result of unexpected and uncontrollable increases in vegetation growth rates, which followed above average rainfall in the ACT. In 2010/11 and 2011/12 rainfall was 40 per cent and 25 per cent respectively above the long term average, and the 8th and 11th highest amounts recorded since 1940.

Jacobs has been asked to review and comment on Appendix A of the AER's 10 June draft determination being the report of the AER Technical Advisory Group (TAG) dated 23 May 2014.

For the purpose of preparing this response, Jacobs has been provided with a copy of the Federal Court of Australia's Practice Note CM7 "Expert Witnesses In Proceedings in the Federal Court of Australia". Jacobs has read, understood and complied with the Practice Note in preparing this response.

Jacobs assigned one of its most experienced consultants, Mr Cliff Jones to the assignment, and his CV is attached. Mr Jones not only has 15 years of consulting experience in the regulatory area of the Australian electricity industry, but also some 35 years of electricity industry experience at senior engineering and management levels within the industry in Queensland and Victoria. Prior to joining SKM in 1999, Mr Jones had undertaken a number of senior operational, engineering, and management roles including acting CEO of SEQEB (now Energex), acting CEO of Ergon Energy, CEO of Capelec (QLD), and GM Distribution of Eastern Energy (later TXU Aust., and now SPAusNet).

During his time with the electricity industry in Victoria in the early to mid-1990's Mr Jones was also Eastern Energy's senior representative on the Victorian Tree Clearing Management Committee, which included representatives of the Office of Electrical Safety, Department of Primary Industries, Victorian Farmers Federation, and Local Government.



During his career in the electricity industry Mr Jones has had direct operational and management responsibilities for developing, letting, and managing vegetation management contracts in both Queensland (Energex and Ergon Energy) and Victoria (Eastern Energy/TXU). In the case of Victoria, during the period of transition to private ownership Mr Jones was responsible for overseeing the implementation of new vegetation contracting models that led to the establishment of new companies providing vegetation management services.

Mr Jones has, through his network of industry contacts and his ongoing consulting work with the Australian DNSPs, kept abreast of recent developments in vegetation management strategies, and the various contracting models that are often applied.

Except where otherwise stated, the opinions in this response are based wholly or substantially on the specialised knowledge of Mr Jones referred to above.

Jacobs has reviewed Appendices A and B of the AER's 10 June draft determination although this letter specifically addresses only the comments and arguments presented in Appendix A.

Appendix A

From its review of Appendix A Jacobs understands that the AER Technical Advisory Group (TAG) concludes that ActewAGL's vegetation management costs are not efficient for three underlying reasons:

- 1) **The contracting methodology** – the TAG states that *"Our experience in reviewing vegetation management practices and contracts has identified that hourly-rate style contracts generally result in higher cost and are often less effective than other contracting methodologies such as the more commonly utilised unit rate contracting methodologies"*.
- 2) **The unit rate costs** – The TAG conclude that ActewAGL's costs on a unit rate basis are inefficient because those costs have increased from 2008/09 to 2012/13, and because ActewAGL's unit rates in 2012/13 were over [cic █████] above the TAG's asserted benchmark total vegetation management cost per network span.
- 3) **That ActewAGL's vegetation management strategy is reactive** - and may be inefficient because ActewAGL's does not *"...monitor rainfall and pre-emptively adjust pruning practices."*

Taking each of these assertions individually, we would comment as follows:

The contracting methodology

Jacobs fully recognises that for certain electricity distribution activities for which the scope of work, the labour required, and where total costs for a particular task will normally fall within a small to moderate range (say $\pm 10 - 20\%$) then unit rate contracting can be used effectively to achieve a particular level of output for a fixed unit price. Typical examples of work that can be done using unit rate contracts are:

- Meter reading
- Pole inspection
- Pole replacement
- Transformer replacement



- Other tasks where there is not large variability in the possible scope of work and time taken to complete

However, it is also our experience that there are certain distribution work activities which cannot be sufficiently tightly scoped to allow for unit rate contracting to be universally applied, without the contractor pricing in a significant risk premium. Such work includes:

- Standby and after hours call-out work where the frequency and duration of call-out jobs is unknown
- Emergency response work such as during storms and cyclones
- Tree trimming/clearing and vegetation management, where the accessibility is difficult, or where the species of trees and/or volume of material to be disposed of is unknown, or difficult to estimate

The TAG report conveys the impression that unit rate contracts are more commonly used for vegetation control across the distribution industry than hourly rate contracts, and that by deduction one can only be classified as "cost effective" if a utility uses unit rate contracting for vegetation control. This is not correct, nor is it representative, in Jacobs's experience, of the commonly used contracting methodologies for vegetation control by Australian distribution companies.

