

Burrundulla Mini Sustainable Energy Park

3B Sydney Road, Burrundulla, IT Power (Australia) Pty Ltd

Landscape Concept



December 2021



Image 1 - Existing trees along the western boundary of the site

EXISTING CONDITIONS:

The site includes a few scattered trees but is otherwise cleared and has historically been used for grazing and cropping. There is a single row of mature trees along part of the western boundary of the site (image 1).

There is also some native vegetation on the adjoining site to the south which is forming a visual screen (image 2). There are ornamental trees and gardens along the surrounding driveways and around the residential dwellings (image 3).

LANDSCAPE STRATEGY:

A landscape concept plan has been developed based on consideration of the potential visibility of the site. The objectives of this landscape plan are to:

- Reduce the visibility of the site from adjacent sensitive receivers (including neighbouring residences and views from the Castlereagh Highway) over time
- Improve the character of the landscape through the restoration of native vegetation
- Provide habitat and increase local biodiversity through the use of local plant species.



Image 2 - Native screen planting on adjacent property, viewed from the site



Image 3 - Callistemon sp. forming a dense hedge on neighbouring property



The landscape plan identifies four landscape treatments for the site. These are:

1. Native screen planting
2. Existing trees with supplementary planting
3. Bushland revegetation
4. Scattered trees in pasture.

These landscape treatments are shown on the landscape plan on Figure 2.

To ensure the suitability of planting for the local conditions, the plant species proposed for these landscape treatments have been selected from the:

- *Native Species Revegetation, A Guide for the Mid Western Regional Council Area*, Watershed Landcare Incorporated (in association with the Australian Government National Landcare Program)
- *Native Plants for Mudgee Gardens*, Australian Plant Society, Central West Group, 2010
- *Planting your patch, A guide to revegetation on your property*, State of New South Wales Local Land Services, 2016.

Further consultation with Council Officers and local land care groups would be undertaken during detail design.



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FIGURE 1: EXISTING CONDITIONS & LANDSCAPE STRATEGY

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Drawn: SR
Issue: Rev1



Key:

-  1. Native screen planting (10 metres wide)
-  2. Existing trees with supplementary planting
-  3. Bushland revegetation
-  Scattered trees in pasture
-  Existing trees to be retained
-  Existing trees to be removed

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FIGURE 2: LANDSCAPE PLAN

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1. NATIVE SCREEN PLANTING

A mix of native trees and shrubs with a dense and compact habit have been selected to provide a maximum screening effect.

The following plant list includes a number of 'pioneer species' which should establish quickly and form an effective visual screen in the short term. While some of these species are relatively short lived (7-12 years), they will disperse seed and new plants will regenerate so that a self-sustaining vegetation screen is maintained in the long term.

Plant list:

Species name, Common name

Mature height

Native trees

<i>Acacia filicifolia</i> , Fernleaf wattle*	3-14m
<i>Acacia falciformis</i> , Broad-leaved hickory*	2-10m
<i>Acacia implexa</i> , Black wattle*	5-12m
<i>Allocasuarina verticilla</i> , Drooping she-oak*	3-7m
<i>Callistemon salignus</i> , Willow bottlebrush*	3-10m
<i>Callistemon viminalis</i> , Weeping bottlebrush+	6-9m
<i>Casuarina cunninghamiana</i> , River she-oak*	15-30m
<i>Eucalypt dealbata</i> , Tumble-down red gum	15m

Native shrubs

<i>Acacia decora</i> , Western silver wattle*	2-4m
<i>Acacia difformis</i> , Drooping wattle*	1-6m
<i>Acacia hakeoides</i> , Hakea wattle*	1-6m
<i>Acacia spectabilis</i> , Mudgee wattle*	1-4m
<i>Callistemon citrinus</i> , Crimson bottlebrush*+	1-3m
<i>Dodonaea viscosa</i> 'angustifolia', Sticky hop bush*	1-5m
<i>Dodonaea viscosa</i> 'cuneata' Wedge-leaf hop bush*	1-3m
<i>Melicytus dentatus</i> , Tree violet/Gruggly bush*	1-3m

Source:

