



Paling Yards Wind Farm SEPP 33 Assessment Report

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1. Abbreviations

Abbreviation	Description
EMF	Electric and Magnetic Field
LPG	liquefied petroleum gas
MW	Mega Watts
PG	Packing Group
PHA	Preliminary Hazard Analysis
PTD	Permanent Total Disability
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SWMS	Safe Work Method Statement

2. Executive Summary

The purpose of this report is to provide a screening assessment of the hazards associated with the storage of dangerous goods on the site in accordance with NSW State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) for Paling Yards wind Farm with total generational capacity of up to 329 MW.

This report evaluated the following Project Development phases.

- Construction, including early investigative works and Commissioning, and
- Operations

The main areas of development for the project that have been analysed are as follows:

- Wind Turbines
- Substation / Switching Stations
- Operation and Maintenance Facility, including warehouse and workshops.
- Construction Compounds & Storage facility laydown areas
- Onsite Concrete Batch plant
- Onsite Quarry

This report has investigated the permissible quantities as stipulated in the NSW SEPP 33 guidelines. As SEPP 33 thresholds are not exceeded, the risks associated with storage and transportation of hazardous materials are unlikely to be significant or pose any risk to public safety. Consequently, **Paling Yards Windfarm is not considered to be a hazardous** as per the SEPP 33 screening. Further, the SEPP33 guidelines state that Wind Farms are not considered to be a Potentially Hazardous Industry.

Therefore, **a PHA (Preliminary Hazard Analysis) is not required for this project.**

Also, considering the results of environmental impact statement report, type of the material stored, proposed mitigation measures for the Project, distance from nearby land users, it can be concluded that **there will be no potentially offensive impacts associated with the Project.**

The Project Construction Environmental Management Plan (CEMP), or equivalent needs to comply with the volumes and hazardous goods assumptions made within this report, specifically Tables 5 & 6. If Volumes changes are necessary, or other Hazard materials are required, an update to this SEPP 33 report should be undertaken.

3. Project Overview

The project is proposed to be located on two land holdings known as 'Mingary Park' and 'Paling Yards' comprising a total of approximately 3,900 hectares . It also includes a transmission line corridor of approximately 9km in length and 70 metres in width across nine land parcels to the north-east of the site. There are no non-involved dwellings within 2km of the turbines.

The site is situated approximately 60km south of the township of Oberon and 60km north of the township of Goulburn, in the Central Tablelands of NSW.

This report provides a brief overview of the project assessment regarding SEPP 33 risk screening criteria.

3.1. System Components

The Paling Yards Wind Farm project involves the construction, operation, and maintenance of up to 47 wind turbines, together with the ancillary infrastructure.

The project comprises several elements, including:

- Up to 47 individual wind turbines with a capacity of 6MW to 7MW;
- Up to 47 individual Wind Turbine kiosks including the housing of transformers, switchgear and associated control systems, shall be in the vicinity of the wind turbine towers (in some turbine models the equipment is integrated within the tower or nacelle).
- Upgrades to local road infrastructure including up to six access points from Abercrombie Road.
- Internal unsealed tracks for vehicle access to turbines and infrastructure.
- An underground electrical, communication cable and earthing network linking turbines to each other and the proposed on-site substation.
- Up to three wind monitoring masts fitted with various instruments such as anemometers, wind vanes, temperature gauges and potentially other electrical equipment.
- A temporary batching plant to supply concrete for the foundations of the turbines and other associated structures.
- Obstacle lighting to selected turbines (if deemed necessary).
- Removal of native vegetation and non-native vegetation (if required).
- Vegetation planting to provide screening.
- Wind farm electrical substation, operational control room, and facilities buildings including Administration and warehousing.
- An on-site electrical substation and approximately 9km of overhead powerline of up to 500kV.
- Grid connection achieved via an off-site 500kV electrical Terminal Station (including control room and other associated facilities) for the grid cut-in to the Mt Piper to Bannaby 500kV transmission line; and
- Temporary site buildings and facilities for construction contractors / equipment, including site offices, car parking, amenities, and laydown areas for the construction workforce.

- external water supply and aggregates / materials for concrete batching and construction activities
- A viewing platform within the site boundary adjacent to the Abercrombie Road corridor.
- the transport, storage and handling of fuels, oils and other hazardous materials for construction and operation of wind farm infrastructure.
- All associated and ancillary uses and activities.

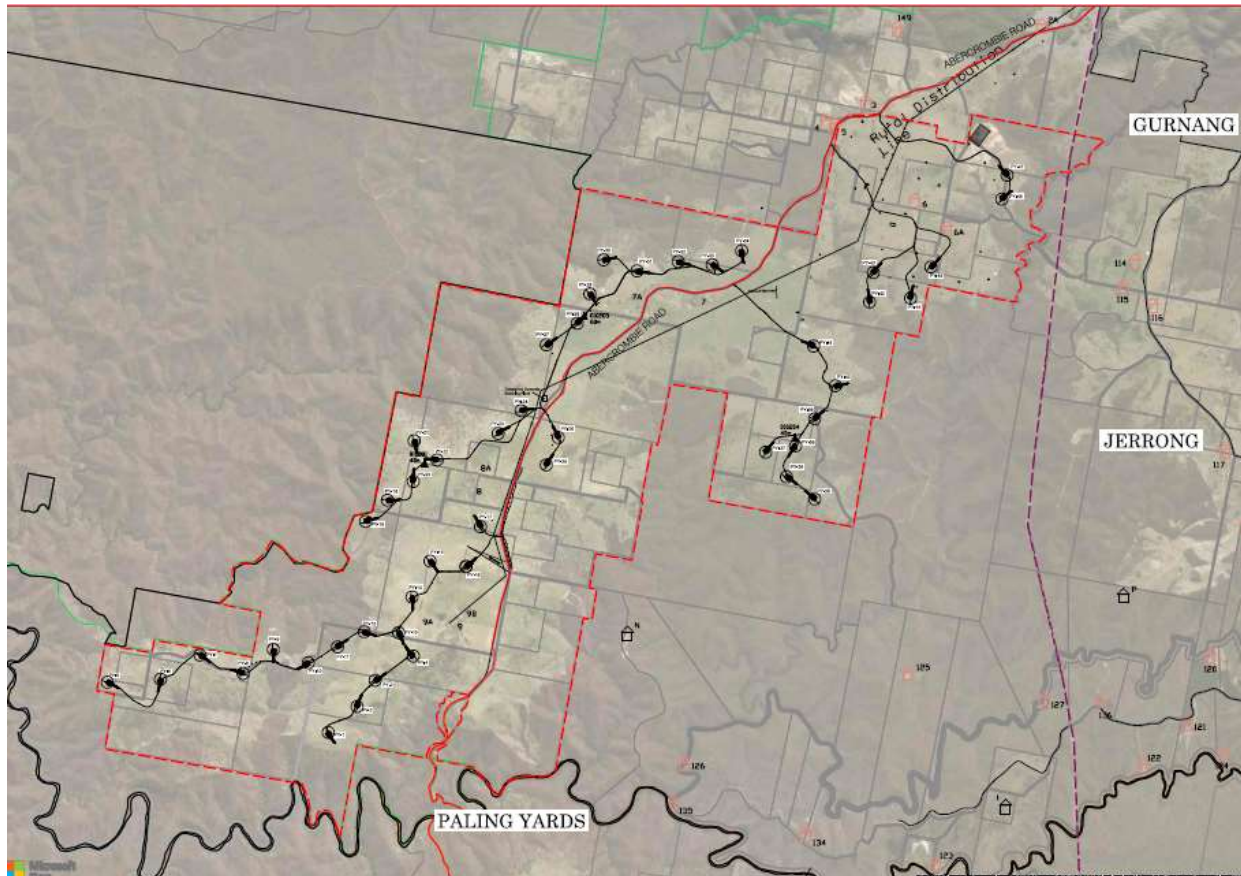


Figure1-Project Site Layout

3.2. Construction and operational Hours

Construction activities of the site will be from 7:00 am to 6 Pm during weekdays and 7 :00 am to 1:00 pm Saturdays.

