Prepared for
Cleve Wind Farm Pty Ltd
ABN: 70 664 155 104

AECOM

Cleve Wind Farm

Environmental Impact Report

09-Jul-2025
Cleve Wind Farm

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Coopers Gap Wind Farm, Boyneside, Australia

Cleve Wind Farm

Environmental Impact Report

Client: Cleve Wind Farm Pty Ltd

ABN: 70 664 155 104

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1.0 Introduction

Cleve Wind Farm Pty Ltd (being a related entity of Vestas Development Australia Pty Ltd) (Vestas) is proposing to develop a large-scale renewable energy generation and storage project on the Eyre Peninsula to the north-west of the township of Cleve.

Vestas is seeking to obtain a Renewable Energy Infrastructure Licence (the Licence) for the Project under the *Hydrogen and Renewable Energy Act 2023* (HRE Act). A Renewable Energy Infrastructure Licence Application was lodged with the Department for Energy and Mining (DEM) on 4 November 2024.

To support the assessment of the Licence Application an Environmental Impact Report (EIR) (this report) is required to be prepared pursuant to Section 61 of the HRE Act and Regulation 32 of the *Hydrogen and Renewable Energy Regulations 2024* (HRE Regulations).

This EIR has been prepared in accordance with the above legislative requirements which includes the Environmental Impact Assessment Criteria which was Gazetted on 31 October 2024 and the following associated DEM guidance document:

- *Environmental Impact Assessment Criteria Guideline, HRE Act October 2024*

1.1 Project Background

The Eyre Peninsula is one of the best wind resource areas in South Australia and Vestas has been investigating the wind resource potential of the Project area since 2021.

Together with the viable wind resource, the Project area is well-serviced by existing high-voltage transmission infrastructure and is strategically situated to support future hydrogen facilities and major infrastructure projects proposed for the wider Eyre Peninsula region.

The Project will consist of approximately 70 wind turbine generators each with a maximum blade tip height of 250 metres and a combined maximum capacity of approximately 500 megawatts (MW). The wind farm will be supported by a battery storage facility (BESS) of 240MW.

The proposed Project will help achieve the South Australia Government's recently revised renewable energy target of net 100% renewable energy generation by 2027. When fully operational, the Project is expected to generate enough energy to power around 390,000 average South Australia homes per year and will prevent approximately 1,360,000 tonnes of CO2-e being emitted into the atmosphere each year.

In addition, the Project will generate significant economic and employment opportunities for the State with over $1 billion expected to be invested in the local region and a construction and operational workforce of up to 350 and 12 respectively, required to deliver and operate the Project.

2.0 About Vestas

Vestas is a global leader in wind energy and was recently named the one of the most sustainable companies in the world.[1]

With more than 166,000MW or approximately 86,000 wind turbines installed in 88 countries, Vestas has installed more wind power than any other company. Vestas, headquartered in Denmark, has been active in Australia, including South Australia, since 1993 and employs around 800 staff in Australia and New Zealand.

Vestas is funding the development and design of this Project, and is committed to supplying the wind turbine generators, managing project construction and providing long-term operation and maintenance services for the wind farm and BESS.

3.0 Legislative Process

The construction and operation of the Cleve Wind Farm requires a Renewable Energy Infrastructure Licence to be obtained under the HRE Act.

To inform the Licence application assessment and approval process, Section 61 of the HRE Act requires an EIR to be prepared in respect of a proposed authorised operation (activity undertaken under licence).

Pursuant to Section 61(2) of the HRE Act an EIR must:

(a) take into account the environment, cultural and other values as those matters are relevant to the assessment; and

(b) take into account risks inherent in the authorised operations to the health and safety of the public; and

(c) contain sufficient information to make possible an informed assessment of the likely impact of the authorised operations on the environment; and

(d) include an assessment of the environmental impact of authorised operations to which the report applies against the environmental impact assessment criteria; and

(e) be prepared in accordance with the requirements of the regulations.

The Environment Assessment Criteria reference in Section 61(2)(d) was recently Gazetted on 31 October 2024, pursuant to Section 60(1) of the HRE Act. The Environment Assessment Criteria requires an assessment of the following key elements:

- Elements of the Environment
- Potential Impact Events
- Confirmation of Impact Events
- Control and Management Strategies and Uncertainty Assessment
- Environmental Significance Assessment
- Statement of Environmental Objectives

With regard to Section 61(2)(e), the EIR must be prepared in accordance with the requirements of Regulation 32 of the HRE Regulations. Specially, Regulation 32(2) requires the EIR to contain the following information:

(a) a description of the authorised operations to be undertaken and the location at which the operations are to be undertaken;

[1] https://www.corporateknights.com/rankings/global-100-rankings/2024-global-100-rankings/the-20th-annual-global-100/

(b) a description of the specific elements of the environment that can reasonably be expected to be affected by authorised operations, with particular reference to the environment and existing land uses;

(c) data relating to biodiversity within the area of land to which the report relates that can reasonably be expected to be affected by authorised operations;

(d) an assessment of the cultural and heritage values of Aboriginal and Torres Strait Islander persons and other persons within the area of land to which the report relates that can reasonably be expected to be affected by authorised operations, and the public health and safety risks inherent in undertaking those operations (insofar as these matters are relevant in the particular circumstances);

(e) if relevant and required by the Minister—an assessment of the continuity of supply with respect to hydrogen;

(f) information on consultation that has occurred in accordance with the approved consultation plan, including specific details about relevant issues that have been raised and any response to those issues (but not including confidential information).

4.0 Project Area and Locality

4.1 Project Area

The Project area is located approximately 3 kilometres to the north-west of the township of Cleve (refer to Figure 1and Figure 2).

The Project area comprises an area of approximately 23,900 hectares and is bound by the Birdseye Highway to the south, Cleve Road to the east, Plane Road and Evans Gum Flat Road to the north, and Old Drake Peak Road to the west. A number of unsealed local roads bisect the project area.

The Project area generally consists of cleared farming land with development limited to associated dwellings and farm buildings scattered throughout the Project area.

Patches of native vegetation exist, mostly within the central and northeastern portion of the Project area.

The Project area and surrounding land feature an undulating landscape. The land generally falls from east to west. The difference between the highest and lowest elevations across the Project is approximately 285 metres. Ridge lines along the eastern boundary reach elevations of up to 410 metres Australian Height Datum (AHD) while the lowest elevation of 125 metres AHD occurs at the south-western corner of the Project. As a result of the undulating characteristics, numerous watercourses exist throughout the Project area.

A 275kV transmission line (currently operating at 132kV - Eyre Peninsula Link) intersects the southeast portion of the Project area which connects to the Yadnarie Substation. This substation adjoins the Project area's southern boundary.

Development within the Project area is serviced by 19kV electricity distribution infrastructure.

The Project area comprises of 75 parcels of land (refer to Figure 3), a copy of the Certificates of Title are included in Appendix B. All parcels are privately owned, with the exception of two small parcel of Crown land (ID 45 in Figure 3) located within the southwest portion of the Project area. Whilst contained within the nominated project boundary, it is not proposed to undertake any development within the two Crown allotment.

It is noted that numerous landowners own multiple properties that form the Project area.

Vestas has obtained access licences agreements with all private landowners who will be hosting project infrastructure within the Project area and are currently in the process of entering into option agreements with all private landowners to lease the relevant areas of land required for the Project.

4.2 Locality

Land within the locality is primarily used for primary production. There are a number of dwellings, and associated farm buildings on the land surrounding the Project area.

