

# ACCIONA Energy Australia Global Waubra Wind Farm



## ELECTRIC LINE CLEARANCE MANAGEMENT PLAN (ELCMP) 2018/2019

- Rev 5.2
- Date Issued: July 2018

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## Document History and Status

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## 1.0 Overview

### 1.1 Preamble

ACCIONA Energy Australia Global Pty Ltd (ACCIONA Energy) operates the Waubra Wind Farm. This wind farm is located approximately 35 km northwest of Ballarat, near the town of Waubra, on open agricultural land that is used predominately for grazing and cropping.

The wind farm comprises 128 turbines with a combined power generation capacity of 192 MW. The electrical power generated by the wind turbines is reticulated through underground 12 kV power cables (approximately 95 km) to five collector substations located at various strategic points around the wind farm. From the collector substations overhead 66 kV power lines (approximately 19 km) are used to bring the electrical power to a single collector switching station where the wind farm's electrical power is aggregated and finally delivered to AusNet Services adjacent terminal station for connection into their 220 kV transmission line.

An overview plan of the wind farm infrastructure, including the extent of overhead cabling, is illustrated in Appendix A.

### 1.2 Why Prepare this Plan?

Victoria is one of the most fire-prone areas in the world<sup>1</sup>. As with any electrical installation the operation of the Waubra Wind Farm has the potential to ignite fires. Any ignition of fire within the wind farm has the potential to increase the risk of bushfire. Consequently mitigation measures need to be developed and put into effect to reduce this risk as far as is reasonably practicable.

ACCIONA Energy has developed a Bushfire Mitigation Plan (BMP) as a part of its overall Operational Environmental Management Plan (OEMP) for the wind farm in line with the principals set out in its Wind Farm Operations Manual<sup>2</sup>. The BMP has been prepared in

<sup>1</sup> Country Fire Authority Victoria website <http://www.cfa.vic.gov.au> . Accessed 02 August 2016

<sup>2</sup> Refer to OM003 Wind Farm Operations Manual. Acciona Energy 2011.

accordance with the Electricity Safety Act 1998 (the Act) and the subordinate Electricity Safety (Bushfire Mitigation) Regulations 2013.

The objective of this Electric Line Clearance Management Plan (ELCMP) is to complement the Waubra BMP and demonstrate a commitment to the compliance with the Electricity Safety (Electric Line Clearance) Regulations 2015 (the Regulations) and the Code of Practice for Electric Line Clearance (the Code)<sup>3</sup> contained therein.

This ELCMP is an integral part of the overall BMP: it controls the ingress of trees and other tall growing vegetation into proximity of electric lines which could then create a fire ignition risk.

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<sup>3</sup> The schedule to the Electricity Safety (Electric Line Clearance) Regulations 2015 forms the Code of Practice for Electric Line Clearance

## 2.0 Contact Information

### 2.1 Responsible Person

Name	Cameron Stowe
Address	Waubra Wind Farm Maintenance Facility 275 Harrisons Road WAUBRA Victoria 3352
Phone	03 4313 4420 or 0439 341270
Website & Link to Plan	<a href="http://www.accionacom.au">www.accionacom.au</a> <a href="https://www.accionacom.au/projects/energy/wind-power/waubra-wind-farm/">https://www.accionacom.au/projects/energy/wind-power/waubra-wind-farm/</a>

### 2.2 Person Responsible for the Preparation and Management of the Plan

Name	Cameron Stowe
Position	Site Manager – Waubra Wind Farm
Address	Waubra Wind Farm Maintenance Facility 275 Harrisons Road WAUBRA Victoria 3352
Phone	03 4313 4420
Mobile	0439 341270
Email	<a href="mailto:cameron.stowe@accionacom.au">cameron.stowe@accionacom.au</a>

### 2.3 Person Responsible for Carrying Out the Management Plan

Name	Eric Caesar
Position	General Manager - Operations
Address	Level 38, 360 Elizabeth St Melbourne Victoria 3000
Phone	03 9027 1000
e-mail	<a href="mailto:eric.caesar@accionacom.au">eric.caesar@accionacom.au</a>

## 2.4 Emergency Contact

Name	Waubra Wind Farm
Position	Emergency Line
Address	275 Harrisons Road WAUBRA VIC 3352
Phone	1300 515 345

### 2.4.1 Secondary Emergency Contacts

Fall back emergency contact points are as follows...

Name	Cameron Stowe
Position	Site Manager - Waubra Wind Farm
Address	Waubra Wind Farm Maintenance Facility 275 Harrisons Road WAUBRA Victoria 3352
Phone	03 4313 4420
Mobile	0439 341270
Email	<a href="mailto:cameron.stowe@acciona.com">cameron.stowe@acciona.com</a>



## 3.0 Objectives of the Plan

The primary objective of ACCIONA Energy's BMP is to eliminate fire ignition risks in all our operations through the;

- ▲ Elimination of ignition sources, and
- ▲ Maintenance of the necessary separation between potential ignition sources and any flammable material.

In support of the BMP's objectives this ELCMP aims to achieve and maintain the necessary vegetation safety clearances whilst taking into consideration, as far as is practicable, the natural habit of the vegetation in the interests of its long term health.

Specifically, the objective of this ELCMP is to provide a management framework that will be implemented at the Waubra Wind Farm focused on:

- ▲ Reducing the risk of fires and power interruptions caused by vegetation coming into contact with overhead wires;
- ▲ Ensuring safe clearances are achieved and maintained around electric lines, and
- ▲ Minimising the environmental impacts of our mitigation activities, and
- ▲ Ensuring that a safe work place is maintained and that an appropriate level of community satisfaction in the maintenance of the asset is maintained.

## 4.0 Description of Waubra Wind Farm

### 4.1 General Wind Farm Description

The Waubra Wind Farm is located in western Victoria, near Waubra approximately 35 km northwest of Ballarat. The area comprises cultivated farm land, predominantly used for grazing and cropping (mostly cereal grains and potatoes). There is little to no forest within the Waubra Wind Farm itself apart from isolated trees and windbreaks.

### 4.2 Fire Hazard Rating

In accordance with Section 80 of the Act the Country Fire Authority (CFA) is responsible for making determinations of Fire Hazard Rating<sup>4</sup>. The CFA has determined that the Fire Hazard Rating of the region is "High"<sup>5</sup>. Consequently the Waubra Wind Farm is in a "hazardous bushfire risk area" and all overhead power lines are deemed to be "at-risk electric lines".

### 4.3 Electrical Infrastructure Overview

The wind farm comprises 128 turbines with a combined power generation capacity of 192 MW. The electrical power generated by the wind turbines is reticulated through underground 12 kV power cables (approximately 95 km) to five collector substations located at various strategic points around the wind farm. From the collector substations overhead 66 kV power lines (approximately 19 km) are used to bring the electrical power to a single collector switching station where the wind farm's electrical power is aggregated and finally delivered to AusNet Services adjacent terminal station for connection into their 220 kV transmission line.

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<sup>4</sup> Refer to the BMP for an explanation of Fire Hazard Ratings.

<sup>5</sup> Fire Hazard Ratings for the Electricity Safety Act 1998 – Edition 2013. Country Fire Authority 2013 (DVD)

## 4.4 Electric Lines

Acciona Energy operates a total of approximately 19 km of overhead power lines (electric lines) as a part of the Waubra Wind Farm. All the electric lines operate at 66 kV either as single circuit or double circuit.

