

## Bookaar Solar Farm Landscape Plan

November 2022

### 1. Introduction

Oz Trees Colac Pty Ltd has been commissioned by Bookaar Renewables Pty Ltd to provide a Landscape Plan to:

- Establish and manage a number of vegetation screens for the proposed Bookaar Solar Farm (the 'Development'); and
- Ensure that the established vegetation screens will meet the requirements specified in Condition 8 of the Planning Permit issued on 14<sup>th</sup> July 2022 (PA2000997, the 'Permit').

The purpose of the vegetation screens is to provide a visual barrier that will screen views of the solar farm over its lifetime. As such, the screens are required to:

- Establish quickly; and
- Form a dense screen at least 4 metres above natural ground level.

Condition 8 of the Permit sets out the following:

*Before development starts, excluding site preparation works, a Landscape Plan must be submitted to, approved and endorsed by the responsible authority. When endorsed, the plan will form part of this permit. The plan must be fully dimensioned and drawn to a scale. The Landscape Plan must be prepared by a suitably qualified expert and be generally in accordance with the advertised Landscape Plan (prepared by Landscape Plans by Oz Trees Colac Pty Ltd (February 2021) and the site plan by NG Electrical Pty Ltd (9/06/2022) but modified to include:*

- a) Details of any screening treatments as required by the Glint and Glare Management Plan required by Condition 10*
- b) Details (including location, type, species and heights at time of planting and maturity) of the species of plants selected to form part of the landscaping plantings, which must be selected with a preference for:*
  - I. Species native to the area and/or endemic Ecological Vegetation Class of the location*
  - II. Species that are not highly flammable, with a preference for smooth-barked species that minimise the generation of embers in the event of a bushfire*
  - III. Species that collectively will form a dense screen at least 4 metres above natural ground level*
- c) Any landscaping buffers to be no more than 15m in width*
- d) Where new landscaping is located near an existing Shelterbelt, a 5 metre canopy separation must be provided*
- e) A statement summarising the design and species selection justification with regard to the requirements of Condition 8b*
- f) Mounding and trenching for tree planting located within the estimated 1% AEP flood extent shall be spaced as per the minimum suggested distances shown in Figure 4-6 of the Bookaar Solar Farm Flood Impact Assessment prepared by Venant Solutions and dated 10 August 2021; that is:*

- i. mounding will obstruct no more than 50% of the width of the section of vegetation screen located perpendicular to the direction of movement of floodwater
  - ii. the volume of adjacent trenching and mounding will be equal in extent so that there is no net increase in fill within the planting area
- g) the constructed level of the site access along Meningoort Road to be no higher than the existing road level
- h) Pest management infrastructure installed to protect trees prior to becoming established.
- i) Details of how the ground cover under the solar panels will be maintained by the owner and/or occupier at a reasonable level, including during fire season(s).
- j) Timing of planting, which must be completed prior to the installation of solar panels commencing (unless otherwise agreed to in writing by the responsible authority);
- k) A maintenance program to be implemented by the owner and/or occupier, including weed management, the replacement of dead or diseased plants for the life of the facility and the removal of debris from fences.

The following Landscape Plan details the design, species selection, site preparation, planting, and maintenance required to install and manage the vegetation screens at the Development to meet the requirements of Condition 8.

## 1.2 Conditions 8a & 8g

With respect to Condition 8a, no screening treatments are recommended by the Glint and Glare Management Plan (Condition 10) due to an assessment level of low impact at all receivers.

Condition 8g requires the constructed level of the site access along Meningoort Road to be no higher than the existing road level. This will be achieved and is noted on the Site Plan.



## 2. Screen design

### 2.1 Site Conditions

A site visit was carried out on October 18<sup>th</sup>, 2022, to assess the soils and growing conditions at the locations proposed for the landscape screens. The species proposed are based on the findings of this assessment and have been selected to promote planting success and high growth rates at the Site. It was determined that growing conditions at the proposed screen locations could be characterised into two types:

- 'Type 1' conditions: 'Dark clay' soils and/or located in areas with poor to moderate drainage.
- 'Type 2' conditions: 'Loamier clay' soils and/or located in areas with moderate to good drainage.

Figure 1 overleaf provides a map illustrating Type 1 and Type 2 conditions across the Site. The different condition types support different species, and therefore two sperate lists have been generated for the landscape screens, as is explained below.



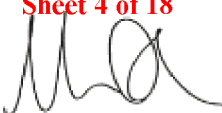
## Bookaar Solar Farm Landscape Screen Planting Conditions

### Legend

- Areas with 'Type 2' screen composition
- Areas with 'Type 1' screen composition
- Boundary

### PLANNING and ENVIRONMENT ACT CORANGAMITE PLANNING SCHEME

PERMIT NO. PA2000997  
CONDITION 8  
ENDORSED PLAN  
Sheet 4 of 18

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Date: 18 January 2023

#### Notes:

1. Screen is 15m wide and comprises of three rows of vegetation.
2. 2.5m offset between vegetation screens and from boundary to vegetation.
3. Screen not drawn to scale.



Figure 1: Bookaar Landscape screen growing conditions

## 2.2 Species List (Condition 8b)

After assessing conditions at the Site, the following steps were taken to determine species lists that would fulfil the requirements of Condition 8b:

- 1) In response to Condition 8bi), two lists of species (one for each condition type) 'with a preference for Species native to the area and/or endemic Ecological Vegetation Class of the location', and also capable of high growth rates, were developed.

