

# **Vegetation management cost pass through application**

## **ActewAGL response to AER draft determination**

Public submission

June 2014

# Contents

Contents.....	2
1. Introduction.....	3
2. Pass through application submitted within time.....	4
3. Proposed pass through event satisfies the requirements of a positive change event.....	7
3.1 Uncontrollable and unforeseeable event requirement.....	8
4. Approved pass through amount.....	13
4.1 Pre-emptive vegetation management strategy.....	15
4.2 Use of a unit rate in vegetation management contracts.....	17
4.3 Increases in vegetation management costs.....	29
4.3.1 ActewAGL's vegetation management practices.....	29
4.3.2 Adoption of LiDAR technology.....	31

# 1. Introduction

ActewAGL makes the following submission in response to the AER's Draft Determination of June 2014 on its cost pass through application in respect of vegetation management costs for the 2012/13 regulatory year (**Draft Determination**). In its Draft Determination, the AER considers that ActewAGL's pass through application does not satisfy the criteria of a general nominated pass through event on the basis that ActewAGL has not undertaken prudent risk management which could have mitigated the effect of the proposed pass through event. In addition, the AER raises the issue in its Draft Determination of whether ActewAGL submitted its cost pass through application within the required time.

In response, ActewAGL submits that:

- ActewAGL submitted its pass through application within time.  
For the purposes of clause 6.6.1(c) of the National Electricity Rules (**NER**), the relevant date from which 90 business days runs is the date ActewAGL became aware, or ought to have become aware, that a pass through event which required it to incur materially higher costs had occurred. That is, the relevant date is when ActewAGL first became aware, or ought to have become aware, that the cost consequences of managing the increased vegetation growth were going to be material.
- The proposed pass through event, being the increased vegetation growth, satisfies the criteria of a general nominated pass through event.  
In proposing to reject the pass through application on the basis that ActewAGL has not undertaken prudent risk management, the AER erroneously interprets and applies the requirement for a general nominated pass through event that the event "must be an uncontrollable and unforeseeable event that falls outside of the normal operations of the business, such that prudent operational risk management could not have prevented or mitigated the effect of the event." The risk management actions undertaken by ActewAGL and whether it mitigated the costs of the event is relevant to the quantum of the pass through approved by the AER and is not relevant to determining whether or not a general nominated pass through event has occurred.
- The AER's conclusion that ActewAGL failed to take action to mitigate the costs of the pass through event, with the consequence that the cost it incurred as a result of the event are inefficient, is incorrect and unreasonable. In the Draft Determination, the AER contends that ActewAGL has not submitted any evidence to disprove the AER's observation. However, in the initial cost pass through application, ActewAGL provided details on actions taken to reduce the magnitude of the eligible pass through amount, including reprioritising labour, using new technology to increase productivity and continuing to reinforce community awareness of the vegetation clearance requirements.

ActewAGL's position on each of these matters is set out below.

## 2. Pass through application submitted within time

In its Draft Determination, the AER states that it is not certain that ActewAGL submitted its cost pass through application within the required timeframe.<sup>1</sup> ActewAGL submits that the relevant date from which 90 business days runs for the purpose of clause 6.6.1(c) is the date it first became aware, or ought to have become aware, that the cost consequences of managing the increased vegetation growth were, or were likely to become, material.

In response to the issues raised by the AER in the Draft Determination, ActewAGL has given further, and more detailed, consideration to the correct construction of clause 6.6.1(c) and its application in the present circumstances.

In order to seek the AER's approval to pass through a positive pass through amount, clause 6.6.1(c) provides that a Distribution Network Service Provider (**DNSP**) must submit to the AER "within 90 business days of the relevant *positive change event* occurring" a written statement specifying the matters in clauses 6.6.1(c)(1) to 6.6.1(c)(7).

"Positive change event" is defined in Chapter 10 of the NER as:

*For a Distribution Network Service Provider, a pass through event which entails the Distribution Network Service Provider incurring materially higher costs in providing direct control services than it would have incurred but for that event, but does not include a contingent project or an associated trigger event.*

"Materially" is defined in Chapter 10 of the NER as:

*For the purposes of the application of clause 6.6.1, an event results in a Distribution Network Service Provider incurring materially higher or materially lower costs if the change in costs (as opposed to the revenue impact) that the Distribution Service Provider has incurred and is likely to incur in any regulatory year of a regulatory control period, as a result of that event, exceeds 1% of the annual revenue requirement for the Distribution Network Service Provider for that regulatory year.*

Clause 6.6.1(c) establishes a temporal requirement that the written statement must be submitted to the AER within 90 business days of an event satisfying the definition of a positive change event occurring. A DNSP cannot seek the AER's approval to pass through a positive pass through amount resulting from a positive change event until that event occurs. There is no "positive change event" until a pass through event which entails the DNSP incurring material higher costs occurs. An event does not satisfy the definition of a "positive change event" merely because it satisfies the definition of a "pass through event". In addition to being a pass through event, the event must entail the DNSP to incur materially higher costs.

---

<sup>1</sup> Draft Determination, p15.

Clause 6.6.1(c) requires the ascertainment of a date from which to calculate the 90 business days notwithstanding whether an event is continuous and ongoing. In circumstances where the event is continuous and ongoing, the relevant enquiry for the purpose of clause 6.6.1(c) is to ascertain the date on which the DNSP became aware, or ought to have become aware, that a positive change event has occurred. Given that a positive change event is defined in the NER as a pass through event which entails the DNSP incurring materially higher costs, the relevant date for the purpose of clause 6.6.1(c) is when the DNSP became aware, or ought to have become aware, that the cost consequences of managing the pass through event were, or were likely to become, material.

Accordingly, until a DNSP is aware, or ought to have become aware, that the cost consequences of the event are, or are likely to become, material, it would not be in a position to know that a *claimable* pass through event has occurred (i.e. a positive change event). In addition, it would not be in a position to make an application to the AER to seek its approval to pass through the positive pass through amount or to provide the matters specified in clauses 6.6.1(c)(1) to 6.6.1(c)(7), which include the eligible pass through amount, the positive pass through amount proposed by the DNSP, evidence of the actual and likely increase in costs, and evidence that such costs occur solely as a consequence of the positive change event. While the AER can extend the time limit in clause 6.6.1(c), this is limited to circumstances where it is satisfied that the difficulty of assessing or quantifying the effect of the relevant pass through event justifies the extension.

In the case of ActewAGL, we were not aware, and ought not to have become aware, that the cost consequences of managing the increased vegetation growth were, or were likely to become, material until 10 October 2013. While ActewAGL incurred costs as a result of the increase in vegetation growth rates throughout 2012/13, it was not until 10 October 2013 that ActewAGL became aware and ought to have become aware that those costs were likely to be material.

In order to ascertain the materiality of the cost consequences of managing the increased vegetation growth in 2012/13, ActewAGL had to wait for:

- the completion of June 2013 month end processes on 5 July 2013; and
- completion of the audit of financial statements on 30 August 2013 for the 2012/13 financial year.