Key features within the extended locality include:

- The Birdseye Highway to the south
- Rudall Conservation Park to the southwest
- Cleve approximately 3 kilometres to the southeast
- Yeldulknie Conservation Park approximately 3 kilometres to the east
- Rudall Township approximately 5 kilometres to the southwest
- Mount Millar Wind Farm approximately 20 kilometres to the east

The Project area and locality are further illustrated in **Error! Reference source not found.**, Figure 2 and Figure 3 on the following pages.

Figure 1 Project Area and Regional Setting

Figure 2 Project Area and Locality

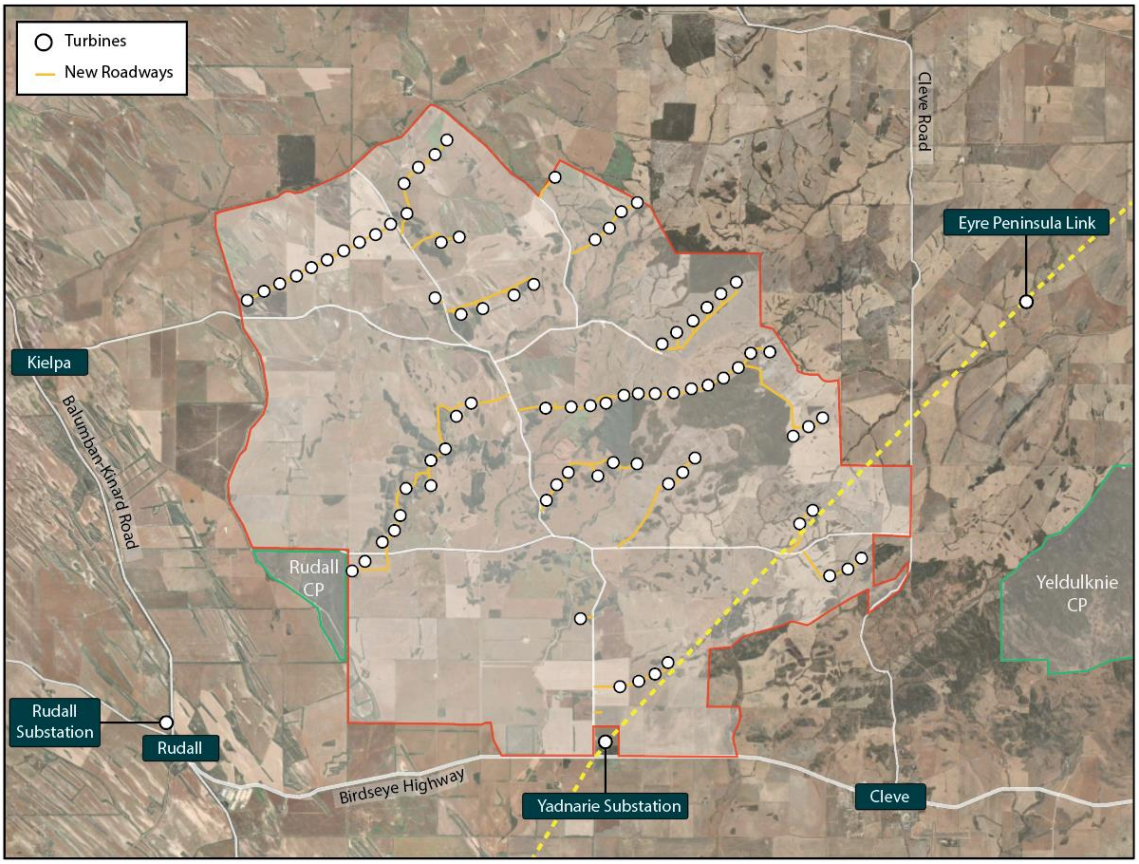
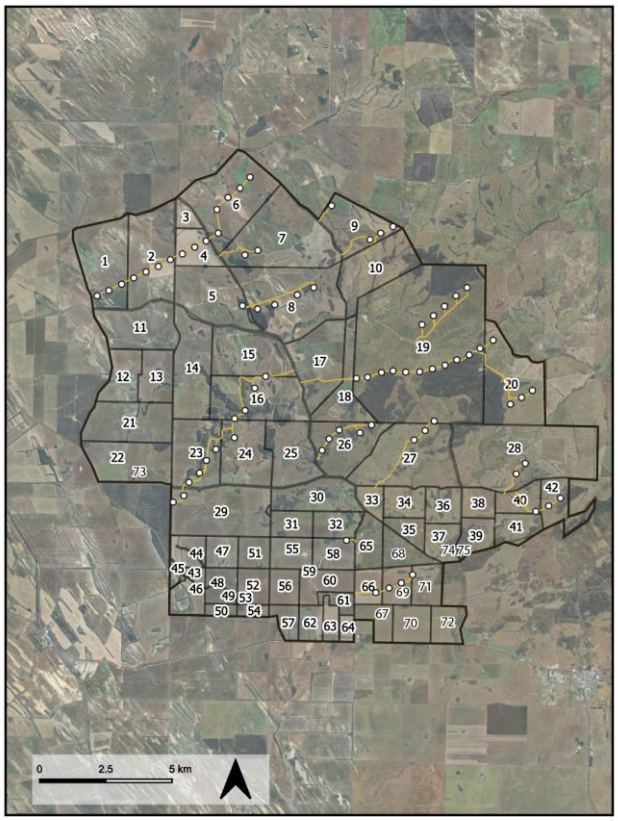


Figure 3 Project Area – Legal delineation



ID	Plan and Parcel	CT	ID	Plan and Parcel	CT
1	H532900SE14	CT5716/374	39	H533400SE95	CT6173/413
2	H532900SE15	CT5442/126	40	H533400SE104	CT6277/55
3	H530500SE29	CT5780/226	41	H533400SE94	CT6277/54
4	H530500SE6	CT6190/220	42	H533400SE105	CT5614/632
5	H530500SE5	CT5361/620	43	H533400SE466	CT5962/98
6	H530500SE7	CT5938/857	44	H533400SE378	CT5937/611
7	H530500SE8	CT5955/100	45	H533400SE399	CR5767/524
8	D37298AL101	CT5277/978	46	H533400SE377	CT5937/611
9	H530500SE32	CT5916/155	47	H533400SE83	CT5425/505
10	D37298AL100	CT5277/977	48	H533400SE82	CT5820/47
11	D88834AL400	CT6093/304	49	H533400SE379	CT5820/47
12	F12808AL1	CT5483/296	50	H533400SE59	CT5476/862
13	F12808AL2	CT5780/224	51	H533400SE84	CT5938/716
14	D88834AL401	CT6093/305	52	H533400SE81	CT5820/47
15	H530500SE315	CT5851/815	53	H533400SE380	CT5820/47
16	H530500SE216	CT5851/815	54	H533400SE60	CT5476/862
17	H530500SE42	CT5139/887	55	H533400SE85	CT5394/447
18	H530500SE40	CT5191/143	56	D86447AL1	CT6087/160
19	H530500SE36	CT5458/988	57	D86447AL9	CT6087/167
20	H530500SE14	CT5480/560	58	H533400SE86	CT5394/447
21	H532900SE5	CT6238/911	59	H533400SE25	CT5717/74
22	H532900SE1	CT5956/915	60	D122993AL12	CT6237/913
23	H533400SE413	CT6238/913	61	D122993AL13	CT6237/914
24	H533400SE412	CT6238/913	62	D86447AL8	CT6087/166
25	H533400SE411	CT6238/912	63	D86447QP7	CT6087/165
26	H533400SE382	CT5959/665	64	D86447QP6	CT6087/165
27	H533400SE381	CT5959/665	65	H533400SE87	CT6197/823
28	H533400SE414	CT6197/361	66	D86447AL4	CT6087/163
29	H533400SE461	CT5956/915	67	D95003AL5002	CT6151/567
30	H533400SE460	CT5957/539	68	H533400SE88	CT6197/823
31	H533400SE99	CT5957/539	69	H533400SE75	CT6185/901
32	H533400SE98	CT5957/539	60	H533400SE64	CT6197/822
33	H533400SE100	CT5480/940	61	H533400SE74	CT6185/901
34	H533400SE101	CT5465/137	72	H533400SE65	CT5144/403
35	H533400SE97	CT6197/823	73	H532900S88	CR5767/460
36	H533400SE102	CT5465/120	74	H533400SE376	CT5809/820
37	H533400SE96	CT6197/261	75	H533400SE393	CT5809/821
38	H533400SE103	CT6277/54			

5.0 Proposed development

5.1 Design Summary

The Project will provide up to 500MW of renewable energy generation to the National Energy Market (NEM) which will be supported by a 240MW (approx.) BESS to ensure grid stability requirements are achieved.