- 2) In response to Condition 8bii), the species lists were then considered from a fire risk perspective with an emphasis on selecting species that were '*not highly flammable, with a preference for smooth-barked species that minimise the generation of embers in the event of a bushfire*'. This step was taken in consultation with the CFA (see the updated Risk Management Plan written by Fire Risk Consultants dated November 2022).
- 3) The selected species and the proposed spatial design of the screen was then considered against the criteria for Condition 8 b iii; to ensure that (for each condition type), selected species would '*form a dense screen at least 4 metres above natural ground level*'. Confirmation of this was sought and provided by Landform Architects, who undertook a review of the proposed species and planting arrangements of the screens (see the Landscape Screening Review Letter).

In line with requirements to satisfy Condition 8b, the species lists are provided below, including a description of the species' qualities, natural range and height at maturity.

Note that to improve growth rates, all trees will be planted as tube stock (approximately 250mm 350mm in height at planting). Furthermore, to improve the overall screening outcome, the externally facing row of the screens will consist of shrubs only.



### Type 1 Species List

The list of species for landscape screens to be developed in Type 1 conditions is provided in Table 1 below.

Species	Common name	Description
1. Eucalyptus Ovata	Swamp Gum	Small to medium sized tree widespread in Southern Victoria. Predominantly smooth bark. Endemic to South-eastern Australia including the Corangamite area. Occurs on swampy flats & poorly drained sites, including mildly saline soils. Useful shade and windbreak tree. Height at maturity 8m to 25m (8m to 20m wide).
2. Casuarina Glauca	Swamp she-oak	Fast growing and hardy medium sized Casuarina trees species, 6m to 20m tall greyish brown bark with small fissures. Grows well in brackish areas and returns nitrogen to the soil. Mainly known from scattered locations in the Wimmera, Victoria (to the north of the Site)
3. Melaleuca Ericofolia	Swamp paper bark	Bushy dense shrub, pale white or brownish papery bark, leaves are dark green. Native to the local area but has widely been cleared through wetland drainage. 3m to 8m height at maturity. Note only to be planted on outside row.
4. Eucalyptus Occidentalis	Swamp yate	Medium size tree, short trunk, umbrella like appearance, smooth white bark on upper branches. <i>Although not naturally native to the area</i> it is widely planted in Victoria due to its effectiveness as a soil stabilizer in wet areas. 4m to 20m tall depending on conditions.
5. Eucalyptus Camuldulensis	River Red Gum	Smooth white or cream coloured bark, lance shaped or curved adult leaves. A 'stately' tree with white, grey bark often seen along inland watercourses and riverbanks. Occurs widely throughout Victoria. Typically grows to a height of 20m+ and can grow to 45m high.
6. Melaleuca Lancelata	Black paperbark	Leaves are alternative, large shrub 4m to 8m high, soft silky hair like leaves on branchlets. The creamy/white coloured flowers appear in spring and summer. Bird attracting, great pollen producer for bees Occurs widely and naturally throughout Victoria. Note only to be used on outside row.