Once final audited financial information was available, detailed analysis was required to determine the incremental costs that could be attributed solely to the pass through event. This involved analysis of:

- adjustments for costs not incurred solely as a result of the pass through event, such as overheads; and
- the extent to which the actual increment in costs was incurred solely as a consequence of the proposed pass through event. In doing so, ActewAGL

considered whether any costs needed to be removed such that only the increment in costs was sought to be recovered. ActewAGL removed recoverable amounts invoiced to the ACT Government or property occupants.

The analysis conducted above was critical to the determination of whether the cost was likely to be material. The magnitude of each adjustment is greater than the amount by which the proposed positive pass through amount exceeded the materiality threshold. This means that forming a view before finalisation of each analysis could have resulted in an inaccurate assessment of materiality. It is notable that, as set out in the AER's Draft Determination, the costs relating to the increase in vegetation growth pass through account for 1.07 per cent of ActewAGL's annual revenue requirement in the 2012/13 regulatory year.<sup>2</sup> They do not exceed the materiality threshold by much. This demonstrates that careful analysis that was required to determine whether the costs were material.

ActewAGL was not aware that the cost impact was likely to be material until several weeks after the finalisation of its financial information and was therefore was not in a position to become aware until that time. ActewAGL's initial analysis indicating that the impact was likely to be material was completed on 10 October 2013. Following the 10 October 2013 initial assessment ActewAGL made a number of revisions to the materiality estimate as a number of issues were identified and resolved.

Even if the AER considers (contrary to ActewAGL's contentions) that ActewAGL should have become aware of the materiality of the costs at some time prior –for example, because the analysis it undertook was not required or should have been completed more quickly – it should be uncontroversial, on any view, that ActewAGL was not in a position to determine whether the costs were, or were likely to become, material until the requisite information became available to ActewAGL on 30 August 2013.

ActewAGL submitted its cost pass through application on 1 November 2013, which was less than 90 business days after 10 October 2013. Accordingly, ActewAGL submitted its pass through application within the required timeframe in clause 6.6.1(c). The application was also submitted within 90 days of 30 August 2013.

---

<sup>2</sup> Section 6.3 of the Draft Determination.

### 3. Proposed pass through event satisfies the requirements of a positive change event

ActewAGL submits that the proposed increase in vegetation growth pass through event satisfies the requirements of a positive change event. For a positive change event that is a general nominated pass through event to be determined, the following matters must be satisfied:

1. The pass through event must be an "uncontrollable and unforeseeable event that falls outside of the normal operations of the business, such that prudent operational risk management could not have prevented or mitigated the effect of the event"<sup>3</sup> (**the uncontrollable and unforeseeable event requirement**).
2. The pass through event must occur during the regulatory control period which is subject to ActewAGL's distribution determination.<sup>4</sup>
3. The pass through event cannot fall within any pass through event definition in the NER or any other event nominated in ActewAGL's distribution determination.<sup>5</sup>
4. The pass through event must materially increase ActewAGL's costs of providing direct control services.<sup>6</sup>

The AER determines that it will not apply the requirement in the definition of the general nominated pass through event in ActewAGL's distribution determination that the change in costs of providing distribution services as a result of the event "is likely to significantly affect the DNSP's ability to achieve the operating expenditure objectives and/or the capital expenditure objectives...". The AER makes this decision having regard to Tribunal's decision in *Application by EnergyAustralia and Ors* [2009] ACompT 8 and the concession it made in that case that those words are not intended to impose a second or higher threshold to the materiality requirement provided for in the Transitional Rules.<sup>7</sup> ActewAGL agrees with this decision by the AER.

The AER concedes in its Draft Determination that the matters in points 2 to 4 above (inclusive) are satisfied. That is, it concedes that the proposed pass through event occurred during the regulatory control period, the change in costs associated with that

---

<sup>3</sup> Definition of general pass through event in ActewAGL's distribution determination 2009/10 to 2013/14 (**ActewAGL's distribution determination**).

<sup>4</sup> Definition of general pass through event in ActewAGL's distribution determination.

<sup>5</sup> Definition of general pass through event in ActewAGL's distribution determination.

<sup>6</sup> Definition of general pass through event in ActewAGL's distribution determination and definition of positive change event in Chapter 10 of the NER.

<sup>7</sup> Section 6.4 of the Draft Determination.

event were material<sup>8</sup> and that the event did not fall within any other cost pass through definition in the NER or ActewAGL's distribution determination.<sup>9</sup>

In addition, the AER concedes that the proposed pass through event is uncontrollable and unforeseeable.<sup>10</sup> However, the AER determines to reject the pass through application on the basis that the proposed event does not satisfy the uncontrollable and unforeseeable event requirement because ActewAGL has not undertaken prudent risk management which could have mitigated the effect of the proposed pass through event.<sup>11</sup> In doing so, the AER erroneously interprets and applies the uncontrollable and unforeseeable event requirement. Relying on such an interpretation renders the AER's determination incorrect and unreasonable. This error is discussed in more detail below.

### **3.1 Uncontrollable and unforeseeable event requirement**

The uncontrollable and unforeseeable event requirement necessitates an objective enquiry into whether the proposed pass through event is an uncontrollable and unforeseeable event that falls outside of the normal operations of the business, such that prudent operational risk management could not have prevented or mitigated the effect of the event. The proposed pass through event sought by ActewAGL satisfies this requirement. By contrast, the AER mistakenly enquires into whether ActewAGL has undertaken all steps available to it to mitigate the pass through event on the basis that a general nominated pass through event only occurs when a DNSP has done this.

The uncontrollable and unforeseeable event requirement has only one limb being:

1. there is an uncontrollable and unforeseeable event that falls outside of the normal operations of the business, such that prudent operational risk management could not have prevented or mitigated the effect of the event.

The phrase "such that prudent operational risk management could not have prevented or mitigated the effect of the event" must be construed by reading the requirement as a whole consistent with principles of statutory interpretation. Reading the requirement as a whole, it is apparent that the phrase is not an additional, separate requirement but, instead, merely adds content to the requirement that there be an uncontrollable and unforeseeable event that falls outside of the normal operation of the business. This is evident from the use of the words "such that". If the phrase operated to establish a separate requirement instead of "such that", a word such as "and" would be used.

That the crux of the general nominated pass through event is an uncontrollable and unforeseeable event that falls outside normal business operations can be seen from the AER's final decision on ActewAGL's 2009-14 distribution determination.<sup>12</sup> In making its

---

<sup>8</sup> Section 6.3 of the Draft Determination.

<sup>9</sup> Section 6.5 of the Draft Determination.

<sup>10</sup> Section 6.1 of the Draft Determination.

<sup>11</sup> Section 6.2 of the Draft Determination.

<sup>12</sup> Page 128-129.

decision to include a general nominated pass through event, the AER refers to the possibility of events occurring during a regulatory control period that "are uncontrollable, unforeseen, and have a material impact on costs". The AER does not describe a separate requirement that prudent operational risk management could not have prevented or mitigated the effect of the event.

If prudent risk management could prevent the effect of an event then it would be not uncontrollable and unforeseeable. The general nominated pass through event was predicated on there being an uncontrollable and unforeseeable event which prudent risk management could not prevent or mitigate.