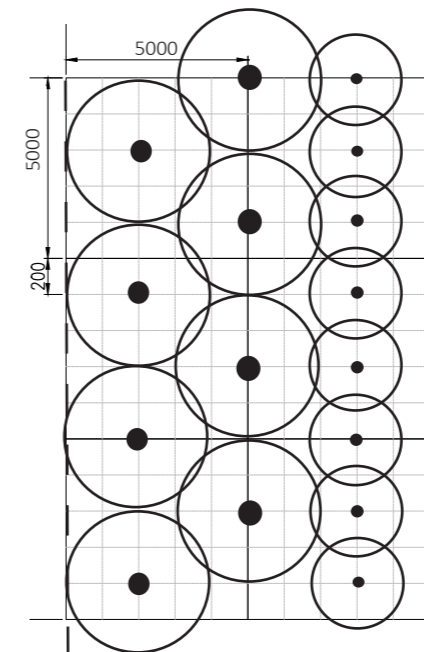
* Native species revegetation, A Guide for the Mid Western Regional Council Area, Watershed Landcare Incorporated
+ from Australian Plants Society, Central West Group, Native plants for Mudgee Gardens

Plant set-out matrix

Trees and shrubs will be staggered to maximise the screening effect.

Specification notes

- Three offset rows of trees and shrubs as per the set out matrix.
- 12 month establishment followed by a 24 month maintenance period
- Activities during establishment would include watering, weed management and replacement of dead plant stock as required.
- Activities during monitoring would include weed management, topping up of mulch as required and replacing dead plant stock during the next suitable planting season.



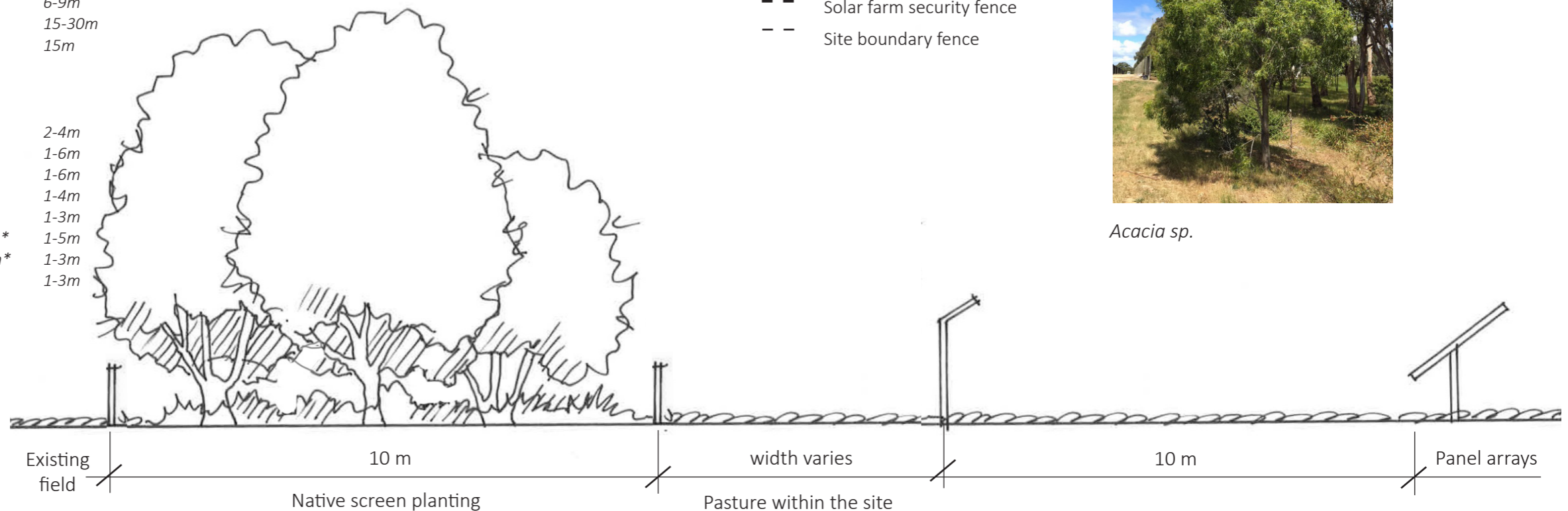
- KEY**
- Small trees
 - Shrubs
 - - Solar farm security fence
 - Site boundary fence



Allocasuarina sp.

