

**Vegetation Management Cost Pass
Through Application**

**ActewAGL Response to Essential
Energy Documents Provided by the
AER on 27 June 2014**

July 2014

ActewAGL 

for you

Contents

Contents.....	2
1. Overview.....	3
2. LiDAR	6
3. Hourly rate contracts	11

1. Overview

On Friday 27 June 2014 (at 4.36pm) the AER informed us that two documents had come to its attention in the last week which it intended to have regard to in making its final determination in respect of ActewAGL Distribution's (**ActewAGL's**) pass through application of November 2013 in respect of vegetation management costs for the 2012/13 regulatory year (**Pass Through Application**). The AER informed us that these two documents were public documents submitted by Essential Energy to the AER in support of its 2014–19 regulatory proposal (**Documents**) and gave us until close of business on Wednesday 2 July 2014 to respond to them. The Documents are entitled:

"Appendix - Vegetation Management Review Findings" (**Document 1**); and

"Approaches to Vegetation Management and Overhead Line Inspection", Item No. 7.3, Executive Leadership Group Meeting, 20 June 2013. This document is certified by John Hardwick, Group Executive Network Strategy, Networks NSW (**Document 2**).

The AER did not inform ActewAGL of the particular points in the Documents which it intended to have regard to in making its final determination. It is therefore not entirely clear which points in those Documents are of concern to the AER or how the AER intends to have regard to and rely upon the Documents in making its final determination.

We consider that by not informing us of the particular matters in the Documents which it intends to have regard to and giving us only 3 business days to comment on the Documents, the AER has failed to accord procedural fairness. In order to accord procedural fairness, the AER should have informed us of the way it proposed to take account of and give weight to the Documents and given us a reasonable opportunity to respond. The Documents comprise 25 pages of difficult technical material which prima facie have no relevance to ActewAGL's Pass Through Application. It is difficult for ActewAGL to properly respond to the Documents when it does not know the way in which the AER proposes to take the material into account or the weight it proposes to give that material. Further, we consider that, particularly given the technical nature of the material contained in the Documents and their preparation in a different context for a different purpose, allowing 3 business days for us to respond to the Documents is not adequate.

Nonetheless, ActewAGL has not identified anything in the Documents that would provide the AER with any basis to reject ActewAGL's Pass Through Application or to reduce the quantum of the proposed positive pass through amount. Similarly, in correspondence to ActewAGL dated 2 July 2014, ActewAGL's consultants, Jacobs Group (Australia) Pty Ltd (**Jacobs**), conclude that the Documents do not change its views expressed in its report dated 17 June 2014 (set out in Attachment 1.1 to ActewAGL's response of 20 June 2014 (**Response to Draft Determination**) to the AER's draft determination on the Pass Through Application of 10 June 2014 (**Draft Determination**)) (**Jacobs Report**). ActewAGL attaches a copy of Jacobs' letter to, and relies on that letter for the purposes of, this submission.

Particularly since the AER has not informed us of the matters in the Documents which it intends to have regard to, the onus is on the AER to establish that any material in the Documents it relies on is accurate, reliable and applicable to ActewAGL. On their face the Documents are specific to the Networks NSW distribution network service providers (**DNSPs**), being Essential Energy, Ausgrid and Endeavour Energy, and contain detailed comments and conclusions tailored to the specific circumstances of those DNSPs. This is evident, for example, from the differences in the conclusions made in respect of the changes in focus areas for each of the DNSPs in Attachments 4 to 6 of Document 1.

Because the Documents concern circumstances particular to the Networks NSW DNSPs and do not deal with ActewAGL or the particular circumstances of its Pass Through Application, we consider that there is a risk that the AER may fall into error if it relies on any statements in the Documents in making its determination on ActewAGL's Pass Through Application.

While we note that the Documents are specific to the Networks NSW DNSPs, we draw the following points in the Documents to the attention of the AER in the event that the AER should nevertheless have regard to them:

The Documents support ActewAGL's use of LiDAR technology in the circumstances of the pass through event where a quick response was necessary to rectify the vegetation encroachments. For example, Document 1 observes that:¹

High definition aerial photography (to appropriate resolution) is an important tool for system defect resolution. It allows the operator to inspect their network in a short period of time, which is particularly useful for PSBI given its seasonal nature, but is also very useful during incident recovery to patrol damage and direct response activities.