Reading the uncontrollable and unforeseeable event requirement as a whole is consistent with the apparent intent of including the requirement, being to limit the general nominated pass through to events with particular characteristics such that they warrant a pass through. The words "such that prudent operational risk management could not have prevented or mitigated the effect of the event" are directed at assisting the identification of events that fall outside the normal operations of the business and therefore might fall within the general pass through event. If the words are broken up into separate requirements, as the AER appears to have done, they take on a different meaning and depart from the intent of including the requirement.

If there was a separate requirement that prudent operational risk management could not have prevented or mitigated the cost impact of the event after its occurrence, such a requirement would render the general nominated pass through event redundant. This is because there would theoretically always be scope for a DNSP, acting prudently, to mitigate the cost impact of an uncontrollable and unforeseeable event after it has occurred. As a matter of statutory interpretation, it must follow that such a construction is unworkable and cannot apply.

Moreover, the phrase "prudent operational risk management" necessitates an objective enquiry rather than a subjective enquiry. In determining whether the event was uncontrollable and unforeseeable and falling outside normal business operations such that prudent operational risk management could have prevented or mitigated the effect of the event, the AER should not have undertaken a subjective enquiry. The AER undertakes a subjective enquiry, focussing on ActewAGL's actions in the section of its Draft Determination discussing whether the effect of the event could not be prevented or mitigated by prudent operational risk management.<sup>13</sup>

The risk management actions undertaken by ActewAGL, and whether those actions mitigated the costs of the pass through event, are relevant to the quantum of the pass through approved by the AER and are not relevant to determining whether a positive change event that is a general nominated pass through event has occurred. This is because whether or not ActewAGL had undertaken prudent risk management is relevant

---

<sup>13</sup> Section 6.2 of the Draft Determination.

to whether its decisions and actions in relation to the positive change event were efficient within clause 6.6.1(j)(3) of the NER.

In rejecting the proposed pass through on the basis that ActewAGL has not undertaken prudent risk management which could have mitigated the effect of the proposed pass through event, the AER erroneously:

- construes the phrase "such that prudent operational risk management could not have prevented or mitigated the effect of the event" so as to disregard the context in which that phrase appears;
- fails to have regard at any point in its Draft Determination to the words "that falls outside the normal operations of the business";
- as consequence of the above, splits the uncontrollable and unforeseeable event requirement into two separate requirements, namely:
  - there is an uncontrollable and unforeseeable event; and
  - prudent operational risk management could not have prevented or mitigated the effect of the event.<sup>14</sup>
- focusses on the actions ActewAGL has taken (subjectively assessed), rather than what prudent risk management would have required in the circumstances (objectively assessed).<sup>15</sup>
- implies that a general nominated pass through event will only occur when a DNSP has undertaken all of the prudent steps available to it to prevent or mitigate the effect of the pass through event;<sup>16</sup> and
- focusses on whether the costs of the event have been mitigated and not the effects of the event being the increased vegetation growth rate.<sup>17</sup>

---

<sup>14</sup> This is evidence from the AER's separate analysis of whether there has been an uncontrollable and unforeseeable event in section 6.1 of the Draft Determination and the steps ActewAGL took to prevent or mitigate the effect of the event in section 6.2 of the Draft Determination.

<sup>15</sup> This is evidenced by the AER's repeated references to ActewAGL's actions in section 6.2 of the Draft Determination.

<sup>16</sup> This is evidenced by the AER's focus, in section 6.2 of the Draft Determination, on whether ActewAGL had undertaken sufficient steps to prevent or mitigate the effect of the proposed pass through event. We refer, for example, to the AER's statement on p19 of the Draft Determination that "we consider that there are further measures that ActewAGL could have undertaken in order to prevent or mitigate the effect of the proposed pass through event". This statement suggests that it is only when a DNSP has undertaken all of the prudent steps available to it to prevent or mitigate the effect of an event that the AER will find a general nominated pass through event has occurred. Rather, the enquiry required is an objective enquiry into whether the proposed pass through event is an uncontrollable and unforeseeable that falls outside of the normal operations of the business, such that prudent operational risk management could not have prevented or mitigated the effect of the event.

This renders the AER's decision that the proposed pass through event does not constitute a positive change event incorrect and unreasonable.

The AER appears to conclude that an efficient vegetation management strategy by ActewAGL would have prevented or mitigated the effect of increased vegetation growth. In support of this conclusion, the AER refers to the AER Technical Advisory Group (**TAG**) Targeted Technical Report dated 23 May 2014 (**TAG Report**) which forms Appendix A to its Draft Determination. The AER states:<sup>18</sup>

The TAG report noted that an efficient vegetation management strategy will include monitoring rainfall and pre-emptively adjusting pruning practices to reduce the impact of the expected growth response 18 to 24 months hence. However ActewAGL's strategy operates to first observe the vegetation growth and then respond with increased cutting.

As set out in section 4 of this submission, the statement in the TAG Report is mere assertion. There is no explanation provided or basis advanced for this view and no evidence is advanced by TAG in support of that statement. The review of the TAG Report, prepared for ActewAGL by consultants Jacobs Group (Australia) Pty Ltd (**Jacobs**), also identifies several critical problems with TAG's analysis and conclusions. A copy of Jacobs' review (**Jacobs Report**) is contained in Attachment 1 to this submission and Jacobs' conclusions are described in section 4 below. Accordingly, the AER cannot reasonably rely on the TAG Report in determining whether the vegetation management cost pass through event was uncontrollable and unforeseeable, such that prudent operational risk management could have prevented or mitigated the effect of the event. To do so would render the AER's decision incorrect and unreasonable.

ActewAGL submits that its cost pass through application does satisfy the uncontrollable and unforeseeable event requirement. As the AER concludes in its Draft Determination:<sup>19</sup>

- The rate at which vegetation grows within ActewAGL's distribution area is not controllable by ActewAGL.
- The level of rainfall in 2010/11 and 2011/12 was a key driver of vegetation growth rates experienced by ActewAGL in 2012/13.
- The level of rainfall in 2010/11 and 2011/12 was significantly higher than average.
- At the time ActewAGL submitted its regulatory proposal to the AER in 2008, rainfall of the level experienced in 2010/11 and 2011/12 had not been reached in 19 years.

---

<sup>17</sup> This is evidenced by the AER's focus on mitigating the costs of the event in section 6.2 of the Draft Determination.

<sup>18</sup> Draft Determination, p19.

<sup>19</sup> Pages 16-18.

- There was no historical information available in 2008 that would have led a reasonable person to consider that a rainfall event such as that experienced in 2010/11 and 2011/12 was more likely than not to occur within the current regulatory control period.
- Having regard to the nature of the climatic conditions experienced in the ACT during 2010/11 and 2011/12 and the lack of information available to ActewAGL for five year outlook forecasting, the increase in vegetation growth in 2012-13 was unforeseeable at the time ActewAGL submitted its regulatory proposal to the AER.

It follows from the above that the proposed pass through event, being the increased vegetation growth, was an uncontrollable and unforeseeable event that fell outside of the normal operations of ActewAGL's business, such that prudent operational risk management could not have prevented or mitigated the effect of the event.

