Clearing Permit Application - Supporting Information

Kwinana Battery Energy Storage System

May 2021

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Kwinana Battery Energy Storage System

1 ENDORSEMENTS

SIGN OFF	SIGNATURE	NAME AND TITLE	OPERATING UNIT
Author:		Emma Jones	Sustainability
Endorsed by:		Dom Watson	Commercial
Approver:		Terrence Loh	Generation
Approval Details			
Final approval Date:	31 May 2021		
DM number	24817241		

2 ABBREVIATIONS

BESS – battery energy storage system

DWER – Department of Water and Environmental Regulation

ESA – Environmentally sensitive areas

Subject Site – site where the BESS is proposed to be located

TEC – threatened ecological community

3 INTRODUCTION

Synergy, as announced by the Premier, Hon Mark McGowan MLA, and the Minster for Energy, Hon Bill Johnston MLA, in October 2020, is planning to construct a 100 MW / 200 MWh battery energy storage system (**BESS**) and associated substation and infrastructure on land at Kwinana Power Station.

The Kwinana BESS is one of the key actions of the Western Australian Climate Policy (November 2020), enabling more renewable generation to be stored while maintaining system security in the south west interconnected network. Whilst Synergy is the lead agency for implementing this action, the Department of Water and Environmental Regulation (**DWER**) is responsible for overall implementation of the Policy and monitoring of progress against the key actions.

The proposal involves the installation of lithium ion battery packs, inverters, transformers, control rooms, switch rooms, a substation and two transmission cables that will connect into the 330 kV Western Power network.

4 SUBJECT SITE AND SURROUNDINGS

The Kwinana BESS will be located on Lot 22 Weston Street Naval Base (the 'subject site'). The land is owned by Synergy and currently includes Kwinana Power Station (i.e. High Efficiency Gas Turbines or HEGTs) and Cockburn Power Station. The remainder of the site comprises of Western Power switchyards and the decommissioned coal power station (see Appendix A for a project layout).

The subject site is located within the Kwinana Strategic Industrial Area on the Swan Coastal Plain, situated approximately 30 kilometres southwest of the Perth central business district, 17 kilometres south of Fremantle and 5.5 kilometres northwest of the Kwinana town centre.

Fuel Oil Bulk Storage tanks 1 to 4 have been demolished from the subject site and contaminated sites investigations and remediation are underway.

5 OTHER APPROVALS

Synergy has liaised with the Industry Regulation and Contaminated Sites branches of DWER regarding the Kwinana BESS project. Synergy received confirmation that while the Kwinana BESS will be partially located within the existing prescribed premises boundary of Kwinana Power Station, a licence amendment or works approval was not required.

Synergy submitted an application for Development Approval from the City of Kwinana and Western Australian Planning Commission on 6 April 2021.

6 CLEARING DESCRIPTION

It will be necessary to clear vegetation on and around subject site for the purposes of moving existing infrastructure, construction of the Kwinana BESS, and also bushfire management.

Due to the subject site being partly within a 'bushfire prone area' a bushfire attack level assessment has been undertaken and a bushfire management plan developed to reduce the risk of bushfire impacts. See Appendix A for a plan of the assessed vegetation indicating that some vegetation outside the construction footprint needs to be modified to low threat.

A description of the areas to be cleared is provided in Table 1 below, together with an aerial plan and photos in Appendix B. Clearing of exclusively known non-native species have not been included in the permit application.

Table 1 – Description of clearing areas.

Area	Size	Vegetation description	Clearing	Photos
Area 1	1 m^2	One *Agonis flexuosa* Amongst non-native *Tamarix* sp. and oleanders.	Full removal	1
Area 2	39 m^2	*Agonis flexuosa.*	Full removal	2
Area 3	340 m^2	*Agonis flexuosa.*	Full removal	3
Area 4	62 m^2	*Agonis flexuosa.*	Full removal	4 and 5
Area 5	246 m^2	*Agonis flexuosa.*	Full removal	4 and 5
Area 6	624 m^2	*Eucalyptus gomphocephala* (Tuart) and *Allocasuarina* sp. possibly planted, *Acacia* sp.	Modified Removal of understorey only from ground level to 2 m high. Large trees will remain.	6 to 9
Area 7	236 m^2	Mix of native and likely non-local species, Eucalyptus sp., *Agonis flexuosa*, Myrtaceae sp. (potential *Beaufortia* sp.).	Modified Removal of understorey only from ground level to 2 m high. Large trees will remain.	10 to 12
Area 8	672 m^2	Mix of non-native, non-local species and potentially native, *Eucalyptus* sp., *Agonis flexuosa*, oleanders.	Modified Removal of understorey only from ground level to 2 m high. Large trees will remain.	13 to 16
Total	2220 m^2			

