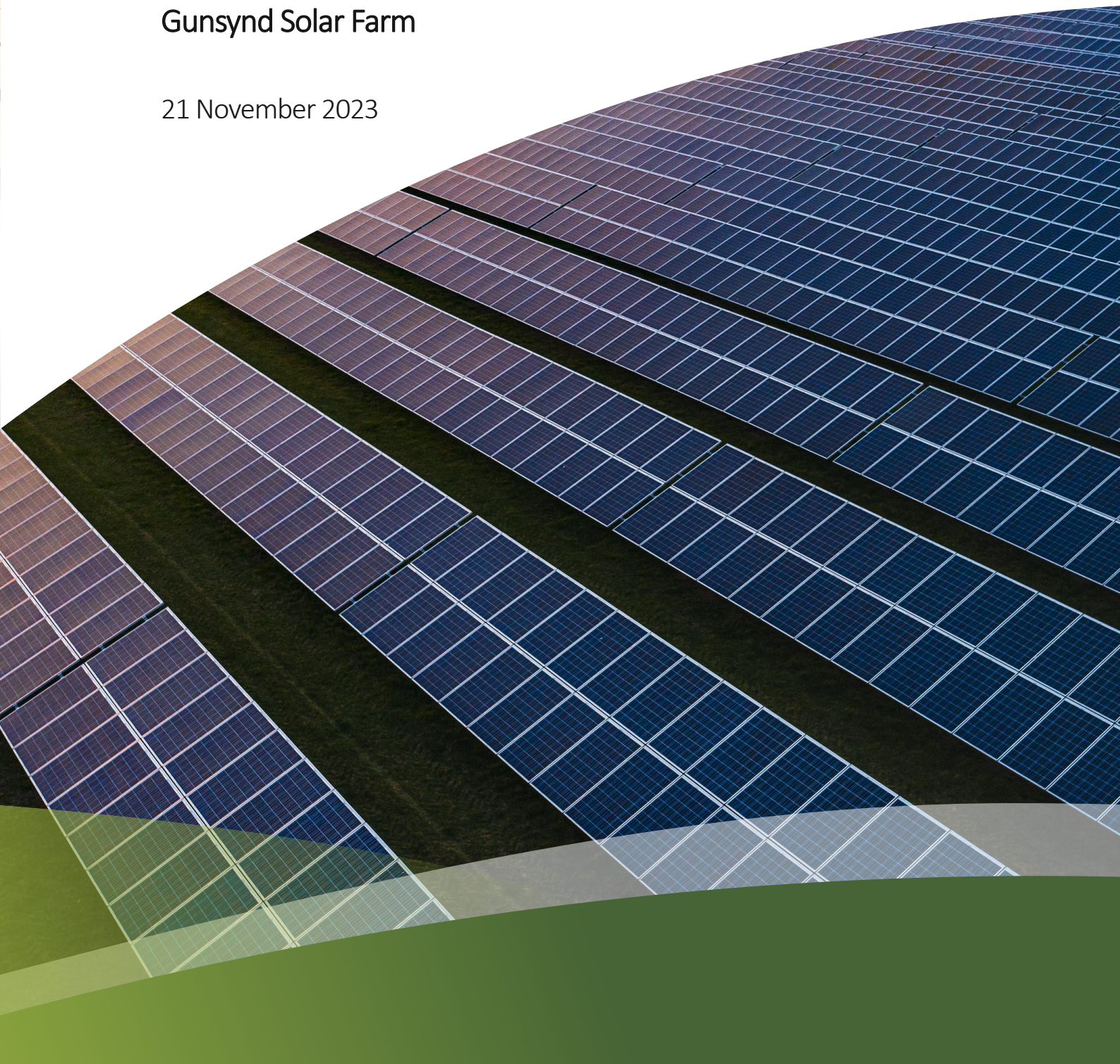




Waste Minimisation and Management Plan

Gunsynd Solar Farm

21 November 2023




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Gunsynd Solar Farm

AE1247

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Sri Sahaarengan Sri Renganathan Project Manager, PCL Solar PCL Constructors Pacific Rim Pty Ltd			
Prepared by:		Reviewed by:	Approved by:
Bernard Chong Environmental Planner		Michael Cramer Director	 Michael Cramer, Director
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www.accentenvironmental.com.au

info@accentenvironmental.com.au

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Abbreviations

AC	alternating current
AS	Australian Standard
Biosecurity Act	<i>Biosecurity Act 2014</i>
Biosecurity Regulation	Biosecurity Regulation 2016
BoP	balance of plant
CoC	condition of consent
DES	Department of Environment and Science
DN	decision notice
Echo Consultants	Echo Consultants Pty Ltd
EP Act	<i>Environmental Protection Act 1994</i>
EPC	engineering, procurement and construction
EPP (Water and Wetland Biodiversity)	Environmental Protection (Water and Wetland Biodiversity) Policy 2019
EP Regulation	Environmental Protection Regulation 2019
ERA	environmentally relevant activity
ESCP	Erosion and Sediment Control Plan
GBO	General Biosecurity Obligation
GED	General Environmental Duty
GRC	Goondiwindi Regional Council
Goondiwindi Region PS	Goondiwindi Region Planning Scheme
Gunsynd SF	Gunsynd Solar Farm
km	kilometre
kV	kilovolt
Metis Energy	Metis Energy Ltd
MW	megawatts
NEM	National Electricity Market
O&M	operations and maintenance

PCL	PCL Constructors Pacific Rim Pty Ltd
PD Act	<i>Plumbing and Drainage Act 2018</i>
Redleaf Environmental	Redleaf Environmental Pty Ltd
RSO	registered suitable operators
SDS	safety data sheet (for chemical use)
Site EMP	Site Environmental Management Plan
WMMP	Waste Minimisation and Management Plan
WPMP	Weed and Pest Management Plan
WRR Act	<i>Waste Reduction and Recycling Act 2011</i>
WRR Regulation	Waste Reduction and Recycling Regulation 2011
WTC	waste tracking certificate

1 Introduction

The Gunsynd Solar Farm (Gunsynd SF) project is a solar farm in southern Queensland that is being developed by Metis Energy Ltd (Metis Energy – the proponent). Metis Energy has engaged PCL Constructors Pacific Rim Pty Ltd (PCL) as the engineering, procurement and construction (EPC) contractor for the project.

1.1 Purpose and scope of this document

The purpose of this Waste Minimisation and Management Plan (WMMP) is to provide a framework for the management of waste from the Gunsynd SF project. This WMMP is a subplan under the Site Environmental Management Plan (Site EMP) for the project. The Site EMP is the key document outlining the requirements for environmental management during construction and operations. Figure 1.1 shows where this WMMP sits in relation to the Site EMP.