## 4. Approved pass through amount

If the AER determines that a positive change event has occurred, the AER must determine the approved pass through amount (clause 6.6.1(d) of the NER). ActewAGL submits that the AER should approve the entire amount of its proposed pass through event being \$1.9 million.

As noted above, in its Draft Determination the AER considers that ActewAGL has not undertaken prudent risk management which could have mitigated the effect of the proposed pass through event. While the risk management actions undertaken by ActewAGL are not relevant to whether a positive change event has occurred, they may be relevant to the quantum of the pass through amount approved by the AER. Clause 6.6.1(j)(3) of the NER provides that, in determining the approved pass through amount under clause 6.6.1(d), the AER must take into account:

in the case of a *positive change event*, the efficiency of the *Distribution Service Provider's* decisions and actions in relation to the *positive change event*, including whether the *Distribution Service Provider* has failed to take any action that could reasonably be taken to reduce the magnitude of the *eligible pass through amount* in respect of that *positive change event* and whether the *Distribution Network Service Provider* has taken or omitted to take any action where such action or omission has increased the magnitude of the amount in respect of that *positive change event*.

As set out in section 3 of its pass through application, ActewAGL considers that its decisions and actions in respect of the positive change event were efficient. ActewAGL provides the following response to the AER's conclusion in respect of prudent risk management.

The AER concludes that ActewAGL did not undertake prudent risk management because:

- it should have, but did not, undertake a pre-emptive vegetation management strategy which would have mitigated the costs of the increased vegetation growth;
- ActewAGL's contracting practices were inefficient in that the use of a unit rate rather than an hourly rate would have resulted in lower vegetation management costs; and
- ActewAGL's increased vegetation management costs were not wholly attributable to the higher than average rainfall in 2011/12 but were also the result of inefficiencies in ActewAGL's vegetation management practices and its adoption of LiDAR technology.

In reaching its conclusion, the AER relies on:

- the TAG Report;



#### 4.1 Pre-emptive vegetation management strategy

The AER considers that ActewAGL has not established that it took steps to prevent or mitigate the effect of increased vegetation growth resulting from the increased rainfall recorded in 2010/11 and 2011/12.<sup>23</sup> The AER also claims that ActewAGL has not submitted any evidence to disprove its observation that ActewAGL has taken no action to reduce the magnitude of the pass through event.<sup>24</sup>

Contrary to the AER's claim, ActewAGL's cost pass through application identified several actions taken to reduce the magnitude of the event, including:

- reprioritising labour – ActewAGL reprioritised labour from other projects to focus on vegetation inspection.<sup>25</sup> The AER accepts that this reprioritisation from other projects was an action that did reduce the magnitude of ActewAGL's proposed pass through event and represented an efficient course of action;<sup>26</sup>
- using new technology to increase productivity - in 2012/13 ActewAGL developed and deployed a mobile data capture system. This system replaced an older approach which required vegetation inspectors to travel to a depot and spend time completing paper based forms to issue notices. The new system allows vegetation inspectors to wirelessly log information and issue notices as inspections are conducted;<sup>27</sup> and
- continuing to reinforce community awareness of the vegetation clearance requirements. ActewAGL undertook a targeted advertising campaign to increase awareness of vegetation requirements on private land, including television commercials, print advertisements, radio, social media and the ActewAGL website. Relevant campaigns were run during October 2011, May/June 2012 and October/November 2012.<sup>28</sup>

The AER states that ActewAGL's strategy operates to first observe the vegetation growth and then respond with increased cutting. It criticises this approach by reference to the statement in the TAG Report that an efficient vegetation management strategy will include monitoring rainfall and pre-emptively adjusting pruning practices to reduce the impact of the expected growth response 18 to 24 months hence.<sup>29</sup> However, this statement in the TAG Report is mere assertion. There is no explanation or basis for this view and no evidence is advanced by TAG in support of this statement. Accordingly, the AER cannot reasonably rely on this statement to form a conclusion that ActewAGL did not take steps to mitigate the effect of the increased vegetation growth.

---

<sup>23</sup> Section 6.2.1 of the Draft Determination.

<sup>24</sup> Section 6.2.1 of the Draft Determination.

<sup>25</sup> ActewAGL 2013, Vegetation management cost pass through, November, p22.

<sup>26</sup> Section 6.2 of the Draft Determination.

<sup>27</sup> ActewAGL 2013, Vegetation management cost pass through, November, p18.

<sup>28</sup> ActewAGL 2013, Vegetation management cost pass through, November, p18.

<sup>29</sup> Draft Determination, p19; TAG Report, p2.

As noted above, ActewAGL engaged consultants Jacobs to review the TAG Report. Based on their extensive industry experience and consultation with industry experts, Jacobs concludes.<sup>30</sup>

...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.

Furthermore, 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 3 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 and outside the approach distances of overhead line 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<sup>31</sup>

Lastly, we note that ActewAGL’s ability to pre-emptively adjust pruning practices is limited, for two reasons:

1. In urban areas, ActewAGL cannot control the extent to which vegetation is trimmed. ActewAGL can only issue notices if vegetation encroaches within the

---

<sup>30</sup> Jacobs Report, p6, Attachment 1.

<sup>31</sup> Jacobs Report, pp5-6.

2. The Code of Practice<sup>33</sup> requires that, where reasonably practicable, vegetation shall be cleared to achieve a 3-year cut cycle. As Jacobs notes above, vegetation inspectors adjust pruning practices accordingly. Adjustments are based on whether the vegetation is a shrub or tree, a native or introduced species, maturity of the tree and whether it is fast growing in a favourable environment. As a result, ActewAGL alters pruning practices to the limited extent that is possible.

[REDACTED]

The flexibility in the hourly rate contracts in place allowed ActewAGL to effectively address the urgent operational imperative to clear vegetation encroachment resulting from the proposed increase vegetation growth pass through event without any penalties or contract variations. Further, there was a high variability in the cost of the work undertaken to address the proposed pass through event due to differences in travel time, accessibility and volume of vegetation to be cleared. As GHD notes [cic Aurora]

[REDACTED]

GHD's analysis of hourly rate contracting is consistent with Jacobs' conclusions as follows:<sup>38</sup>

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:

<sup>37</sup> Aurora Report, p22.

<sup>38</sup> Jacobs Report pp2-3, Attachment 1 to this submission.

- 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 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 works 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 hourly 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.

Significantly, Jacobs concludes that “[t]he 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".<sup>39</sup>

#### **4.2.2 No basis for conclusion that ActewAGL did not undertake prudent risk management**

The AER states that, to assess ActewAGL's expenditure, it considered "approaches of other DNSPs to vegetation clearance contracting arrangements, many of whom contract by applying a unit rate approach rather than an hourly rate approach".<sup>40</sup> However, the AER does not specify which DNSPs it studied and which DNSPs apply a unit rate. In any event, the adoption by other DNSPs of a unit rate contracting approach is not relevant and leads the AER into error in assessing the efficiency of ActewAGL's costs in its pass through application. Indeed, GHD, the author of the Aurora Report upon which the AER relies, [cic Aurora: [REDACTED]

[REDACTED]

[REDACTED]

The AER fails to heed this warning.