7 VEGETATION ASSESSMENT

The impacted vegetation is a mix of native and non-native species. The area was mostly cleared during the late 1960s / early 1970s as part of the Kwinana Power Station development. Some of the vegetation is likely to have been planted, but historical evidence proving this was not able to be located and some may have naturally regenerated. The vegetation condition is described as 'completely degraded' as per Keighery (1994).

A desktop assessment has not identified any Environmentally Sensitive Areas (**ESAs**) within the subject site. The nearest ESAs are 1 km to the north and 1.8 km to the east. The pre-European dataset indicates that vegetation associations applicable to the subject site are 998 (Spearwood system) and 3048 (Rockingham system). The vegetation to be cleared is unlikely to be representative of either of these associations due to historical clearing, industrial development and completely degraded vegetation condition.

The subject site is reported as likely to contain the federally listed threatened ecological community (**TEC**) "Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community". While a number of tuarts are located within the subject site, the vegetation is not considered to be representative of this TEC since it is completely degraded with no vegetation structure and almost no native species.

The vegetation is not associated with any wetlands, conservation areas or riparian areas.

In summary, it is not believed the proposed clearing will have an impact on the environment.

APPENDIX A: PROJECT LAYOUT AND BUSHFIRE MANAGEMENT

CONCEPT LANDSCAPING PLAN

NORTH

132kV SWITCHYARD

132kV SWITCHYARD

330kV SWITCHYARD

DEVELOPMENT SITE BOUNDARY
NOTE 3

PROPOSED BATTERY ENERGY STORAGE FACILITY 100MW BESS

CONSTRUCTION LAYDOWN

GRAVEL BASE

CONSTRUCTION LAYDOWN

SERVICE TRACK SEALED ROAD

100MW BESS PLANT
PERIMETER - 381.34m
AREA - 8651.85m²

330/33kV SWITCHYARD
PERIMETER - 496.09m
AREA - 10853.50m²

PROPOSED 330kV/33kV SUBSTATION LAYOUT
NOTE 2

WATER PIPELINES TO BE RELOCATED (NOTE 4)

HP GAS & FIBRE OPTIC CABLE

415V SWITCHBOARD TO BE REMOVED BY OTHERS

U/G HV 66kV CABLE TRENCH

GAS STATION

WESTON STREET

125.8
26.4
107.6
157.6
103.2
11.7
52.2
121.5
137.9
46.4
46.8
105.5
12.9
70.1
47.5
7.0
90.0
7.06

NOTES:

1. ALL DIMENSIONS IN METRES (m).
2. ALL VEGETATION WITHIN THE 330kV/33kV SUBSTATION FENCLINE TO BE REMOVED.
3. ALL VEGETATION/TREES WITHIN THIS BOUNDARY SHALL BE RETAINED WHERE POSSIBLE.
4. WASTE WATER & OILY WASTE WATER PIPELINES SHALL BE RELOCATED AWAY FROM THE 330/33kV SWITCHYARD. A 6.0m CLEARANCE SHALL BE REQUIRED.
5. THE 100MW BATTERY FARM PROPOSED LAYOUT IS ONLY AT CONCEPT AT THIS STAGE. A MORE ACCURATE LAYOUT SHALL BE COMPLETED AT DETAILED DESIGN.