### 4.4.1 Description

All overhead power lines are mounted on CCA<sup>6</sup>-treated, timber poles. The poles are approximately 14 m high for single circuit lines and 18 m high for double circuit lines. The conductors are mounted on insulators which are in turn mounted on galvanized steel cross-arms that are attached to the top of the poles. A fibre optic cable is mounted on a catenary approximately 4 m below the conductors and an earth wire is mounted a further 0.6 m below this. The clearance to ground level underneath the earth wire is variable but generally 6 - 7½ m.

The overhead power lines all use bare Iodine<sup>7</sup> as a conductor.

ACCIONA Energy does not operate any pole mounted switchgear or transformers as a part of the Waubra Wind Farm.

All Waubra Wind Farm overhead lines are managed by the ELCMP.

It should be noted that this ELCMP addresses only the 66 kV overhead power lines that are owned by and under the control of ACCIONA Energy. ACCIONA Energy is not responsible for the 220 kV transmission line and terminal station (part of AusNet Services transmission network) and the numerous other overhead power lines that provide supplies to the various retail customers in the local area (part of Powercor Australia's distribution network). The overhead lines that are part of the transmission and distribution networks are the subject of separate Electric Line Clearance Management Plans controlled and implemented by others.

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<sup>6</sup> CCA = Chromated Copper Arsenate (CCA) is a wood preservative routinely used to protect it against damage from bacteria, fungus and insects.

<sup>7</sup> Iodine = 7 strands of 4.75mm AAAC 1120 (All Aluminium Alloy Conductor manufactured to AS1531).

## 5.0 Location of Potentially Impacted Vegetation

This section provides information on the nature of the vegetation potentially impacted from the management activities required to protect our electric lines.

A series of initial desktop assessments and site visits were undertaken prior to construction of the electric lines to gather information on the nature and extent of vegetation that may be impacted by Waubra Wind Farm's electric lines.

These assessments and visits found that the land in which the electric lines are now located have a long history of agricultural activity which has resulted in the removal of the majority of the original vegetation. As a result of these activities, the majority of this environment is now largely devoid of tall vegetation apart from occasional trees and shrubs.

There exists no trees listed within the City of Ballarat or Pyrenees Shire Council's Planning Scheme with ecological, historical, aesthetic, cultural or environmental significance within the boundaries of the Waubra Wind Farm.

The detailed results of the desktop assessments and site visits are summarised in section 5.1 below. An overview map illustrating the location of the overhead electric lines and the tree/shrub vegetation that lies within close proximity is attached in Appendix A.

### 5.1 Classification and Initial Assessment Vegetation Potentially Impacted

The Code (and the objectives of this ELCMP) requires a different approach for different types of vegetation so as to minimise the impact on the environment resulting from our management activities. This section provides the classes of vegetation and the initial assessment of potential impacts.

#### 5.1.1 Culturally Important Vegetation

A comprehensive cultural heritage assessment of the site was undertaken in June 2006. This assessment did not identify any vegetation that was culturally significant.

#### 5.1.2 Historically Important Vegetation

A comprehensive cultural heritage assessment of the site was undertaken in June 2006. This assessment did not identify any vegetation that was historically significant.

#### 5.1.3 Vegetation of Outstanding Aesthetic Value

A search of the Department of Planning and Community Development (DPCD) online planning maps found that no "Significant Landscape Overlays" apply to the land in which the electric lines have been positioned.

#### 5.1.4 Vegetation of Botanical or Ecological Significance

An ecological survey was undertaken throughout the entire wind farm site in October 2005 as part of the wind farm planning application. The survey found that the site has had a long history of agricultural activity that has resulted in intensive agricultural use of the landscape and the removal of the majority of the native flora. The survey concluded that botanical or ecological interest of the vegetation on site is limited to isolated areas of native grasslands and occasional scattered native trees.

A search of the Department of Planning and Community Development<sup>8</sup> online planning maps found that no "Vegetation Protection Overlays" apply to the land in which the electric lines have been positioned.

#### 5.1.5 Habitat of Rare or Endangered Species

An ecological survey was undertaken over the entire wind farm site in October 2005 as part of the wind farm planning application. This survey included the areas of the site that

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<sup>8</sup> Now known as the Department of Transport, Planning and Local Infrastructure (DTPLI).

are now used for our electric lines. The survey concluded that the majority of the site did not have habitat that was considered suitable for supporting rare or endangered species. However, the survey identified occasional native trees, minor streams, dams and rocky gullies that occur across the landscape that have the potential to support threatened species.

However, these habitats would not need to be impacted from the ongoing maintenance requirements associated with the electric lines as these habitats do not comprise trees or other tall growing vegetation.

#### 5.1.6 Native Tree Species

An ecologist has undertaken a survey of all trees in proximity to the electric lines to identify which trees are native.

#### 5.1.7 Easement Condition Ratings

A preliminary survey of the overhead electric line route was undertaken in August 2008 to establish the nature of the vegetation within close proximity to the electric lines. The survey found that there was no tall growing, remnant, native vegetation and no particularly fast or slow growing species within close proximity to the electric lines. The vegetation in our electric line easements is categorised according to condition ratings detailed in Table 1 in accordance with the relevant sections of the Wind Farm Operations Manual OM003.

#### ■ Table 1 Condition Rating Classifications Used in Easement Inspections

Condition Rating	Easement Inspection Guideline	Work Order Priority
100%	Easement clear of all structures and devoid of vegetation	-
90%	Easement clear of all structures and vegetation except unmanaged/managed pasture	-
80%	Easement contains low lying structures and/or vegetation that may grow into clearance space after five years.	-
70%	Easement contains vegetation expected to grow into clearance space in next 5 years	-
60%	Easement contains structures within 1m of clearance space and/or vegetation expected to grow into clearance space in next 3 years	-
50%	Easement contains vegetation expected to grow into clearance space in next 2 years	3
40%	Vegetation expected to grow into clearance space in next 12 months	2
30%	Vegetation expected to grow into clearance space in next 6 months	2
20%	Vegetation or structure within the clearance space	1
10%	Vegetation or structure within the clearance space and possible contact under sag or sway conditions	1
0%	Vegetation or structure in contact with conductor	1

## 6.0 Management Procedures

This section details the procedures that ACCIONA Energy will adopt to manage the vegetation in and around our electric line easements so as to maintain the clearance space between electric lines and trees. This section also details the procedures that ACCIONA Energy will adopt to identify and, as far as is reasonably practicable, protect those trees that are:

- ▲ native;
- ▲ listed in a planning scheme to be significant;
  - ecologically,
  - historically, or
  - aesthetically; or
- ▲ of cultural or environmental significance.

The responsible person will ensure that prior to the removal of vegetation, that any potentially protected trees are assessed for current protection status. This may involve consultation with specialists or relevant authority to ascertain if there are changes to initial studies outlined in section 5.1.

### 6.1 Measures for the Mitigation of Impacts on Significant Vegetation

During the route selection of the electric lines, tall growing native vegetation and important habitat has been avoided where practicable. This section deals the measures adopted by ACCIONA Energy to mitigate the impacts on 'significant' vegetation as a part of our ongoing efforts to achieve our environmental objectives.

#### 6.1.1 Culturally and Historically Important Vegetation

There are no recorded significant memorial or heritage trees within close proximity to the electric lines, so no specific mitigation measures are required at this stage.