Further, in making the conclusions set out in section 6.2.2 of its Draft Determination, the AER relies on expert and technical reports of limited to no probative value. As such, there is no basis for its conclusions in that section of the Draft Determination.

#### *Aurora Report*

The AER relies on the Aurora Report "[t]o evaluate the efficiency of hourly rate approaches and unit rate approaches in vegetation clearance contracting arrangements".<sup>42</sup> The AER concludes that the Aurora Report [cic Aurora: [REDACTED]<sup>43</sup> The AER further concludes, in reliance, at least in part, on Aurora Report, that the use of a unit rate contracting model "would have contributed to mitigating the effect of the proposed pass through event by

---

<sup>39</sup> Jacobs Report, p3.

<sup>40</sup> Draft Determination, p20.

<sup>41</sup> Aurora Report, p45.

<sup>42</sup> Draft Determination, p20.

<sup>43</sup> Confidential Appendix B p1.

minimising the costs associated with vegetation cutting contractors".<sup>44</sup> In reaching this conclusion, the AER also relies in part on TAG's assertion that ActewAGL's vegetation management costs per span in 2012/13 were around [cic: ] and that this is [cic: ] above TAG's asserted benchmark range for average span costs.

However, for the reasons set out below, the Aurora Report does not support the proposition that unit rate contracting is superior to, or generally more efficient than, hourly rate contracting. Nor does it support any conclusion as to the relative efficiency of hourly rate and unit rate contracting in ActewAGL's particular circumstances. As a consequence, it does not provide any evidentiary basis for the AER's conclusion that the efficient vegetation management contracting approach for ActewAGL was a unit rate approach or that ActewAGL's costs of the event would have been mitigated by a unit rate contracting approach.

[illegible]

Category	Value (approximate)
1	95
2	98
3	92
4	88
5	100
6	96
7	95
8	94
9	100
10	100
11	98
12	99
13	99
14	95
15	10

The AER also places insufficient weight on evidence provided by ActewAGL of controls in place to manage the risk from issues identified by the Aurora Report. ActewAGL specified the level of mechanisation,<sup>47</sup> estimated the amount of hours required and

<sup>44</sup> Draft Determination, p21.

<sup>45</sup> Confidential Appendix B p1.

<sup>46</sup> Draft Determination, p20, Confidential Appendix B p1.

47 ActewAGL 2014, Vegetation management cost pass through: Response to second additional information request. February p.17

\_\_\_\_\_

[illegible]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The differences in ActewAGL's and Aurora's circumstances illustrate how the issues and options identified by GHD do not apply equally to ActewAGL.

\_\_\_\_\_

<sup>54</sup> ActewAGL 2013, Vegetation management cost pass through, November p.18



for the AER's conclusion that the efficient vegetation management contracting approach for ActewAGL was a unit rate approach or that ActewAGL's costs of the event would have been mitigated by a unit rate contracting approach.

#### *TAG Report*

As noted above, in reaching its conclusion that "[t]he use of a unit rate contracting model would have contributed to mitigating the effect of the proposed pass through event by minimising the costs associated with vegetation cutting contractors",<sup>60</sup> the AER also relies in part on TAG's assertion that ActewAGL's vegetation management costs per span in 2012/13 were around [redacted] and that this is [redacted] above TAG's asserted benchmark range for average span costs.<sup>61</sup>

ActewAGL contends that the TAG Report is of limited probative value for the following reasons:

1. It would appear from the TAG Report that TAG had not fully addressed ActewAGL's pass through application and information contained in that application<sup>62</sup>
2. TAG states in its Report that it was asked by the AER to provide "targeted advice" on "specific matters". However, the Report does not identify the specific matters on which it was asked to provide targeted advice. The Report refers only to a request for advice on ActewAGL's approach to vegetation management expenditure in the period 2004 to 2013 inclusive generally, having regard to its contracting methodology, unit rate costs and the impacts of a proactive / reactive approach to vegetation management.
3. The TAG Report annexes a CV provided by one expert whose role in preparation of TAG Report (if any) is undisclosed.
4. The TAG Report fails to disclose any documents, other than those lodged by ActewAGL in December 2013 and February 2014, or evidentiary material on which TAG relies / has relied in reaching its conclusions. In particular, the evidentiary basis for its key factual findings and the "benchmark" figures advanced in the report are not identified at any point in the Report, notwithstanding that these figures have presumably been derived by TAG from data or secondary evidentiary material.
5. TAG fails in the TAG Report to disclose any evidentiary basis for its views including:
  - TAG concludes that hourly rate contracting "is not common industry practice or representative of good industry practice" and that "hourly-rate style

---

<sup>60</sup> Draft Determination, p21.

<sup>61</sup> TAG Report, p2.

<sup>62</sup> The "Background and reference documents" referred to in the TAG report do not include ActewAGL's November 2013 application.

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" but provides no reasoning or evidence in support of these views.<sup>63</sup> [cic Aurora [REDACTED].]

- TAG concludes that "[a]n 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" but provides no reasoning in support of this conclusion nor any evidentiary basis for this view.<sup>64</sup>
- Similarly, in reliance on the above conclusion, TAG further concludes that, in the circumstances prevailing on ActewAGL's network, "ActewAGL could have avoided some of the additional cutting costs had it responded early to rainfall events through a pre-emptive management strategy". However, even if the above conclusion is correct, which cannot be ascertained from the TAG Report, it does not follow that, in respect of ActewAGL's network in the circumstances presently in issue, ActewAGL could have avoided some of the cutting costs it incurred.

6. TAG fails to disclose its calculation / derivation of:

- ActewAGL's total vegetation management cost per span in 2008/09 and 2012/13, of [cic [REDACTED]] and [cic [REDACTED]] (real 2012) respectively;
- The percentage of ActewAGL's total vegetation management costs attributable to contractor costs in those same years of [cic [REDACTED]] and [cic [REDACTED]] respectively
- The percentage of ActewAGL's total vegetation management costs attributable to contractor costs in other years within the period 2007/08 to 2012/13, or indeed the percentages derived, on the basis of which ActewAGL asserts that 'this increasing cost trend is virtually continuous over the period'.
- The asserted "benchmark total vegetation management cost per network span" of [cic [REDACTED]] to [cic [REDACTED]] (real 2012). As a consequence, it is unclear what this 'benchmark' represents.
- The percentage difference between ActewAGL's cost per span in each of 2006/07 and 2012/13, and this "benchmark range", of [cic [REDACTED]] below and [cic [REDACTED]] above respectively. TAG does not disclose its figure for ActewAGL's cost per span in 2006/07. It cannot be ascertained with certainty but TAG would appear to presume the "benchmark" total vegetation management cost is unchanged in 2012/13 from 2006/07 - this raises

---

<sup>63</sup> TAG Report, p2.

<sup>64</sup> TAG Report, p2.

questions as to the reliability of the TAG's derivation of ActewAGL's "benchmark" for each of these years.