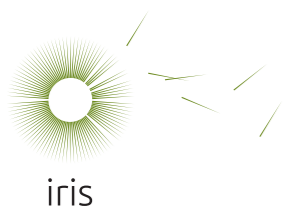


Acacia sp.



A - A Indicative cross section, Native screen planting

Scale: 0m 1 2 5m



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FIGURE 3: NATIVE SCREEN PLANTING

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2. Low screening near existing trees

To screen the gaps between the existing trees along the western boundary of the site, an additional area of native shrubs is proposed. This supplementary planting would be a mix of native shrubs.

Plant list:

Species name, Common name	Mature height
Native shrubs	
<i>Acacia decora</i> , Western silver wattle*	2-4m
<i>Acacia difformis</i> , Drooping wattle*	1-6m
<i>Acacia hakeoides</i> , Hakea wattle*	1-6m
<i>Acacia spectabilis</i> , Mudgee wattle*	1-4m
<i>Callistemon citrinus</i> , Crimson bottlebrush*+	1-3m
<i>Dodonaea viscosa</i> 'angustifolia', Sticky hop bush*	1-5m
<i>Dodonaea viscosa</i> 'cuneata' Wedge-leaf hop bush*	1-3m
<i>Meliccytus dentatus</i> , Tree violet/Gruggly bush*	1-3m

Source:

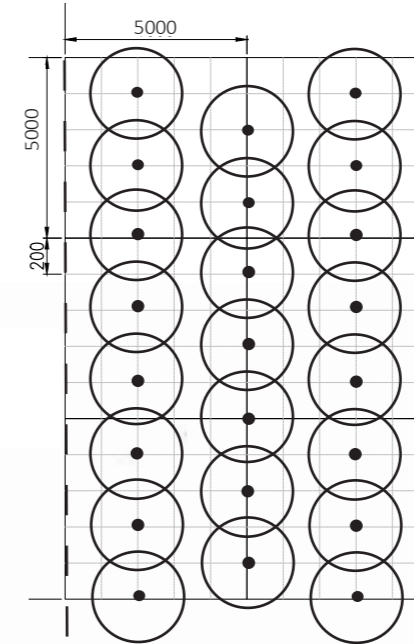
* Native species revegetation, A Guide for the Mid Western Regional Council Area, Watershed Landcare Incorporated + from Australian Plants Society, Central West Group, Native plants for Mudgee Gardens

Plant set-out matrix

Shrubs will be staggered to maximise the screening effect.

Specification notes

- Three offset rows of shrubs as per the set out matrix.
- 12 month establishment followed by a 24 month maintenance period
- Activities during establishment would include watering, weed management and replacement of dead plant stock as required.
- Activities during monitoring would include weed management, topping up of mulch as required and replacing dead plant stock during the next suitable planting season.