However, if at any stage during the operation of the wind farm, it is thought that the vegetation exposed to pruning or clearing practices may be of cultural or historical significance, a specialist will be engaged to determine the cultural or historical importance of the vegetation. The specialist, in consultation with other interested groups (e.g. Aboriginal Affairs Victoria), would develop an appropriate mitigation strategy to limit the impact on the important vegetation. Section 6.3 on page 18 explains possible mitigation methods that may be considered.

#### 6.1.2 Vegetation of Outstanding Aesthetic Value

There are no areas of the site are considered outstanding aesthetic value and therefore, no specific mitigation measures are required.

However, a key objective of this ELCMP is to strike the appropriate balance between maintaining the necessary safety clearances and working with the natural habit of each tree in the interests of its long term health where possible.

ACCIONA Energy will endeavour to minimise the visual impact on the local area while upholding this objective. Where possible, an experienced arborist will use their skills and judgement to ensure that the pruning operation considers the aesthetics of the tree whilst achieving the necessary safety clearances.

#### 6.1.3 Ecologically Important Vegetation and Threatened Species

No tall-growing, threatened or endangered vegetation and habitats are impacted as a result of the ongoing maintenance of the electric lines and therefore no specific strategies

are required to mitigate the adverse impacts to vegetation or habitats of significant ecological importance.

If this situation were to change and ecologically important vegetation could not be practically avoided, ACCIONA Energy would act in accordance with all relevant legislation and policy including the Planning and Environment Act 1987, the Flora and Fauna Guarantee Act 1988, the Native Vegetation Management - A Framework for Action 2002 and the Environment Protection and Biodiversity Conservation Act 1999.

The responsible person will consult the following resources at least annually to ensure the accuracy of Council's knowledge on the location of such trees:

- J Annual inspection and identification of Council trees by qualified arborist;
- J Council planning scheme overlay for historical, cultural, environmental or aesthetic significance;
  - Register of significant trees;
  - Heritage Register (<http://vhd.heritagecouncil.vic.gov.au/>) within the meaning of the Heritage Act 1995;
  - Council will be notified by Victorian Aboriginal Heritage Council of any changes to the Victorian Aboriginal Heritage Register. The Victorian Aboriginal Heritage Register is not a publicly accessible register because it contains culturally sensitive information. Applicants may apply online for access or advice using the Aboriginal Cultural Heritage Register and Information System (ACHRIS - <https://applications.vic.gov.au/apps/achris/public/request-for-access/enter>) established under section 144 of the Aboriginal Heritage Act 2006;
  - Threatened Flora List in accordance with section 10 of the Flora and Fauna Guarantee Act 1988 (<http://delwp.vic.gov.au/environment-and-wildlife/conserving-threatened-species-and-communities/flora-and-fauna-guarantee-act-1988/ffg-listed-taxa-communities-and-potentially-threatening-processes>);
  - Flora or fauna as listed as threatened with a status of 'vulnerable,' 'endangered' or 'critically endangered' (<http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora> and <http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl>);
- J Threatened Invertebrate Fauna List ([https://www.environment.vic.gov.au/\\_data/assets/pdf\\_file/0016/50452/Advisory\\_List\\_of\\_Threatened\\_Invertebrate\\_Fauna\\_2009\\_FINAL\\_Sept\\_2009.pdf](https://www.environment.vic.gov.au/_data/assets/pdf_file/0016/50452/Advisory_List_of_Threatened_Invertebrate_Fauna_2009_FINAL_Sept_2009.pdf)); and
- J Threatened Vertebrate Fauna List ([https://www.environment.vic.gov.au/\\_data/assets/pdf\\_file/0014/50450/Advisory-List-of-Threatened-Vertebrate-Fauna\\_FINAL-2013.pdf](https://www.environment.vic.gov.au/_data/assets/pdf_file/0014/50450/Advisory-List-of-Threatened-Vertebrate-Fauna_FINAL-2013.pdf)).

Equally, if a tree were identified to be the habitat for fauna that is either:

- ▲ listed as threatened in accordance with section 10 of the Flora and Fauna Guarantee Act 1988;
- ▲ listed with a conservation status in Victoria of "vulnerable", "endangered" or "critically endangered" in the;
  - Threatened Invertebrate Fauna List; or
  - Threatened Vertebrate Fauna List.

The cutting or removal of that tree will be undertaken outside of the breeding season for that species, wherever practicable. If it is not practicable, for that species, translocation of the fauna will be undertaken wherever practicable.

#### 6.1.4 Native Vegetation

In situations where native trees require management to prevent their encroachment on the clearance space, ACCIONA Energy will instruct the contracted arborist to use their skills and judgement to ensure that the pruning operation considers the health and longevity of the tree whilst achieving the necessary safety clearances.

### 6.2 Ongoing Management Strategies

A number of strategies have been adopted to ensure that the objectives of this ELCMP are achieved. These strategies are discussed in the sections below.

#### 6.2.1 Route Selection

The electric lines have been strategically routed within the landscape to minimise the amount of vegetation that would be impacted by the construction and ongoing operation and management of the electric lines. This was achieved by selecting a route that, where practicable, avoids areas that support vegetation that are considered culturally, ecologically, and aesthetically important. Additionally, the route has been selected to avoid those areas of the landscape that support trees and other tall growing vegetation which have the potential to impact electric lines in both the short term and long term.

The route for the electric lines is now finalised and is not expected to change in the future, however, should the electric lines need re-routing for any reason, the re-routing process would be in accordance with these principals.

#### 6.2.2 Vegetation Monitoring (Easement Inspections)

The entire route comprising overhead electric line is subject to an ongoing systematic vegetation monitoring programme to ensure vegetation does not encroach on the minimum clearance space surrounding the electric lines thereby complying with the Code.

In essence, these easement inspections involve the inspection of the entire electric line route to ascertain which vegetation has or is likely to encroach upon the clearance space surrounding the overhead electric lines. In addition to this minimum clearance space for 66 kV power lines; ACCIONA Energy will also inspect the clearance space around the earth wire and fibre optic cables that hang underneath our 66 kV power lines.

These inspections involve viewing the vegetation from a number of different vantage points on the ground and conservatively estimating how far the vegetation is from encroaching upon the required minimum clearance space. Where the clearance cannot be confidently estimated using visual techniques, other non-contact techniques such as the use of a “hot stick” or a laser measuring device will be implemented. A work order for corrective action is triggered whenever the vegetation condition rating is determined to be less than 50% (refer to Table 1 above). The work order will be assigned a priority rating depending on the condition rating, with priority 1 work orders being the most urgent (again, refer to Table 1 above).

The easement inspection is completed annually. The pre-summer easement inspection will be undertaken prior to summer each year between August to September. The results of the inspection will be reported to the General Manager - Operations within one month of completing the inspection.

Acciona Energy will ensure all clearing is completed prior to the Declare Fire Season of each year.

#### 6.2.3 Vegetation Clearance and Pruning

Those areas along the electric line route that support trees and tall growing vegetation, and could not be practically avoided during the design process, are likely to be subject to an ongoing procedure of controlled clearing and/or pruning. This includes trees that have

the potential to fall (as assessed by a suitably qualified arborist) onto or otherwise come in contact with the electric lines.

Any such pruning will need to be undertaken to ensure the vegetation;

- ▲ remains in good health,
- ▲ does not come in contact with the electric lines, and
- ▲ complies with the Code.

Vegetation management is achieved using one, or a combination, of the following maintenance methods, depending on the vegetation in question:

- ▲ Pruning;
- ▲ Removal; and/or
- ▲ Slashing.