7. TAG compares ActewAGL's average cost per span to a "benchmark" average cost per span (of unknown meaning), without making any adjustments for network differences, work programs etc. This is notwithstanding that the Australian Competition Tribunal has concluded that substantively similar analysis is deficient, where it fails to take into account such differences.

In *Application by United Energy Distribution Pty Ltd* [2012] ACompT 1 (**UED Decision**), the Australian Competition Tribunal considered whether the expert retained by the AER, Nuttall Consulting, made a fundamental error in failing to appreciate the idiosyncrasies of the Powercor Australia (**Powercor**) and CitiPower networks in evaluating its proposed step changes in respect of vegetation management. Powercor and CitiPower contended that Nuttall Consulting's evaluation was defective because "it placed too much emphasis on common features across all networks and, in particular, on unit costs on an average basis undertaken by other networks without paying due regard to the idiosyncrasies of the CitiPower (and, in particular) the Powercor networks".<sup>65</sup> The Tribunal concluded that "Nuttall Consulting failed to pay proper regard to the differences between Powercor's network and those of the other DNSPs and failed to take proper account of the differences between the work programs which had been put in place by Powercor, in particular, and those which the other DNSPs proposed to undertake".<sup>66</sup>

TAG's methodology is essentially a crude comparison of one DNSP's average cost per span with another DNSP's average cost per span. The substantively similar desk top review by Nuttall Consulting was found to be materially deficient by the Tribunal for reasons that are equally applicable to the TAG Report. As a consequence TAG makes the same errors identified by the Tribunal.<sup>67</sup> ActewAGL attaches a copy of the relevant section of the UED Decision and the Nuttall Consulting Report in Attachment 2 to this submission.

As a consequence, in proposing to rely on the TAG Report, the AER is in danger of making the same error as in CitiPower and Powercor's distribution determinations, of placing undue weight on an "expert" report and "benchmark" average cost per span of other DNSPs as asserted by TAG Report, rendering its assessment of ActewAGL's costs incorrect and unreasonable (cf UED Decision at [651(c) and (e)] and [667]).

ActewAGL submits that comparisons of average cost per span of vegetation management must take account of:

---

<sup>65</sup> UED Decision at [648].

<sup>66</sup> UED Decision at [666].

<sup>67</sup> ActewAGL notes that the CV of one of the TAG experts is attached to the Nuttall Consulting Report dated 26 October 2010, as a Director of Cadency Consulting.

- Differences in network characteristics, including:
  - Length of spans in the network;
  - Vegetation characteristics of network, including age, type and species of vegetation and associated growth rates and heights, as well as extent to which spans are vegetated;
  - Whether the vegetation is in a low bushfire risk area or a high bushfire risk area;
  - Accessibility of spans / sites (for cutting purposes);
  - Traffic control costs; and
  - Differences in climatic conditions in the network (for example, in comparing ACT network costs to those of say Queensland) - rain conditions, total fire ban conditions etc.
- Differences in climatic conditions across time periods (for example comparing costs during periods of drought versus periods of high rainfall)
- Differences in regulatory requirements including:
  - line clearance requirements are imposed by jurisdictional instruments and, accordingly, differ between the ACT and other jurisdictions as to matters from line clearances required to customer notification and consultation obligations;
  - clean up requirements as consequence of regulation may differ.
- Differences in work programs. Total cost is a function of both volume and average cost per span. Volume and average cost per span are inversely related (i.e. interdependent). The more volume of vegetation equals less cost per span and vice versa, as determined by the work program. Unit cost per span cannot be considered in isolation from volumes / work programs. The Tribunal observed in relation to CitiPower and Powercor's submission on this (at [653(a)]): "This illustrates the need for the AER, when comparing unit rates of one DNSP with one or more of the other DNSPs, to be careful to ensure that appropriate consideration is given to the differences between the networks and the work programs in place for achieving the clearance requirements according to the relevant regulations."
- Differences between DNSPs as to inclusions or exclusions in average cost per span data that has been used to produce the "benchmark" referred to by TAG, for example:
  - DNSPs' practices as to treatment of inspection costs, i.e. whether they are included or excluded from average cost per span, vary (refer to UED Decision at [653(b)])

- Some DNSPs have a practice of capitalising the most expensive items and, thus, excluding them from average cost per span (refer to UED Decision at [653(b)]).

As set out above, the Tribunal concluded that Nuttall Consulting erred in respect of dot points 1 and 4 above. The matter in point 3 above was not recognised expressly as an issue by the Tribunal because Nuttall Consulting compared only Victorian DNSPs.

8. TAG makes a number of findings in the TAG Report that are not, in fact, evidenced by / ascertainable by reference to the factual matters that TAG advances in support of those findings, including:
  - TAG concludes that "ActewAGL has not taken any action that has arrested the impact of the cost per span trend on total costs" in reliance on its assertion that the percentage of ActewAGL's total vegetation management costs attributable to contractor costs has increased over the period 2007/08 to 2012/13. However, the fact that the proportion of total vegetation management costs that are contractor costs has been increasing does not enable any conclusion to be drawn as to ActewAGL's vegetation management contracting practices or as to actions taken or not taken by ActewAGL.
  - TAG concludes that ActewAGL's contracting practices have contributed to the cost increases in reliance on its asserted percentage figures by which ActewAGL's average cost per span diverges from the "benchmark" (the calculation of which is not disclosed). However, these percentage figures (even if they be accurate and reliable, which cannot be ascertained from the TAG Report) do not enable any conclusion to be drawn as to the extent to which, if at all, these figures are caused by ActewAGL's contracting practices.
9. In place of reasoning, evidentiary support and calculations, TAG asserts its conclusions and opinions should be accepted on the basis of its team's "experience with vegetation management contracts and practices" and "in reviewing vegetation management practices and contracts". The CVs for TAG provided do not disclose this experience. In any event, it is evident from the TAG Report itself that the team do not claim practical experience of the vegetation management function but rather in performing desk top reviews of vegetation management practices and contracts of the kind represented by the TAG Report. A question arises as to the resultant expertise of the team to opine on the matters addressed by the Report.

In summary, the conclusions by TAG in the TAG Report are 'mere assertion', unsubstantiated by reasoning, calculations or evidence. As a result, the TAG Report is of limited probative value. The AER places undue weight on the conclusions in the Report, with the consequence that the conclusions reached in reliance on that Report are incorrect and unreasonable.

### 4.3 Increases in vegetation management costs

The AER considers that the increases in ActewAGL's vegetation management expenditure are not wholly attributable to the higher than average rainfall in 2011/12 but are also the result of inefficiencies in ActewAGL's vegetation management practices and its adoption of LiDAR technology.<sup>68</sup>

#### 4.3.1 ActewAGL's vegetation management practices

In making its conclusion in respect of inefficiencies in ActewAGL's vegetation management practices, the AER relies on:

- The statement in the TAG report that there has been a marked upward trend in vegetation management costs from around [cic [REDACTED]] (real 2012) per span in 2008/09 to around [cic [REDACTED]] (real 2012) per span in 2012/13 and the conclusion that contractor costs are a major source of this increase;<sup>69</sup> and
- Its analysis of the average rainfall from the preceding two years against the total vegetation management contracting costs.<sup>70</sup>

For the reasons set out above, the TAG Report is unreliable and does not provide probative evidence for the AER's conclusions in the Draft Determination.