The Project area has been strategically located adjacent the recently upgraded transmission network at Yadnarie thereby allowing the development to connect directly and efficiently into the grid.

5.2 Description of development

The Project is a large-scale renewable energy generation and storage project comprising:

- Wind farm up to 500MW, consisting of approximately 70 wind turbines (WTG). The wind turbines are proposed to be manufactured and supplied by Vestas and can range within the following dimensions:
  - Blade length – 57.2m - 84m
  - Hub Height – 80m - 150m
  - Overall Height – 137.2m - 250m
- 240MW (approx.) battery storage facility
- Substation
- Associated onsite facilities and infrastructure, including:
  - Turbine pads
  - Crane hard stands pads (for construction)
  - Internal road network upgrades and new roads to accommodate turbine transport and maintenance.
  - Construction compound
  - Concrete Batch Plant
  - O&M building
  - Construction camp
- Transmission connections to the Yadnarie Substation

Preliminary scaled application plans for the development are included in Appendix A (plans may be subject to further amendment as the Project progresses).

The proposed development also includes the decommissioning of the WTG and associated infrastructure and rehabilitation of the site, noting the Project has a design life of 30 years.

5.3 Construction and operation details

The proposed development is expected to be constructed over an approximate 18-month period, with construction proposed to commence in Q1 2026. It is anticipated that the construction activities will include:

- Site mobilisation
- Site preparation (clearing, benching/filling, fencing, access, establishment of laydown areas etc)
- Civil and stormwater works
- Construction of infrastructure and buildings

- Testing and commissioning

Employee numbers on the site during the construction phase will vary depending on the stage of works. However, it is estimated that up to 350 workers will be required at the peak of construction.

To support construction activities a workers accommodation camp will be established on the site and will be serviced by appropriate associate temporary services and facilities.

The operation of the facility will be limited to maintenance, operational, monitoring and associated administrative activities. It is estimated that between 10 and 15 workers will be required for the operation of the facility.

The WTGs and associated infrastructure will be operational on a 24 hours per day / seven days a week basis.

It is anticipated that general maintenance and administrative staff will primarily be at the site during daylight hours (7am-7pm), after hours work for these activities may occur intermittently when required. Not all staff will be required on site, and administrative functions could potentially be undertaken externally.

5.4 Management Plans

To ensure potential environmental impacts are appropriately managed during the construction and operational phases of the development, a Construction Environmental Management Plan (CEMP), Operational Environmental Management Plan (OEMP) and Decommissioning and Rehabilitation Plan will be prepared and implemented.

These plans will form part of Operational Management Plan required to be prepared pursuant to Section of 66 the HRE Act.

The CEMP will include a range of control measures to manage and minimise environmental risks during the construction phase of the project. The control measures will be specific to the site and will principally relate to the following key aspects:

- Indigenous Heritage
- Ecology
- Soil and Contamination
- Stormwater and Water Quality
- Landscape and Visual Impact
- Traffic
- Aviation
- Social Infrastructure
- Bushfire
- Noise
- Shadow Flicker
- Electromagnetic Interference
- Geology

A specific OEMP will be prepared for the project which will describe measures to prevent or minimise environmental harm and mitigate impacts on the community. It will incorporate procedures, controls, monitoring and reporting requirements in relation to the above.

The Decommissioning and Rehabilitation Plan will guide how the infrastructure and equipment will be decommissioned and the site rehabilitated at the end of the Project life.

6.0 Methodology

The EIR methodology has been developed in accordance with the relevant HRE Act requirements, including the Environmental Impact Assessment Criteria and the following associated DEM EIR guidance documents:

- *Environmental Impact Assessment Criteria Guideline, HRE Act October 2024*

Consideration has also been given to the Principles of Environmental Assessment Best Practice guidance document prepared by the International Association for Impact Assessment to provide widely agreed guidance on the principles and best practice in environmental impact assessment.

6.1 Screening

The purpose of a screening step in the environmental impact assessment process is to determine whether or not a proposal should be subject to EIA and, if so, at what level of detail.

The HRE Act and the Environmental Impact Assessment Criteria are not conclusive on the inclusion of a screening step. In accordance with Section 62(1) of the HRE Act, a licence cannot be granted unless a statement of environmental objectives (SEO) is in force. In accordance with Section 62(2) of the HRE Act, the SEO must address the matters contained in the environmental impact report. This requirement indicates that there is no current approved method for screening authorised operations, with all projects being required to undertake an Environmental Impact Report.

6.2 Scoping - Assessment of environmental elements

An assessment of the environmental elements listed as a minimum requirement in the draft Environmental Impact Assessment Guideline (October 2024) was undertaken using publicly available data of the project site and surrounds.

This assessment was approached as a scoping step in accordance with the environmental impact assessment best practice guidelines (International Association for Impact Assessment, 2019). The purpose of performing a scoping step early in the environmental assessment process is to determine the impacts and issues that are likely to be important.

The outcomes of the environment assessment have guided the assessment of the environmental elements potentially impacted (and not impacted) by the proposed development within Section 7.0.

6.3 Environmental Risk Assessment

An environmental risk assessment was undertaken to identify potential issues that could reasonably be expected to impact receptors. The risk assessment was undertaken based on the initial risk of the proposed action prior to any mitigating measures being applied.

The risk assessment takes into account both the likelihood and a consequence of potential environmental impact events. The likelihood and consequence descriptors were determined based on the Environmental Impact Assessment Criteria Guideline and is consistent with the principles of the AS/NZ ISO 31000:2009 (ISO 31000) Risk Management – Principles and Guidelines (Standards Australia, 2009).

Table 1 and Table 2 outline the likelihood and consequence definitions respectively. The risk matrix presented in Table 3 aligns the consequence and likelihood with either low, medium, high or very high risks.

The initial risk ratings were assessed in consideration of the existing environmental conditions and management controls at the site, and the proposed design as specified in Section 5.0.

Table 1 Likelihood definitions for the environmental risk assessment

Rating	Descriptors
Almost certain	Expected to occur in most circumstances
	Guide: is expected to occur multiple times within a year or incident is clearly imminent
Likely	Probably occur in most circumstances
	Guide: is expected to occur approximately once per year
Possible	Could occur at some time
	Guide: likely to occur approximately once every 5 years
Unlikely	Not expected to occur
	Guide: likely to occur approximately once every 5-10 years
Rare	Exceptional circumstances only
	Guide: likely to occur with less frequency than once every 10 years

Table 2 Consequence definitions for the environmental risk assessment

Rating	Descriptors
Severe Widespread, serious, permanent effect	Incident is reportable to the regulator, serious permanent/persistent and irreversible damage is caused to an area or asset outside of the immediate vicinity of the project. Incident causes significant public interest and media coverage.
Major Wider spread, moderate to long-term effect	Incident is reportable to the regulator and notable damage is caused to an area or asset from which it will take more than 10 years to recover with long-term evidence of the incident resulting. Or Incident is reportable to the regulator and public concern raised.
Moderate Localised, short-term to moderate effect	Moderate but repairable damage that will take up to 10 years to recover. Or Incident is reportable to the regulator.
Minor Localised, short-term effect	Minor damage to the environment or heritage asset or area that is immediately contained on site. It will take less than two years for the resource or asset to fully recover or it will only require minor repair. Or Disturbance to scarce or sensitive environmental or heritage resources.
Insignificant No impact or no lasting effect	Negligible damage that is contained on site. And The damage is fully recoverable with no permanent effects, taking less than six months to fully recover.