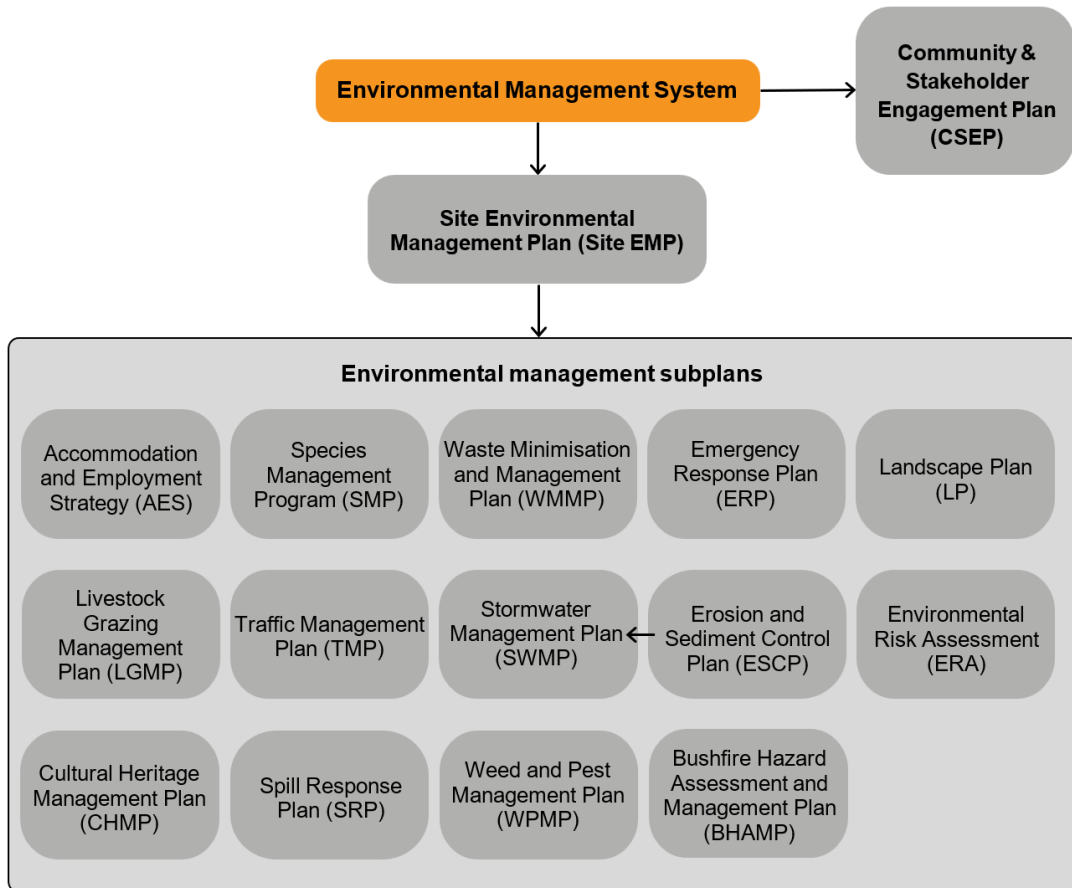


Figure 1.1 Site EMP and subplans diagram

The WMMP covers the construction and operation of the Gunsynd SF to be managed and undertaken for Metis Energy by PCL, including the activities undertaken by construction subcontractors, and by operations and maintenance (O&M) subcontractors.

1.2 Project overview

The project is a utility-scale solar renewable energy development, capable of generating up to 94 megawatts alternating current (MWAC). This electricity will be transmitted to the National Electricity Market (NEM) through the adjacent 132 kilovolt (kV) Bulli Creek – Waggamba electricity transmission line via an overhead connection with the on-site substation.

The project site is located on land identified as Lot 51 on MH115 ‘Glenoe’, Jacksons Road, Goondiwindi. The project site is located approximately 15 kilometres (km) away from the Goondiwindi township in southern Queensland, on the border between Queensland and New South Wales.

1.2.1 Construction

Goondiwindi Regional Council-led road upgrade works to Scudamores and Jacksons Roads to support the Gunsynd SF project are commencing on October 2023. Main site construction is expected to commence in December 2023. The construction period will be 26 months, with practical completion expected in October 2025. Construction will be undertaken by PCL, with substation, civil, electrical and mechanical Balance of Plant (BoP) subcontractors. Ergon Energy (Network) (Ergon Energy) will provide the grid connection for the Gunsynd SF.

Key construction works include:

- external Goondiwindi Regional Council (GRC)-led upgrade works to Scudamores and Jacksons Roads, as well as the Department of Transport and Main Roads (TMR)-managed works for the intersection of Scudamores Road and Cunningham Highway
- establishing the site compound (access roads, fencing, laydown areas and O&M buildings)
- constructing the substation, switchyard and control building
- erecting solar panels, trackers and associated infrastructure
- testing and commissioning the solar farm infrastructure
- rehabilitating the site prior to completion ahead of commercial operations.

1.2.2 Operation

When the Gunsynd SF commences operation, PCL will appoint an operations and maintenance (O&M) contractor to undertake routine, scheduled, and/or unscheduled maintenance tasks for the Gunsynd SF. These tasks include:

- cleaning the solar panels
- management and preventative maintenance of site infrastructure (such as fencing, solar panels, substations and cabling)
- land management activities (such as vegetation, weed and pest management)
- security monitoring.

Section 3 of the Site EMP provides more detail pertaining construction and operation activities.

1.3 Project objectives

Metis Energy has established several overarching objectives for the Gunsynd SF project. These objectives include:

- protecting the agricultural productivity of the project site and surrounding land while maximising agricultural co-existence opportunities within the project site (sheep grazing)
- preventing harm to sensitive flora, fauna and livestock on the project site and surrounding land through good design, best practice and compliance with legislation
- avoiding and minimising adverse social and environmental impacts on the local community and environment
- forming mutually beneficial relationships with host communities, First Nations and other stakeholders through community engagement and benefit sharing (employment, training, social procurement and investment)
- setting a target of zero injuries during construction and operation of the project
- contributing to Australia's transition to a clean energy future.

The WMMP seeks to support the achievement of these project objectives.

1.4 Objectives of this plan

The objectives of the WMMP are to:

- ensure waste management activities comply with state and local legislation and policies
- minimise waste products generated on the project site by managing waste according to the waste and resource management hierarchy
- describe an end-to-end process for reducing, managing, recovering, and disposing of all wastes produced on the project site, including regulated waste (such as chemicals and contaminated soil)
- ensure waste and waste management activities on the project site do not cause adverse impacts to the project site, the surrounding area and the community.