Further, the AER's analysis of the average rainfall from the preceding two years against the total vegetation management contracting costs establishes nothing as to the causal relationship between the two. No conclusion can be reached on the basis of the graph about the extent to which increases in vegetation management contract costs in 2012/13 are caused by or attributable to the rainfall issue or some other factor. This is because the graph does not represent the relationship between rainfall and vegetation management costs. Rather, it graphs rainfall and vegetation management costs without controlling for other factors affecting vegetation management costs.

Accordingly, the AER cannot reasonably rely in this analysis in concluding the increases in ActewAGL's vegetation management expenditure are not wholly attributable to the higher than average rainfall in 2010/11 and 2011/12 but are also the result of inefficiencies in ActewAGL's vegetation management practices.

#### *Factors Affecting Historical Vegetation Management Costs*

The AER examines historical vegetation management costs and comes to the view that as costs are increasing much more rapidly than the rate attributable to the proposed rainfall event ... the increases in ActewAGL's vegetation management expenditure are the result of inefficiencies in ActewAGL's vegetation management practices."<sup>71</sup> The AER claims it "is not aware of any changes to ACT regulations that have impacted these

---

<sup>68</sup> Section 6.2.3 of the Draft Determination.

<sup>69</sup> Draft Determination, p22.

<sup>70</sup> Confidential Appendix B to the Draft Determination.

<sup>71</sup> Section 6.2.3 of the Draft Determination.

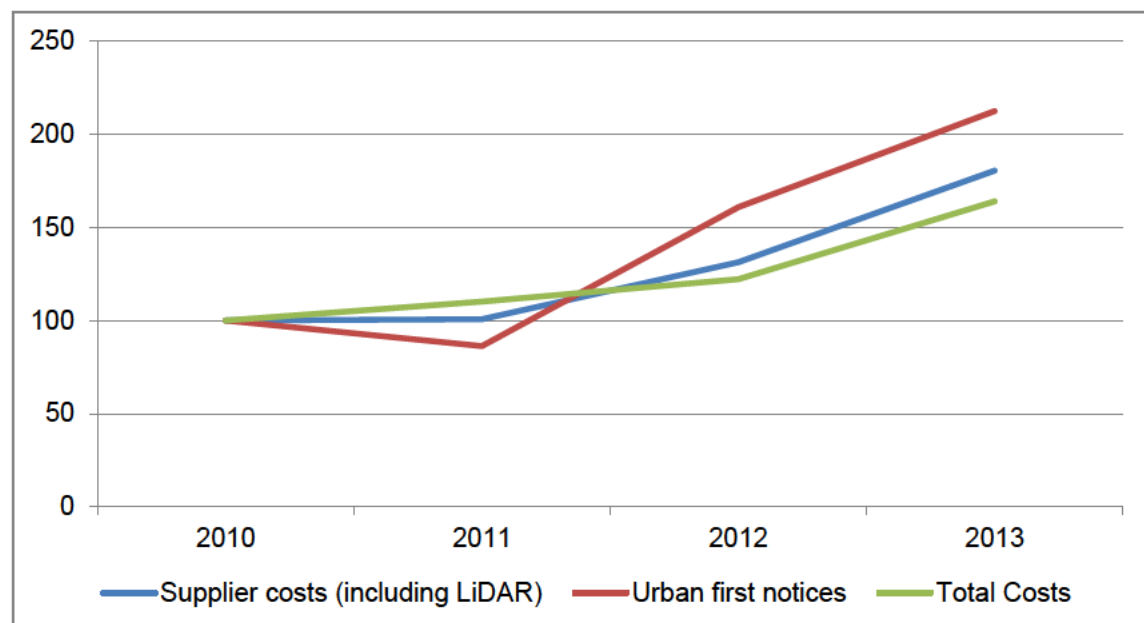
costs” and that it “is not aware of any exogenous factors driving these increases in vegetation management costs.”<sup>72</sup>

ActewAGL made clear in its initial pass through application that the new Code of Practice came into effect in September 2009 and resulted in the step up in costs evident in the AER’s Figure 6.1 in Confidential Appendix B. The Code of Practice between ActewAGL and the ACT Government Conservator of Flora and Fauna defines the vegetation management responsibilities for unleased Territory land, the land for which ActewAGL has responsibility to clear vegetation.<sup>73</sup> No conclusion regarding ActewAGL’s efficiency can be gleaned from the AER’s analysis unless this step up in costs is taken into account.

ActewAGL does not have any historical clearance volume information; however, it does have records of the number of first notices issued in urban areas. Urban notices are a better proxy for cutting volume than rainfall as they provide a more contemporaneous measure of vegetation encroachment without any other confounding factors such as temperature.

An indication of the productivity of ActewAGL’s vegetation management program can be seen by comparing the change in costs since the Code of Practice came into effect against the number of urban first notices issued as a measure of the volume of work undertaken. This is shown in figure 1.

Figure 1 Real Cost Growth versus urban first notices 2009/10 = 100



<sup>72</sup> Section 6.2.3 of the Draft Determination.

<sup>73</sup> ACT Territory and Municipal Services and ActewAGL, *Code of practice: practical guide and standards for co-operation between ACT Parks, Conservation and Lands & ActewAGL version 1 09/09*.

Figure 1 shows both total costs and contractor costs increased by less than the number of first notices issued indexed to 100 in 2009/10. From 2009/10 to 2012/13 urban first notices increased by 113%. In contrast supplier costs increased by 81% and total costs increased by 62%.

This demonstrates that, contrary to the assertions by the AER and TAG, ActewAGL's vegetation management program has become more efficient over time.

#### 4.3.2 Adoption of LiDAR technology

In respect of ActewAGL's adoption of LiDAR technology, the AER concluded that "the use of LIDAR technology resulted in increased costs rather than reducing the magnitude of the pass through event".<sup>74</sup>

To support this conclusion, the AER relies upon a case study of transmission lines inspections in Canada occurring 11 years ago and its views that:<sup>75</sup>

- "ActewAGL provided no information to demonstrate the backlog in vegetation inspection identified through the use of LIDAR technology was solely caused by external factors"; and
- "LIDAR inspections identify a greater number of trees requiring trimming because aerial inspections benefit from a clearer view of the electricity assets and also because of the accuracy of LIDAR technology".

Below, ActewAGL explains why the material relied upon does not support the AER's conclusion. Instead, the 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.

#### *Implications of the AER cited Case Study*

The AER cites *A Case Study: Workflow Analysis of Powerline Systems for Risk Management (the Case Study)* in support of the proposition that the adoption of LiDAR technology by ActewAGL resulted in increased costs in responding to the increase vegetation management pass through event. The study does not support this proposition because it examined transmission lines owned by Hydro One Inc in Ontario Canada operating 11 years ago in a different climatic, natural and regulatory environment to ActewAGL. Indeed, the Case Study is consistent with ActewAGL's claim.