Jacobs has contacted industry representatives and a highly reputable private vegetation management company that operates nationally, all of whom have confirmed that DNSPs in Australia use a mix of contracting strategies including:

- **Hourly rate** – particularly for difficult to scope work, and emergency response situations
- **Lump sum** – typically on a feeder by feeder basis, where the tenderers can all view and assess the amount of work to be done on a common basis, and assess the risk of variability.
- **Annual budget based contracts** – these are sometimes used to engage a single Vegetation Management Consulting firm (as distinct from the tree trimming contractors), who provides an overall vegetation management service including patrolling and recording vegetation clearance issues, scoping work, issuing work orders, engaging contractors, checking quality of work, arranging payment of contractors, and updating asset records. Sometimes these annual budget based contracts will have benchmark or unit rate targets, and financial incentive arrangements built into the management contracts to encourage productivity improvements. However, there is a "management fee" to the arrangement which often mitigates any realistic estimates of productivity gains.
- **A hybrid of all of the above** – most vegetation management specialists will advise that it is necessary and prudent to have flexible contracting arrangements which are adaptable to the situation faced. For planned clearing work, where the scope is definable, the man-hours required quantifiable, and the "unknowns" minimal, then lump sum or unit rate approach may be appropriate. For un-programmed, unexpected, or emergency response work, such as that experienced by ActewAGL in 2012/13 it is quite appropriate for the work to have been undertaken on an hourly rate basis.

The use of hourly rate contracts for un-programmed, unexpected, or emergency response work is the most common practice across the Australian electricity supply industry, and we believe that it constitutes what a prudent and efficient operator would have done under the circumstances that ActewAGL experienced in 2011/12 and 2012/13.



Unit rate costs

Any consideration of unit cost trends over time, particularly if the time scale spans the period before 2009 and extends out to 2012/13, needs to be considered in the context of a period of rainfall deficiencies followed by the highest level of annual rainfall seen in over 20 years, that commenced in 2010/11.

"Drought declarations" are made by state and territory governments not on any scientific definition by BOM. The ACT did not declare a drought until 20 November 2002. A Drought Statement was issued by BOM in January 2010 which noted that:

"Very long-term rainfall deficiencies outside of the drought periods discussed above persist across parts of southern and eastern Australia. Most notably, rainfall has been below average across much of southwest and southeast Australia since 1997, while the Murray-Darling Basin has experienced below average rainfall since 2002. (See here: <http://www.bom.gov.au/climate/drought/archive/20100105.shtml>)"

The ACT is within the Murray-Darling Basin area.

The sudden change in climatic conditions in early 2011 would have dramatically changed the regrowth rates of vegetation, not only in the ACT, but also across the eastern states. Prior to 2010/11, the sustained period of drought would have resulted in lower regrowth rates, and would have also suppressed the annual budget requirements of not only ActewAGL, but also other DNSP's whose systems are similarly impacted by vegetation. The TAG report uses some simplistic "benchmark cost" analysis which does nothing more than reflect the fact that vegetation management costs were lower during the drought than during the heavy rainfall period in 2010/11 and 2011/12.

This is the very underlying basis of ActewAGL's pass-through claim for an exceptional and unexpected event. "Unexpected" in this context should be considered as being at the time of submission of forecast expenditure for the 2009-14 regulatory period, not in the months leading up to, or at the start of the rainfall event.

Unit cost benchmarking can be a useful tool for comparison of cost trends over time, or for comparison of costs between similar DNSP's under similar circumstances, but it can equally be misleading if used to compare dissimilar utilities under dissimilar circumstances. The unit cost benchmarking, which is the only argument with any quantitative basis put forward by the TAG to support their claims that ActewAGL's vegetation management and contracting practices are inefficient, is severely flawed in several regards, as discussed below:

- The unit rate costs are based on real cost (\$2012) per total number of spans on the network. This ignores the extent to which the network concerned is actually impacted by vegetation. A lightly vegetated supply area will automatically have lower costs than a heavily vegetated area, as the amount of clearing required will be less.
- The unit rate cost trends identified, whereby the TAG calculates that ActewAGL's total vegetation management costs went from around [cic ■■■] (real 2012) in 2008/09 to [cic ■■■] (real 2012) per span in 2012/13 is in our opinion totally expected, as 2008/09 was under drought conditions while the latter is during and immediately after a period of sustained rainfall conditions. The increase in direct contractor costs from [cic ■■■] to [cic ■■■] of the



total cost is also very predictable, and reflects the increased volume of both cutting work and disposal work.