Table 3 Environmental risk matrix

	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Low	Medium	High	Very High	Very High
Likely	Low	Medium	High	High	Very High
Possible	Low	Medium	Medium	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Medium	Medium

6.4 Assessment of significance

All potential impact events were assessed for their significance. The significance assessment presented in Section 7.4 took into account the control and management strategies that were identified for each impact event in Section 7.6.

Significance was assessed based on the parameters required in the Environmental Impact Assessment Criteria. Table 4 outlines the criteria that were considered in the assessment of significance.

Table 4 Criteria used to assess significance of potential impacts

Criteria	Description
Avoidance	Yes – the potential impact can be avoided through the identified controls
	No – the potential impact can not be avoided through the identified controls
Frequency	Constant – Impacts are present throughout the life of the project
	Regular – Impacts are experienced on a regular, on-going basis but are not constant
	Low – Impacts occur for only short periods
	Rare – Impacts not expected or only occur in exceptional circumstances
Duration	Permanent – Impacts to the environment are permanent and non-reversible
	Long term – Impact to the environment persist for a period of years but are reversible
	Short term – impacts of less than a year duration and are reversible
Extent	Localised – impacts are confined to the project site and immediate surrounds
	Regional – impacts are spread on a regional scale
Severity	High – Large degree of change from existing conditions
	Low – Minor degree of change from existing conditions
Cumulative effects	Yes – identified receptors are already impacted by similar activities
	No – identified receptors are not already impacted by similar activities
Sensitivity of receiving environment	Low – small number of receptors identified, or, significance of receptor is low
	High – large number of receptors identified, or, receptors have been identified as protected under specific legislation

7.0 Investigations

7.1 Screening

As the proposed project is to construct and operate an 500MW of renewable energy generation within the NEM which will be supported by a 240MW (approx.) BESS, assessment and approval under the HRE Act, including the preparation of an EIR is required.

The Environmental Impact Assessment Criteria Guideline talks to the adoption of a risk-based approach, wherein the level of detail of the assessment should be commensurate to the potential impacts and the management of anticipated impacts should be prioritised.

The level of assessment for this project reflects the low risk of significant environmental impacts from the proposed activities that has been identified.

7.2 Scoping - Assessment of environmental elements

This section provides a description of the environment through the lens of the different elements of the environment as specified as a minimum to address in the Environmental Impact Assessment Criteria Guideline. Using publicly available data and relevant technical investigations prepared for the Cleve Wind Farm, each element was assessed to determine a baseline of current conditions and assess whether or not it would be reasonably expected to be affected by the proposed activities.

For each environmental element that was found to be reasonably expected to be affected; all potential environmental receptors are identified, and relevant legislation or recognised standards are identified (see Section 7.3.1)

Based on this preliminary investigation, potential impact events are identified for further assessment in Section 7.3.

7.2.1 Land Use

The Project, being a wind farm and battery energy storage facility, is captured within the definition of a ‘renewable energy facility’ as outlined in the Land Use Definitions Table in Part 7 of the South Australian Planning and Design Code (the Code).

The Project area is located within the Rural Zone.

The Desired Outcomes of Rural Zone include:

> *DO 1 A zone supporting the economic prosperity of South Australia primarily through the production, processing, storage and distribution of primary produce, forestry and the generation of energy from renewable sources.*

A renewable energy facility is a desired form of development within the Rural Zone.

Relevant Zone and General policies within the Code seek that renewable energy facilities minimise:

- significant fragmentation or displacement of existing primary production
- hazard, are environmentally and culturally sensitive and manage adverse visual impacts

Further, Performance Outcome 8.1 of the Infrastructure and Renewable Energy Facilities provisions recommend:

- a setback of at least 2,000 metres (plus an additional 10 metre setback per additional metre over 150 metres of the overall turbine height) from the base of the turbine to any of the following zones:
  - Rural Settlement Zone
  - Township Zone
  - Rural Living Zone
  - Rural Neighbourhood Zone

- a setback of at least 1,500 metres from the turbine's base to non-associated (non-stakeholder) dwellings.

The project satisfies the above setback criteria.

The Project area is extensive and is principally used for broadacre farming purposes. The design and siting of the Project will assist to minimise its impact to existing primary production activities as the overall development comprises a relatively limited footprint with wind turbines to be sited on elevated land in generally less arable areas of the Project area.

The design of the proposed development will be required to demonstrate that the proposed facility will minimise any adverse environmental or interface impacts with surrounding land uses, particularly in relation to ecology, heritage, noise, shadow flicker and visual impacts. Appropriate technical investigations have been undertaken to assess these matters and to inform the design. This is further discussed in the following sections.

Summary

As the wind farm is an envisaged land use within the Rural Zone and will have minimal impact on the ongoing primary production activities, this element of the environment is **not reasonably expected to be impacted** by the proposed activities.

7.2.2 Climate

The region has a hot Mediterranean climate with very warm, dry summers and mild, somewhat wetter winters, which lends itself to the mainly agricultural land uses within the project locality.

The Cleve Weather Station (Station Number 18014) is located approximately 5 kilometres from the Project area's south-eastern boundary.

The weather station has recorded rainfall and temperatures since 1939 (BOM, 2025). Records show that the area has a mean average annual rainfall of 402.2mm. Further, the weather station has recorded a mean maximum temperature of 22.1 degrees over the year, with January recording the mean highest maximum temperatures. The weather station has also recorded a daily mean minimum of 11.4 degrees, with July recording the mean lowest monthly temperatures.

Meteorological data recorded in the township of Cleve is shown in Table 5 below.

Table 5 Cleve Meteorological Data

	J	F	M	A	M	J	J	A	S	O	N	D	Annual
Mean Daily Max	28.3	27.7	25.9	22.8	19.0	16.0	15.4	16.7	19.6	22.5	24.9	26.8	22.1
Mean Daily Min	15.8	16.1	14.8	12.4	10.0	8.0	7.2	7.4	8.7	10.3	12.3	14.1	11.4
Mean Rainfall (mm)	16.9	22.1	21.5	28.6	40.0	47.3	45.4	48.0	41.5	35.9	28.0	26.4	402.2

The project proposes to establish a wind farm and battery storage facility that will provide an opportunity generate and firm additional renewable energy in the NEM. By providing a method of renewable generation and storage, the need for baseline energy production through the burning of fossil fuels is avoided.

Summary

The project is assessed as having a **positive** impact on the climate. However, this impact will be global in nature and not necessarily reflected in the local climate of the Project area.

7.2.3 Public health and safety

The site is located in a rural area on private land and public access is restricted through fencing.

The proposed infrastructure will be monitored by the Wind Farm operators as well as through passive surveillance by land owners within the Project area.

The nearest recreational areas are Rudall Conservation Park located immediately abutting the southwestern boundary of the Project area . The township of Cleve and Yelduknie Conservation Park both sit approximately 5 kilometres to the project areas southeastern boundary. This separation limits unintentional interaction with site infrastructure.