The Documents support the use of LiDAR technology as an efficient tool for identifying vegetation encroachments. For example, Document 1 notes that the results of Ausgrid and Endeavour Energy's use of aerial patrol and analysis (or 'AP&A') during 2013 were "very good, clearly identifying defects and assisting in the prioritisation of those defects to support compliance prior to the bushfire season".² Document 2 also sets out efficiency benefits of LiDAR in the four bullet points under the heading "*Cost Benefit Hypotheses*";³

The Documents show that vegetation management contracting costs have increased in recent years for DNSPs which have outcomes based contracts. This supports ActewAGL's position that its proposed positive pass through amount is efficient even though it used hourly rate contracts and casts further doubt on the AER's analysis in sections 6.2.2 and 6.2.3 of its Draft Determination. For example, Document 1 explains that vegetation management contracting costs increased for Endeavour Energy from

¹ Document 1, p7.

² Document 1, p8.

³ Document 2, p3.

2011/12 to 2013/14 and attributes those "significant" cost increases to "contractor management, coupled with no tolerance to variation to standards".⁴

The Documents demonstrate that the vegetation management strategies and contracting arrangements for each of the three NSW DNSPs are different. This is particularly evident in the discussion of the different contracting models for Ausgrid, Endeavour Energy and Essential Energy in Document 1.⁵ Further, it is likely that those strategies and contracting arrangements will remain different even though the Documents indicate Networks NSW is seeking to harmonise the three NSW DNSPs' vegetation management practices. The Documents indicate that the process of implementing specific vegetation management principles across the three businesses will not be straightforward, or even achievable. For example, the discussion in Document 1 regarding basing the contract management models on principles, including outcomes based contracts in particular circumstances, notes that the business process review for vegetation management needs to "reflect what is practical and concentrate on actions that mitigate the most material risks".⁶ Further, the discussion in Document 2 regarding the vegetation management principles for implementing a common standard for vegetation management across the three NSW DNSPs uses language such as "where possible" and "where possible and appropriate".⁷

While we do not know the specific points in the Documents which the AER intends to have regard to, we note that the Documents refer to the use of LiDAR and hourly rate contracts. Accordingly, we address those matters below.

⁴ Document 1, p5.

⁵ Document 1, pp9-10 and Attachment 1.

⁶ Document 1, p10.

⁷ Document 2, p3.

2. LiDAR

The Documents refer to the use of LiDAR technology by Networks NSW, in particular by Endeavour Energy and Ausgrid. There are suggestions in the Documents that the use of LiDAR results in the identification of a higher number of vegetation encroachment defects than "existing scoping and audit methods".⁸

It is therefore possible that the AER will seek to rely on the Documents to support a conclusion such as that contained in its Draft Determination that ActewAGL's adoption of LiDAR in responding to the pass through event would have resulted in increased costs that were not due to that event because LiDAR inspections identify a greater number of trees requiring trimming.⁹ ActewAGL explains below why it would be incorrect and unreasonable for the AER to reach such a conclusion in reliance on the Documents.

The AER must accept information provided by ActewAGL in respect of its Pass Through Application over any statements contained in the Documents, as that information is specific to ActewAGL's circumstances and the circumstances of the pass through event. By contrast, the statements in the Documents concern the current experience of Ausgrid and Endeavour Energy, having regard to their vegetation management practices and circumstances. In the Documents, Networks NSW is comparing the use of LiDAR to the "existing scoping and audit methods" at Ausgrid and Endeavour Energy. Any conclusions in those documents regarding those DNSPs' experience on the adoption of LiDAR do not have regard to ActewAGL's vegetation management practices prior to its adoption of LiDAR, which are necessarily different to those companies' practices.