Operational period of the wind farm is 24hrs/7 days. However, if major maintenance is required it will be conducted from 7 :00 am to 6:00 pm as required by the Planning Approval, or as agreed with local council.

3.3. Proximity to Neighbours

The site is in a generally isolated location and there is no non-project involved, identified dwellings within 2km of any of the proposed wind turbines, the Substation, or the Operational facilities. Therefore, no neighbour agreements are required for the project.

Table1-Proximity of Closest Associated and Non-Associated Dwellings to Key Project Components

Radius from the project	Number of Dwellings	Dwelling status
2 km	7	Associated with the project
Between 2km to 5 km	24	None associated with the project
Between 5km to 10 km	48	None associated with the project

The distance to dwellings regarding proximity to the key infrastructure areas provides a sufficient distance making the potential results for impacts (for example visual impacts, impacts associated with firefrom, substation or loss of containment of chemicals) to be negligible as per the NSW guidelines.

3.4. Surrounding Land Users

The project is not located close to any significant population centres and is in a particularly remote part of the eastern New South Wales. The closest centres are Oberon and Goulburn, which are located approximately 60km north and 60km south of the site, respectively. The lack of towns or other population centres in proximity of the site is a significant determinant of the site's viability for a wind farm.

There are a small number of dwellings in the vicinity of the site, dispersed across the agricultural landscape at a low density, as shown in Figure below – Site Analysis Plan. Within the site there are seven dwellings, all owned by those with a declared interest in the project, having entered commercial arrangements with project developer.

Non-project involved dwellings are generally located on medium sized agricultural properties nearby, with some smaller hobby type farms present. Most of the dwellings are located a significant distance from any turbines proposed as part of the project. In fact, there are no non-project related dwellings within 2km of any turbine. According to Oberon Shire Council's records, there have been no approvals granted for residential dwellings or subdivisions immediately surrounding the site in the past decade.