KEY

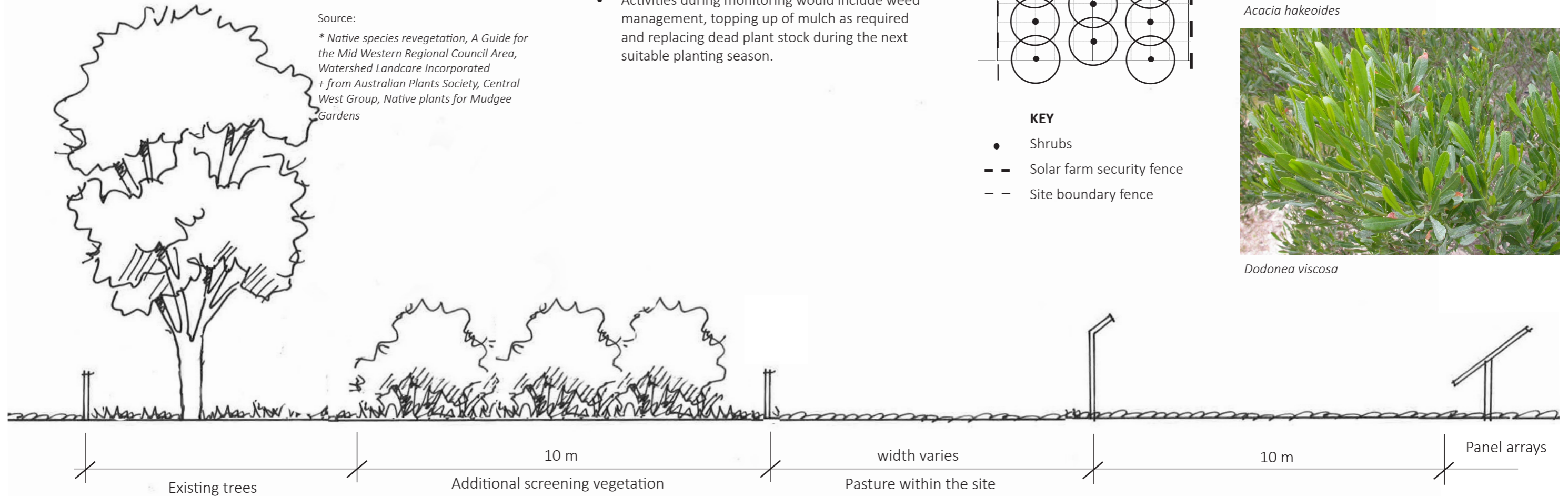
- Shrubs
- - Solar farm security fence
- - Site boundary fence



Acacia hakeoides



Dodonea viscosa



B - B Indicative cross section - Existing trees with supplementary planting

Scale: 0m 1 2 5m



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FIGURE 4: EXISTING TREES WITH SUPPLEMENTARY PLANTING

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3. BUSHLAND REVEGETATION

Revegetation areas will include a mix of locally native trees and shrubs including species to provide habitat for native wildlife. This mix of trees will create a framework for natural regeneration.

Plant list:

Species name, Common name	Mature height
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Large native trees

<i>Angophora floribunda</i> , Rough barked apple*	30m
<i>Eucalypt dealbata</i> , Tumble-down red gum*	15m
<i>Eucalyptus microcarpa</i> , Western grey box*	25m
<i>Eucalyptus melliodora</i> , Yellow box*	30m
<i>Eucalyptus blakelyi</i> , Blakelys red gum*	20m

Native trees

<i>Acacia filicifolia</i> , Fernleaf wattle*	3-14m
<i>Acacia falciformis</i> , Broad-leaved hickory*	2-10m
<i>Acacia implexa</i> , Black wattle*	5-12m
<i>Allocasuarina verticilla</i> , Drooping she-oak*	3-7m
<i>Callistemon salignus</i> , Willow bottlebrush*	3-10m
<i>Callistemon viminalis</i> , Weeping bottlebrush+	6-9m
<i>Casuarina cunninghamiana</i> , River she-oak*	15-30m

Native shrubs

<i>Acacia decora</i> , Western silver wattle*	2-4m
<i>Acacia difformis</i> , Drooping wattle*	1-6m
<i>Acacia hakeoides</i> , Hakea wattle*	1-6m
<i>Acacia spectabilis</i> , Mudgee wattle*	1-4m
<i>Callistemon citrinus</i> , Crimson bottlebrush*+	1-3m
<i>Dodonaea viscosa</i> 'angustifolia', Sticky hop bush*	1-5m
<i>Dodonaea viscosa</i> 'cuneata' Wedge-leaf hop bush*	1-3m
<i>Melicytus dentatus</i> , Tree violet/Gruggly bush*	1-3m

Source:

* *Native species revegetation, A Guide for the Mid Western Regional Council Area, Watershed Landcare Incorporated*
+ from *Australian Plants Society, Central West Group, Native plants for Mudgee Gardens*