ACCIONA Energy will not remove any tree, or trim any tree in a way that substantially damages the tree, unless it considers:

- ▲ Safety is compromised;
- ▲ The electricity works and supplies are threatened;
- ▲ Other options are not feasible because of technical, economic or aesthetic considerations;
- ▲ The vegetation will not respond to directional trimming;
- ▲ The vegetation cannot be maintained for appropriate periods of time due to its growth characteristics;
- ▲ The health of the vegetation is such that to leave it would pose a threat to the safety of the community, property or the electric line;
- ▲ The aesthetics of the vegetation are such that continued trimming irreparably damages it, and/or
- ▲ Removal is considered preferable to ongoing trimming.

The pruning techniques used will generally be in accordance with AS 4373 - Pruning of Amenity Trees and are intended to remove the minimum amount of vegetation necessary to achieve safety clearances whilst preserving the health and safety of the tree. Generally speaking, once the minimum safety clearance plus an allowance for regrowth is determined for each branch, it is then trimmed at the nearest collar (or growth point) outside the limit of clearance. This is a requirement under AS 4373 - Pruning of Amenity Trees as it protects trees from infection or disease and reduces the development of weakly attached growth that can result from trimming trees mid-branch.

Typically a one to three year trimming cycle is considered to be reasonable industry practice, but this will vary depending upon various practical factors and the results of the annual easement inspection. A Hazard tree is a tree that is likely to fall onto, or otherwise contact an electric line due to the condition of the tree, or the foreseeable local conditions. Acciona Energy may cut or remove a Hazard tree which Acciona Energy has clearance responsibilities. The assessment and advice regarding hazard trees must be undertaken by a suitably qualified arborist. Hazard tree cutting or removal may be carried out regardless of whether the tree is within the clearance space or not, as trees may stand outside the clearance space but may make contact with electric lines if they fall.

If pruning works are required ACCIONA Energy will provide 14 days' notice to the owner and occupier of the land on which vegetation is to be pruned and/or cleared. The notice will include contact details of the responsible person, details of the cutting or removal and details on the dispute resolution process. Refer to Appendix C.

Where vegetation management is to occur on public land, the responsible person shall ensure that a notice is published in the local newspaper with at least 14 days' notice.



#### 6.2.4 Emergency Maintenance

The annual monitoring schedule of vegetation within close proximity to the electric lines should prevent the need for any urgent vegetation maintenance to be undertaken. However, if a situation arises whereby vegetation needs to be cleared urgently then an appropriately qualified arborist would be engaged to rectify the situation immediately.

Urgent pruning or clearing shall only be undertaken under the following conditions:

- ▲ As a result of encroachment or growth of vegetation that was not anticipated (i.e. abnormally favourable growth conditions) in the management plan; or
- ▲ As a result of a tree falling or damage to a tree (i.e. from a vehicle accident or a storm bringing down part of a tree) requiring the tree to be cleared to maintain the clearance space required by the Code; or
- ▲ if an arborist's assessment confirms the imminent likelihood of contact with an electric line having regard to foreseeable local conditions; or
- ▲ During the Fire Danger Period declared under the Country Fire Authority Act 1958.

Any urgent pruning or clearance shall not clear vegetation by more than one metre beyond the designated clearance space (including the distance allowed for sag and sway of the conductors), unless in a situation when a tree is likely to fall and come in contact with the electric lines.

In the unlikely event that any emergency pruning is required due to the presence of a hazardous tree or other vegetation that may fall onto or otherwise come into contact with an electric line, ACCIONA Energy will notify the owner and occupier of the land on which vegetation was pruned and/or cleared as soon as practicable after completing the emergency works.

Only personnel authorised as per 7.1 will be permitted to remove hazard trees.

ACCIONA Energy will record specific information that relates to the emergency maintenance works that are undertaken. This includes:

- ▲ Location of emergency works.
- ▲ Date of emergency works.
- ▲ Details as to why the pruning was required.
- ▲ Details of the last inspection of that section of the electric line where pruning and clearing was required.

This information will be retained at the Waubra Wind Farm Maintenance Facility for at least five years.

#### 6.2.5 Other Fuel Loads

If it becomes apparent that a significant fuel load is discovered below the electric line (e.g. a large pile of branches) these will be removed or minimised as far as practicable. Before these actions are undertaken the landowner will be contacted in order to obtain their approval.

#### 6.2.6 Offset Planting

ACCIONA Energy will encourage the replacement of trees that are removed provided the trees are planted away from the overhead electric lines. ACCIONA Energy will supply replacement trees for any trees lost on private land as a result of vegetation clearance associated with the overhead electric lines. However, ACCIONA Energy will generally not replace trees that have been planted inappropriately after the electric lines were erected. Replacement trees will usually be young, as these plants generally establish better and more quickly than older trees and over several years will outgrow a plant that was larger initially. ACCIONA Energy encourages the replacement of trees with species that are native to the local area as this will assist in the preservation of the local ecology.

### 6.2.7 Future Plantings

Trees and other tall-growing vegetation will not be planted in close proximity to electric lines as part of ACCIONA Energy's landscaping and biodiversity planting regime. If land owners wish to plant new vegetation within close proximity to the electric lines, ACCIONA Energy will provide further advice on what species are appropriate to be planted near to the electric lines.

## 6.3 Alternatives to Conventional Maintenance Methods

Tall-growing vegetation and habitats that are of particular importance or special significance may require alternative mitigation strategies to minimise adverse impacts. The present electric line route has been positioned to avoid such important vegetation, so these alternative methods are unlikely to be required at the Waubra Wind Farm. However, if a situation arises where vegetation of particular importance requires pruning and/or clearance, ACCIONA Energy will consider these alternative methods of vegetation management as compared to those standard practices discussed in Section 6.2 above. Each alternative maintenance option is discussed below.

### 6.3.1 Underground Electric Lines

Although underground electric lines are a desirable solution, it is often not financially viable given the large costs associated with underground cabling of high capacity, 66 kV circuits. However undergrounding may be a cost effective at selected locations depending on the nature or importance of the vegetation that may be impacted by the existence of the any overhead electric lines.

The present overhead electric line route does not comprise vegetation considered to be of sufficient importance to warrant underground electric cabling, and therefore, underground cabling has not been implemented at the Waubra Wind Farm for the 66 kV circuits.

### 6.3.2 Insulated Overhead Electric Lines

Aerial Bundled Cable or other insulated electric lines can be a suitable alternative to conventional uninsulated, 66 kV electric lines in circumstances where large trees below or near the electric lines need to be retained. This method allows a tree's canopy to develop under, around and over powerlines, although safety clearances (though reduced) must still be maintained<sup>9</sup>.

The route in which the overhead electric line passes at the Waubra Wind Farm does not comprise vegetation of a nature that warrants insulated cabling, and therefore, insulated cabling has not been implemented at the Waubra Wind Farm.

### 6.3.3 Re-route Overhead Electric Lines

As mentioned in Section 6.2.1 of this plan, the route for the electric lines has now been finalised and is not expected to change in the foreseeable future. However, should the importance of the vegetation that requires ongoing maintenance increase significantly (i.e. be found to be supporting a significant population of a threatened species), then re-routing would be considered as an alternative to conventional vegetation management. It is unlikely that this option would need to be utilised at the Waubra Wind Farm given there is minimal significant tall growing vegetation within close proximity to the overhead electric lines.