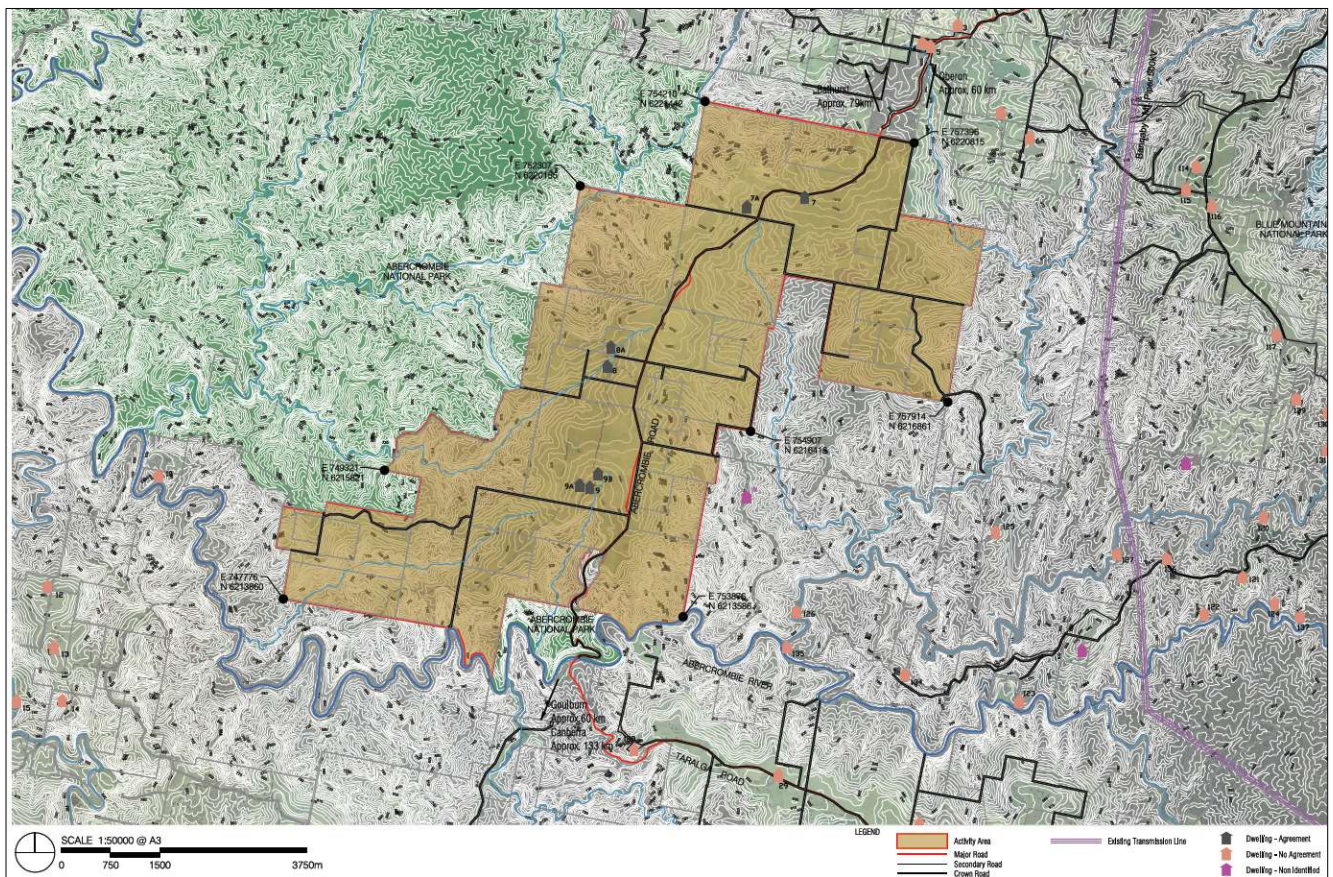


Figure2 site analysis plan and nearby dwelling

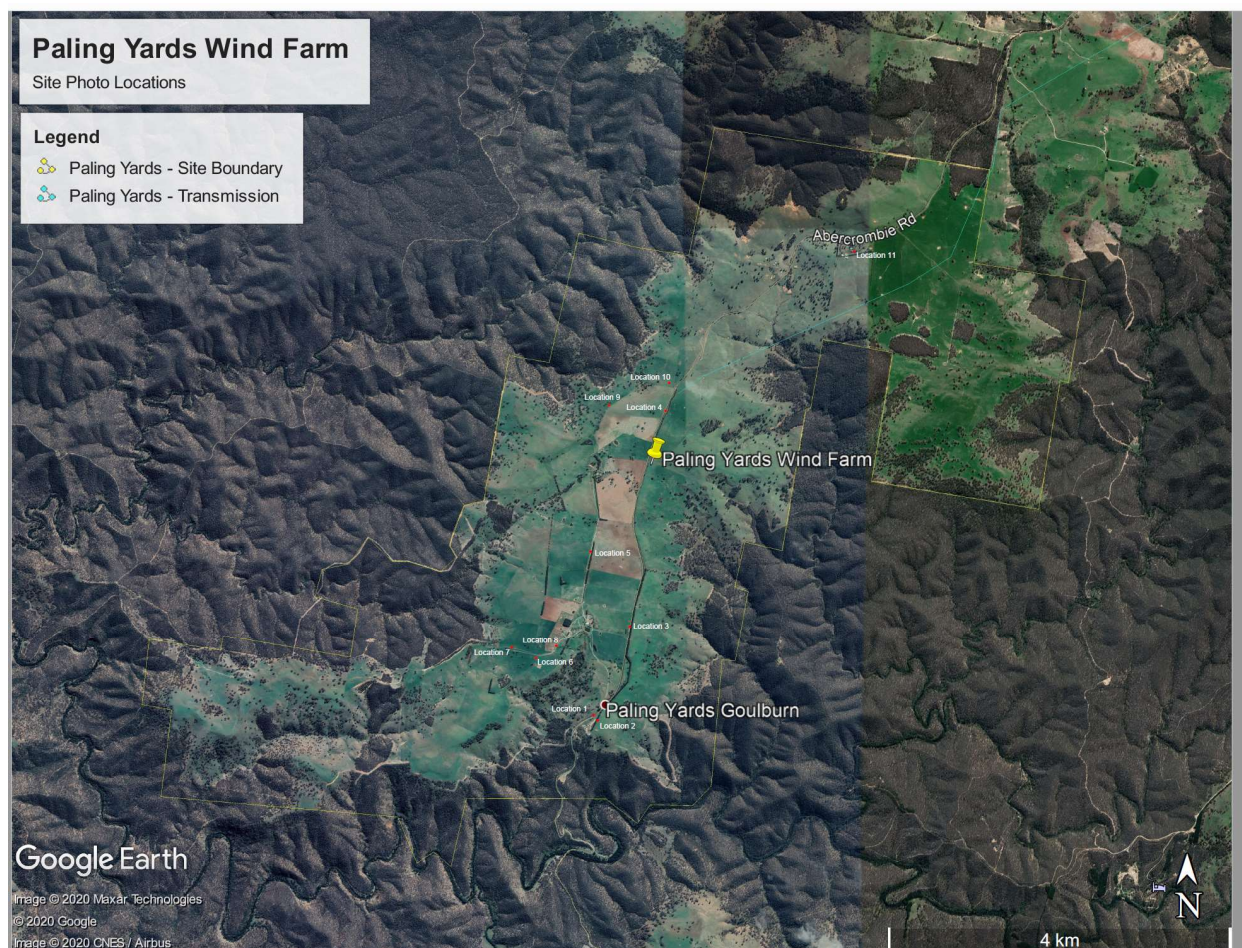


Figure3-site Photo Locations



Figure4-Photo location 1 (south West)



Figure 5 Photo location 2 (east)



Figure 6-Photo location 3 (North)



Figure 7-Photo location 4 (North East)



Figure 8- Photo location 5 (west)



Figure 9- Photo location 6 (south West)

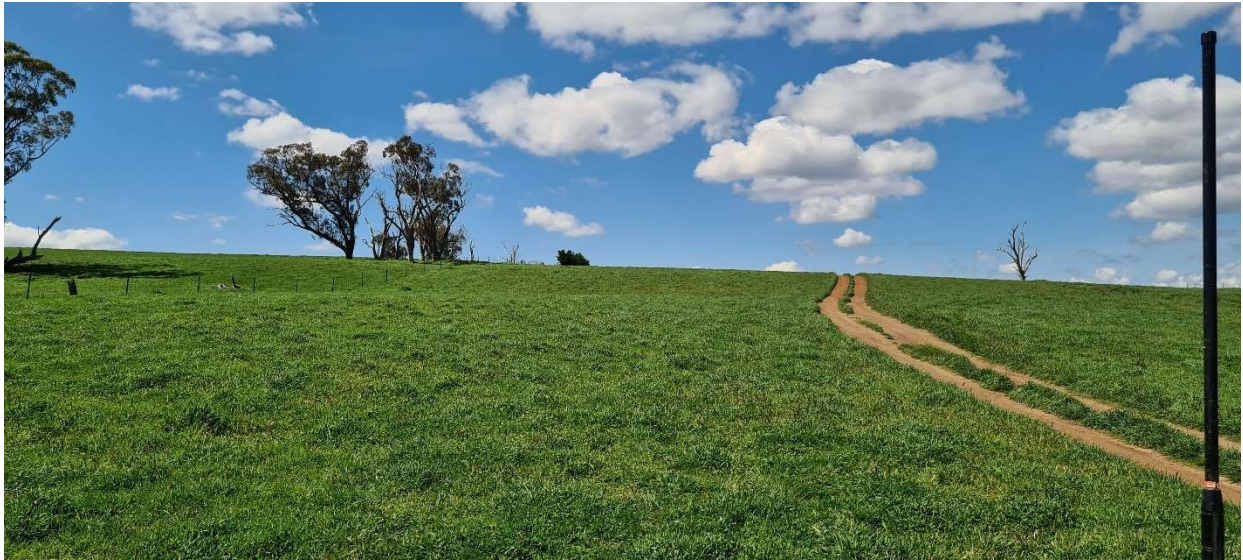


Figure 10- Photo location 7 (east)



Figure 11 - Photo location 8 (North)



Figure 12 - Photo location 9 (North East)

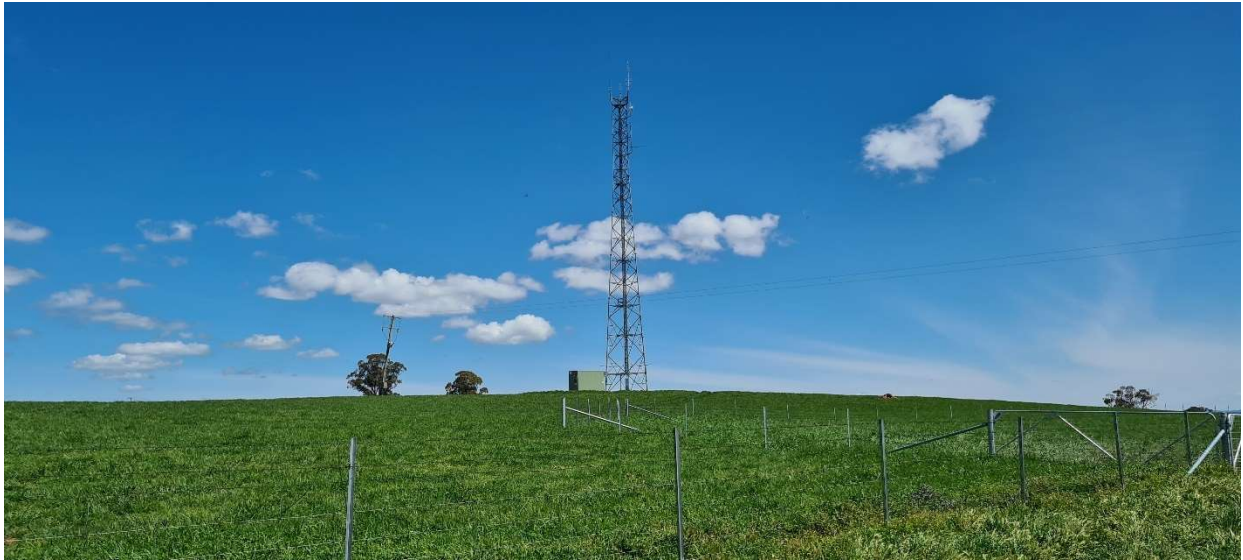


Figure 13 - Photo location 10 (south)



Figure 14- Photo location 11 (south)

4. Assessment

Based on SEPP 33 guidelines, the key inputs for consideration when reviewing the risk profile of a site are as follows:

- The properties of the substance being handled/stored.
- The condition of storage or use
- The quantities involved.
- The location with respect to the site boundaries; and
- Surrounding land use

In preparation of this report all the above parameters have been considered

Figure 15 can be used to indicated whether SEPP 33 will apply for the project or not.