**Table 1: Species List for Landscape Screens in Type 1 locations**

**PLANNING and ENVIRONMENT ACT  
CORANGAMITE PLANNING SCHEME**

**PERMIT NO. PA2000997**

**CONDITION 8**

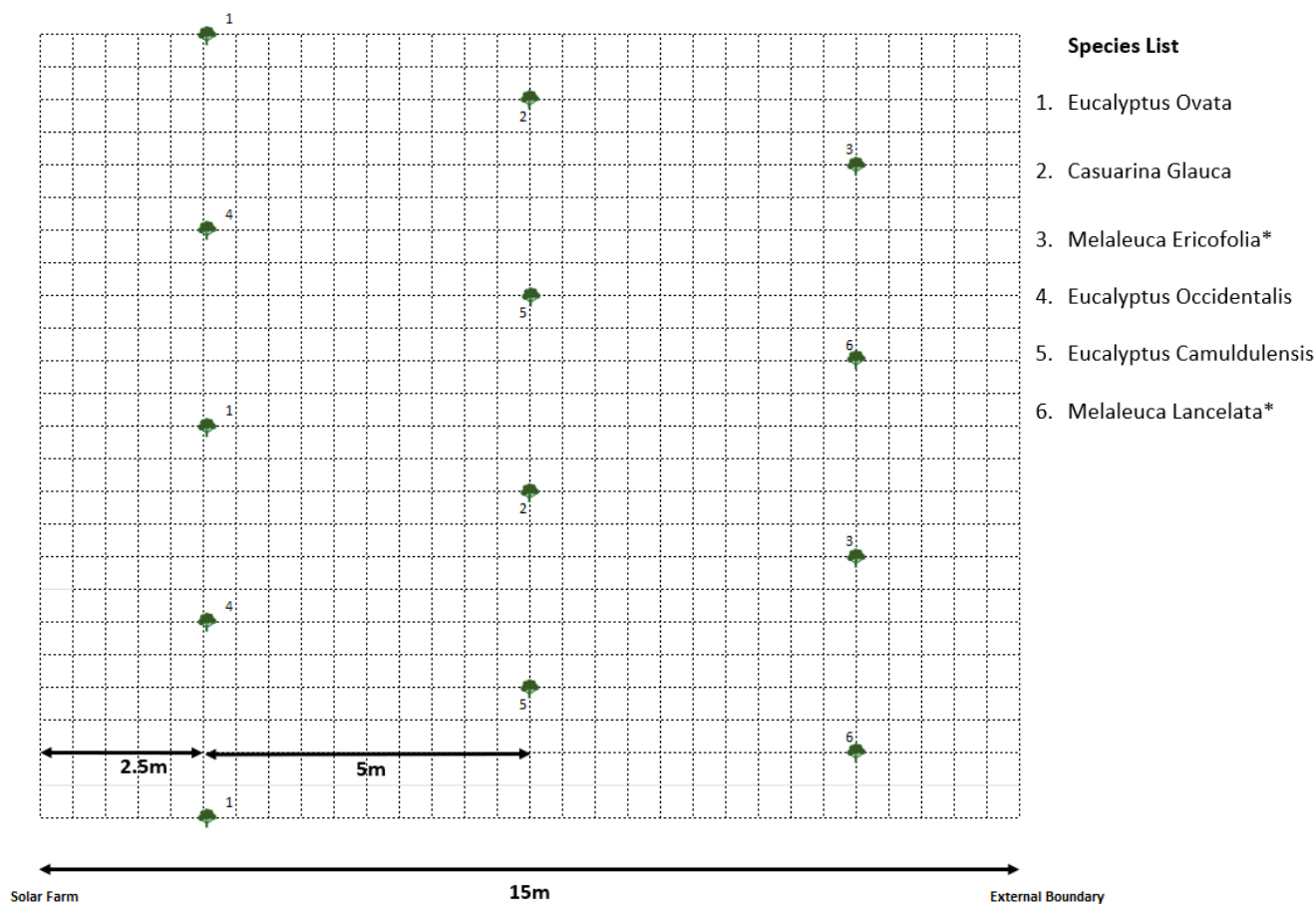
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**Sheet 6 of 18**

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**Date: 18 January 2023**





**Figure 2: Geometry of landscape screens to be located at Type 1 locations<sup>+</sup>**

1. To improve the natural characteristics of the screen, outer row shrub species may not alternate every tree, however the same overall number of trees of each type will be used for overall balance of the screen.
2. Species planted near to the existing 11kV and 220KV transmission lines that traverse the site will adhere to Powercor document 'Planting trees near power lines' (see <https://media.powercor.com.au/wp-content/uploads/2018/11/23144235/cppal-planting-trees-near-power-lines-nov-2008.pdf>).
3. There is no screen proposed within the 220kV easement (see Site Plan).
4. \*External facing row only.
5. \*Tree pattern repeated in areas identified as 'Type 1'.

**PLANNING and ENVIRONMENT ACT  
CORANGAMITE PLANNING SCHEME**

**PERMIT NO. PA2000997**

**CONDITION 8**

**ENDORSED PLAN**

**Sheet 7 of 18**

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 Date: 18 January 2023

## Type 2 Species List

The list of species for landscape screens to be developed in Type 2 conditions is provided in Table 2 below.

Species	Common name	Description
1. Eucalyptus Maculata	Spotted Gum	A fast growing moderately large tree with smooth mottled bark, lance shaped to curved adult leaves. Found in a variety of regions throughout Australia and widely established in Victoria. Expected to reach 20m to 30m in the local conditions based on similar plantings elsewhere.
2. Eucalyptus Radiata	Narrow-leaved peppermint	Medium tree typically 20m, rough, finely fibrous grey bark on trunk and branches, smooth bark on thin branches, narrow lance shaped leaves. Useful for windbreaks. Endemic to South-eastern Australia.
3. Banksia Marginata	Silver Banksia	Medium sized shrub. Bark is pale grey and initially smooth before becoming more tessellated with age. The narrow adult leaves are dull green in colour and generally linear, oblong or wedge-shaped. Expected to reach 5m tall by 4m wide at the Site at maturity. It attracts native birds and insects. Endemic to South-eastern Australia. Note only to be planted on the outside row.
4. Eucalyptus Camuldulensis	River Red Gum	Smooth white or cream coloured bark, lance shaped or curved adult leaves. A stately tree with white, grey bark often seen along inland watercourses and riverbanks. Occurs widely throughout Victoria. Typically grows to a height of 20m+ and can grow to 45m high.
5. Eucalyptus leucoxylon McGillis	Rosea	Flowering red yellow gum, smooth bark, lance shaped or curved adult leaves, 5m high after 5 years and can grow to heights of around 15m, tall erect grower. Native to south-western Victoria including the Corangamite Shire, and parts of South Australia.
6. Callistemon Sieberi	River Bottle Brush	Medium sized shrub of around 3m wide and 2m to 6m wide but can range up to 8m high. Lower branches can be removed, and it trains into a small tree. Found throughout eastern Australian temperate regions including Victoria. Note only to be planted on the outside row.
7. Allolasuarina Verticillata	Drooping Sheoak	Grows as a small nitrogen fixing tree with a rounded habit, reaching 4m to 10m in height, the bark is fissured and the branchlets droop - branchlets are up to 40cm long. Found throughout eastern Australian temperate regions including Victoria.
8. Hakea Salicifolia	Willow-leaved Hakea	Fast growing upright shrub or small tree (4m to 6m tall and 3m wide). Smaller branches are smooth with obvious dark red longitudinal ribbing. Bird attracting. The flowers are white and appear in winter and spring. Found throughout eastern Australian temperate regions including Victoria.
9. Melaleuca Ericifolia	Swamp Paper Bark	Bushy dense shrub, pale white or brownish papery bark, leaves are dark green. Note only to be planted on outside row. Native to the local area but has widely been cleared through wetland drainage. 3 – 8m height at maturity.
10. Casuarina Glauca	Swamp She-oak	Fast growing and hardy medium sized Casuarina trees species, 6m to 20m tall greyish brown bark with small fissures. Grows well in brackish areas and returns nitrogen to the soil. Mainly known from scattered locations in the Wimmera, Victoria (to the north of the Site).
11. Eucalyptus Radiata	Narrow-leaved peppermint	Medium tree typically 20m tall, rough, finely fibrous grey bark on trunk and branches, smooth bark on thin branches, narrow lance shaped leaves. Useful for windbreaks. Endemic to South-eastern Australia.
12. Callistemon Sieberl	River Bottle-Brush	Medium sized shrub of around 3m wide and 2m to 6m tall but can range up to 8m tall. Lower branches can be removed, and it trains into a small tree. Found throughout eastern Australian temperate regions including Victoria. Note only to be planted on the outside row.