### 6.3.4 Use of Taller Poles

The use of taller poles would be an option where there are a number of highly significant trees between a span, whereby conventional vegetation management (i.e. pruning) is not considered appropriate. It is unlikely that this option would need to be utilised at the Waubra Wind Farm given there is lack of significant tall vegetation within close proximity to the overhead electric lines.

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<sup>9</sup> Refer to the schedule to the Code for more details.

## 7.0 Processes and Procedures to Ensure Competence

The implementation of this ELCMP relies in part on the competence of its inspectors and specialist contractors. This section describes the processes and procedure ACCIONA Energy uses to ensure the competence of specialist contractors. The BMP details the processes and procedure ACCIONA Energy uses to ensure the competence of inspectors.

### 7.1 Contractors

Where vegetation needs to be pruned or cleared, ACCIONA Energy will contract out these operations. The Contracting Company engaged by ACCIONA Energy must be able to meet a range of requirements to assure ACCIONA Energy that they are a suitably qualified, experienced and proficient arboriculture company capable of undertaking the required pruning and/or clearing works.

Unless otherwise specified in the Code all contracted personnel need to satisfy the following criteria in order to be authorised to conduct works:

All Team Members must:

- ▲ Complete a site based Induction as part of contractor on boarding and induction processes

Provide evidence of:

- ▲ An RTO recognised UET20312 Certificate II in ESI – Powerline Vegetation Control.
- ▲ An RTO recognised workplace First Aid Level 2 qualification.

In addition to the above, the Team Leader must provide evidence of:

- ▲ At least three years of experience in arboriculture practices.

Arborist:

- ▲ National Certificate Level IV in Horticulture and Arboriculture, including Assess Trees module or an equivalent qualification;
- ▲ An RTO recognised AHCPM201A – Recognise Plants;
- ▲ An RTO recognised UETDRVC24A – Assess vegetation and recommend control measures in an ESI environment, and
- ▲ At least 3 years of field experience in assessing trees.

Only once having satisfied the conditions above will the person responsible authorise a contractor to cut or remove trees, including hazard trees.

The Contracting Company must have successfully undertaken works safely and to the satisfaction of the client in the recent past.

Acciona Energy reserves the right to stop any work that is being carried out by any contractor or worker where an infringement of the safety rules, standard work practices legislation or procedures occurs or where Acciona Energy reasonably believe there is an immediate risk to health and safety of any person or a non-compliance may occur.

### 7.2 Internal Auditors

The electric line clearance operations that are required under this ELCMP will be audited to confirm the work has been undertaken in accordance with the principals outlined in this ELCMP and in compliance with the Code. ACCIONA Energy will audit its contractors on an ongoing basis to ensure appropriate work practices are being maintained and that all contractual and environmental requirements are being met. Contractors will be provided with feedback from ACCIONA Energy audits and this information will also be used to enhance this ELCMP.

If a major discrepancy or deficiency is found in the audited works then the deficient works shall be rectified as necessary. Additionally, the initial contractor may be required to undertake a refresher course before undertaking any further works for ACCIONA Energy.

### 7.3 External Auditors

In addition to the audits described above, an appropriately qualified horticulturist or arborist may be employed by ACCIONA Energy when significant maintenance practices are undertaken. They will audit the work undertaken by ACCIONA Energy's specialist contractors and provide advice on improvements that could be made. This external audit would assist in determining whether the extent of pruning being undertaken is within the guidelines set out in this document.

## 8.0 Management of this Plan

This section describes the processes and procedures to be used by ACCIONA Energy to administer this plan.

### 8.1 Document Control & Access

The custodian of this ELCMP shall be the 'Responsible Person' ACCIONA Energy's Site Manager – Waubra Wind Farm.

The Responsible Person must ensure that a copy of management plan is;

- ▲ Published on the Acciona Energy internet site;

Ensure that a copy of the management plan is available for inspection by the public at the responsible person's principal office in the state during normal business hours. The ELCMP is stored electronically and hard copies are available at the Waubra Wind Farm Maintenance Facility.

A current and endorsed version of this ELCMP is also available on the Company's website:

Link: <https://www.acciona.com.au/projects/energy/wind-power/waubra-wind-farm/>

### 8.2 Monitoring & Auditing of the Plan

#### 8.2.1 Monitoring

The primary mechanism for monitoring this plans performance will be to record a number of relevant parameters (Key Performance Indicators) including:

- ▲ Lost power hours resulting from vegetation interference;
- ▲ Number of emergency maintenance procedures undertaken;
- ▲ Summary of vegetation clearing and pruning programs including completed works, planned (short-term) works and forecast (long-term) works and estimated completion dates.
- ▲ Number of complaints; and
- ▲ Internal and external audit results.

These will be recorded in an appropriate data store by ACCIONA Energy's Site Manager – Waubra Wind Farm (e.g. ACCIONA Energy's Computerised Maintenance Management System, and/or Integrated Management System). A summary will be provided to the HSEQ Manager annually so that improvements to the plan, design and operations and maintenance procedures can be made if necessary.

A comparison of the above Key Performance Indicators with previously compiled reports will provide a mechanism to ensure that rectification works are completed.

Additionally, standard asset management processes will provide inputs into the ELCMP. In particular records will be used to ensure that trends and failures that form potential sources of ignition are tracked and controlled.

### 8.2.2 Auditing

Any part of this plan or its associated systems, procedures and reports will be inspected at any time by independent third party inspectors as a part of Acciona Energy's HSEQ audit process. As a minimum the ELCMP will be audited annually as outlined by the HSEQ internal audit schedule. Specific compliance requirements outlined in the Plan will be validated as per the scope of the annual audit (i.e. inspection activities and subsequent actions are completed as scheduled)

## 8.3 Identifying Deficiencies & Revising the Plan

### 8.3.1 Identifying Deficiencies

Deficiencies in this ELCMP may be identified by a variety of means such as:

- ▲ Annual review of this ELCMP by the Site Manager,
- ▲ Review by Energy Safe Victoria,
- ▲ External Audit,
- ▲ Fire Investigations,
- ▲ Comments and suggestions from:
  - members of the public, or
  - an officer of a public authority.

### 8.3.2 Document Review & Timing

It is acknowledged that ACCIONA Energy must prepare and submit this ELCMP to ESV before 31<sup>st</sup> March in each year, it is required to be submitted within 14 days following a request by ESV, and consequently it is subject to annual review.

The ELCMP may be reviewed and revised more frequently in response to:

- ▲ significant changes to factors such as;
  - legislation,
  - policy,
  - industry practice,
  - standards and
  - responsibilities;
- ▲ Deficiencies identified in the plan's implementation;
- ▲ Deficiencies identified in the inspection process;
- ▲ Deficiencies revealed by incident investigations; and/or
- ▲ An instruction from Energy Safe Victoria<sup>10</sup>.

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<sup>10</sup> Section 10 (3) of the Regulations

## 8.4 Dispute Resolution

Written or verbal submissions on this plan or the implementation of this plan can be made at any time during the life of the project. Written submissions and any other comments should be addressed to:

Name	Ross Tochez Anderson
Position	HSEQ Coordinator
Address	Level 12, Freshwater Place 2 Southbank Boulevard SOUTHBANK Victoria 3006
Phone	03 9027 1000
e-mail	<a href="mailto:ross.tochez.anderson@acciona.com">ross.tochez.anderson@acciona.com</a>

In the event that the person listed above is not contactable, a written submission can be lodged to the ACCIONA Energy's Melbourne Office (using the address given above).

ACCIONA Energy shall contact the submitter and attempt to settle the dispute in a manner that is satisfactory to both ACCIONA Energy and the member of public and complies with the Act, Regulations and Code.