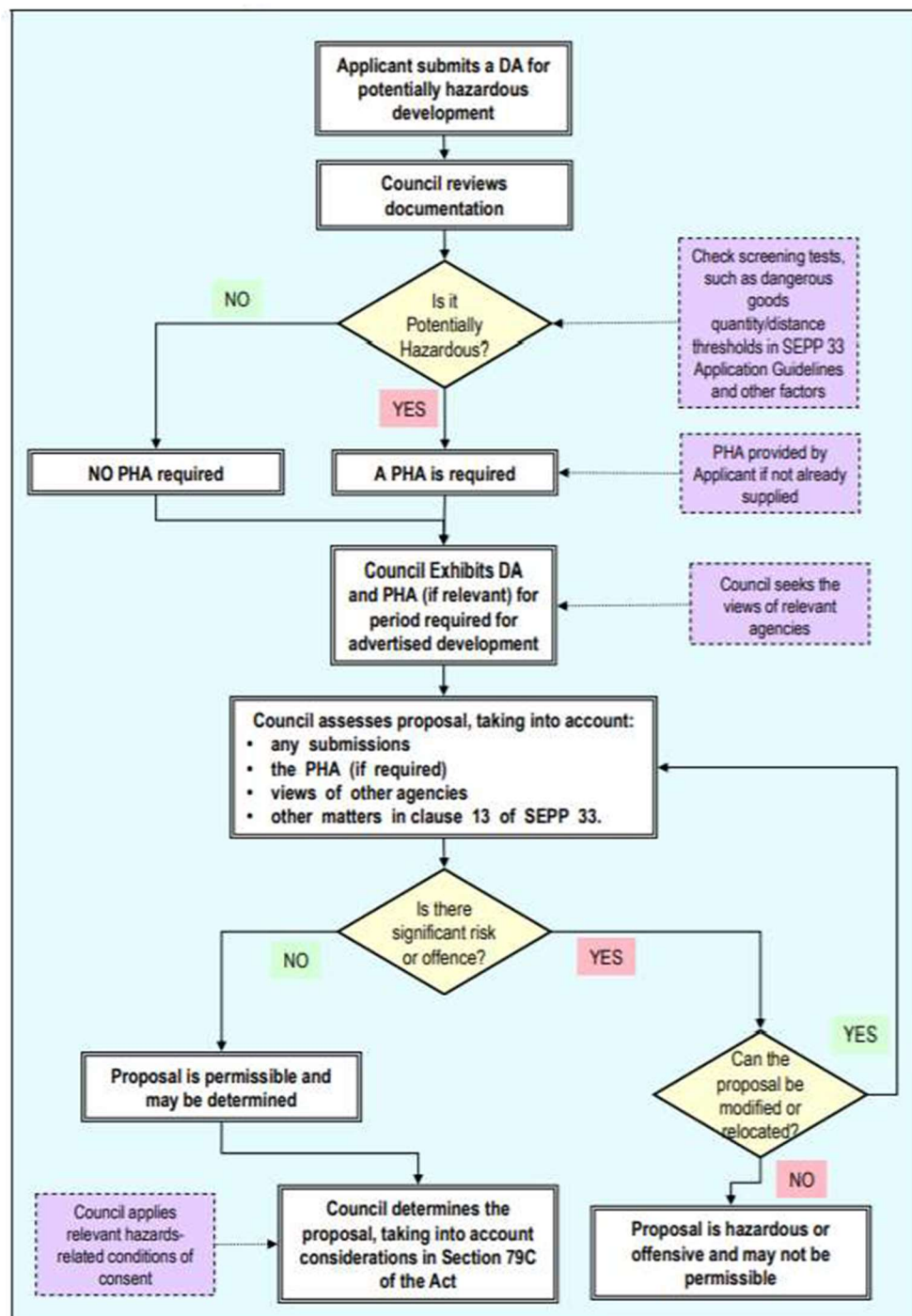


Figure 15– SEPP Process

4.1. Risk Screening Process

Procedures outlined in figure 16 can be used to clarify whether a PHA might be required for the project based on SEPP guidelines. Below information shall be collated to proceed with this analysis:

- A list of all the hazardous materials used in the proposed development and the quantity of each present.
- Materials on the site which are in proximity to the proposed development.
- Dangerous goods classification for each material, including subsidiary class(es);
- The mode of storage used (that is, bulk or packages/containers) and the maximum quantity stored or held on site.
- the distance of the stored material from the site boundary for any of the materials in dangerous goods classes 1.1, 2.1 and 3.
- the average number of annual and weekly road movements of hazardous material to and from the facility, and the typical quantity in each load