LEGEND:

- 330kV POWERLINE
- 132kV POWERLINE
- G — U/G HP GAS
- FOC — U/G FIBRE OPTIC
- OW — OILY WATER
- WW — WASTE WATER
- LOT 22 CADASTRAL BOUNDARY
  PERIMETER - 2972.53m
  AREA - 404059.82m²
- DEVELOPMENT SITE BOUNDARY
  PERIMETER - 868.38m
  AREA - 39865.58m²
- NEW FENCE PALISADE (ANTI-CLIMB) 2.5m
- NEW FENCE CHAIN LINE 2.5m
- EXISTING FENCE
- EXISTING TREES & VEGETATION TO REMAIN
  PERIMETER - 796.62m
  AREA - 13861.6m² (34% OF DEVELOPMENT BOUNDARY)
- EXISTING TREES & VEGETATION TO BE REMOVED

Worley
energy | chemicals | resources

REV	DATE	DRWN	CHK'D	APP'D	DESCRIPTION
A	26.03.21	JH	GM	GS	ISSUED FOR APPLICATION

DRAWING REVISIONS

DRAWING No	TITLE

DRAWING REFERENCES

KWINANA POWER STATION

330kV/33kV SUBSTATION AND 100MW BESS PLANT
CONCEPT LANDSCAPING
SITE PLAN

DRAWN	J.HARTLEY	25.02.21
CHECKED	G.MANNING	
APPROVED		

SCALE 1:750 U.O.N

DRAWING NUMBER
RW412400-SK-0002

synergy

NEXT SHT
REVISION A

A1

Legend

- Street Hydrant
- Fire Water Tank
- Fire Pumproom and Booster Connection
- Turning Head
- Internal Driveway
- Public Road
- Proposed Development Layout
- Asset Protection Zone
- Development Site Boundary
- Electrical Infrastructure Extent
- Enclosure Fence Line (Project Area)
- Modified and maintained as low threat vegetation

Revision Number	Date	Revision

Scale 1: 3,000

0 50 100 150 Metres

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Synergy

Kwinana Substation and Battery Energy Storage, Weston Street, Naval Base

Figure 5: Bushfire Management Measures

Project Number: 001		Drawing Number: 001A	
Rev Number A	Date 30-03-2021	Drawn LW	Approved LW

Ref: 101_G005_RevC.qgz

APPENDIX B: MAP OF CLEARING FOOTPRINT AND PHOTOS

Paper Size ISO A3

0 10 20

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

N

GHD

Synergy
Kwinana Big Battery

Clearing for Kwinana BESS and associated infrastructure

Project No. 12543752
Revision No. A
Date 27 May 2021

FIGURE 1

C:\Scratch\12543752 - Perth JOb\GIS\Maps\Mxds\12543752_Z001_RevA_VegetationClearanceAreas_A3L.mxd
Print date: 27 May 2021 - 17:50

Data source: SLIP / LANDGATE
Landgate / SLIP. Created by: gpayne

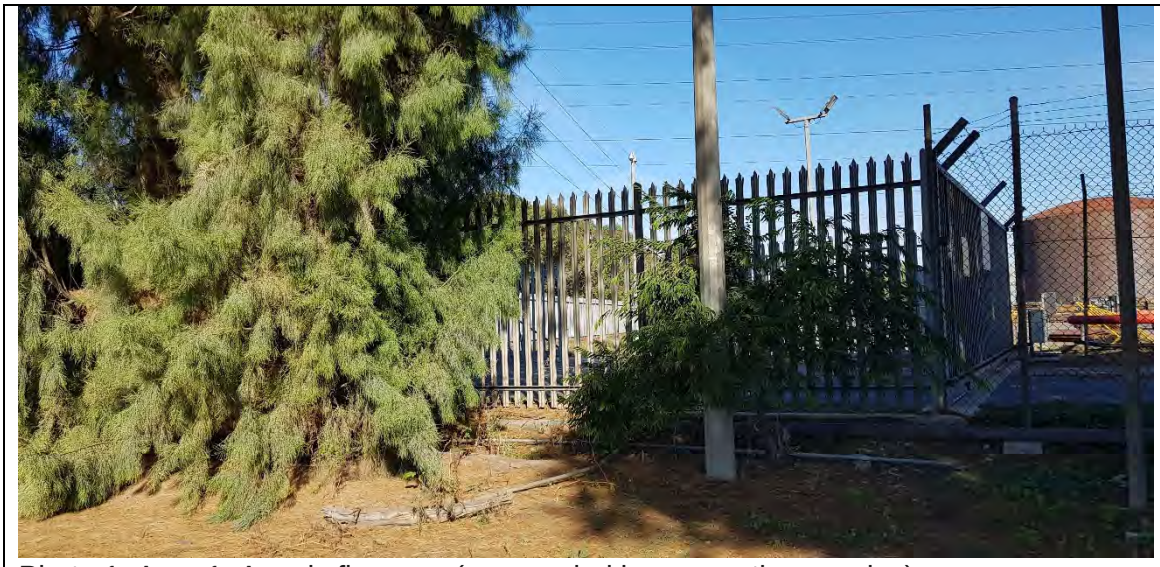

Photo 1: Area 1, Agonis flexuosa (surrounded by non-native species).