The facility does not propose to have any direct emissions to air or water that have the potential to spread beyond the boundary of the site.

Summary

No potential environmental impact events have been identified. No potential receptor has been identified.

This element of the environment **is not reasonably expected to be impacted** by the proposed activities.

7.2.4 European Heritage

There are no Commonwealth, State or Local Heritage places identified within the Project area or in close proximity to the Project area.

Summary

This element of the environment **does not have the potential to be impacted** by the proposed activities.

7.2.5 Indigenous Heritage

A desktop analysis has been undertaken by AECOM's heritage advisors to assess indigenous heritage considerations for the Project area. The Project does not impact any existing known Aboriginal cultural heritage sites.

The desktop assessment undertaken by AECOM included developing a predictive model to identify areas of the site that are highly, moderately or lowly likely to contain Aboriginal heritage sites. The model was informed by the Project area's geology, topography and hydrology characteristics and the regional archaeological record.

Areas highly likely to contain tangible Aboriginal heritage sites are assumed to be associated with major watercourses and suitable geology, which exist predominantly in the east of the Project area. The predictive model identified the Project layout is principally located outside areas which have been identified as having a high and moderate potential of containing Aboriginal heritage sites.

It was determined by this assessment that there is potential for intangible Aboriginal cultural heritage values to exist within the Project area.

A search of the National Native Title Register on 16 November 2023 identified that the Barngarla Native Title Claim (Tribunal ID: SCD2016/001) is a determined native title claim that covers the entire Project area. The native title determination found that native title exists in parts of the determination area, including a small area adjacent the western portion of the Project area (non-exclusive) (Figure 4). Native title does not exist elsewhere in the Project area.

Two registered Indigenous Land Use Agreements (ILUA) cover parts of the Project area in the south (Figure 4):

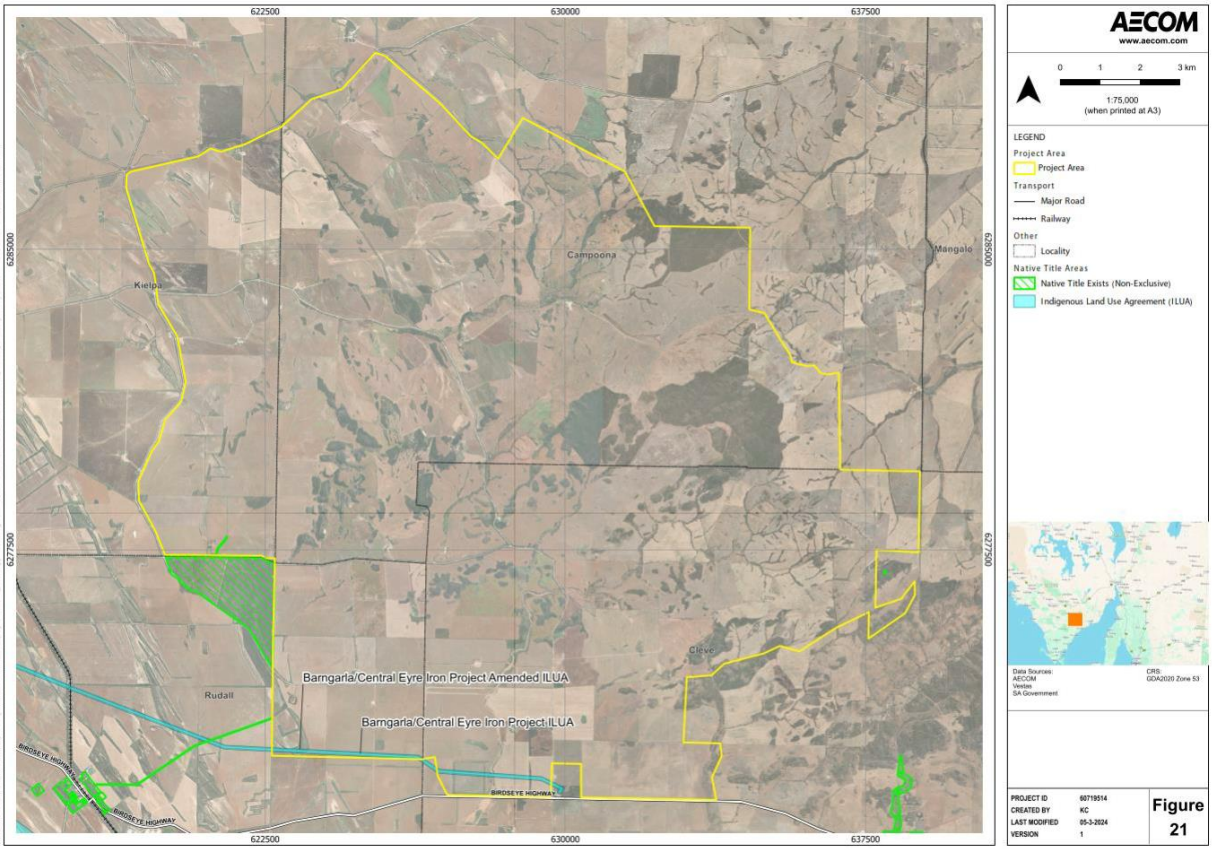
- Barngarla/Central Eyre Iron Project Amended ILUA (tribunal file no. SI2022/001; registered 26 August 2022) a narrow easement from Syvestsen Road west to Pedersen Road).
- The original Barngarla/Central Eyre Iron Project ILUA (tribunal file no. SI2016/002; registered 1 December 2016) follows the same alignment in the project area as the amended version.

The current Project layout does not impact upon land that is subject to Native title and the two ILUAs.

Vestas has initiated consultation with the Barngarla Determination Aboriginal Corporation (BDAC) and intends to continue to engage with BDAC throughout all stages of the Project in relation to Native title and heritage matters.

In addition to further site assessment and consultation with the Barngarla Traditional Owners, appropriate management actions, in accordance with legislative requirements, will be adopted throughout the preliminary site investigations and construction stages of the Project with respect to investigating and responding to any Aboriginal heritage related discoveries.

Figure 4 Native Title and ILUA Areas



Summary

Damage or disturbance of unregistered Aboriginal heritage sites, objects and/or other places has been identified as a potential environmental impact event during the construction stage. The relevant receptor has been identified as Aboriginal heritage and communities.

This element of the environment **has the potential to be impacted** by the proposed activities.

7.2.6 Soil and Contamination

A contamination risk assessment has been undertaken for the site. This investigation involved a desktop review of site characteristics, environmental setting, and historical and current land uses. A preliminary Conceptual Site Model was then developed based on this assessment.

The site's land uses include dryland agriculture and cropping, grazing on modified pastures and conservation areas. The surrounding land use is primarily agricultural, with adjacent conservation parks such as Rudall and Yeldulknie and the Yadnarie Substation to the south.

The site has been used historically for cropping, grazing, and conservation. Reviews of SA EPA records did not identify any known existing site contamination issues.

Potentially Contaminating Activities (PCAs) were identified on and off-site, and included:

- On-site

- Agricultural activities - Use of fertilisers, herbicides, and pesticides.
- General site works - Storage and use of vehicles and generators.
- General site use - Application of herbicides along roads to control weeds.

- Off-site
  - Utilities infrastructure - Electrical equipment and associated chemicals.

The likelihood of significant contamination impacts to identified receptors is assessed as low, given the localised nature of the identified PCAs and their limited intersection with planned project works as the installation of the majority of the infrastructure will be on ridges or away from existing agricultural infrastructure.

The operational phase does not include any solid, liquid or gaseous outputs that could pollute the soil.