Plant set-out

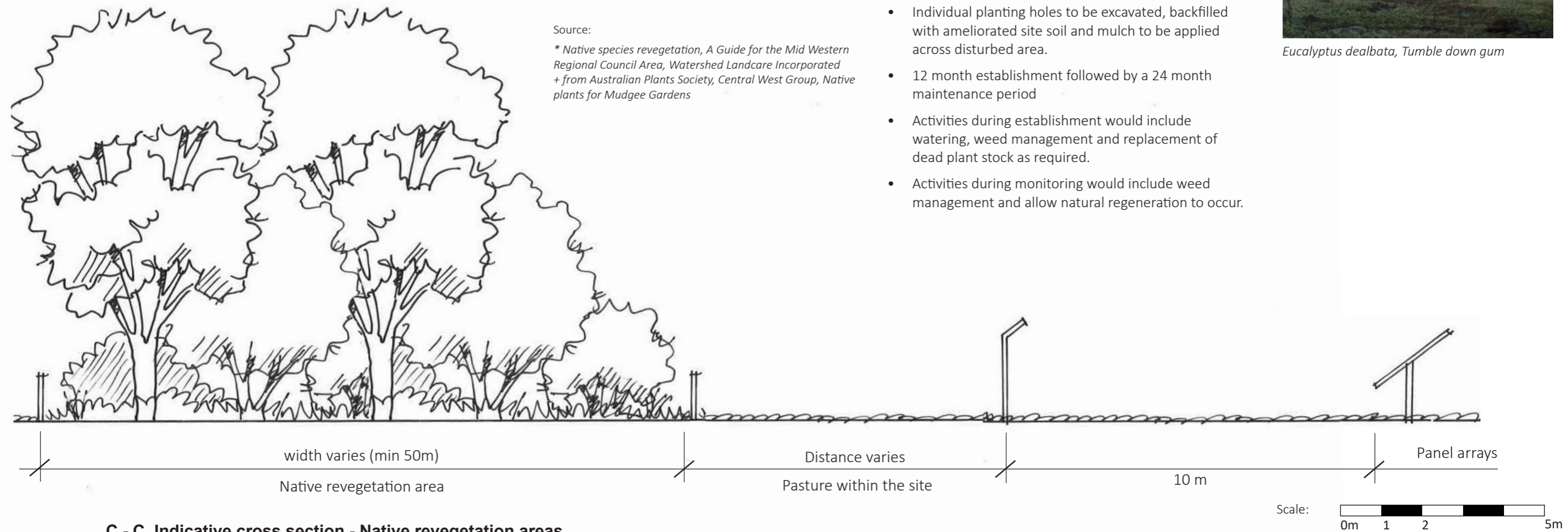
The setout would intermix trees and shrubs in an informal layout. Larger trees to be setback from the solar farm fence and located mainly to the south of the panel array area to minimise overshadowing. There would be random distances between the rows (3 m to 10 m). Some rows will include curves to improve habitat complexity. Plant density and layout should be in accordance with the *Planting your patch, A guide to revegetation on your property*.

Specification notes

- Ripped lines to a depth of 500mm and cultivated to a depth of 150mm.
- A ratio of 80% shrubs and 20% trees.
- Individual planting holes to be excavated, backfilled with ameliorated site soil and mulch to be applied across disturbed area.
- 12 month establishment followed by a 24 month maintenance period
- Activities during establishment would include watering, weed management and replacement of dead plant stock as required.
- Activities during monitoring would include weed management and allow natural regeneration to occur.



Eucalyptus dealbata, Tumble down gum



C - C Indicative cross section - Native revegetation areas



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FIGURE 5: NATIVE REVEGETATION AREAS

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4. SCATTERED TREES IN PASTURE AREAS

Areas within the solar farm fence will be sown with pasture grasses to allow for grazing of the property during operation.

Groups and scattered individual trees will be located through the centre of the site within the pasture grass. These trees will be local native species with a single trunk and open canopy. These will provide some filtering of views where the solar farm can be seen from elevated areas, provide tree canopy cover and habitat.