In the unlikely situation where a dispute cannot be resolved by this person, ACCIONA Energy will provide details of the dispute ESV in conjunction with the ELCMP itself to independently provide guidance on a suitable resolution. ESV will only resolve disputes that relate to their role as electrical safety regulator and not matters associated with other disputes, including amenity disputes.

## 9.0 Legal Requirement and timing for Preparation

Section 9 (2) of the Code requires ACCIONA Energy to prepare this ELCMP;

Before 31 March in each year, a responsible person must ensure that a management plan relating to compliance with the Code for the next financial year is prepared.

Section 10 (1) of the code

This regulation applies in relation to the management plan that a responsible person is required under regulation 9, to prepare for a financial year.

Section 10 (2) of the Code

A responsible person that is a major electricity company must before 31 March in the year that the financial year commences, submit the management plan to Energy Safe Victoria for approval.

Section 10 (3) of the Code

A responsible person must provide a copy of the management plan to Energy Safe Victoria on request within 14 days or such longer period as specified by Energy Safe Victoria.

Section 10 (4) of the Code

The responsible person must, if requested to do so by Energy Safe Victoria, provide further information or material in respect of the management plan within 14 days or such longer period as specified by Energy Safe Victoria.

So we provide more information if requested

Section 9 (5) of the Code

A responsible person must amend the management plan when instructed to do so by Energy Safe Victoria within 14 days or such longer period as specified by Energy Safe Victoria.

So we have to change it if they tell us to.

Section 9 (6) of the Code

The responsible person must not contravene a requirement of the management plan if the management plan is approved by Energy Safe Victoria.

We have an obligation to comply with the plan

Section 9 (7) of the Code

The responsible person must ensure that a copy of the management plan is available.

So we have to have a copy available (place on website).

Section 9 (3) of the Code requires ACCIONA Energy to prepare this ELCMP with the following information;

A responsible person must ensure that a management plan prepared under sub regulation (2) specifies the following —

a) the name, address and telephone number of the responsible person;	Page 6, Section 2.1
b) the name, position, address and telephone number of the individual who was responsible for the preparation of the management plan;	Page 6, Section 2.2
c) the name, position, address and telephone number of the persons who are responsible for carrying out the management plan;	Page 6, Section 2.3
d) (a) the telephone number of a person who can be contacted in an emergency that requires clearance of a tree from an electric line that the responsible person is required to keep clear of trees;	Page 7, Section 2.4
e) the objectives of the management plan;	Page 8, Section 3.0
f) the land to which the management plan applies (as indicated on a map);	Appendix A
g) each area that the responsible person knows contains a tree that the responsible person may need to cut or remove to ensure compliance with the Code and that is— i. native; or ii. listed in a planning scheme to be of ecological, historical or aesthetic significance; or iii. trees of cultural or environmental significance;	Page 12, Section 6.1
h) the means which the responsible person is required to use to identify a tree specified in paragraph (g)(i), (ii) or (iii);	Page 12, Section 6.1.3
i) the management procedures that the responsible person is required to adopt to ensure compliance with the Code, which must— i. include details of the methods to be adopted for managing trees and maintaining a minimum clearance space as required by the Code; and ii. specify the method for determining an additional distance that allows for cable sag and sway for the purposes of determining a minimum clearance space in accordance with Division 1 of Part 3 of the Code;  Notes:  1. Sub regulation (4) provides that the method may provide for different additional distances to be determined for different parts of a span of an electric line.  2. Clause 21(2) of the Code requires a distribution company or an owner or operator of a railway or tramway supply network that is consulted by a Council to assist the Council by determining an additional distance.	Page 14, Section 6.2.3 Appendix C



<p>j) the procedures to be adopted if it is not practicable to comply with the requirements of AS 4373 while cutting a tree in accordance with the Code;</p> <p>Note Clause 9 of the Code requires a responsible person to cut trees, as far as practicable, in accordance with AS 4373.</p>	Page 14, Section 6.2.2
<p>k) a description of each alternative compliance mechanism in respect of which the responsible person has applied, or proposes to apply, for approval under clause 31 of the Code;</p>	Page 17, Section 7.2 & 7.3
<p>l) the details of each approval for an alternative compliance mechanism that— (i) the responsible person holds; and (ii) is in effect;</p>	Page 17 Section 7.1
<p>m) a description of the measures that must be used to assess the performance of the responsible person under the management plan;</p>	Page 17 Section 7.2 & 7.3 Page 18 Section 8.2
<p>n) details of the audit processes that must be used to determine the responsible person's compliance with the Code;</p>	Page 17 Section 7.2 & 7.3
<p>o) the qualifications and experience that the responsible person must require of the persons who are to carry out the inspection, cutting or removal of trees in accordance with the Code;</p>	Page 17 Section 7.1
<p>p) notification and consultation procedures, including the form of the notice to be given in accordance with Division 3 of Part 2 of the Code;</p>	Page 14 Section 6.2.3 Appendix C
<p>q) dispute resolution procedures.</p>	Page 20 Section 8.4

### B3 Code of Practice

The Schedule of the Line Clearance Regulations provides the official "Code of Practice" which we must comply with.

## Glossary & Abbreviations

The following abbreviations are used throughout this document.

ACCIONA Energy:	Acciona Energy Australia Global Pty Ltd (ABN 98 102 345 719)
Act .....	Electricity Safety Act 1998 (version 063, 10-Jul-2013)
AER .....	Australian Energy Regulator
BMP .....	Bushfire Mitigation Plan
Bushfire .....	a generic term for an unplanned fire which includes grass fires, forest fires and scrub fires. Used interchangeably with “wildfire”.
CFA .....	Country Fire Authority
Code.....	Code of Practice for Electric Line Clearance as set out in the Regulations
ELCMP .....	Electric Line Clearance Management Plan
ESV .....	Energy Safe Victoria
ESC .....	Essential Services Commission Victoria
HSEQ.....	Health Safety Environment Quality
OEMP.....	Operational Environmental Management Plan
Regulations .....	Electricity Safety (Electric Line Clearance) Regulations 2015 (version 001, 28-June-2015)

## 10.0 References

ACCIONA Energy, Bushfire Mitigation Plan version 8.2 2018-2019.

ACCIONA Energy, Operations Environmental Management Plan v1.4 2012.

ACCIONA Energy, Wind Farm Operations Manual, 2011.

Electricity Safety Act 1998 (version 063, 10-Jul-2013).

Electricity Safety (Bushfire Mitigation) Regulations 2013 (version 004, 02-May-2016).

Electricity Safety (Electric Line Clearance) Regulations 2015 (version 001, 28-Juen-2015).

Fire Hazard Ratings for the Electricity Safety Act 1998 – 2013 Edition. Country Fire Authority (DVD).

AS 4373 – 2007: Pruning of Amenity Trees.