Unplanned events such as spills that occur from failure of equipment are considered to be at a low risk of occurring, however, have the potential to impact soil.

Summary

The Project brings the potential, while deemed a low risk, of introducing new contaminants into the soil of the region.

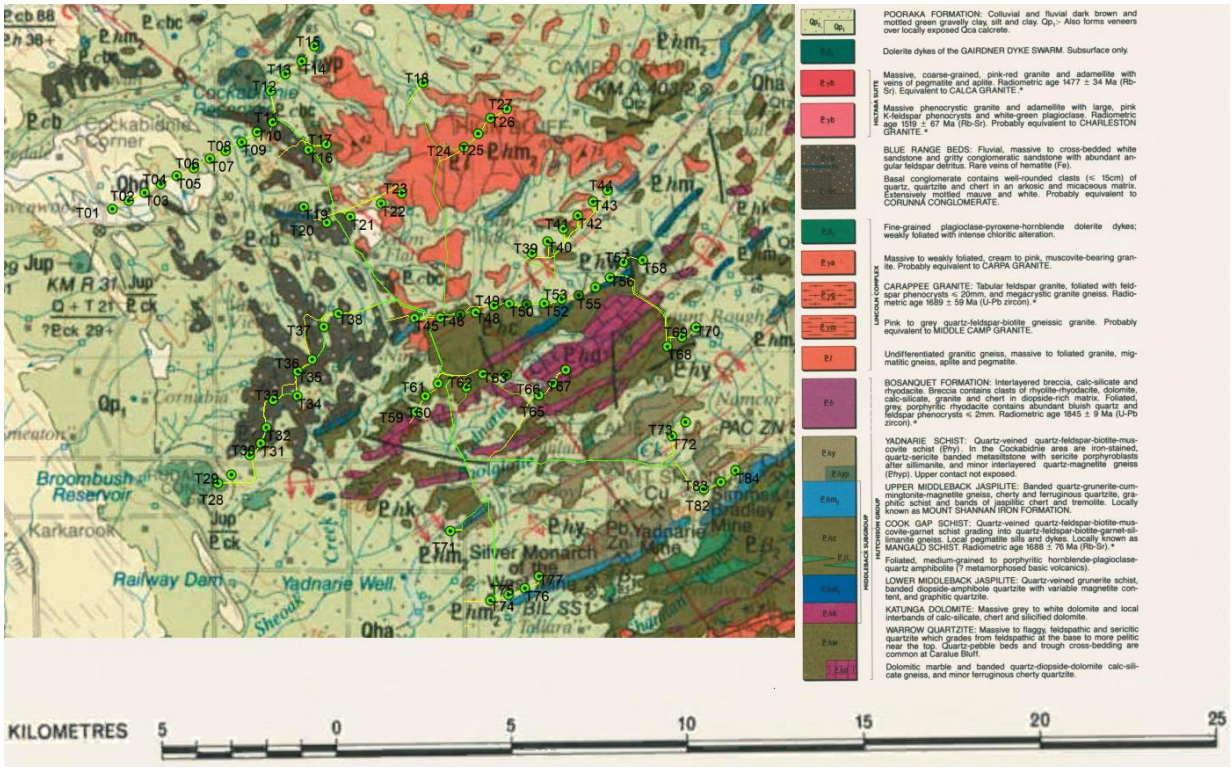
This element of the environment has the **potential to be impacted** by the proposed activities.

7.2.7 Geology

A desktop review of the publicly available geological information was undertaken for the proposed windfarm layout.

With reference to the Kimba Sheet of the 1:250,000 Geology Map Series, the site is underlain by Precambrian rocks within the Gawler Craton geological region. The rock sequence is visible in present day topography, with a difference of approximately 250 metres of the highest and lowest points across the project area. The valleys are blanketed with colluvial and fluvial Quaternary aged sediments, underlain by bedrock. The preliminary site layout has been overlain on the Kimba Sheet to show the expected geologies encountered.

Figure 5 excerpt of the Kimba Sheet of the 1:250,000 Geology Map Series



Publicly available drill holes on SARIG indicate shallow soils are encountered across the project area. However, no engineering data was available, and it is unknown whether the encountered bedrock contains a deeply weathered profile. Turbines T01 to T09 extend south-west towards Holocene aged aeolian sand dunes. Calcrete is noted on the geology map and is encountered extensively across the Eyre Peninsula.

Based on the desktop information gathered, expected ground conditions should be suitable for the proposed wind farm. As the design process progresses, geotechnical investigations will be undertaken to determine the preferred siting locations for the turbines.

Summary

This element of the environment **does not have the potential to be impacted** by the proposed activities.

7.2.8 Ecology

Ecological assessments have been undertaken by Ecosphere Ecological Solutions (EES), to assess ecological values within the Project area and surrounds, including a desktop assessment and series of field investigations. The ecology assessment process is ongoing, with further further review of ecological assessments being conducted for the project as the design progress.

The desktop assessment was undertaken using the DCCEEW Protected Matters Search Tool (PMST) and other relevant databases such as the Biological Databases of South Australia (BDBSA) to identify threatened fauna, flora, communities and habitats within 5 kilometres of the Project area (the Study area). The desktop assessment found the following values with potential to occur within the Study area:

- One EPBC Act listed Threatened Ecological Community (TEC)
- 26 EPBC Act listed threatened species
- 11 EPBC Act listed migratory species
- 16 NPW Act listed threatened species.

For each of the values identified above, an initial likelihood of occurrence assessment was undertaken to determine the likelihood of each value occurring in the Project area, to help inform areas for focus during the field investigations.

One Heritage Agreement (HA1152) is present within the Project area. The agreement, established and managed under the *Native Vegetation Act 1991* (NV Act), is contained within the northeastern portion of the Project area, which the Project will avoid.

To support the desktop assessment, three field investigations were undertaken by ESS in order to refine the likelihood of occurrence assessment and identify any other biodiversity values present at the site, such as native vegetation. These surveys are summarised in Table 6 below.

Table 6 Summary of supporting field investigations

Dates	Investigations undertaken	Associated report
18/03/2024 – 22/03/2024	Baseline ecological assessment of the Project area, focussed on the provisional design including turbine locations, cable and access routes (on foot and by vehicle), including: • Broadscale habitat assessment • Vegetation surveys in accordance with the Bushland Assessment Methodology (BAM) (Native Vegetation Council, 2020) • General avian surveys (bird point counts over an area of 1 ha for a period of 20 minutes) to establish baseline of bird species present in action area, across as many habitat types as possible • Ground truthing of threatened species or species habitat where possible, including searches in areas of	*Campoona Renewable Energy Hub Stage 1 – Ecological Assessment – 13 February 2024* (EES)

Dates	Investigations undertaken	Associated report
	suitable habitat or where previous records had been made (on foot) • Opportunistic flora, fauna, weed and pest records.	
1/10/2024 – 3/10/2024	Targeted ecological assessment of the Project area, focussed on the refined provisional design including turbine locations, cable and access routes (on foot and by vehicle), including: • Targeted surveys for seasonal threatened flora species such as orchids and spring flowering species • Vegetation surveys (BAM) in patches of vegetation interacting with the refined project design • Targeted searches for threatened species in areas of high value vegetation identified in the first survey as well as vegetation not assessed in the previous survey • General avian surveys (bird point counts over an area of 1 ha for a period of 20 minutes) across a variety of habitats, with sites selected based on habitat value, proximity to the turbine locations, and historical records • Opportunistic flora, fauna, weed and pest records.	*Baseline and Targeted Ecological Assessment of the Cleve Wind Farm Project Area -19 December 2024* (EES)
31/03/2025 – 8/04/2025	Bird and Bat Utilisation Assessment, focussed on a range of vegetation associations and intact vegetation within the provisional design area including: • Avian surveys using ramble method across eight sites (four 60-minute surveys per day for nine days), with a focus on species of conservation significance identified in desktop investigations • Opportunistic sightings within roadside vegetation were recorded whilst travelling between sites. • Targeted surveys for threatened bats - Two AnaBat Chorus sound recorders were utilised for 12 hours per night: ▪ One unit installed on Meterological Mast (MetMast) at a height of 120 m recording for 18 nights ▪ One installed on tree trunk in vegetated area at a height of 4.5 m recording for 19 nights.	*Cleve Wind Farm Bird and Bat Utilisation Survey – 23 May 2025* (EES)

One Declared weed under the *Landscape South Australia Act 2019* (LSA Act), *Marrubium vulgare* (Horehound), was identified during the field surveys. Two Weeds of National Significance (WoNS) were identified during the field surveys, *Asparagus asparagoides* (Bridal Creeper) and *Lycium ferocissimum* (African Boxthorn). None of these species were considered a significant management concern.