**Table 2: Species List for landscape screens in Type 2 locations**

**PLANNING and ENVIRONMENT ACT  
CORANGAMITE PLANNING SCHEME**

**PERMIT NO. PA2000997**

**CONDITION 8**

**ENDORSED PLAN**

**Sheet 8 of 18**

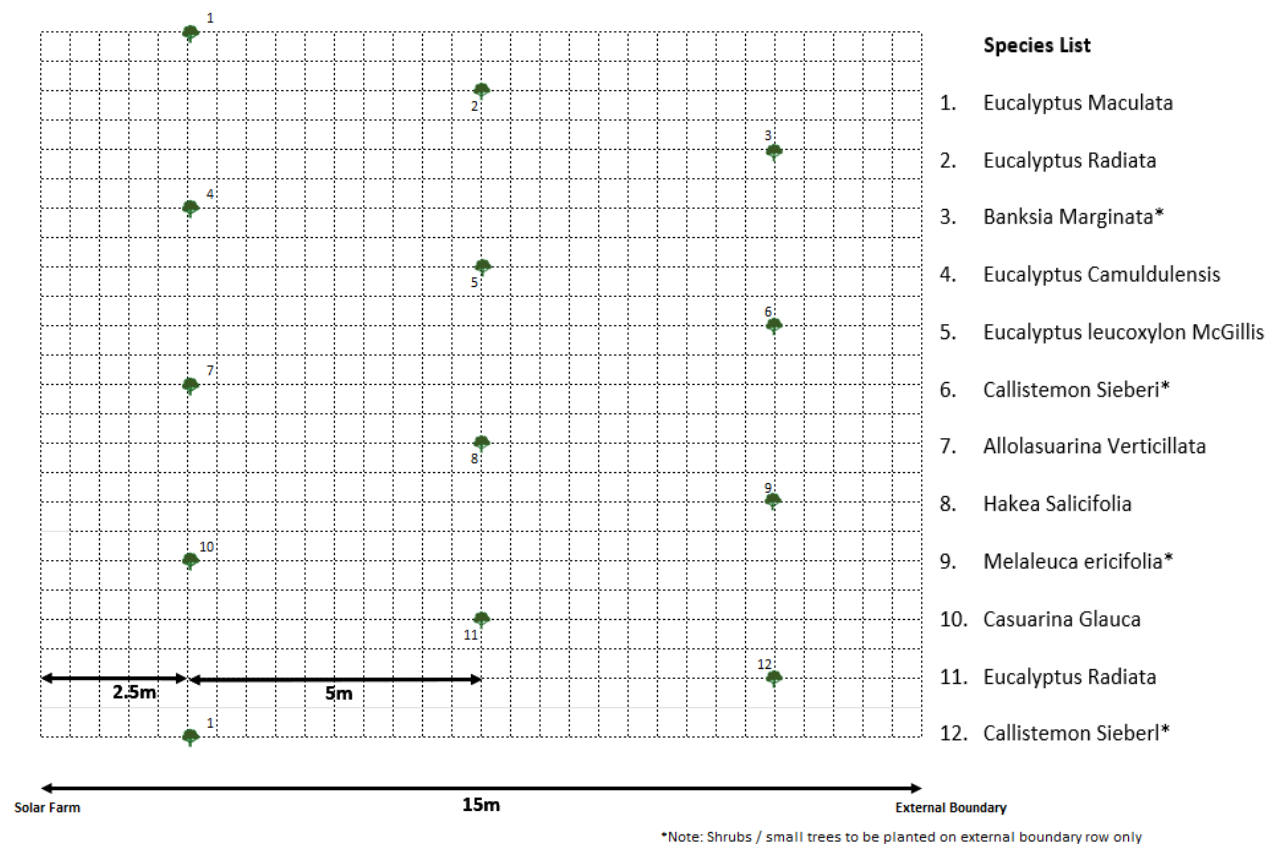
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**Figure 3: Geometry of landscape screens to be located at Type 2 locations<sup>+</sup>**



1. To improve the 'natural' characteristics of the screen, the outer row shrub species may replicate the exact pattern illustrated, however the same overall number of trees of each type will be used for overall balance of the screen.
2. \*External facing row only.
3. \*Tree pattern repeated throughout areas identified as Type 2.