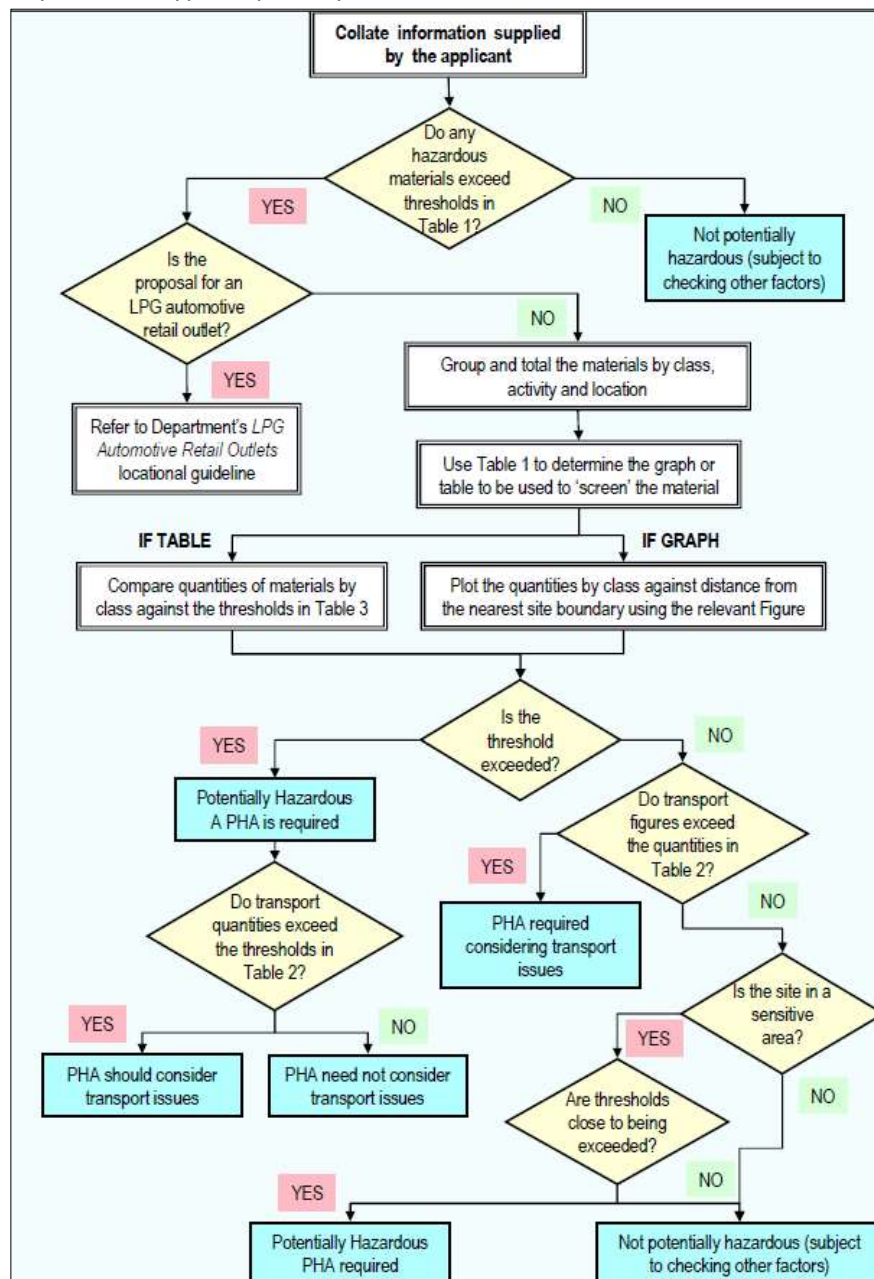


Figure 16- The risk Screening process¹

¹ NSW Assessment Guideline Multi-level Risk Assessment, 2011

Table2- SEPP Screening method which need to be used for each class of dangerous goods.

Class	Materials in this group	Method to Use/Minimum Quantity
1.1	Substances and articles which have a mass explosion hazard	Use graph at Figure 5 if greater than 100 kg
1.2-1.3	1.2. Substances and articles which have a projection hazard but not a mass explosion hazard. 1.3. Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.	Table 3 of SEPP 33 guidelines
2.1 — pressurised (excluding LPG)	Flammable gases such as Ethane, propane	Figure 6 graph of SEPP 33 guidelines if greater than 100 kg
2.1 — liquefied (pressure) (excluding LPG)		Figure 7 graph of SEPP 33 guidelines if greater than 500 kg
LPG (above ground)		table 3 of SEPP 33 guidelines
LPG (underground)		table 3 of SEPP 33 guidelines
2.3	Toxic gases such as Hydrogen Chloride, Ethylene oxide	table 3 of SEPP 33 guidelines
3PGI	Flammable liquids, Packing group 1: high danger. Assigned to flammable liquids with an initial boiling point less-than-or-equal-to 35°C.	Figure 8 graph of SEPP 33 guidelines if greater than 2 tonnes
3PGII	Flammable liquids, Packing group 2: medium danger. assigned to flammable liquids with a flash point less-than-or-equal-to 23°C and an initial boiling point of greater than 35°C.	Figure 9 graph of SEPP 33 guidelines if greater than 5 tonnes
3PGIII	Flammable liquids, Packing group 3: low danger. Assigned to flammable liquids with a flash point greater-than-or-equal-to 23°C but less-than-or-equal-to 60.5°C and an initial boiling point of greater than 35°C. Diesel fuel will be in this class	Figure 9 graph of SEPP 33 guidelines if greater than 5 tonnes
4	Flammable solids; substances liable to spontaneous combustion; substances which, on contact with water, emit flammable gases	table 3 of SEPP 33 guidelines
5	Oxidising substances, organic peroxides Division 5.1: Oxidising substances Division 5.2: Organic peroxides	table 3 of SEPP 33 guidelines
6	Toxic and infectious substances such as Aluminium phosphide pesticides, coumarin derivative pesticide	table 3 of SEPP 33 guidelines
7	Radioactive material	table 3 of SEPP 33 guidelines
8	Corrosive substances such as Sodium hydroxide (caustic soda), Potassium hydroxide (caustic potash), Ammonium solution, Ferric chloride (water treatment), Sodium hypochlorite (disinfectant)	table 3 of SEPP 33 guidelines

Note: Classes 1.4, 1.5, 1.6, 2.2, 7 and 9 are excluded from the risk screening. Classes

4.1.1. General Screening Threshold Quantities

According to SEPP guidelines general Screening threshold quantities for each class of dangerous goods are defined as table 3.

Table3-SEPP 33 Screening Threshold quantities

Class	Screening Threshold	Description
1.2	5 tonnes	or are located within 100 m of a residential area
1.3	10 tonnes	or are located within 100 m of a residential area
2.1		(LPG only - not including automotive retail outlets
	10 tonne or 16 m ³	if stored above ground
	40 tonne or 64 m ³	if stored underground or mounded
2.3	5 tonnes	anhydrous ammonia, kept in the same manner as for liquefied flammable gases and not kept for sale
	1 tonne	chlorine and sulphur dioxide stored as liquefied gas in containers <100 kg
	2.5 tonne	chlorine and sulphur dioxide stored as liquefied gas in containers >100 kg
	100 kg	liquefied gas kept in or on premises
	100 kg	other poisonous gases
4.1	5 tonnes	
4.2	1 tonne	
4.3	1 tonne	
5.1	25 tonnes	ammonium nitrate- high density fertiliser grade, kept on land zoned rural where rural industry is carried out, if the depot is at least 50 metres from the site boundary
	5 tonnes	ammonium nitrate - elsewhere
	2.5 tonne	dry pool chlorine - if at a dedicated pool supply shop, in containers <30 kg
	1 tonne	dry pool chlorine - if at a dedicated pool supply shop, in containers >30 kg
	5 tonnes	any other class 5.1
5.2	10 tonnes	
6.1	0.5 tonne	packing group I
	2.5 tonne	packing groups II and III
6.2	0.5 tonne	includes clinical waste
7	all	should demonstrate compliance with Australian codes
8	5 tonnes	packing group I
	25 tonnes	packing group II
	50 tonnes	packing group III

4.1.2. Transport Assessment Thresholds

In addition to the assessment of “Distance from nearest boundary”, an assessment of whether development may become potentially hazardous due to the number of traffic movements needs to be undertaken. Table 4 provides the transportation screening threshold in accordance with SEPP 33 guidelines.

Table 4- Transportation Screening Thresholds

Class	Vehicle Movements		Minimumper load Bulk	quantity* (tonne) Packages
	Cumulative Annual	Peak or Weekly		
1	see note	see note	see note	
2.1	>500	>30	2	5
2.3	>100	>6	1	2
3PGI	>500	>30	1	1
3PGII	>750	>45	3	10
3PGIII	>1000	>60	10	no limit
4.1	>200	>12	1	2
4.2	>100	>3	2	5
4.3	>200	>12	5	10
5	>500	>30	2	5
6.1	all	all	1	3
6.2	see note	see note	see note	
7	see note	see note	see note	
8	>500	>30	2	5
9	>1000	>60	no limit	

Note: Where proposals include materials of class 1, 6.2 or 7, the Department of Planning should be contacted for advice

* If quantities are below this level, the potential risk is unlikely to be significant unless the number of traffic movements is high.