The field investigations identified eight broad vegetation associations within the provisional design area:

- *Allocasuarina verticillata* (Drooping Sheoak) +/- *Eucalyptus socialis* (Red Mallee) very low open forest over open grassland and +/- sedges
- *Eucalyptus brachycalyx* (Gilja) very open mallee over native grassland
- *Eucalyptus petiolaris* (Eyre Peninsula Blue Gum) / *Eucalyptus odorata* (Peppermint Box) low woodland
- Eucalyptus spp. mixed mallee over *Bursaria Spinosa* (Christmas Bush) / *Melaleuca uncinata* (Broom Bush) very open shrubland and open grassland
- *Eucalyptus* spp. mixed mallee over Melaleuca uncinata (Broom Bush) open shrubland

- *Eucalyptus* spp. mixed mallee over *Melaleuca uncinata* (Broom Bush) open shrubland +/- native grasses and sedges
- *Melaleuca uncinata* (Broom Bush) shrubland over +/- very open grassland and very open sedgeland
- *Melaleuca uncinata* (Broom Bush) tall shrubland with emergent *Eucalyptus phenax* (White Mallee) / *Eucalyptus oleosa* (Red Mallee) / *Eucalyptus leptophylla* (Narrow-leaved Red Mallee)

Some patches of the *Eucalyptus petiolaris* (Eyre Peninsula Blue Gum) / *Eucalyptus odorata* (Peppermint Box) low woodland vegetation association meet the criteria for the EPBC Act listed Endangered TEC Eyre Peninsula Blue Gum (*Eucalyptus petiolaris*) Woodland. A Significant Impact Assessment will be undertaken in accordance with the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (DEWHA, 2013), to determine if the Project will or will not have a significant impact to this community.

The refined likelihood of occurrence assessment determined that the majority of flora and fauna species identified in the desktop assessment are considered unlikely to occur within the provisional design area due to a lack of suitable habitat within the site, which consists predominantly of cleared agricultural land. While numerous Commonwealth and State listed threatened species have records within and surrounding the Project area, the records are concentrated around conservation reserves within the locality, which the Project will avoid.

Three NPW Act listed threatened flora species were recorded during the field investigations: *Daviesia pectinata* (Zig-Zag Bitter-pea), *Eucalyptus cretata* (Darke Peak Mallee) and *Sarcozona bicarinata* (Ridged Noon-flower). Darke Peak Mallee was recorded throughout the Project area within road reserves and remnant areas. *Sarcozona bicarinata* had no historical records within the Study area and was not identified by the desktop assessment, however flowering individuals were identified in the Project area during the field surveys. One NPW Act listed threatened fauna species was recorded during field investigations, Purple-gaped Honeyeater (*Lichenostomus cratitius occidentalis*).

Diamond Firetail *(Stagonopleura guttata*), listed as Vulnerable under the EPBC Act, was recorded twice during the October survey in the Project area, with suitable habitat observed across the wider Project area.

No EPBC or NPW Act listed bat species were recorded during site investigations.

Significant Impact Assessments will be undertaken in accordance with the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (DEWHA, 2013), to determine if the Project will or will not have a significant impact to any EPBC listed species identified as possible, likely or known to occur.

The clearance related to the Project will be limited to the areas required for infrastructure and access (turbine sites, cable routes, access tracks and associated infrastructure), and has been designed to align with areas that have been previously cleared, and to avoid remnant native vegetation.

The study area is made up of approximately 70% farmland and 30% remnant vegetation, which is largely present within patches that are contained within protected reserves and areas with heritage agreements. This remnant vegetation is largely Mallee vegetation; however, some areas of the EPBC Act listed TEC is present. These areas will be avoided where possible through micro-siting of infrastructure. Where it is not possible to avoid these areas, alternative methods such as directional drilling or aerial T lines will be investigated to minimise impacts.

Several conservation significant flora and fauna species have been recorded within and surrounding the Project area. However, historical records mostly associated with conservation reserves and larger intact patches of remnant vegetation in areas not previously cleared for agriculture. This demonstrates the importance of ensuring Project design avoids areas of native vegetation.

Potential direct impacts from the Project include native vegetation clearance, fauna habitat fragmentation, disturbance, injury and mortality to fauna. If native vegetation is to be removed by the Project, a Clearance Application under the NV Act would be required. This would involve the preparation of a Data Report including Significant Environmental Benefit (SEB) calculations by a Native Vegetation Council Accredited Consultant.

With the majority of the Project area under cereal cropping land use, the potential to utilise these areas for burial of transmission cables means that levels of disturbance during construction of this element is low. Access tracks are present throughout the Project area as part of standard farming practices and additional access routes required for turbine sites have been sited to minimise disturbance.

Turbines as part of the operational phase will aim to avoid areas of intact vegetation Threatened fauna species known to utilise the area are typically low flying and ground dwelling species not known to generally fly at heights in the blade sweep area.

Potential impacts to higher flying species with soaring habits such as raptors (Eagles, Falcons, Kites etc.) are a common risk associated with operations around windfarms, however these groups have been shown to be adaptable to these types of infrastructure in similar environments elsewhere.

Summary

Potential direct impacts from the Project include native vegetation clearance, fauna habitat fragmentation, disturbance, injury and mortality to fauna. It is anticipated that most impacts from the Project can be avoided, minimised or mitigated through the implementation of a variety of measures during the detailed design phase.

This element of the environment has the **potential to be impacted** by the proposed activities.

7.2.9 Groundwater

A review of active and historical bores within a 11.5km radius of the centre of the project area (-33.610547,136.369369) through the WaterConnect platform (Government of South Australia 2025) showed that there are 1,901 listed wells within the search area. The groundwater depth is variable, and those records with measurement details show depths ranging between 1 metre and 441 metres below ground level.

Groundwater salinity is high, with recorded total dissolved solids within the search area ranging between 1,514 mg/L and 26,418 mg/L (12 recorded measurements). Of these records, all levels are listed above 1,200 mg/L, which is regarded as unacceptable drinking water for human consumption as per the SA Health Guidelines. Under the *Environment Protection (Water Quality) Policy 2015*, the following environmental values apply in relation to groundwater:

- Primary industries (irrigation and general water uses, livestock drinking water, and aquaculture and human consumption of aquatic foods) for groundwater with total dissolved solids between 1,200 – 3,000 mg/L
- Primary industries (livestock drinking water, and aquaculture and human consumption of aquatic foods) for groundwater with total dissolved solids between 3,000 mg/L – 13, 000 mg/L.

This suggests that groundwater within the study area has limited potential for use, but may be used for agricultural purposes in some portions of the project area.