2 Statutory requirements and policies

2.1 Conditions of consent

A Decision Notice (DN) 19/04W permitting the development of the Gunsynd SF was issued on 18 April 2019. This DN permitted the development of the Gunsynd SF subject to the conditions of consent (CoCs) prescribed in Attachment 1 of the DN. This WMMP has been developed to comply with the waste-related CoCs contained in Attachment 1. The CoCs are presented in Table 2.1 along with a cross-reference to the section in which they are addressed.

Table 2.1 Conditions of consent reference table

No.	Condition	Reference
Essential Services		
9	<i>Prior to the commencement of the use, the development shall be connected to an appropriately designed onsite effluent disposal sewerage system, in accordance with the Queensland Plumbing and Wastewater Code, to the satisfaction of and at no cost to Council. All sewer infrastructure (including effluent disposal areas) shall be fully located within site boundaries, to the satisfaction of and at no cost to Council.</i>	Section 5.3
Earthworks and Erosion control		
25	<i>At all times while the use continues, the development shall be conducted in accordance with the provisions of the Environmental Protection Act 1994 (the Act) and all relevant regulations and standards under that Act. All necessary licences under the Act shall be obtained and shall be maintained at all times while the use continues.</i>	The Site EMP and subplans
27	<i>At all times while the use continues it shall be operated in such a manner as to ensure that no nuisance shall arise to adjoining premises as a result of dust, noise, lighting, odour, vibration, rubbish, contaminants, stormwater discharge or siltation or any other potentially detrimental impact.</i>	This WMMP
28	<i>At all times while the use continues, provision must be made on site for the collection of general refuse in covered waste containers with a capacity sufficient for the use. Waste receptacles shall be placed in a screened area. The site must maintain a general tidy appearance.</i>	Section 5.2 Section 5.3
30	<i>Construction works must occur so they do not cause unreasonable interference with the amenity of adjoining premises. During construction the site must be kept in a clean and tidy state at all times.</i>	Section 5.3

2.2 Commitments in Planning Report and Environmental Assessment Report

To support the development approval of the Gunsynd SF, waste-related commitments have been made in the Planning Report for Material Change of Use Development Application (Echo Consultants 2019) and Environmental Assessment Report (Redleaf Environmental 2023). A summary of commitments include:

- separating general, recyclable, construction and regulated wastes into separate streams
- ensuring regulated wastes (including sewage and wastewater) are removed and disposed by licenced waste contractors at licenced waste facilities
- documenting the movement of regulated waste in accordance with waste tracking requirements
- tidying the project site each day to ensure no litter is left on the project site
- designing an on-site sewage system in accordance with statutory requirements and Australian standards
- avoiding or minimise wastewater discharge to waterways through the waste and resource management hierarchy (Figure 2.1)
- developing a project specific EMP or wastewater management plan to manage impacts to groundwater, waterways and surface water.

These measures have been incorporated into this WMMP.

2.3 Legislation and regulation

Key legislation used to develop this WMMP include:

- *Waste Reduction and Recycling Act 2011 (WRR Act)*
- *Waste Reduction and Recycling Regulation 2011 (WRR Regulation)*
- *Plumbing and Drainage Act 2018 (PD Act)*
- *Environmental Protection Act 1994 (EP Act)*
- *Environmental Protection Regulation 2019 (EP Regulation)*
- *Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (EPP [Water and Wetland Biodiversity])*
- *Biosecurity Act 2014 (Biosecurity Act)*
- *Biosecurity Regulation 2016 (Biosecurity Regulation)*
- *State Planning Policy (July 2017)*
- *Transport and Infrastructure Code, Goondiwindi Region Planning Scheme (Goondiwindi Region PS)*

- Local Law No. 8 – (Waste Management) 2018.

2.4 Waste and resource recovery hierarchy

Section 4 of the WRR Act describes principles of waste and resource management. Where relevant, these principles have been integrated into the WMMP. These principles include:

- managing waste according to the **waste and resource management hierarchy** (Figure 2.1)
- **circular economy** – keeping all products and materials in the economy for as long as they have value or remain useful, thereby reducing the demand for virgin materials
- **polluter pays** – all costs associated with waste management should be borne by waste generators. This includes costs associated with minimising, containing, treating and disposing waste, as well as rectifying waste-related environmental harms
- **proximity** – managing waste and recovered resources as close to the source of generation as possible
- **product stewardship** - sharing responsibility between all persons who are involved in the life cycle of a product for managing the environmental, social and economic impact of the product.

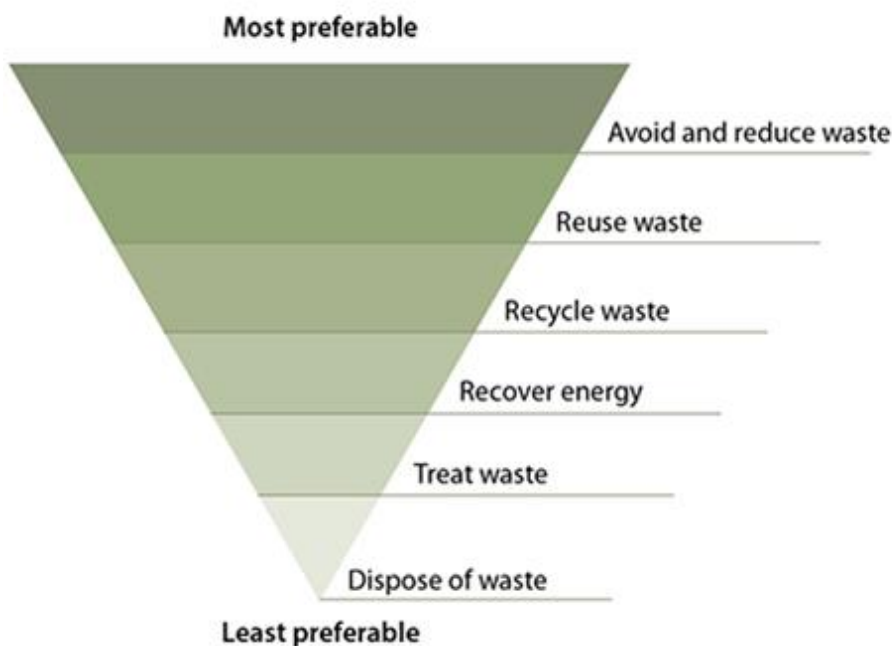


Figure 2.1 Waste and resource management hierarchy

The waste and resource management hierarchy comprises six waste management implementations to minimise the potential impact of waste. Section 5 of the WMMP describes management measures to ensure compliance with the waste and resource management hierarchy. A summary of measures are as follows:

Avoidance and waste reduction

- Sourcing local materials, and materials containing recyclable content where possible.
- Minimising over-ordering of materials through coordination with Metis Energy, PCL and subcontractors throughout the design and construction process.
- Classifying and separating regulated waste, recyclable and reusable waste, as well as general waste (see also Section 4.2).
- Ensuring waste on site is stored in fit-for-purpose receptacles with lids to prevent environmental contamination, fauna intrusion or winds picking up litter.
- Ensuring waste materials are not received or ultimately disposed on site.