4.2. Assessment Scope and Limitations

The scope of work is limited to the requirements of SEPP 33 that address the hazards and risks component of the SEARs. Bushfire Risk assessment, Electric and Magnetic Field risks (EMF), telecommunications and Electromagnetic Interference risks, Traffic management risks and construction hazard risk assessment for this project are not covered as part of this report.

The scope of the current assessment includes the following project infrastructure and phases:

4.2.1. Construction period

- Temporary construction activities such as concrete batching.
- Temporary fuel storage (Diesel,);

4.2.2. Operational Period

- Electricity network (aboveground and underground transmission lines), substation and switchingstation.
- supporting infrastructure, including:
 - operational buildings.
 - access roads and internal roads onsite, as well as emergency access points.
 - fencing and landscaping Surrounding the Substation, switching station

4.3. Assessment Methodology

This report is a desktop assessment on the environmental hazards and risks that could happen during the construction and operation of key infrastructure components of the Project (i.e. wind turbines, Substation and O&M Workshop), as well as mitigation measures to address such issues.

4.4. Potential Hazards and Risks

Potential hazards and risks during construction and operational period include:

- The onsite storage, use and transport of dangerous goods and hazardous substances; and
- Risk of damage to existing infrastructure due to ground movement and geotechnical instability.

According to NSW guidelines for applying SEPP 33, The first step is to determine the type and quantity of hazardous materials present and how they are used or stored on site. The materials should be classified in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (Dangerous Goods Code).

A list of the expected types and quantities of materials to be stored or handled at the proposed development during construction and operational period are provided in table 5 and 6 along with the SEPP storage and transport thresholds for each item.

It is expected that the storage containers on site will be managed to enable 5 Days of storage coverage, which means that on average the site will only need to receive a delivery of each fuel and dangerous goods every 5 days. This will equate to approximately 73 deliveries per year. Therefore, the proposed Vehicle Movements of 73 is well under the acceptable annual transport threshold for each item.

Table 5-Proposed Hazardous Materials at Paling Wind farm (During Construction) – Storage and Transport

Material	Application	Australian Dangerous Goods Class	Storage Location	Storage Method	Quantity(T)	Max Annual Vehicle movement	SEPP 33 threshold			exceeded?
							Min Quantity	Min. storage distance from sensitive receptors	Transport	
Diesel UN No. 1202(during construction)	For diesel generators and other construction activities	Class 3	Batching / laydown areas	Self-bunded above ground tanks AST (AS 1940)	100 T	73	5000 T	10 m	1000	No
Welding Cylinders	Welding application during construction	Class 2.1, 2.2	Batching / laydown areas,	Cylinders (AS 4332, AS 4839)	5 Welding Sets (<0.1 T)	73	10 T	N/A	500	No
Lubricating oils/grease/hydraulic fluids/gear oils	Lubricating for temporary generators and equipment during construction	Mixed, Not classified as dangerous good	Batching / laydown areas,	Self-bunded above ground tanks AST (AS 1940)	<1 T	73	N/A	N/A	N/A	No
Propane	Might be used for heating purpose of the buildings	Class 2.1	Batching / laydown areas,	stored in aboveground propane. storage vessel	Less than 1000 L	73	10	100 m	500	No
Glycol-based antifreeze	Might be used in cooling system of wind turbine components, transmission system or in diesel engines	Class 9 (excluded from SEPP 33 risk screening)	Batching / laydown areas,	Stored in accordance with Australian standards and environmental requirements	Less than 100 L	73	N/A	N/A	N/A	No
Paints and Coatings	touch-up painting during construction phase	If Paints are in aerosol forms UN 1950 can be classified as dangerous goods class 2	Batching / laydown areas,	Stored in accordance with Australian standards and aerosol forms will be very limited	Less than 200 L	73	10T	200 m	500	No
Cleaning Solvents	Cleaning	Can be either class 3, 5 or 6 based on	Batching / laydown areas,	Stored in accordance with Australian standards, applicable SWMS	Less than 200 L	73	N/A	N/A	N/A	No
Pesticides	May be used to control vegetation around. facilities for fire safety during construction and operation	Class 6	will be brought to the site and applied by a licensed applicator as necessary	Stored in accordance with Australian standards,	Less than 50 L	73	0.5 T	N/A	all	No

Table6- Proposed Hazardous Materials at Paling Wind farm (During Operational Period) – Storage and Transport

Material	Application	Australian Dangerous Goods Class	Storage Location	Storage Method	Quantity(T)	Annual Vehicle movement	SEPP 33 threshold			Threshold exceeded?
							Min Quantity	Min. storage distance from sensitive receptors	Transport	
Diesel UN 1202(during Operation)	will be stored in aboveground tanks to support emergency. power generator throughout the operation phase.	Class 3	O &M inventory	Self-bunded above ground tanks AST (AS 1940)	Less than 10000 L (1 T)	73	5000 T	10 m	1000	No
Welding Cylinders	Welding application during O &M	Class 2.1, 2.2	Batching / laydown areas,	Cylinders (AS 4332, AS 4839)	5 Welding Sets (<0.1 T)	73	10 T	N/A	500	No
Lubricating oils/grease/ hydraulic fluids/gear oils	Lubrication and hydraulic fluid for some wind turbine components	Mixed, Not classified as dangerous good	O &M inventory site	Self-bunded above ground tanks AST (AS 1940)	Less than 10000 L (1 T)	73	N/A	N/A	N/A	No
Propane	Might be used for heating purpose of the buildings	Class 2.1	O &M inventory	stored in aboveground propane. storage vessel	Less than 5000 L	73	10 T	100 m	500	No
Glycol-based antifreeze	Might be used in cooling system of wind turbine components, transmission system or in diesel engines	Class 9 (excluded from SEPP 33 risk screening)	O &M inventory	Stored in accordance with Australian standards and environmental requirements	Less than 50 L.	73	N/A	N/A	N/A	No
Paints and Coatings	Used for corrosion control on all exterior. surfaces of turbines and towers	If Paints are in aerosol forms UN 1950 can be classified as dangerous goods class 2	O &M inventory	Stored in accordance with Australian standards and aerosol forms will be very limited	Less than 100 L	73	10T	200 m	500	No
Cleaning Solvents		Can be either class 3, 5 or 6 based on	O &M inventory	Stored in accordance with Australian standards, applicable SWMS	Less than 50 L	73	N/A	N/A	N/A	No
Pesticides	May be used to control vegetation around the facilities for fire safety during construction and operation	Class 6	Normally will not be stored on site and will be brought to the site and applied by a licensed applicator as necessary	Stored in accordance with Australian standards,	Less than 50 L	73	0.5 T	N/A	all	No

The thresholds in Applying SEPP 33 represent the maximum quantities of hazardous materials that can be stored or transported without causing a significant offsite risk.

Based on the above table, **SEPP 33 thresholds are not exceeded for any material**. Also, the risks associated with storage and transportation of hazardous materials are unlikely to be significant or pose a risk to public safety. A detailed construction environmental management plan (CEMP) and Operational Management Plan (OMP) shall be required for this project to ensure the proposed numbers will not exceed the SEPP screening limits.

These plans would ensure hazardous materials will be stored appropriately and at the required distance from sensitive land uses, in accordance with the thresholds established under Applying SEPP 33 and relevant Australian Standards.