A scaled cross section of the landscape screens is provided in Figure 4 overleaf.

**PLANNING and ENVIRONMENT ACT  
CORANGAMITE PLANNING SCHEME**

**PERMIT NO. PA2000997**

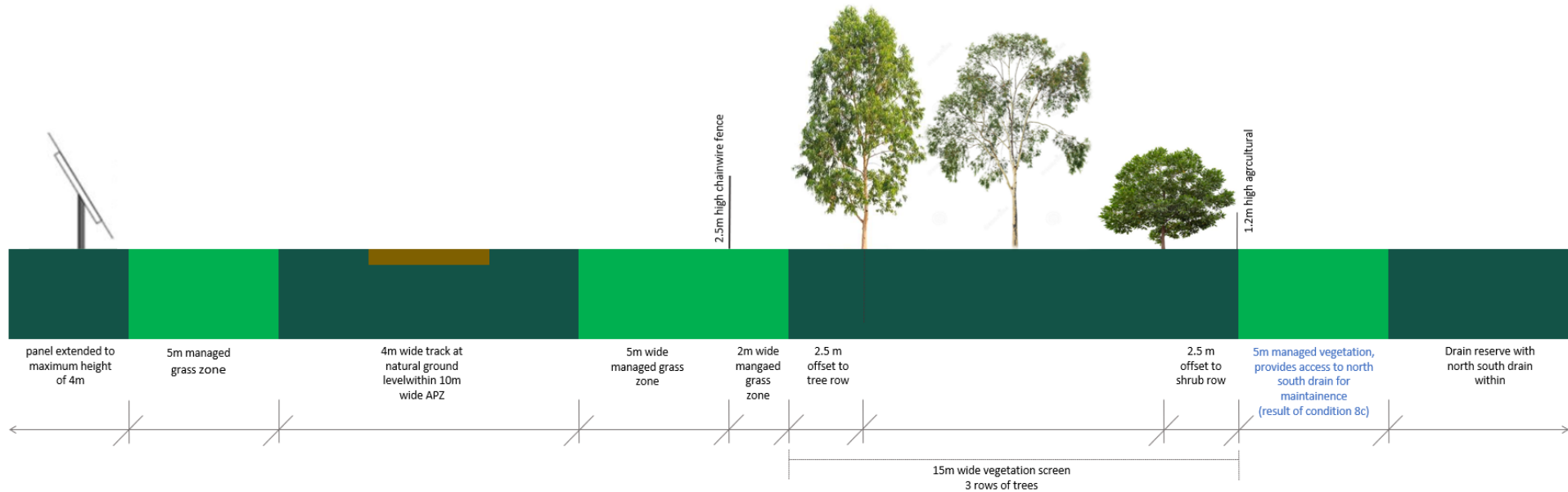
**CONDITION 8**

**ENDORSED PLAN**

**Sheet 9 of 18**

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**MINISTER FOR PLANNING**  
 Date: 18 January 2023

**Figure 4: Scaled cross section of screens showing eastern boundary (Eastern Boundary)**



### Notes

1. Cross Section depicted correlates to Site Plan Appendix K 'Boundary Details, Eastern Boundary Detail (TYP)'.
2. Compared to the Permitted Landscape Plan which included 20m wide landscape screens, northern, southern, and western boundaries have an additional 5 m managed vegetation on the internal side of the screen. See Site Plan Appendix K 'Boundary Details'.

The staggered planting design of the screens will maximise their visual density, while still providing adequate space between individual plants to avoid competition and encourage maximum growth. To further improve the screening outcome, the outer most row of the screens will consist of small trees and shrubs only, which are able to screen potential views of the solar farm from ground height to two to three meters high (Figure 4). Support for this approach has been sought and confirmed by the CFA (see the updated RMP).

Using the design presented, it is estimated that effective landscape screens with adequate density and height (at least 4 m) will be established within 4 years with appropriate pre planting treatments and maintenance routines (Section 4). This is based on the outcome of windbreaks that have been established on the property that the Development is proposed and plantings within the wider area.

### 2.3 Screen width and offsets to existing vegetation (Conditions 8c, 8d)

In accordance with Condition 8c, the vegetation screens will be planted within a 15m band along much of the perimeter of the Solar Farm (please refer to Figure 1; and the Site Plan). The width of 15 m and three rows of trees has been implemented to meet CFA preferences, as set out in the Officer Assessment Report for the Bookaar Solar Farm (pg 36):

*The proposed 20m-wide buffer however is not a width that is readily supported by the CFA with a width of 15m preferable. The 5m reduction in landscaping width lowers the amount of fuel surrounding the facility, simplifies the maintenance requirements including not necessitating branches to be trimmed below 2m in height and therefore provides an improved screening outcome. A 15m wide buffer will still allow 3 rows of trees to be provided to provide sufficient screening...*

In accordance with Condition 8d, an offset of 5m will be applied to all exiting shelter belts (Figure 1, Site Plan).