Reuse, recycle or resource recovery

- Reusing or recycling surplus or waste materials on site where practical (such as timber, clean fill or cleared vegetation).
- Considering recycling or reusing opportunities off-site (such as sending material off-cuts to recyclers) is considered if reuse of waste material on site is not possible.
- Communicating the importance of reducing waste on site through the site induction (see Site EMP).

Treatment or disposal

Where avoidance and resource recovery are not feasible, waste will be disposed off-site.

- Ensuring regular waste collection and placement of waste receptacles at strategic points on the project site to prevent waste build-up and littering.
- Verifying that regulated waste is tracked in accordance with the EP Regulation, transported and disposed by licensed waste contractors.

2.5 Other statutory obligations

Under the EP Regulation, there is a requirement for regulated waste to be tracked from its source to its place of storage, recycling, treatment or final destination. Waste tracking is monitored by the Department of Environment and Science (DES). The EP Regulation outlines what is defined as regulated waste (this a refined list of moderate to high risk commercial and industrial waste). Note that regulated waste transported in a pipeline from the site or that is granted an exemption from DES, is exempt from waste tracking requirements. All waste tracking information provided to DES must be kept for a minimum of five years.

There is also a **general environmental duty (GED)** under the EP Act to not carry out an activity that causes or is likely to cause environmental harm. Unless an authority to do so has been

provided, all reasonable and practicable measures must be taken to prevent or minimise the harm.

The Biosecurity Act requires that all persons dealing with biosecurity matter have a **general biosecurity obligation (GBO)** to take all reasonable and practical measures to prevent or minimise all biosecurity risks.

2.6 PCL waste policy

Waste avoidance and minimisation is consistent with PCL's Environmental Policy Statement (Section 5 of Site EMP) which includes a commitment to "taking steps to protect the environment from adverse effects of all construction operations".

3 Roles and responsibilities

Roles and responsibilities for Metis Energy, PCL personnel and subcontractors are detailed in Section 4 of the Site EMP. These roles and responsibilities include:

- complying with the DN, Australian Standards, local government, state and Commonwealth legislation, as well as local government requirements
- implementing the management and monitoring measures of the WMMP (as a subplan to the Site EMP).

PCL will be responsible for informing DES and the waste transporter about the transportation of regulated waste, as defined in the EP Regulation. Trackable waste requirements are defined in Section 5.7.

4 Types of waste

4.1 Waste quantities

4.1.1 Construction

Waste quantities have been estimated for three main types of waste: ‘module waste’ (primarily comprising timber pallets, cardboard and plastic), ‘tracker waste’ (primarily comprising timber pallets and dunnage, cardboard and plastic) and ‘general waste’ (primarily comprising non-recyclable waste generated during construction). The wastes to be generated by the project are generally solid, non-putrescible wastes. However, the general waste category can contain small quantities of putrescible solid waste from kitchen and lunchroom waste.

A summary of wastes expected to be generated from the project site, as well as estimated waste quantities are provided in Table 4.1. A detailed list of wastes expected to be generated on the project site, and recommended recycling and disposal methods are provided in Appendix B. Sewage will be generated by the construction workforce of up to 200 personnel.

Table 4.1 Waste quantities by type and estimated quantity

Waste types	Main components	Estimated quantity (tonnes)
Module waste (from the supply of solar panels)	<ul style="list-style-type: none"> • PET plastic straps • Shrink wrap plastic • Cardboard • Timber pallets • Defective materials 	1,300
Tracker waste (from the supply of solar tracker units)	<ul style="list-style-type: none"> • Timber dunnage • Shrink wrap plastic • Cardboard • Plastic straps • Timber pallets • Defective materials 	3
General waste	<ul style="list-style-type: none"> • Office, kitchen and lunchroom wastes • Miscellaneous soiled materials unable to be recycled • Non-recyclable plastics • Scrap cables • Non-recyclable wood waste • Fully cured adhesive waste • Assorted non-recyclable construction waste 	119

Waste types	Main components	Estimated quantity (tonnes)
Liquid waste	<ul style="list-style-type: none"> • Sewage from ablution facilities • Construction wastewater • Chemicals and adhesives • Waste oils and fuel 	286
Total		1,708

4.1.2 Operation

During operation, only 5 full time equivalent personnel will be present at the site during normal operation and maintenance activities. Accordingly, it is expected that waste generated will be minor and will comprise:

- office (e.g. waste paper, plastics and general waste) and minor food wastes
- sewage and wastewater from septic tanks
- wastes associated with operation and maintenance activities, such as electrical wiring offcuts, empty oil/lubricant containers, plastic packaging, and parts that have been replaced.

4.1.3 Decommissioning

During decommissioning, wastes will be generated by the dismantling of project infrastructure and will comprise materials such as:

- steel and other metals
- concrete
- wiring
- electrical conduits
- solar panels
- timber
- plastic materials and packaging
- waste hydrocarbons and chemicals and their containers.

Most of the above materials are expected to be recyclable off-site.

4.2 Waste classification types

Where practical, the Gunsynd SF project aims to avoid or reduce waste generation throughout construction and operation (and during eventual decommissioning). Based on the waste and resources management hierarchy and the EP Regulation, waste on the Gunsynd SF project site will be classified into three waste classes:

General (recyclable) waste

Waste that can be reused, recycled and recovered either on site or off site, and is not considered a regulated waste within the meaning of Schedule 9 the EP Regulation.

General (disposable) waste

Waste that cannot be recycled or reused and is not considered a regulated waste within the meaning of Schedule 9 the EP Regulation. Disposable waste can be further classified into:

- putrescible waste – waste that contain organic matter capable of being decomposed by microorganisms
- non-putrescible waste – solid waste that is not susceptible to rapid decomposition.

Regulated waste

Commercial or industrial solid or liquid waste, or any containers with residues of waste, defined within Schedule 9 of the EP Regulation 2019. Regulated waste can be further classified into:

- category 1 waste – highest risk
- category 2 waste – moderate risk.

Some regulated waste is also considered trackable waste. Trackable waste is defined as regulated waste outlined in Schedule 11 of the EP Regulation.

5 Management measures

The management measures listed below provide direction and guidance for operational controls to the PCL and its subcontractors undertaking activities that may have potential for producing waste.

5.1 Waste avoidance, recycling and re-use

When ordering materials, the implications of disposal of waste will be considered. In line with the waste and resources management hierarchy outlined in Section 2.4, general waste avoidance considerations for ordering materials are outlined below:

- avoid over-ordering materials
- investigate low-packaging options and adopt if practical
- where possible, purchasing local materials
- when purchasing, preferentially choose construction items/materials with recycled content where practical.