Furthermore, proper storage and handling SWMS will be prepared for the project in accordance with the Work Health and Safety Act, the Storage and Handling of Dangerous Goods Code of Practice (safe work NSW) and SEPP 33 requirements.

Therefore, the risks associated with storage and transportation of hazardous materials are unlikely to be significant or pose a risk to public safety. Thus, Paling Yards Windfarm is not considered to be a hazardous or potentially hazardous industry under SEPP 33 chemical screening. Therefore, **a PHA is not required for this project**.

In addition to this, Appendix 3 of Applying SEPP 33 provides a list of industries that may fall within SEPP 33. It should be noted that wind farms are not part of these industries.

5. Potentially Offensive Development Assessment

In deciding if a project is 'potentially offensive industry', clarification is required on whether, in the absence of safeguards and mitigation strategies, the proposal could produce a polluting discharge which would cause a significant level of offence.

According to SEPP 33 guidelines, below information is required to identify potentially offensive industry.

- A listing of any materials or processes that could produce air, noise, water, or other emissions with a potential for pollution; and
- Details of known requirements for pollution control licenses, permits or agreements.

Appendix 3 of SEPP 33 guideline also propose a list of potentially offensive industries. However, Wind Farms are not considered to be in the list of potentially offensive developments.

To ensure this project will not be potentially offensive, type and quantities of materials stored and processed on the site have been fully investigated (results indicated in above section). In addition to this a detailed Environmental impact assessment had been conducted previously to evaluate adequacy of proposed technical, operational, and organisational safeguards; surrounding land uses or likely future land uses; and interactions of these factors.

Table 7-Potentially Offensive Assessment

Potential Impacts	Description
Air emissions	<p>No emission is expected during operational period of wind farms.</p> <p>The construction environmental management plan will be implemented and mitigate construction related issues including dust suppression.</p>
Noise	<ul style="list-style-type: none">• A detailed noise assessment was conducted by SLR previously. The noise assessment found that all non-project involved receptors were found to be below the relevant noise criteria, and therefore comply with the relevant noise standards.• During operational period the proponent will undertake routine noise monitoring, assessment and reporting at compliance critical locations.• Further noise monitoring will be conducted, and mitigation measures shall be put in place during operational time.• Upon finalizing the layout and turbine models a revised noise assessment will be completed and noise impact mitigation techniques investigated to ensure a fully noise compliant turbine layout. <p>Standard hours will apply during project construction period, as outlined below,</p> <ul style="list-style-type: none">- Monday to Friday: 7:00am to 6:00pm- Saturdays: 7:00am to 1:00pm- Sundays: No construction <p>If it is required to undertake other works outside the above construction hours, prior approval will be obtained from the relevant authority.</p>

Odor	Given the nature of the Wind Farm, this is an unlikely issue. therefore, not required to be assessed
Hydrology assessments	<ul style="list-style-type: none"> • A detailed Soil and Water Management Plan (SWMP) will be prepared prior to construction commencing. The SWMP will be prepared by a suitably qualified person, such as a soil conservationist. • Progressive Erosion and Sediment Control Plans will be prepared as the project progresses to address management requirements at individual work sites. • The wind farm and transmission line will be designed and constructed to minimize land disturbance and therefore reduce the erosion hazard. • The construction activities will be staged to minimize the duration and extent of land disturbance. • Topsoil resources will be managed to minimize the risk of erosion and sedimentation and maximize reuse of topsoil during rehabilitation. • Upslope (clean) stormwater will be diverted around the disturbed site capture sediment-laden runoff from within the disturbed site for diversion to sediment. • The site will be promptly and progressively rehabilitated as works progress. • Erosion and sediment control devices will be inspected and maintained for the duration of the project. • The construction of new vehicle watercourse crossings will be avoided. • Any water crossings would be designed to minimize impacts on existing banks, water flow, animal passage and on the movement of flows. • Land disturbance within 20 m of minor streams (first and second order watercourses) and 40 m of third order or higher watercourses will be avoided. • Appropriate procedures will be in place for the transport, storage and handling of fuels, oils, and other hazardous substances, including availability of spill cleanup kits. • Disturbance during transmission line construction will be minimized by using existing access tracks and roads and avoiding construction of a permanent access track along the transmission line easement. • Appropriate stormwater, collection, treatment, and recycling at the concrete batch plant will occur in accordance with relevant best practice guidelines and any requirements of the NSW Office of Environment and Heritage • Water will be reused where possible to reduce water consumption (as detailed in the Water Management Plans to be included in the CEMP and OEMP) • Over-extraction of surface water or groundwater will be avoided to prevent adverse impacts on environmental flows and water availability for existing licensed users. • Any necessary water access licenses will be obtained.
Ground contamination	No issues identified for the project during environmental assessments

6. Preliminary Hazard Analysis

Based on the above analysis, Paling Yards Wind Farm is not potentially hazardous and does not require a PHA. Nevertheless, A basic hazard analysis has been conducted to identify potential project risks that shall be considered in developing the project management plans.

6.1. Hazard Identification

Hazard identification process has also considered possible ways of reducing or eliminating hazards, such as changes in site location or technology.

6.1.1. Methodology

For this assessment, it has been assumed that all the applicable standards and guidelines will be followed appropriately for this project. For each identifiable hazard, the following was considered:

- Identification – the mechanism or scenario by which the hazard potential is realized.
- Causes – the potential ways in which the event could arise.
- Consequences – the outcome or impact of the event.
- Likelihood – the probability for the event to occur.
- Mitigation strategies – any measures which prevent and/or mitigate against the event and resulting consequences.

The following risk matrix is prepared to determine what is the risk factors of the project as well the associated likelihood & consequence.

					Likelihood				
CONSEQUENCES					A	B	C	D	E
					Improbable > 20yrs	Unlikely 10 – 20 yrs	Possible 5 – 10 yrs	Likely 1 – 5 yrs	High < 1yr
					Never heard of in industry	Heard of in industry	Incident has occurred	Happens several times per year	Happens several times per year
SEVERITY	0	No health effect/ injury	No damage	No effect	No impact	L	L	L	L
	1	Slight health effect/injury	Slight Damage/Loss - No disruption to operation (costs less than \$10,000)	Slight effect	Slight impact	L	L	L	L
	2	Minor health effect/injury	Minor Damage/Loss - Brief disruption (costs less than \$100,000)	Minor effect	Limited impact	L	L	M	M
	3	Major health effect/injury	Local Damage/Loss - Partial shutdown (can be restarted but costs up to \$500,000)	Localized effect	Considerable impact	L	L	M	M
	4	PTD or 1 to 3 fatalities	Major Damage/Loss - Partial operation loss (2 weeks shutdown costs up to \$1,000,000)	Major effect	National impact	L	M	MH	H
	5	Multiple fatalities	Extensive Damage - Substantial or total loss of operation (costs in excess of \$10,000,000)	Massive effect	No continuation of business possible	MH	MH	H	H

Table 8- Hazard Identification

Hazard	Possible Consequences	Mitigation/Controls	Risk Rating after mitigation strategies			
			P	A	E	R
Dust and other air emissions	<ul style="list-style-type: none"> Personal health issues Complains of nearby farms or assets 	<ul style="list-style-type: none"> Implementation of a suitable dust suppression system 	D1	D1	D1	D1
Blasting	<ul style="list-style-type: none"> Personal injury Damage to nearby assets 	<ul style="list-style-type: none"> operations will need to be engineered and implemented to a high standard and routinely monitored The project must ensure that any blasting complies with the ANZECC guideline. need to develop suitable SWMS and training for the works 	B3	B3	B3	B3