The Case Study provided historical background of aerial inspections consistent with the background information provided to the AER in December 2013.<sup>76</sup> The study noted aerial

---

<sup>74</sup> Section 6.2.4 of the Draft Determination.

<sup>75</sup> Section 6.2.4 of the Draft Determination.

<sup>76</sup> ActewAGL 2013, Vegetation management cost pass through: additional information, December p.9

inspections were conducted using hovering helicopters and binoculars<sup>77</sup> and, similar to ActewAGL<sup>78</sup>, found quality issues with this approach.<sup>79</sup>

The Case Study noted that the initial cost was much higher than the traditional method of using ground crews but that cost savings of labour per mile will show the method to be “very much worth using”.<sup>80</sup> The Case Study concluded that

We believe a workflow designed to incorporate LIDAR and digital camera imagery will make vegetation monitoring easier. It also provides utility companies a more effective method to manage their vegetation management programs, and at a reasonable cost.

The Case Study also recommended:

What we suggest is that instead of manual visual comparison for maintaining the ROW [right-of-way], LIDAR technology and digital camera imagery should be used. The maintenance will be more efficient, take less time, be much more accurate, and should prove less costly over the long term. To illustrate this method’s speed, an aerial survey may take an average of 50 km a day to gather LIDAR data, combining ROW and transmission structure inspection. This would typically take a ground crew about 4 days just to inspect. Thus, the automated process is much faster in generating usable information for decision making and analysis. The powerline system components can also be inspected from the survey data.

This recommendation is consistent with the overall approach taken by ActewAGL in 2012/13. Importantly, the Case Study identifies the key reason for adoption of aerial surveys: the urgent operational imperative to determine the extent of vegetation regrowth in high bushfire risk areas.

---

<sup>77</sup> Ituen.I., Sohn.G., and Jenkins.A., 'A Case Study: Workflow Analysis of Powerline Systems for Risk Management' in the *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Vol. XXXVII. Part B3b, 2008, p 333 This article is available at: [http://www.isprs.org/proceedings/XXXVII/congress/3b\\_pdf/66.pdf](http://www.isprs.org/proceedings/XXXVII/congress/3b_pdf/66.pdf).

<sup>78</sup> ActewAGL 2013, Vegetation management cost pass through: additional information, December p.9

<sup>79</sup> Ituen.I., Sohn.G., and Jenkins.A., 'A Case Study: Workflow Analysis of Powerline Systems for Risk Management' in the *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Vol. XXXVII. Part B3b, 2008, p 334 This article is available at: [http://www.isprs.org/proceedings/XXXVII/congress/3b\\_pdf/66.pdf](http://www.isprs.org/proceedings/XXXVII/congress/3b_pdf/66.pdf).

<sup>80</sup> Ituen.I., Sohn.G., and Jenkins.A., 'A Case Study: Workflow Analysis of Powerline Systems for Risk Management' in the *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Vol. XXXVII. Part B3b, 2008, p 336 This article is available at: [http://www.isprs.org/proceedings/XXXVII/congress/3b\\_pdf/66.pdf](http://www.isprs.org/proceedings/XXXVII/congress/3b_pdf/66.pdf).

### *No inspection backlog*

ActewAGL's February response to the AER's second additional information request reported that:

Identification and clearing of vegetation encroachments was up to date prior to the period of increase rainfall, and there was no backlog of work that might have inflated costs during 2012/13.<sup>81</sup>

In the Draft Determination, however, the AER concludes that:

ActewAGL provided no information to demonstrate the backlog in vegetation inspection identified through the use of LIDAR technology was solely caused by external factors.<sup>82</sup>

To clarify, 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.

The decision to use LiDAR in August 2012 was driven by the urgent operational imperative to determine the extent of vegetation regrowth in high bushfire risk areas. This decision proved to be prudent as approximately 526 urgent clearance encroachments were identified. The use of LiDAR was driven by vegetation regrowth following two years of above average rainfall.<sup>83</sup>

### *Identification of trees*

The AER considers that:

LIDAR inspections identified a greater number of trees requiring trimming because aerial inspections benefit from a clearer view of the electricity assets and also because of the accuracy of LIDAR technology

ActewAGL has provided evidence illustrating how, prior to the adoption of LiDAR technology, ground staff resolved view and access issues and ensured that any potential encroachments on network assets were identified, such as when access tracks had been washed away near Monaro highway due to a creek overflow.<sup>84</sup>

Despite this, the AER disregards this information and uses data provided by one DNSP, Ergon Energy, in its 2014 response to an Economic Benchmarking RIN relating to its experience of the adoption of LiDAR technology in its particular circumstances to concluded that an increased number of "trees" must have been identified as a

---

<sup>81</sup> ActewAGL 2014, Vegetation management cost pass through: Response to second additional information request, February p.4

<sup>82</sup> Draft Determination, p22.

<sup>83</sup> Draft Determination, p16.

<sup>84</sup> ActewAGL 2014, Vegetation management cost pass through: Response to second additional information request, February p.11

consequence of ActewAGL's LiDAR program in 2012/13 relative to those identified in prior years which were reported using a Tree Management Database (**TMD**). In so doing, the AER ignores its own express acknowledgement that information provided in order to comply with a RIN may not be suitable for any other purpose.<sup>85</sup>

Further, in providing the data to the AER to effect compliance with the RIN, Ergon Energy put the AER on notice that the data was unreliable. As part of its RIN response, Ergon Energy reported:

- there is error in the reported data as number of “trees” is actually the number of intrusions into the Clearance Zones. Ergon Energy warns that each “intrusion” into the Clearance Zone may not be truly representative of a single tree. This is presumably due to each branch of a single tree being counted as an intrusion;
- that for Urban vegetation zones “Some error exists in the provided figures as the TMD-sourced information does not include all trees inspected, nor does it include work undertaken under hourly rate or herbicide application work”; and
- rural vegetation zone estimates “...are particularly erroneous as most treatment is undertaken using herbicide application, which is recorded as an application rate per hectare and total hectare area treated.”<sup>86</sup>

This means that there is an upwards error bias in the new LiDAR data and a downwards error bias in the older TMD data. The AER does not identify or make any adjustment to account for the increased identification of trees that is due to these error biases.

Furthermore, the AER only reports the increase for the erroneous data from the rural zones although the increased number of “trees” in urban zones is about 5.5 times smaller. The AER also picks data from 2011/12 with the lowest amount of trees reported by Ergon Energy despite this figure being 56% less than the average number of “trees” in the 2009-12 period (where data was available). Lastly, the AER does not make any adjustment for any potential seasonal variation that could have occurred between 2011/12 and 2012/13.

In summary, the material relied upon does not support the AER’s conclusion that the use of LiDAR technology resulted in increased costs rather than reducing the magnitude of the pass through event. The increase in vegetation clearance requirements and costs 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.

---

<sup>85</sup> AER 2014, Ergon Energy Network information – RIN responses, accessed 18 June 2014 Available: <http://www.aer.gov.au/node/24385>

<sup>86</sup> Ergon Energy, *Economic benchmarking regulatory information notice, Final submission (audited), 1 July 2005 to 30 June 2013, 2014*, p. 89