Waste tracking for Gunsynd SF generated waste (during construction and operation) will provide data that can help identify improvement opportunities for waste avoidance and recycling (see Section 5.7).

In addition, waste avoidance, recycling and reuse will be achieved by:

- ordering materials and generating waste that can be re-used, recycled or reprocessed into a new product, used for energy recovery, or have potential commercial opportunities – for example, reusing timber (if chemical free) by grinding or chipping for use as mulch in revegetation where possible
- investigating reduced packaging options for materials brought to site
- optimising the segregation of materials that can be reused/recycled/reprocessed e.g., designating clearly signed bins/areas at appropriate locations across the site to promote recycling
- exploring commercial re-use opportunities for generated waste
- informing employees and contractors of expectations and procedures in relation to waste avoidance, recycling and reuse
- returning excess (unused) receptacles or materials for reuse where feasible.

5.2 Site management

The construction site will be maintained in an environmentally sound manner during building works. Site management measures in relation to waste management are outlined in Table 5.1.

Table 5.1 Site management measures

Reference	Management measure	Timing	Frequency
WM-1	<p>Keep the project site and waste containment area neat and litter free at the end of the working day by:</p> <ul style="list-style-type: none"> cleaning up litter found on site storing waste in accordance with Section 5.3 removing deteriorated wrapping and packaging storing equipment and materials in accordance with the management measures defined in Section 9 of the Site EMP and associated subplans. 	<p>Construction Operation</p>	<p>Each working day</p>

5.3 Waste handling

Waste handling measures are outlined in Table 5.2. Specific waste handling measures for streams of waste are addressed in Appendix B.

Table 5.2 Waste handling management measures

Reference	Management measure	Timing	Frequency
WM-2	<p>Provide a designated waste containment area on site, with bins for each waste stream defined in Section 3.2. The waste containment area must:</p> <ul style="list-style-type: none"> be located away from surface drains, environmentally sensitive areas or other sensitive receptors. be screened to prevent amenity impacts have bins with lids or netting to prevent infiltration by fauna or litter being swept by the wind. 	<p>Construction Operation</p>	<p>Throughout construction and operation</p>
WM-3	<p>Ensure hazardous waste is segregated from general waste streams and is stored in an appropriately bunded area, in accordance with relevant safety data sheets (SDS) and AS1940:2004 – The storage and handling of flammable and combustible liquids.</p>	<p>Construction Operation</p>	<p>Throughout construction and operation</p>
WM-4	<p>Implement an on-site sewage management system that is compliant with the Queensland Plumbing and Wastewater Code.</p>	<p>Construction Operation</p>	<p>Prior to construction and operation</p>

Reference	Management measure	Timing	Frequency
WM-5	Sewage and wastewater generated on site must be directed into the on-site sewage management system.	Construction Operation	Prior to construction and operation
WM-6	No waste will be burnt or buried on-site, with the exception of cleared vegetation. Vegetation can be burnt on site provided that: <ul style="list-style-type: none"> it is not needed to be retained for habitat purposes (see Site EMP) it is not required in rehabilitation (e.g. as mulch or erosion protection) (see ESCP) appropriate permits have been obtained (e.g. from GRC [permit to deposit or dispose waste] and the Queensland Fire and Emergency Services [permit to light fires]) appropriate fire risk management measures are in place (see Bushfire Management Plan). 	Construction Operation	Where necessary
WM-7	Waste containing weeds and pests must not be placed into the green waste stream. Weeds must be stored in a stored, sealed waste disposal receptacle until disposal, or handled in accordance with the: <ul style="list-style-type: none"> EP Regulation regulator's requirements and/or policies WPMP. 	Construction Operation	Throughout construction and operation

5.4 Waste classification

To ensure waste is appropriately classified into streams, Table 5.3 defines management measures relating to waste classification.

Table 5.3 Waste classification management measures

Reference	Management measure	Timing	Frequency
WM-8	Waste, contaminated soil, or containers/material containing residue of waste that is generated on the project site is to be classified as regulated or general waste according to the procedure outlined in Appendix A – Waste Classification Procedure.	Construction Operation	Throughout construction and operation

Reference	Management measure	Timing	Frequency
WM-9	Waste that is generated on the project site must be classified into recyclable and disposable waste, according to the classification types defined in Section 3.2.	Construction Operation	Throughout construction and operation
WM-10	After classification, waste is to be stored in the correct bins for each stream defined in Section 3.2.	Construction Operation	Throughout construction and operation

5.5 Waste transportation

Waste transportation management measures are outlined in Table 5.4. General transportation management measures are set out, as well as management measures for specific wastes.

Table 5.5 contains information on waste transportation contractors.

Table 5.4 Waste transportation management measures

Reference	Management measure	Timing	Frequency
WM-11	Suitably licensed waste transporters must be contracted prior to construction and operation of wastes (such as Registered Suitable Operator (RSO) registration and ERA 57 environmental authority for regulated waste transport) (see Table 5.5).	Construction Operation	Prior to construction and operation
WM-12	Waste must be kept in bins for transportation. Where practical, recyclable wastes such as plastic wrap or cardboard must be baled prior to transportation.	Construction Operation	Prior to waste transportation
WM-13	Waste transporters must be provided with a Waste Tracking Certificate prior to transporting trackable waste (see Section 5.7).	Construction Operation	Prior to trackable waste transportation
WM-14	All waste leaving the project site must be recorded through a Waste Management Register (see Section 5.7).	Construction Operation	Prior to waste transportation
WM-15	DES must be notified about the transportation of trackable waste off the project site (see Section 5.7).	Construction Operation	Prior to trackable waste transportation
WM-16	Trucks transporting waste offsite will have covered loads to prevent spillage and other nuisances.	Construction Operation	During waste transportation activities
WM-17	When prohibited and restricted weed and pest material is to be transported, a	Construction	Prior to transporting

Reference	Management measure	Timing	Frequency
	Restricted or Prohibited Matter Permit must be applied for and granted, in accordance with the Biosecurity Regulation (see Appendix B).	Operation	prohibited and restricted weed and pest material

Table 5.5 Waste transportation contractors

Waste stream	Waste transporter	Operating hours
General waste (non-putrescible) General waste (putrescible) Sewage and construction wastewater Regulated waste Weed, rock contaminated soil	E & E Waste 81 Hungerford Street, Goondiwindi 07 4671 2403	Monday to Friday – 8 am to 4 pm Saturday – 8 am to 12 pm
Waste oil (commercial quantities) Oily rags	Nationwide Oil (Cleanaway) oil collection and recycling Phone: 13 13 39	On-demand
E-waste (commercial quantities) Expanded polystyrene	Ecycle Solutions Phone: 03 9706 5966	On-demand
PV panels	Solarshift Phone: 1300 499 080	On-demand

All waste transporters (including any alternative waste transporters utilised throughout the project) must have the appropriate permissions required to transport waste. Regulated waste transporters must be registered with the DES as a Registered Suitable Operator (RSO) and hold any appropriate environmental authorities for waste transportation (such as an ERA 57 authority for regulated waste transport).