In our Response to the Draft Determination we referred to the Australian Competition Tribunal's (**Tribunal's**) decision in *Application by United Energy Distribution Pty Ltd* [2012] ACompT 1 at [666] (**UED Decision**) in which the Tribunal noted that, in assessing vegetation management costs, Nuttall Consulting failed to pay proper regard to the differences of Powercor Australia's network and work programs and those of the other DNSPs. This decision emphasises that the AER should not seek to apply conclusions made by other DNSPs to ActewAGL's circumstances. Rather, the AER should take account of the information provided by ActewAGL and the submissions made by ActewAGL in reaching its conclusion on its Pass Through Application. That information is the best information on which the AER should make its decision because it is specific to ActewAGL and the circumstances giving rise to its Pass Through Application.

As ActewAGL has stated in its submissions and information responses to the AER, in our experience ground crews identify the same amount of vegetation to be cleared as LiDAR technology.¹⁰ The main advantage of LiDAR technology in the circumstances we faced

⁸ Document 1, p6, p8 and p9; Document 2, p4.

⁹ Draft Determination, p 22.

¹⁰ ActewAGL, Vegetation management cost pass through: Additional information, December 2013, p11; ActewAGL, Vegetation management cost pass through: Response to

(the subject of the Pass Through Application) was that it enabled us to inspect for clearance encroachment more quickly than ground surveillance would have. This enabled us to dispatch crews to address vegetation encroachment sooner.

In comparing the number of vegetation encroachment defects identified using LiDAR technology to those identified by ground inspections, it is important to keep in mind the different manner in which LiDAR records vegetation encroachment defects as compared to ground inspectors. This difference might account for statements in the Documents that the use of LiDAR results in the identification of a higher number of vegetation encroachment defects. Just because LiDAR might identify a higher number of vegetation encroachment defects does not mean that it identifies more tree cutting requirements.

The LiDAR inspection method applies a mechanical test to determine whether there is any encroachment in the clearance zone. A single tree can cause multiple reported encroachments linked to a single conductor, due to multiple branches entering the clearance zone. In contrast, ground inspectors record only whether any clearance needs to be undertaken on a span by span basis rather than recording every single branch, with the consequence that only a single reported encroachment is recorded by ground inspectors where multiple branches from one or more trees enter the clearance zone for any given span. Assuming no error, LiDAR will result in a greater number of recorded encroachments than ground inspectors despite identifying the same amount of vegetation to be cleared.

Ergon Energy has also noted that a single tree can result in multiple encroachments being identified by LiDAR. As we observed in our Response to Draft Determination,¹¹ Ergon Energy reported in its 05/06-12/13 Economic Benchmarking RIN (Final Submission) that there is some error in the reported data as the number of "trees" reported is actually the number of intrusions into the Clearance Zone and that an "intrusion" may not be representative of a single tree.¹² We noted that this is presumably due to each branch of a single tree that enters the clearance zone being counted as an intrusion. Endeavour Energy similarly noted in its Response to the AER Economic Benchmarking RIN, Basis of Preparation, 30 April 2014 that:¹³

A tree growing beneath a maintained span could have multiple non compliances with the Network standards for clearances to overhead conductors and the removal of single branch often removes multiple defects. The records of defects

second additional information request, February 2014 (**February Response**), pp10-12; ActewAGL, Response to Draft Determination, pp31-34.

¹¹ ActewAGL, Response to Draft Determination, p34.

¹² Ergon Energy 2013, Economic Benchmarking Regulation Information Notice, p. 88, Available: <http://www.aer.gov.au/sites/default/files/Ergon%20-%20EB%20RIN%20written%20response.pdf>

¹³ Endeavour Energy 2014, AER Economic Benchmarking RIN Endeavour Energy Basis of Preparation, p. 63. Available: <http://www.aer.gov.au/sites/default/files/Endeavour%20Energy%20Economic%20Benchmarking%20RIN%20Basis%20of%20Preparation%2030-4-14.pdf>

in the corporate Ellipse database are not consistently accurate and can contain duplications.

Accordingly, ActewAGL maintains that LiDAR technology does not identify more tree cutting requirements than ground based inspections.¹⁴

We also responded to the suggestion, specific to ActewAGL's network and its response to the pass through event, that the adoption of LiDAR technology identified more tree cutting requirements than would have been identified by its pre-existing ground based inspections in our February Response.