Hazard	Possible Consequences	Mitigation/Controls	Risk Rating after mitigation strategies			
			P	A	E	R
Inappropriate waste disposal	<ul style="list-style-type: none"> Contamination of land, contamination of watercourses or groundwater, degraded water quality, aquatic ecosystems adversely affected, potential loss of economic value of water. 	<ul style="list-style-type: none"> No hazardous or regulated wastes will be disposed of on-site. All off-site disposal via approved transport operators. All off-site disposal in accordance with local, state, and federal regulations. 	D2	D2	D2	D2
Fall from height	Personal Injury	<ul style="list-style-type: none"> Use proper PPE and safety equipment. Prepare the SWMS for the works 	C2	A1	A1	A1
Security Breach	<ul style="list-style-type: none"> Damage to the assets 	<ul style="list-style-type: none"> Implement suitable procedures in relation to a high voltage installation. Implement suitable security system for the Project including CCTV, safety fencing, alarm systems; ... Restricted access to the project site. 	B1	B1	B1	B1
Vehicle accidents	<ul style="list-style-type: none"> Personal injury or property damage 	<ul style="list-style-type: none"> Fencing / bollards and positioning of batteries to minimise incidental vehicle interaction. Transport of dangerous goods will comply with the requirements of the Australian Code for the Transport of Dangerous Goods by Road and Rail (the ADG Code). Proper traffic management plan and traffic Impact statement to be prepared for the site. Training of the drivers 	C1	C1	C1	C1
Spills or loss of chemicals on site	<ul style="list-style-type: none"> Personal injury and property damage 	<ul style="list-style-type: none"> Design and install storage equipment based on applicable standards and safety protocols. Implement the inspection and maintenance plan for the storage equipment on site. Provide spill kits. Prepare the Safety Data Sheets (SDS's) with details of handling processes. Provision of suitable PPE 	B1	B1	B1	B1
Flammable/combustible Vapours/liquids	<ul style="list-style-type: none"> Potential ignition to cause either a flash or pool fire 	<ul style="list-style-type: none"> All electrical equipment within hazardous areas to be designed according to the standards and intrinsically safe. 	B0	B0	B0	B0

Hazard	Possible Consequences	Mitigation/Controls	Risk Rating after mitigation strategies			
			P	A	E	R
		<ul style="list-style-type: none"> • All metallic materials and electrical equipment to be bonded to prevent static discharge. • Site fitted with emergency stop system. • Site designed to ensure traffic flow in one direction to reduce potential for asset impact. • suitable fire extinguishers shall be installed on site. • Shear valves under all dispensing equipment. 				
EMF related infrastructure (such as Power lines, Grid infrastructure etc.)	<ul style="list-style-type: none"> • Personal injury 	<ul style="list-style-type: none"> • All the design shall be in accordance with applicable Australian and international standards. • Safety procedures for the HV works and installations shall be fully incorporated in the site. • Restricted access to site facilities and proper construction management plan will be implemented 	A1	A1	A1	A1
Fire (Bush fire or external fire)	<ul style="list-style-type: none"> • Personal injury and property damage 	<ul style="list-style-type: none"> • Design all the assets in accordance with applicable Australian Standards. • Design and install suitable fire protection system. • Incorporate suitable emergency management plan for the site. • Implement bushfire management plan • 	B1	B1	B1	B1
Cyclone	<ul style="list-style-type: none"> • Personal injury and damage to the property 	<ul style="list-style-type: none"> • Infrastructure to be designed and constructed according to the appropriate standards • Have proper cyclone management plan in place 	B1	B1	B1	B1
Flood	<ul style="list-style-type: none"> • Personal injury and damage to the property 	<ul style="list-style-type: none"> • Flood assessment report to be prepared prior to construction • Design storm water management plan and drainage design based on site conditions 	B1	B1	B1	B1
lightning	<ul style="list-style-type: none"> • Personal injury and damage to the property 	<ul style="list-style-type: none"> • Project infrastructures to be designed based on the applicable standards and regulations 	B1	B1	B1	B1

7. Conclusion

It has been recognised that the Paling Wind Yards Project will only include storage of small quantities of hazardous materials which do not trigger the SEPP 33 thresholds. Also, the number of annual transport deliveries to site is anticipated to be well under the SEPP thresholds.

With consideration of the insignificant quantity of materials stored onsite, along with the substantial distance to neighbouring properties, it can be concluded that the risks associated with storage and transportation of hazardous materials are unlikely to be significant or pose a risk to public safety. Given that the stipulated SEPP 33 thresholds are not exceeded or close to nominated parameters, the Project is not considered to be a hazardous or potentially hazardous industry under SEPP 33. Therefore, a PHA is not required to be undertaken for the Paling Yards wind Farms.

Also, considering the results of environmental impact statement report, type of the material stored, proposed mitigation measures for the Project, and the distance from nearby land users it can be concluded that there will be no potentially offensive impacts associated with the Project in accordance with the published guidelines.

8. References

Australian Standards:

AS1940 – 2017 “The Storage & Handling of Flammable & Combustible Liquids”.

AS / NZS 1596: 2008 “Storage and Handling of LPG Gas”.

AS 4897 – 2008 “The Design, Installation and Operation of Underground Petroleum Storage Tanks”

AS 3000 – 2000 “Electrical Wiring Rules”.

AS / NZS AS/NZS 60079.10.1:2009 “Classification of Areas. Explosive gas atmospheres”.

AS 2832.2 – 2003 “Cathodic Protection of Metals – Compact buried structures”.

AS 2239 – 2003 “Galvanic (sacrificial) Anodes for Cathodic Protection”.

AS / NZS 3788: 2006 “Pressure Equipment – In-service inspection”.

AS 4037 – 1999 “Pressure Equipment – Examination & testing”.

AS 1692 – 2006 “Tanks for Flammable and Combustible liquids”.

Codes of Practices:

Australian Code for the Transportation of Dangerous Goods by Road and Rail, Seventh edition.

NSW Code of Practice 2005 for Storage & Handling of Dangerous Goods.

NSW Occupational Health & Safety Amendment (Dangerous Goods) Act 2003 and the Regulation of the same name dated 2005.

Planning NSW Guidelines:

Hazardous and Offensive Development Application Guidelines - Applying SEPP 33.

Hazardous and Offensive Development Application Guidelines - Multi-Level risk Assessment.

Hazardous Industry Planning Advisory Paper No. 1 - Industry emergency Planning Guidelines.

Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Study Guidelines

Hazardous Industry Planning Advisory Paper No 3 - Environmental Risk Impact Assessment Guidelines

Hazardous Industry Planning Advisory Paper No. 4 - Risk Criteria for Land Use Safety Planning

Hazardous Industry Planning Advisory Paper No. 5 - Hazard Audit Guidelines

Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis

Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines

Hazardous Industry Planning Advisory Paper No. 8 - Hazard and Operability Studies

Hazardous Industry Planning Advisory Paper No. 9 - Guidelines for the Development of Safety Management Systems

NSW EPA Guidelines:

Information Sheet 3 of Environmental Action for Service Stations. Forecourt Design, Operation & Maintenance.

Other Documentation:

NSW Occupational Health and Safety Amendment (Dangerous Goods) Act 2003.

Local Authorities requirements, NSW Work Cover and EPA Acts and Regulations.