5.6 Waste disposal

Management measures for waste disposal are defined in Table 5.6. Waste disposal facilities to be utilised for specific waste streams are defined in Table 5.7. Consultation with GRC and other private waste disposal facilities about waste disposal facility capacity has been undertaken as part of the preparation of this WMMP and have been integrated into the management measures in Table 5.6, Table 5.7 and Appendix B.

Table 5.6 Waste disposal management measures

Reference	Management measure	Timing	Frequency
WM-18	Wastes contained in specific streams must be transported to a suitably licensed waste disposal or recycling facility (see Table 5.1).	Construction Operation	Prior to construction and operation
WM-19	For regulated and trackable waste, the waste receiver (waste disposal facility) must receive information about the waste from the waste transporter.	Construction Operation	During trackable waste transportation
WM-20	Weed and pest material (or soils containing weed material) must be disposed according to the requirements of the Biosecurity Regulation and WPMP.	Construction Operation	During weed and pest disposal
WM-21	For regulated waste, the waste facility must be contacted at least 24 hours prior to waste transportation to ensure waste can be accepted.	Construction Operation	Prior to regulated waste transportation
WM-22	<p>If a waste facility requests that regulated waste be tested prior to disposal, testing must be conducted by a suitably qualified person and analysed at an accredited laboratory.</p> <ul style="list-style-type: none"> • Testing must be done in accordance with Division 2 of the EP Regulation and ESR/2019/4749 - Information sheet: Overview of regulated waste categorisation. • Results of tested waste (including classification of waste as either Category 1 or 2 regulated waste) must be provided to the waste transporter and waste facility. 	Construction Operation	Prior to regulated waste transportation

Table 5.7 Waste disposal facilities

Type of waste	Waste facility	Operating hours	Operator
General waste (non-putrescible) General waste (putrescible) Regulated waste (case-by-case basis)*	Goondiwindi Waste Facility Rubbish Tip Road (off Kildonan Road)	Monday to Friday – 8:00am to 5:00pm, Saturday & Sunday – 9:30am to 5:00pm	GRC

Type of waste	Waste facility	Operating hours	Operator
Weed, rock contaminated soil E-waste (domestic quantities)			
Sewage Construction wastewater	Inglewood Transfer Station Inglewood/Texas Road	24 hours, 7 days a week Construction and demolition waste only accepted on Wednesdays, 8.30am – 12.30pm.	GRC
Waste oil (commercial quantities) Oily rags	Nationwide Oil (Cleanaway) oil collection and recycling Phone: 13 13 39	On-demand	Cleanaway
E-waste (commercial quantities) Expanded polystyrene	Ecycle Solutions Phone: 03 9706 5966	On-demand	Ecycle Solutions
PV panels	Solarshift Phone: 1300 499 080	On-demand	Solarshift

*Soil contaminated by chemicals will be assessed by GRC on a case-by-case basis. Soil will need to be tested by an accredited laboratory service and results provided to GRC prior to disposal at a GRC-operated waste facility.

If GRC's waste disposal facilities are unusable due to capacity or other constraints, PCL and its subcontractors will seek arrangements with other regional waste disposal facilities. This includes seeking for waste disposal and recycling facilities:

- within other local government areas
- commercial landfills and recycling facilities.

All waste disposal and recycling facilities (including any alternative waste disposal or recycling facilities used as part of this project) must be registered with the DES as a RSO and hold the appropriate environmental authorities for waste disposal and recycling. Waste-related environmentally relevant activities which require an environmental authority are listed in Parts 12 and 13 of the EP Regulation.

Prior to using alternative waste disposal and recycling facilities, consultation must be undertaken with the relevant commercial party or council, in accordance with the Community and Stakeholder Management Plan. Engagement topics include:

- understanding if the waste disposal or recycling facility is able to accommodate waste generated from the project
- whether the facility has the required authorities to accept waste
- special requirements (such as testing of regulated wastes) that must be fulfilled by PCL or its subcontractors prior to disposing of waste.

5.7 Waste tracking and monitoring

Tracking and monitoring requirements for the Gunsynd SF include establishing a Waste Management Register and keeping prescribed information about trackable waste. Management measures for waste tracking and monitoring are defined in Table 5.8.

The Waste Management Register will contain information about the:

- date and time the waste was collected
- description of waste
- quantity (in tonnes)
- information about the waste transporter
- disposal site.

Information about trackable waste must be provided to DES and a licenced waste transporter, and stored for a minimum five years, by the waste generator, PCL. Information that must be provided includes (but is not limited to):

- description of waste
- UN classification and packaging (applicable for Dangerous Goods)
- bulk or no. of packages
- type of packaging
- amount of waste
- physical nature (solid, liquid etc.)
- waste code
- details of the waste generator (PCL) (i.e. name and contact information)
- proposed waste receiver.

Waste tracking information can be provided to DES through:

- a paper Waste Transport Certificate (WTC)
- Business Queensland's Online Services platform (<https://www.business.qld.gov.au/running-business/environment/online-services>).

Table 5.8 Waste tracking management measures

Reference	Management measure	Timing	Frequency
WM-23	Establish and update a Waste Management Register for the Gunsynd SF.	Construction Operation	At all times
WM-24	Record and keep prescribed information about regulated and trackable waste (including tested waste results) for up to five years.	Construction Operation	At all times

6 Compliance

6.1 Training and awareness

General waste awareness training will be provided to new employees and contractors as part of the Gunsynd SF induction program, defined in Section 6.5 of the Site EMP. Additional training and awareness will also be undertaken with specific people involved in waste management via the following methods:

- toolbox talks highlighting waste issues and obligations
- incorporation of waste management update into crew training days
- clear signage for waste management locations/requirements and different coloured bins for different waste streams.

6.2 Monitoring and inspections

In addition to general monitoring and inspection requirements set out in the Site EMP, monitoring and inspections for the WMMP will be undertaken in accordance with the regime set out in Table 6.1.

6.3 Audit

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with Project requirements, and other relevant approvals, licenses and guidelines – including those in relation to waste management. Audit requirements and frequencies are detailed in the Site EMP.

6.4 Reporting

All wastes (general and regulated) transported off site must have a completed waste transportation form and be tracked in the Waste Management Register (Appendix A). Reporting requirements and responsibilities are documented in the Site EMP.