### 2.4 Design Statement (Condition 8e)

As noted above species for Type 1 and Type 2 locations have been selected with a preference for:

- I. Species native to the area and/or endemic Ecological Vegetation Class of the location

**Statement:** Preference has been given to species that are native to the area and/or endemic Ecological Vegetation Class of the location. See Table 1 and Table 2 for detailed descriptions.

One species (the 'Swamp Yate') selected for Type 1 conditions has been extensively used in windbreaks in the local area, and is considered to be 'naturalised' in parts of Victoria (please see [VicFlora – Eucalyptus occidentalis \(rbg.vic.gov.au\)](http://VicFlora - Eucalyptus occidentalis (rbg.vic.gov.au))). The inclusion of this species is helpful due to its soil stabilising qualities (see Table 1) and allows for a more diverse range of species overall without being considered out of place in local conditions.

- II. Species that are not highly flammable, with a preference for smooth-barked species that minimise the generation of embers in the event of a bushfire

**Statement:** The species selected are not 'highly flammable', and a preference has been given to smooth-barked species that will minimise the generation of embers in the event of a bushfire.

The CFA has been consulted with on the species selection for each condition type and the overall design of the landscape screens. It considers each of these factors to be acceptable (see the updated RMP, November 2022, written by Fire Risk Consultants).

- III. *Species that collectively will form a dense screen at least 4 metres above natural ground level.*

**Statement:** The species selected for each of the identified condition types will collectively form a dense screen at least 4 meters above natural ground level. This is based on the experience of OZ trees who have completed numerous vegetation screens in the local area. Confirmation of proposed landscape screens' ability to achieve '*a dense screen at least 4 metres above natural ground level*' was sought and provided by Landscape Architects who have reviewed the screen geometry, composition, and proposed species lists (see the Landscape Screening Review Letter, November 2022, written by Landform Architects).

**PLANNING and ENVIRONMENT ACT  
CORANGAMITE PLANNING SCHEME**

**PERMIT NO. PA2000997**

**CONDITION 8**

**ENDORSED PLAN**

**Sheet 12 of 18**

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**Date: 18 January 2023**



### 3. Planting Methodology:

#### 3.1 Overview

Tube stock (seedlings) rather than more established plants will be used. This is because survival rates are higher, and any perceived growth advantages are lost over a period of three to four years due to root stock growth from the tube stock seedlings.

Site preparation to increase available moisture in the soil profile is critical to establishing successful plantings. The two most important factors for increasing moisture in the soil are:

1. Controlling competition – weeds and in particular grasses are the biggest reason why seedlings do not establish properly. Weeds directly compete with seedlings for available moisture. By spraying weeds and grasses, soil moisture can accumulate in the soil prior to planting; and
2. Ripping the soil – ripping will ensure that any rainfall is immediately stored in the soil profile. It also provides a good environment for seedling roots by aerating the soil. Ripping is essential to achieving successful growth rates when planting seedlings.

The following sections detail the treatments that will be applied to all the landscape screen locations before planting.

#### 3.2 Spraying

Each of the rows will be sprayed out to 2m to remove weeds and grasses to control competition and increase soil moisture.

The site will be sprayed approximately 3 to 4 weeks prior to land preparation.

#### 3.2 Land Preparation

To prepare the site for planting each row will be ripped and mounded approximately 4 to 6 weeks after spraying. The soil will then be ripped to a depth of approximately 800 mm using a large winged ripper which piles the excavated soil into a mound adjacent to the rip line (shown in Figure 5). A second pass will break down any large clods of soil and flatten the top of the mound for planting. The height of the mound when complete will vary (a little) depending on the soil type and grass present at the time of mounding, but on average the height expected will be 400mm. This ripping and mounding process will shatter the soil profile making the mounded soil friable, providing a large flat raised soil mass in which to establish the new seedlings.

In addition, the rip lines adjacent to the soil mounds will allow rainfall to soak into the soil profile, providing a moisture store below the soil surface under the mounded soil into which the new seedlings will be planted. This water store will encourage the seedlings to send their roots down towards the moisture stored at depth as the surface soil dries out, accelerating root development and in turn increasing plant resilience.

The rip lines will be established at least 3 months prior to planting to ensure an adequate moisture store can be created in the soil profile before planting.

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Date: 18 January 2023

Figure 5: Example of mounding process near the subject site



### 3.3 Mounding and trenching within the 1% AEP Flood Extent (Condition 8f)

The mounding will also provide protection for young plants which can be susceptible to waterlogging during flood events if they are planted at natural ground level. This is important as flooding is known to occur at the Site.

An outcome of the Bookaar Solar Farm Flood Impact Assessment (prepared by Venant Solutions and dated 10 August 2021) is the following requirements (via Condition 8f) for mounding and trenching within the estimated 1% AEP Flood extent:

*Mounding and trenching for tree planting located within the estimated 1% AEP flood extent shall be spaced as per the minimum suggested distances shown in Figure 4-6 of the Bookaar Solar Farm Flood Impact Assessment prepared by Venant Solutions and dated 10 August 2021; that is:*

- i. mounding will obstruct no more than 50% of the width of the section of vegetation screen located perpendicular to the direction of movement of floodwater*
- ii. the volume of adjacent trenching and mounding will be equal in extent so that there is no net increase in fill within the planting area.*