Plant list:

Species name, Common name	Mature
height	

Large native trees

<i>Angophora floribunda</i> , Rough barked apple*	30m
<i>Eucalyptus blakelyi</i> , Blakelys red gum*	20m
<i>Eucalyptus bridgesiana</i> , Apple box*	20m
<i>Eucalyptus microcarpa</i> , Western grey box*	25m
<i>Eucalyptus melliodora</i> , Yellow box*	30m

Source:

* *Native species revegetation, A Guide for the Mid Western Regional Council Area, Watershed Landcare Incorporated*
 + *from Australian Plants Society, Central West Group, Native plants for Mudgee Gardens*

Plant set-out

Trees would be set out in an informal layout, with individual and groups of trees. All trees to be set back a minimum of 10 metres and larger trees by 20 metres from the solar farm fence to minimise overshadowing of the panel array area.

Specification notes

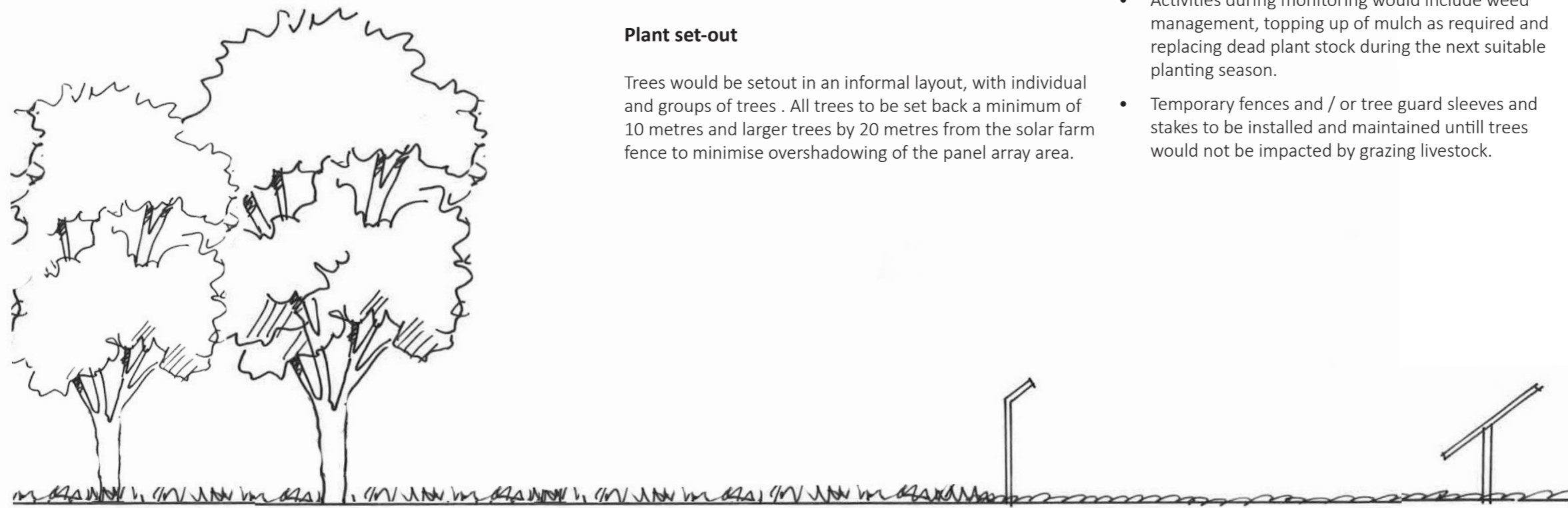
- Individual planting holes to be excavated, backfilled with ameliorated site soil and mulch to be applied across disturbed area.
- 12 month establishment followed by a 24 month maintenance period
- Activities during establishment would include watering, weed management and replacement of dead plant stock as required. Activities during monitoring would include weed management
- Activities during establishment would include watering, weed management and replacement of dead plant stock as required.
- Activities during monitoring would include weed management, topping up of mulch as required and replacing dead plant stock during the next suitable planting season.
- Temporary fences and / or tree guard sleeves and stakes to be installed and maintained until trees would not be impacted by grazing livestock.



Eucalyptus melliodora, Yellow box



Eucalyptus albens, White box



D - D Indicative cross section - Native revegetation areas



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FIGURE 6: SCATTERED TREES IN PASTURE AREAS

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