6.5 Incidents

Any incidents involving material or serious environmental harm must be reported to the PCL Construction or Site Manager as early as practicable, as part of the Duty to Notify. The procedures for environmental incidents detailed in Section 7 of the Site EMP must be followed to contain the impacts of an environmental incident. The Metis Energy site manager/project manager must be notified immediately of incidents, in addition to GRC and emergency response services.

Table 6.1 Monitoring and inspection requirements

Reference	Performance Criteria	Monitoring requirements	Responsibility	Timing	Frequency
WMM-1	No waste disposed of contrary to its appropriate disposal classification	Checking that waste is stored in appropriately-labelled bins, according to the conditions set out in Section 5.3.	PCL Construction/Site Manager	Construction Operation	Weekly during construction
WMM-2	No inaccuracies made when entering data on the Waste Management Register	Checking that the Waste Management Register has been completed accurately when cross-checked with other documents, such as waste dockets, tested waste results and WTCs.	PCL Construction/Site Manager	Construction Operation	Each entry of data on the Waste Management Register
WMM-3	To ensure that impacts on the surrounding visual environment are minimised	Regularly inspecting the site to ensure it is kept tidy and well maintained and that packaging materials are being securely stored and regularly removed	PCL Construction/Site Manager	Construction Operation	Weekly during construction In response to complaints received

7 References

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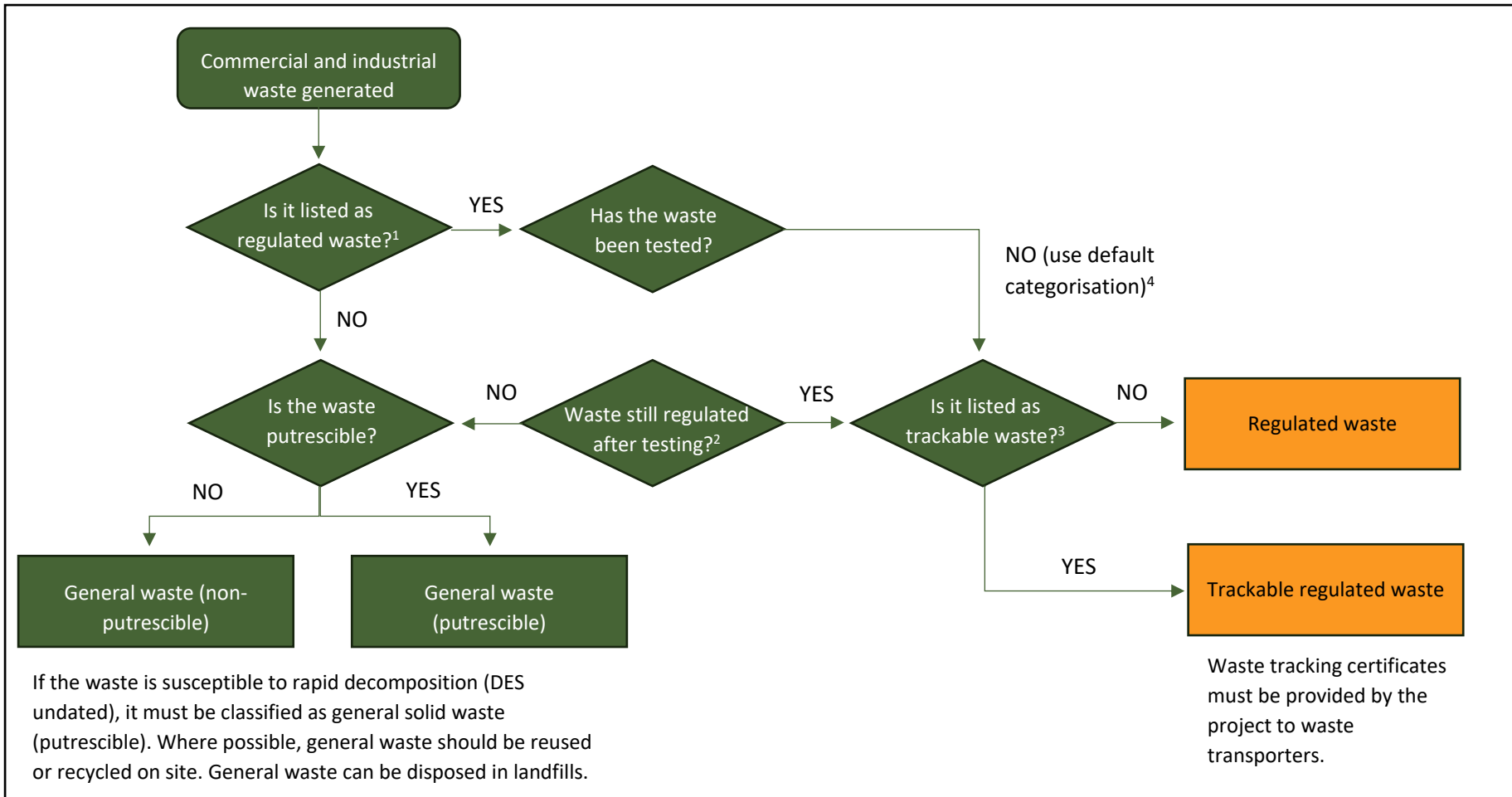
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Standards Australia (2004). Australian Standard (AS) 1940:2004 The Storage and Handling of Flammable and Combustible Liquids.



Appendix A: Waste classification procedure



¹ Refer to the Environmental Protection Regulation 2019, Schedule 9, Parts 1, 2 and 3 (Division 1).

² Refer to the Environmental Protection Regulation 2019, Schedule 9, Part 3 (Division 2).

³ Refer to the Environmental Protection Regulation 2019, Schedule 11.

⁴ Use the default categorisations defined in the Environmental Protection Regulation 2019, Schedule 9, Part 1.



Appendix B:
Waste produced by the
Gunsynd SF

Waste	Description	Timing	Recycling and reuse	Disposal	Trackable waste?
Regulated waste					
Wastewater	<ul style="list-style-type: none"> Construction wastewater Sewage from ablution facilities Contaminated water from chemicals, oils or fuels 	Construction Operation	<ul style="list-style-type: none"> If treated or of good quality, construction wastewater can be considered for irrigation on site¹. 	<ul style="list-style-type: none"> Sewage to be collected in septic tank. Construction wastewater to be collected in a sediment pond. Collection of sewage and wastewater by a licensed waste transporter for disposal. 	✓
Waste oils and fuels	<ul style="list-style-type: none"> Lubricants and engine oil Hydraulic and brake fluids Fuels 	Construction	<ul style="list-style-type: none"> Waste oils and fuels to be separated in a bunded container on site. Collection by a licensed waste transporter for recycling at a licensed waste facility. 	<ul style="list-style-type: none"> Non-recyclable waste oils and fuels must be disposed in a licensed waste facility. 	✓
	Other products that may be considered waste oil include: <ul style="list-style-type: none"> Contaminated soil 	Construction	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Waste oils and fuels to be separated in a container on site. 	✓

¹ The use of recycled construction wastewater, or recycled water sourced from sewage or effluent may require registration under the *Water Supply (Safety and Reliability) Act 2008*. The Australian Guidelines for Water Recycling (Phase 1 and Phase 2) also provides guidance on managing environmental and health risks associated with recycled water.