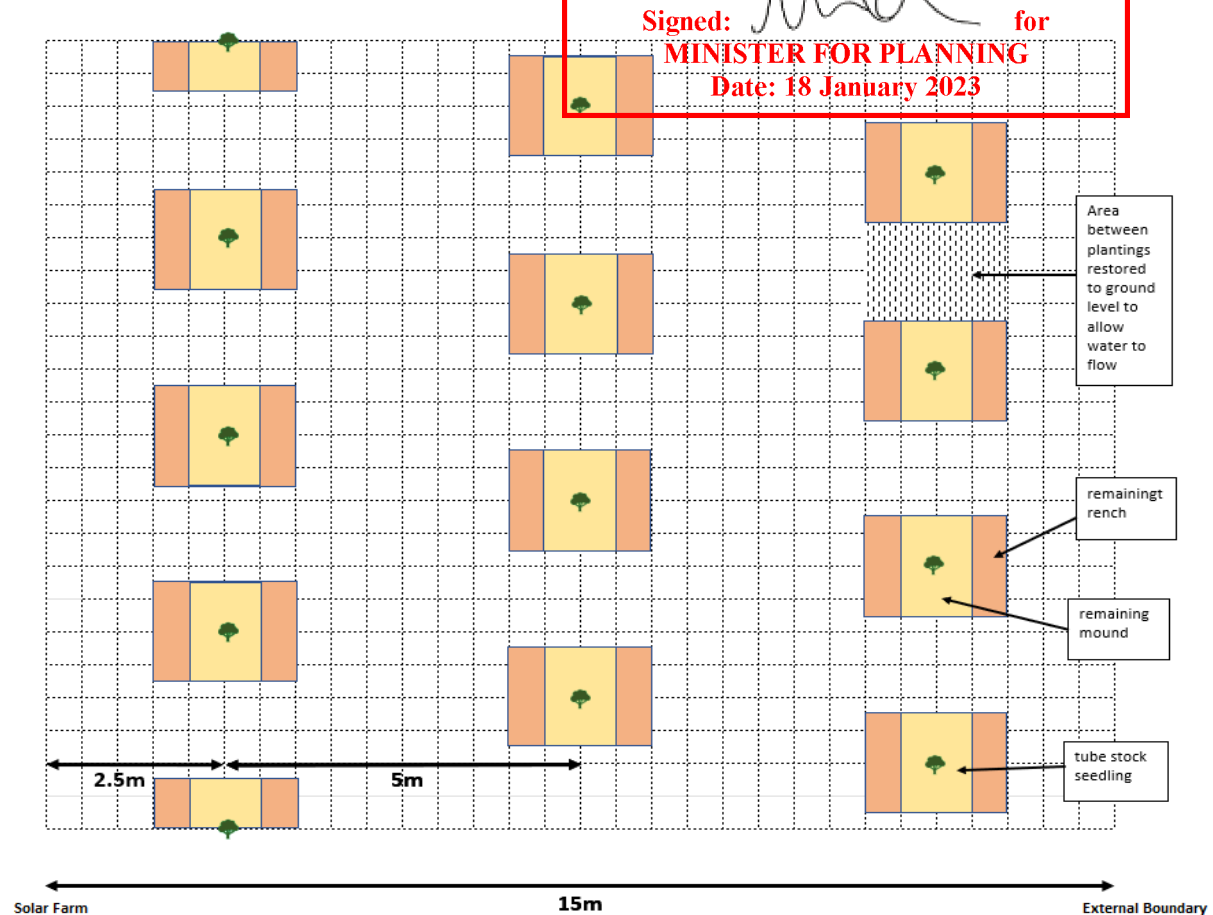
Figure 6 below demonstrates that the proposed spacing, mounding and trenching for the landscape screens will be the same as shown in Figure 4-6 of the Bookaar Solar Farm Flood Impact Assessment (and therefor will comply with Condition 8f), that is:

- Mounding will not obstruct more than 50% of the width of the vegetation screen (perpendicular to the direction of movement of floodwater); and
- There will not be an increase in fill within the planting area.

The above points will be achieved by reinstating a 2 m length of the soil mound into the rip line between each of the planting locations. Confirmation that the proposed spacing, mounding and trenching arrangements met the assumptions of the Flood Impact Assessment, and therefore was suitable from a flood risk perspective, has been sought and provided by Venant Solutions (see Venant Solutions Review Letter, November 2022).



Figure 6: Schematic showing tube stock plantings directly after planting



**Notes:**

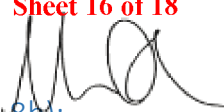
1. The mounding and trenching will be completed for each row of the screens as part of preparation for planting (see Figure 5).
2. Following planting, mounding between the seedlings within rows will be restored to flat ground by filling in the trenching.
3. The illustration shows a section of landscape screen following this process, such that mounding obstructs no more than 50% of the width of the vegetation screens.
4. The volume of adjacent trenching and mounding is equal in extent (no net increase in fill within the planning area), i.e., the mounding material comes from the trenching (Refer Figure 5).
5. Over time remaining mounding/trenching reverts to the original topography.

### 3.3 Pre-Planting Spraying:

A pre-planting spray will be applied approximately 3 weeks prior to planting the tube stock seedlings. This residual herbicide spray will provide a shield that will kill germinating weed seeds for up to 7 months preventing weed competition as the new seedlings establish their roots.