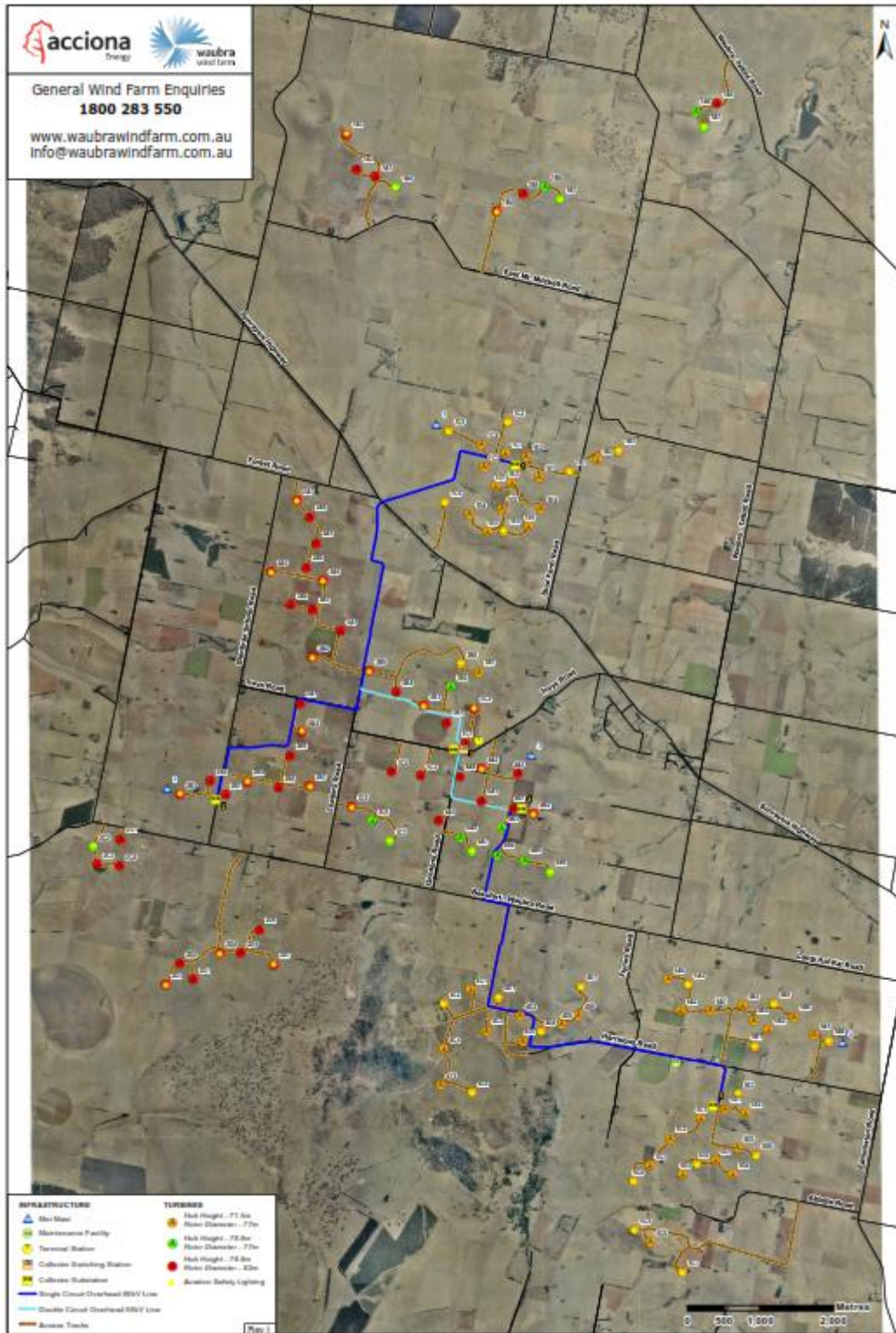
<http://www.esv.vic.gov.au/Legislation-Regulations>

<http://www.esv.vic.gov.au/Electricity-Professionals>

<http://www.aer.gov.au/>

# 11.0 Appendix

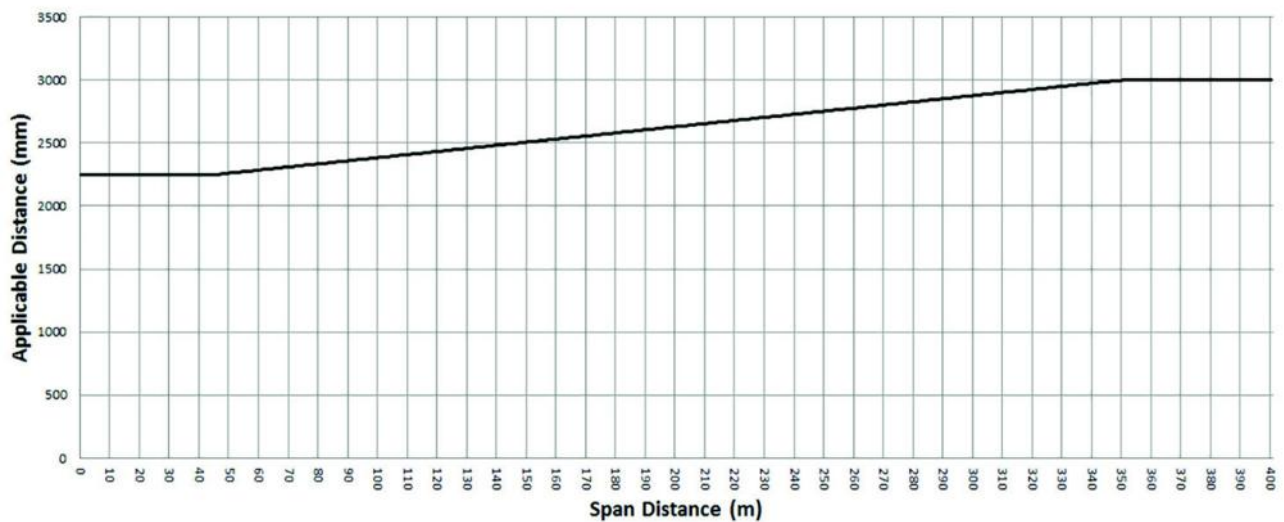
## 11.1 Appendix A - Overview Map of the Waubra Wind Farm



## 11.2 Appendix B – Clearance Spaces Surrounding Our Electric Lines

The schedule to the Code specifies the minimum clearance space around electric lines that the Responsible Person must maintain. Waubra Wind Farm is located in a “hazardous bushfire risk area” and uses only uninsulated electric lines operated at 66 kV. Consequently it is only ‘Graph 6, ‘Figure 1’ and ‘Figure 5’ which are relevant to this ELCMP. These tables and figures are reproduced below for convenience of the reader (reference should always be made directly to the Code in case changes have been made).

**GRAPH 6  
UNINSULATED 66,000 VOLT ELECTRIC LINE ON HAZARDOUS BUSFIRE AREA**



### Graph 6 Formula

The formula by which the applicable distance for the middle two thirds of a span of an electric line to which clause 29 applies is calculated is as follows:

For  $0 < SD \leq 45$ ,  $AD = 2250$  mm

For  $45 < SD < 350$ ,  $AD = 2250 + ((SD - 45) \times (750 \div 305))$

For  $350 < SD$ ,  $AD = 3000$  mm

Where:

SD = Span Distance

AD = Applicable Distance

### Notes to Graph 6

- (1) The applicable distance must be extended by an additional distance to allow for sag and sway of the cable. This is done by adding that distance to the applicable distance (see clause 29(2) (a)).