Waste	Description	Timing	Recycling and reuse	Disposal	Trackable waste?
	<ul style="list-style-type: none"> Oily rags Used spill kits and absorbents Waste oil containers 			<ul style="list-style-type: none"> Collection by a licensed waste transporter for disposal at a licensed waste facility. GRC waste facilities require 24 hours' notice of contaminated soil disposal and prior testing of contaminated soil. 	
Batteries	<ul style="list-style-type: none"> Batteries used for equipment, vehicles and plant on site 	Construction	<ul style="list-style-type: none"> Batteries to be collected by a licensed waste transporter and recycled in a licensed waste facility. 	<ul style="list-style-type: none"> Batteries must not be disposed in landfill. 	✓
Tyres	<ul style="list-style-type: none"> Used tyres from vehicles operating on site 	Construction	<ul style="list-style-type: none"> Tyres to be stockpiled on site for collection by licensed waste transporter. Recycle at a licensed waste facility. 	<ul style="list-style-type: none"> Tyres must not be disposed in landfill. 	✓
Chemical wastes	<ul style="list-style-type: none"> Herbicides and pesticides Coolants Adhesives Cleaning solutions 	Construction Operation	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Chemicals to be separated in a banded container on site. Collection by a licensed waste transporter for disposal. 	✓

Waste	Description	Timing	Recycling and reuse	Disposal	Trackable waste?
	<p>Other products that may be considered chemical waste include:</p> <ul style="list-style-type: none"> Contaminated soil Used spill kits and absorbents Chemical waste containers 	<p>Construction Operation</p>	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Contaminated materials to be separated in a container on site. Collection by a licensed waste transporter for disposal. GRC waste facilities require 24 hours' notice of contaminated soil disposal and prior testing of contaminated soil. 	✓
Weeds and pests	<ul style="list-style-type: none"> Weed material Carcasses or remains of pests Weed-contaminated soil 	<p>Construction Operation</p>	N/A	<ul style="list-style-type: none"> Weeds and weed-contaminated soil are to be stored in a sealed container and transported directly to a licensed waste facility for disposal. A license to transport weed-containing material may be necessary. Pest carcasses to be disposed/incinerated. 	
PV modules	<ul style="list-style-type: none"> PV modules from the solar farm 	<p>Operation</p>	<ul style="list-style-type: none"> PV modules to be separated and stockpiled on site. Collection by a waste transporter for recycling. 	<ul style="list-style-type: none"> PV modules must not be disposed in landfill. 	
Non-regulated waste					
Excavated soil	<ul style="list-style-type: none"> Surplus clean excavated soil from topsoil (non-contaminated) 	<p>Construction</p>	<ul style="list-style-type: none"> Stockpile with suitable erosion and sediment 	<ul style="list-style-type: none"> Dispose in a licensed waste disposal facility. 	

Waste	Description	Timing	Recycling and reuse	Disposal	Trackable waste?
	<ul style="list-style-type: none"> Surplus clean fill 		<p>control measures installed.</p> <ul style="list-style-type: none"> Reuse on site as fill, or as part of revegetation where possible. 	<ul style="list-style-type: none"> Evidence must be provided that clean fill is not: <ul style="list-style-type: none"> acid sulfate soil contaminated with hazardous materials or chemicals contaminated with other waste materials (e.g. concrete, ceramics or bricks) contaminated with weeds. 	
Surplus material	<ul style="list-style-type: none"> Surplus concrete and aggregates from concrete pours Surplus access point and track construction material 	Construction	<ul style="list-style-type: none"> Separate surplus concrete and aggregates on site. Allow surplus concrete to harden. Collection by waste management contractor for off-site recycling. 	<ul style="list-style-type: none"> Collection by waste management contractor for off-site disposal. 	
Timber	<ul style="list-style-type: none"> Timber dunnage Timber pallets 	Construction Maintenance	<ul style="list-style-type: none"> Timber to be separated on site. Timber can be chipped for mulch. Collection by waste management contractor for off-site recycling. 	<ul style="list-style-type: none"> Non-recyclable materials to be disposed at an offsite licensed waste disposal facility. 	

Waste	Description	Timing	Recycling and reuse	Disposal	Trackable waste?
Plastic	<ul style="list-style-type: none"> Plastic straps from packaging Shrink wrap plastic from packaging 	Construction Maintenance	<ul style="list-style-type: none"> Recyclable material to be separated on site. Collection by waste management contractor for off-site recycling. 	<ul style="list-style-type: none"> Non-recyclable materials to be disposed at an offsite licensed waste disposal facility. 	
Paper	<ul style="list-style-type: none"> Cardboard packaging Office paper 	Construction Operation	<ul style="list-style-type: none"> Recyclable material to be separated on site. Collection by waste management contractor for off-site recycling. 	<ul style="list-style-type: none"> Non-recyclable materials to be disposed at an offsite licensed waste disposal facility. 	
Metal	<ul style="list-style-type: none"> Metal scraps Scrap cables 	Construction Maintenance	<ul style="list-style-type: none"> Recyclable material to be separated on site. Collection by waste management contractor for off-site recycling. 	<ul style="list-style-type: none"> Non-recyclable materials to be disposed at an offsite licensed waste disposal facility. 	
Green waste	<ul style="list-style-type: none"> Non-recyclable wood waste Grass clippings Cleared vegetation 	Construction Operation	<ul style="list-style-type: none"> Collect all green waste Collection by green waste recycling 	<ul style="list-style-type: none"> Non-recyclable materials to be disposed at an offsite licensed waste disposal facility. 	

Waste	Description	Timing	Recycling and reuse	Disposal	Trackable waste?
	<ul style="list-style-type: none"> Food waste from lunch rooms 		service for use as compost or mulch.		
E- waste	<ul style="list-style-type: none"> Waste from electronics and electronic consumables, such as cartridges Inert solar farm electrical components (e.g. inverters, transformers) Lightbulbs 	Construction Operation	<ul style="list-style-type: none"> E-waste is to be separated from other waste. Collected and recycled through a licensed e-waste recycling facility 	<ul style="list-style-type: none"> E-waste must not be disposed directly to landfill. 	