### 3.4 Timing of Planting (Condition 8j):

Development of the landscape screens will be one of the first onsite activities to take place, and planting will commence in either spring or late autumn depending on construction timelines. Spring and autumn are the optimum times to plant in this area. Planting will be completed prior to the commencement of the installation of solar panels (unless otherwise agreed to in writing by the Responsible Authority). It is estimated that planting the entire landscape screen will take up to 5 days.



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Date: 18 January 2023

### 3.5 Pest Management Infrastructure (Condition 8i):

Plant guards (1 litre milk cartons) will be secured over each new seedling to protect them from the weather and pests such as hares, birds, and rabbits. Plant guards have been shown to provide the optimal protection for young trees. They create a microclimate around the immature seedling, increasing its growth rate. Protection during their first two seasons of growth is critical to their long-term success rate. Plant guards also protect young trees from climatic extremes and spray drift from follow up weed control.

As is shown on the Site Plan the vegetation screens will be fenced to prevent sheep and cattle grazing in the tree lines. Fences will be maintained for the Development's lifetime.

## 4. Maintenance Programme

### 4.1 Maintenance of the array area ground cover (Condition 8i):

Groundcover (grass), under the solar panels will be monitored and will be actively managed through mechanical slashing and/or mowing as required. Active maintenance of groundcover will reduce the risk of grass fires starting within the Site and will ensure that fires originating from outside the Site do not intensify because of entering the Site. During the bushfire season, groundcover (including under panels) will be slashed and/or mowed to achieve a minimal fuel load (less than or equal to 100mm height). These management actions will also be included in the Environmental Management Plan.

### 4.2 Landscape Screens Maintenance (Condition 8k):

In accordance with Condition 8k, a maintenance program will be implemented by the owner and/or occupier, including weed management, the replacement of dead or diseased plants for the life of the facility and the removal of debris from fences.

Maintenance of the vegetation screens is also important to ensure that fire risk remains as contemplated by the Risk Management Plan, and to ensure optimum screening outcomes of the landscape screens. Details of the Maintenance programme are provided below.

#### *Tube stock Maintenance years - 0 to 2, and ongoing*

To ensure high survival rates, the tube stock seedlings will be maintained regularly for 2 years and then intermittently over the life of the solar farm. Maintenance will include follow up inspections at quarterly intervals to monitor survival rates and assess watering and weed management requirements.

#### *Watering*

Depending on the climatic conditions in any given year, watering is usually not required for seedlings. However, watering can be beneficial depending on the soil moisture levels at the time of planting, and whether a dry summer subsequently develops. As such, the requirement for watering will be monitored throughout the first 24 months (at quarterly intervals) and will be carried out if it is deemed necessary to ensure the new seedlings develop optimally.

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### *Weed Control*

Competition from weeds could compromise growth rates and the vigour of young plants. Weeds will therefore be sprayed regularly. On average, weed spraying should occur three to four times over a twelve-month period, and its requirement will be determined at quarterly intervals. Timing will vary depending on weed growth and will be required less as the screens develop. Once screens are fully established the requirement for weed control via slashing (or spraying) will be considered annually each spring and carried out only if necessary.

Weed control activities will be documented by the Project's Environment Officer, with the following information to be recorded:

- the date, time and location of areas that have undergone weed control activities;
- the methods used for weed control including where used and the types of chemicals used;
- any issues encountered; and
- the recommended frequency and methods for follow-up weed control.

Where it has been identified that weed control activities have not been effective, the method of control implemented will be reviewed prior to further control activities occurring.

### *Maintenance of fence lines to prevent flood issues*

All fences surrounding the screens will be checked quarterly and after flood events, to ensure structural integrity and to remove any debris that could obstruct flood waters flowing freely through the fences.

To ensure that drains function correctly, drains will be maintained such that they do not become overgrown with weeds. In accordance with Condition 2 of the Permit, The North South drain will be maintained to the satisfaction of Corangamite Shire Council.

### *Maintenance to reduce bushfire risk*

Vegetation screens will be maintained in accordance with advice provided in the 'Risk Management Plan', which sets out the following principles to reduce potential fuel loads:

- Removal of dead and diseased vegetation (including individual branches where possible) within the screens annually before the declared Fire Danger Period;
- Management of groundcover under the screens to ensure growth does not exceed 100mm during the Fire Danger Period.
- Removal of branches within 0-2m of ground height once trees are collectively established to a height of at least 4m. Note that this does not apply to the shrub row.

### *Replants*

In the Bookaar area, using the planting methodology described above, it is usual to achieve a planting success rate of approximately 90%. As such, to ensure that the screens are successful and do not end up with gaps, seedlings that do not survive, or are diseased, will be replaced as soon as possible. Missing or defective tree guards will also be replaced during regular maintenance in the first 1 -2 years. If the maintenance program is implemented as described above no replants should be required beyond 2 years, however the need for replants will be considered throughout the lifetime of the Project during the annual weeding maintenance.



## 5. Existing vegetation screens in the area

Below are photos of a screen planted by OZ Trees in the surrounding area at 24 months after planting, and at 5 years after planting. As can be seen, if all the steps are followed correctly relatively quick growth rates can be achieved.



*Photo: Vegetation screen 24 months after planting. Note that mounding has naturally broken down from heights illustrated in Figure 5.*



*Photo: Vegetation screen 5 years after planting (it is estimated that these trees are approximately 5m high).*