- a. If the span is greater than 45 metres and less than or equal to 345 metres – the distance calculated in accordance with the following expression-

$2250 + ((SD - 45) \times (750 \div 305))$

where –

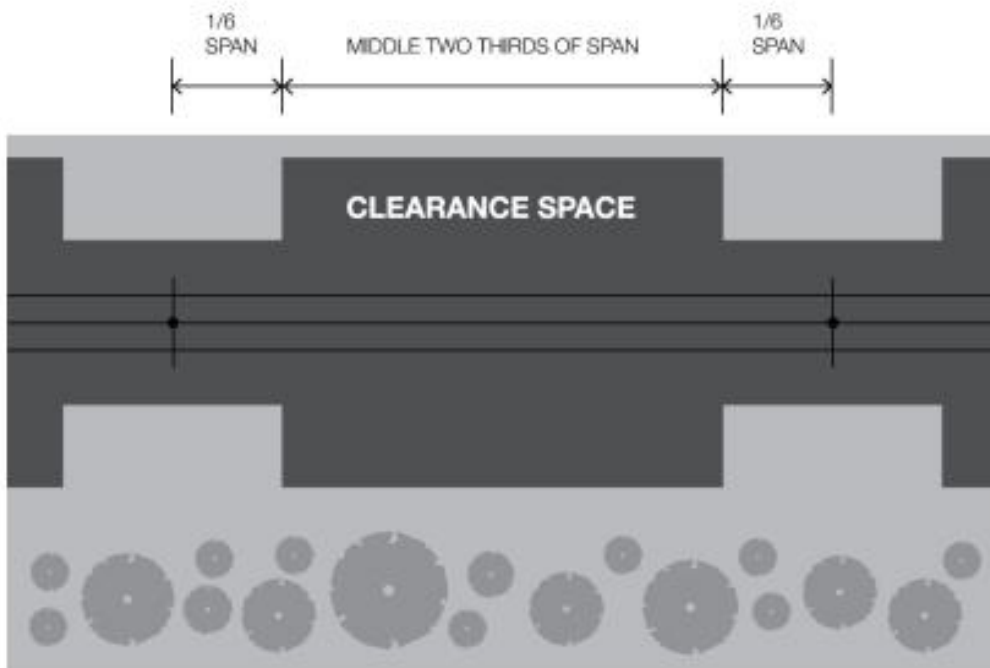
SD is the span distance

(2) A distribution company, or an owner or operator of a railway supply network or a tramway supply network, must assist a Council, if requested, by determining the additional distance (see clause 21(2)).

(3) The minimum clearance space for a span of an electric line to which this Graph and clause 29 apply is partially illustrated in Figures 1 and 5.

(4) The applicable distance for the first and last sixths of a span of an electric line to which clause 29 applies is 2250 millimetres.

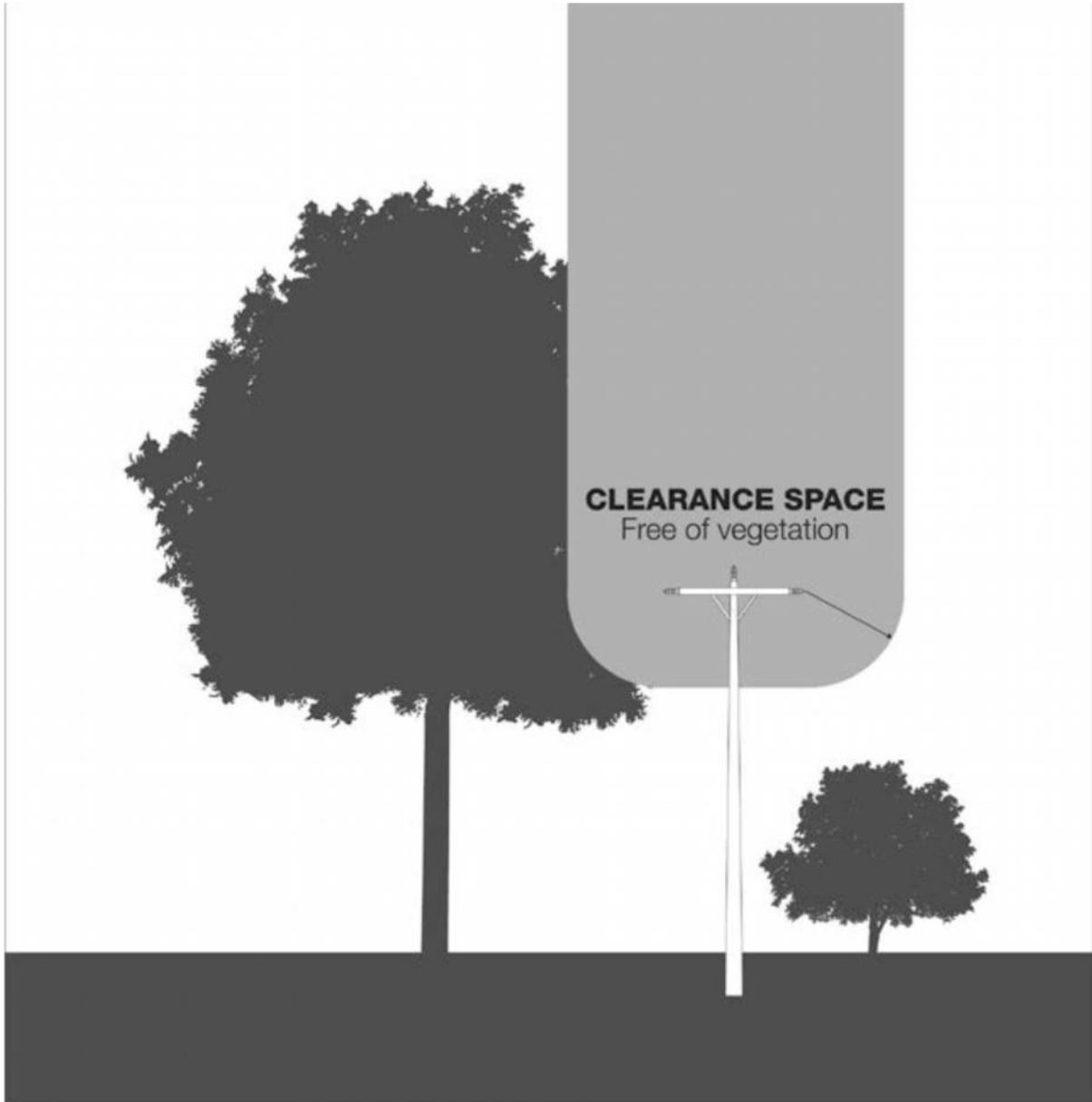
**FIGURE 1: PLAN VIEW OF ELECTRIC LINES IN ALL AREAS**



NOT TO SCALE

**FIGURE 5:**

UNINSULATED 66 000 VOLT ELECTRIC LINE IN A LOW BUSHFIRE RISK AREA AND  
UNINSULATED ELECTRIC LINE IN A HAZARDOUS BUSHFIRE RISK AREA



NOT TO SCALE



## 11.3 Appendix C - Notice to Land Owner of Pruning Works

### Notice of Vegetation Pruning Works

Dear land Owner,

As part the Acciona Energy 'Electrical Line Clearance Management Plan' we have under taken our annual vegetation assessment regarding vegetation in proximity to the wind farm overhead power lines.

The assessment has identified ..... trees located on your property that require pruning to maintain compliance with the 'Electrical Line Clearance Management Plan'.

To complete these works we will requires access to your property to perform the pruning works, at least 14 days from the date of this notice.

We will endeavour to remove all debris on the day of the works, however in some circumstances this may take up to 7 days.

Please contact me as soon as possible so we can discuss the required works.

Name: Cameron Stowe

Phone: 0439 341270

Email: cameron.stowe@acciona.com

There will be no charge to you for the pruning of the trees, as all expenses relating to the pruning will be paid for by Acciona Energy.