- The TAG report also states that "...we are of the opinion that the benchmark total vegetation management cost per network span is in the order of [cic ■■■] to [cic ■■■] (real 2012)". While the benchmark costs have obviously been adjusted in some way to 2012 values, it is not stated over what period of time the data was collected to establish the benchmark. If it was established based on information and data collected prior to the end of the drought period, then it will clearly be a figure which has been suppressed by the prevailing environmental conditions, and cannot be used by which to judge the efficiency of costs after the drought period.
- It is also prudent to note that the TAG report has identified that ActewAGL's cost per span was [cic ■■■] below the benchmark range in 2006/07. If the benchmarking data can be relied upon (doubtful), this would appear to indicate that it was operating more efficiently than the industry average. While ActewAGL's contracting strategy has over the years been a mix of "lump sum" and "hourly rate", appropriate to the situation, the contracting strategy in 2006/07 was essentially the same as it was in 2012/13, with a significant proportion of hourly rate work. This fact poses two questions
 - 1) If hourly rate contracting is less cost effective than unit rate contracting (if one accepts the proposition that unit rate contracting is the more common practice), how is it that ActewAGL were [cic ■■■] below the benchmark in 2006/07?
 - 2) Over what period in time was the information and data collected to establish the benchmark range, and to what extent is the benchmark range more indicative of sustained drought conditions, rather than normal rainfall levels?

There does not appear to have been any attempt made to "normalise" the benchmark data for those factors that are the underlying drivers of vegetation management costs, such as:

- The vegetation density – i.e. the difference in the percentage of spans that are directly impacted by adjacent vegetation
- Vegetation growth rates – i.e. the differences in growth rates during dry periods will be vastly different to wet periods, but the benchmark cost comparison expects them to fall within a narrow range regardless of the level of rainfall. This is nonsensical.

That ActewAGL's vegetation management strategy is reactive

The TAG report closes by making the observation that "... the TAG is also of the view that ActewAGL's vegetation management strategy may be inefficient. An efficient vegetation management strategy will include monitoring rainfall and pre-emptively adjusting pruning practices to reduce the impact of the expected growth response some 18 months to two years hence."

Jacobs is of the view that ActewAGL are pro-active in their approach to vegetation management, and this is evidenced by the following elements of their vegetation management policies and practices:

- Regular ground patrols on a defined cycle, as outlined in ActewAGL's November 2013 cost pass through submission
- The practice of trimming back to allow for three years regrowth wherever possible



- The decision to undertake aerial patrols in 2011 and 2012 when ground patrols became difficult in some areas due to ground conditions, and when the possibility of multiple clearance breaches emerged
- The subsequent decision to programme more regular aerial patrols, to compliment ground patrols, and to further trial the implementation of LiDAR technology
- With the potential expansion of the use of LiDAR, ActewAGL is also considering the establishment of a geographical vegetation database of the span location, height of the trees and species of trees that are within or just outside the approach distances of overhead lines, with the potential to cause interference.
- Targeted advertising campaigns to increase the awareness of vegetation requirements and responsibility for clearance
- Maintaining a list of suitable trees and shrubs that are suitable for planting near power lines

Finally, the statement in the TAG report that an efficient strategy "...will include monitoring rainfall and pre-emptively adjusting pruning practices..." does not reflect industry practice. We have checked with our industry contacts, which includes a private vegetation management company (that has worked in all the states of Australia), and they all confirm that to the best of their knowledge, no DNSP in Australia monitors rainfall (in an active and continuous sense), and adjusts pruning practice accordingly. To some extent this is what vegetation inspectors do intuitively, and ActewAGL's three year regrowth cutback is designed to accommodate.

To suggest that a "prudent and efficient operator" does continuously monitor and respond to rainfall brings into question their whole understanding of the vegetation management process.

In preparing this response we have made all the inquiries that we believe are desirable and appropriate and no matters of significance that we regard as relevant have been withheld.

Regards

A handwritten signature in black ink, appearing to read "Cliff Jones".

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