Specifically, we considered that the additional "find rate" of inspections of ActewAGL's network in response to the pass through event using LiDAR technology above that of a ground inspection process was zero.¹⁵ We noted that "although obstacles and sight lines increase the time taken for ground crews to inspect lines they did not prevent the identification of vegetation encroachment".¹⁶ In this regard we gave the example of the instance where ground staff resolved view and access issues when an access track near the Monaro Highway was washed away when a creek overflowed.

Further, we provided evidence of ActewAGL's specific experience, on its adoption of LiDAR, of the differences in the detection of vegetation cutting requirements on its network as between LiDAR technology and ground based inspections. This evidence is inconsistent with a conclusion that, on its adoption of LiDAR, ActewAGL experienced any systematic difference in the identification of vegetation cutting requirements on its network as between LiDAR technology and ActewAGL's pre-existing vegetation management practices.

In our February Response, we observed that ground based inspectors identified instances of vegetation encroachment not identified by LiDAR (false negatives), in addition to instances of vegetation identified by LiDAR as requiring cutting but which in fact did not require cutting (false positives).¹⁷ We noted that these differences are likely due to different levels of sag and swing (caused by wind) which is taken into account by experienced ground inspectors. Document 2 provided by Essential Energy also observes that "as conductors change temperature with loading and ambient conditions, their tension and height also vary".¹⁸ In our February Response we stated:

For instance, experienced ground inspectors can identify whether saplings, which are more flexible than established trees, are likely to enter an encroachment zone. LiDAR may not detect this possibility if they are outside of the clearance zone on the day of the survey.

¹⁴ See p11 of our February Response.

¹⁵ February Response, p11.

¹⁶ February Response, p11.

¹⁷ February Response, p10.

¹⁸ Document 2, p4.

We provided examples of where ground based inspectors had identified instances of false positives and false negatives in Attachment C to our February Response. Those examples included two scoping maps showing lines with coloured dots representing where LiDAR identified encroachment. Attached to this submission are two of those scoping maps previously provided. The first scoping map attached includes a hand written note showing vegetation encroachments "not picked up" by LiDAR.¹⁹ The second scoping map attached shows that LiDAR had identified a vegetation encroachment, however, ground inspectors found that the line did not require cutting because it was an "ABC" (Aerial Bundled Conductor) line which has a smaller clearance zone.²⁰ This is shown by the handwritten note "service line ABC no cut required".

In our Response to Draft Determination we confirmed that:²¹

- "[t]he increase in vegetation clearance requirements stems from the unexpected and uncontrollable increase in vegetation growth. The use of aerial survey technology made it possible for ActewAGL to patrol lines faster and to respond to the increased vegetation growth in a timely and cost efficient manner".²²
- "... LiDAR technology did not identify any vegetation inspection backlog. Instead LiDAR technology identified vegetation encroaching on network assets. Higher levels of vegetation growth resulted in encroachment ahead of when assets were due to be inspected."²³

Nonetheless, even if (contrary to ActewAGL's knowledge and belief, and the evidence it has provided to the AER) ActewAGL's adoption of LiDAR technology in response to the pass through event resulted in the identification of more vegetation to be cleared than would have been identified by ground inspections, this does not support a conclusion that the incremental vegetation to be cleared identified using LiDAR over ground inspections was not caused by the pass through event. Rather, it simply means that the amount of vegetation to be cleared as a consequence of the pass through event that was identified using LiDAR was greater than would have been identified by ground inspections. The only reasonable inference to be drawn is that any additional vegetation clearance requirements ActewAGL identified using LiDAR occurred as a result of the pass through event, particularly given the drought conditions that were experienced prior to the above average rainfall that gave rise to the pass through event. The AER cannot reduce the quantum of the approved pass through amount or refuse the Pass Through Application simply because it concludes ActewAGL's adoption of LiDAR identified more vegetation requiring clearing than would have been identified using ground inspections, as this does

¹⁹ Note this was the second scoping map provided in Attachment C to our February Response.

²⁰ Note this was the third scoping map provided in Attachment C to our February Response.

²¹ Response to Draft Determination, pp31-34.

²² Response to Draft Determination, p31 and p34.

²³ Response to Draft Determination, p33.

not suffice to establish that ActewAGL's claimed costs of addressing those clearance requirements were not wholly attributable to the pass through event.