Photo 2: Area 2, Agonis flexuosa.

Photo 3: Area 3, Agonis flexuosa.

Photo 4: Areas 4 and 5, *Agonis flexuosa*.

Photo 5: Areas 4 and 5, *Agonis flexuosa*.

Photo 6: Area 6, tuarts, Allocasuarinas, Acacia.

Photo 7: Area 6, tuarts, Allocasuarinas, Acacia.

Photo 8: Area 6, Acacia and tuart.

Photo 9: Area 6, Allocasuarina.

Photo 10: Area 7, Agonis flexuosa.

Photo 11: Area 7, Eucalyptus.

Photo 12: Area 7, Eucalyptus, *Agonis flexuosa*, Myrtaceae

Photo 13: Area 8, mix of native, non-local and non-native species.

Photo 14: Area 8, *Agonis flexuosa*, Eucalyptus.

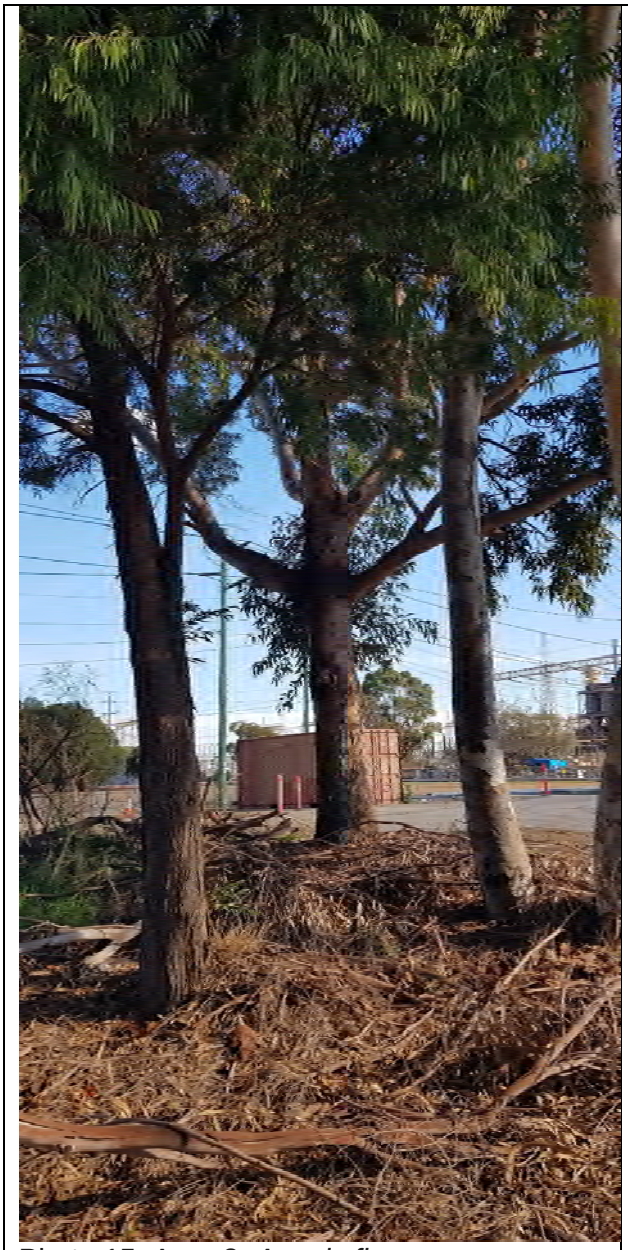

Photo 15: Area 8, *Agonis flexuosa*, Eucalyptus.

Photo 16: Area 8, Eucalyptus.