Further and in any event, if it be accepted (as ActewAGL maintains) that it was efficient for ActewAGL to adopt LiDAR technology to identify vegetation clearance requirements in responding to the pass through event, it necessarily follows that all of the costs of addressing those cutting requirements are causally attributable to the pass through event and so should be included in the approved pass through amount. The AER appears to accept in its Draft Determination that it was efficient for ActewAGL to use LiDAR technology to identify the vegetation clearance requirements resulting from the pass through event. As noted above, this view is consistent with the views expressed in the Documents, albeit that the Documents are specific to the experience of Networks NSW. In circumstances where, due to the nature of the pass through event, it was efficient to adopt LiDAR technology in place of ground based inspections in responding to that event, any vegetation management costs incurred as a result of any increased detection of vegetation requiring clearing using LiDAR must necessarily be causally related to the pass through event. Once LiDAR identified those additional vegetation clearance requirements, ActewAGL was required to rectify them. That is, 'but for' the pass through event the costs of addressing those additional clearance requirements would not have been incurred. It follows that the AER must necessarily approve the proposed positive pass through event notwithstanding any conclusion it reaches as to the identification of increased vegetation clearance requirements as a consequence of the adoption of LiDAR.

3. Hourly rate contracts

There is a suggestion in the Documents that outcome based contracts are preferable to hourly rate contracts.²⁴ For example, Document 1 states in respect of Essential Energy that its hourly rate model does not create an incentive for contractors to deploy resources efficiently, but rather creates an incentive to over service the business.²⁵

In our Response to Draft Determination, we addressed at length the AER's suggestion that ActewAGL's contracting practices were inefficient because the use of a unit rate rather than an hourly rate would have resulted in lower vegetation management costs.²⁶ Our Response to Draft Determination referred to and attached the Jacobs Report which concluded that ActewAGL's use of an hourly rate contract for the vegetation management work undertaken in response to the increased vegetation growth was what a "prudent and efficient operator would have done under the circumstances that ActewAGL experienced in 2011/12 and 2012/13."²⁷ We also explained why the AER could not rely on the report submitted to the AER by Aurora Energy (**Aurora**) as part of the Tasmanian distribution determination process prepared by GHD in February 2011 (**Aurora Report**) and the AER Technical Advisory Group Targeted Technical Report dated 23 May 2014.²⁸ One of the criticisms we made was that those reports did not take into account ActewAGL's particular network characteristics, vegetation work programs or the particular circumstances the subject of the vegetation management costs to which the application relates which required un-programmed and unexpected work to rectify the vegetation encroachments.²⁹

In its submission on the Draft Determination, Aurora also considered that the AER could not rely on the Aurora Report in making a determination on ActewAGL's Pass Through Application.³⁰ In its submission Aurora noted that the "AER are setting a dangerous precedent for all NSPs whereby the circumstances of a particular NSP can be generally applied to any other NSP without fully understanding the circumstances that were applicable to the original NSP and accounting for any particular differences."³¹

Similarly, the AER cannot rely on statements in the Documents in respect of hourly rate contracting to form a conclusion that unit rate contracting is more efficient in making its determination on ActewAGL's Pass Through Application. The statements in the Documents concerning hourly rate contracting were made in the context of Networks NSW's, and in particular, Essential Energy's particular network and vegetation management practices. No regard is had in those Documents to ActewAGL's network

²⁴ For example, Document 1 p9, p13, p17 and p22.

²⁵ Document 1, p13.

²⁶ Response to Draft Determination pp17-28.

²⁷ Jacobs Report, p3.

²⁸ Response to Draft Determination pp22-28.

²⁹ Response to Draft Determination, p20, pp22-24, pp26-28.

³⁰ Letter from Aurora Energy to the AER dated 20 June 2014 (**Aurora Submission**).

³¹ Aurora Submission, p2.

characteristics, vegetation management practices or the particular circumstances the subject of the vegetation management costs to which the application relates. As noted above, the Tribunal in the UED Decision found that Nuttall Consulting made a fundamental error in failing to appreciate the idiosyncrasies of the CitiPower and Powercor Australia networks in evaluating its proposed step changes in respect of vegetation management. The AER is in danger of making the same error if it seeks to apply statements in the Documents to ActewAGL's specific circumstances and the specific circumstances of the pass through event.