The proposed activities may require dewatering, which would involve extracting groundwater to facilitate the works during the construction phase. Unplanned events such as spills that occur from failure of equipment are considered to be a low risk of occurring. The project does not have any solid, liquid or gaseous outputs that could affect the quality of groundwater.

Summary

Due to the continued use of the surrounding land for agricultural purposes, the proposed activities have the **potential to impact** this element of the environment. Environmental values of the groundwater are limited to primary industries. Due to the limited nature of the proposed works and operational infrastructure, it is anticipated that most impacts from the Project can be avoided, minimised or mitigated through the implementation of management measures in the construction phase.

7.2.10 Surface water

A surface water assessment was undertaken (included in Appendix E). It was identified that numerous watercourses exist throughout the project area due to the undulating landscape, with land generally falling from east to west.

The undulating terrain and defined watercourses are predominantly confined to the upstream (eastern) portions of the Project. As these watercourses fall towards the west, they gradually become less defined, and the surrounding land becomes flatter which is likely to spread flows across the much wider and flatter topography.

The longitudinal grade of these existing watercourses is relatively constant and ranges between 1-2% through the Project and past Project extents. The surrounding land falling towards these watercourses can range anywhere from 8-10% within steeper regions down to near nothing (flat) across the downstream (south-west) regions.

The Project area is located primarily within the Driver River Catchment (96%), with a small portion of the northeastern extent being contained within the Salt Creek Catchment (4%).

Within the Driver River Catchment there are a range of subcatchments, these are:

- Cockabindnie Creek
- Gum Creek
- Sheoak Creek
- Yadnarie Creek
- Poolalie Creek
- Mangalo Creek

Existing catchments on the southern and eastern sides of the Eyre Peninsula have been extensively developed for agriculture, thereby modifying the hydrology, water quality and ecology of the catchment. Most watercourses and their tributaries are naturally ephemeral, experiencing peak flows during winter and often ceasing to flow by late spring or early summer. There are a significant number of small farm dams that have been constructed along these ephemeral drainage lines to hold water for domestic, agricultural, horticultural and industrial uses.

It is noted that these water sources drain towards the Rudall Conservation Park which is located downstream in the south western corner of the Project Area.

The project, during construction and operation, will require impervious surfaces such as concrete slabs for buildings and formalised roadways to be built within the study area. This development, though minor in the overall percentage of land use within the study area, has the potential to impact watercourses across the project area and wider region. The works have the potential to:

- Obstruct and/or alter existing overland flow paths across the Project area
- Concentrate/ channelise flows which could potentially increase the risk of scouring and erosion
- Alter the quantity and quality of water supply to existing farm dams and downstream watercourses/ waterbodies
- Impact existing flood extents and/or increase the risk of flooding to existing infrastructure or private properties across the broader catchment due to protection measures for the project infrastructure
- Impact the quality of stormwater entering downstream watercourses/ waterbodies adversely by creating an influx of pollutants carried by stormwater runoff across the Project.

Several of these potential interactions with watercourses would constitute a Water Affecting Activity (WAA) under the LSA Act Section 104. Any WAA would require submission of an application for a Water Affecting Activity Permit (WAAP) to the Eyre Peninsula Landscape Board.

Construction-specific activities such as the concrete batching plant, construction yards, and accommodation units will be removed, and the site will be remediated once the wind farm is operational. However, elements such as the roadways and the infrastructure relating to WTG will remain over the life of the project.

Summary

Due to the introduction of impervious surfaces during the construction stage, with some remaining during the operation stage, this element of the environment has the **potential to be impacted** by the proposed activities.

7.2.11 Landscape Character Visual Impact

It is noted within the Landscape Character Visual Impact Assessment (LCVIA) report (included in Appendix F), that the project area and its surroundings are predominately defined as an undulating landscape that is generally comprised of farmsteads with residential dwellings set back some distance from the roads and arranged in a linear east-west fashion. There are patches of densely covered native vegetation within the study area, and there is intermittent landscaping in the form of roadside planting to assist in the delineation of landowners, roads and driveways.

The LCVIA study identified that the landscape within the study area is already impacted by the 275kV transmission towers that connect to the Yadnarie Substation.

An initial review of the proposed turbines and associated infrastructure identified a notional 15 kilometre radius Zone of Theoretical Visual Influence (ZTVI) surrounding The Project (see Figure 6). The LCVIA analysis took place within this ZTVI.

A site visit allowed for the assessment to determine specific locations within the ZTVI, which would have a number of co-located sensitive receptors to undertake the impact analysis; this site visit resulted in the identification of four sensitive receptor localities (SRLs).

These four SRLs were assessed, and photomontages produced which impose the windfarm onto the existing landscape to determine the potential impacts.

Due to the introduction of The Project to the landscape. It is noted that of the four SRL's there is a

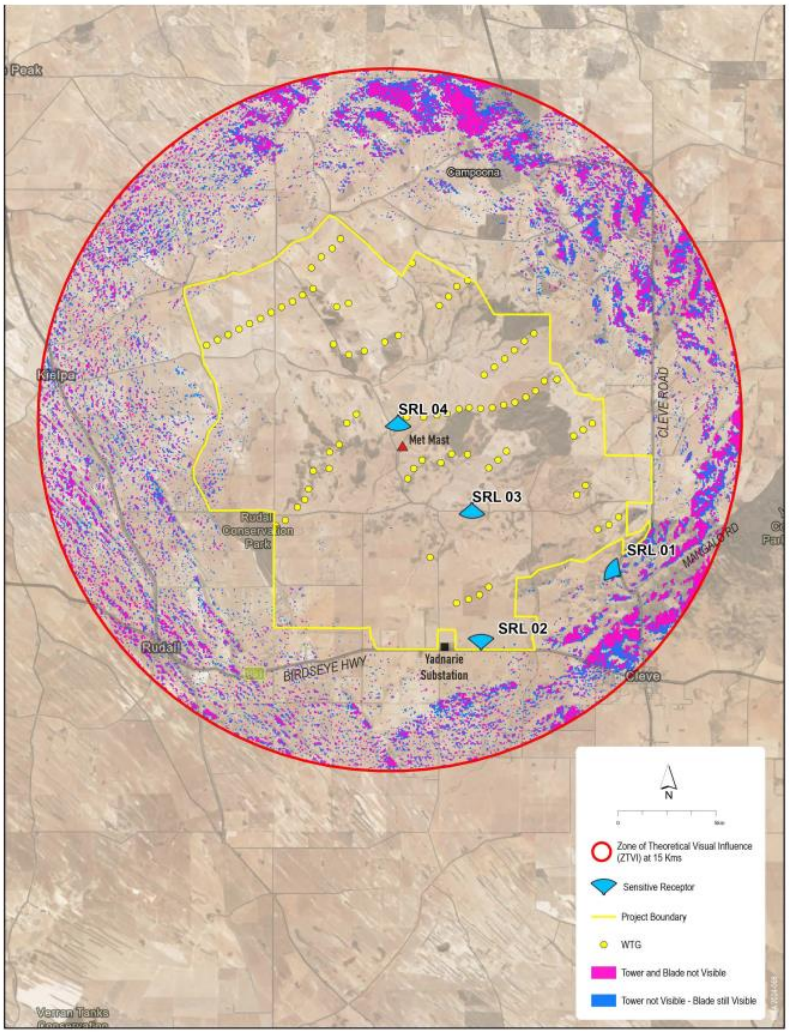
- Slight adverse impact at one Sensitive Receptor Locality (SRL 04);
- Slight adverse impact to moderate adverse impact at three Sensitive Receptor Localities (SRL 01, SRL 02 and SRL 03).

However, outside of these locations it was determined that the contextual landscape within which the Project is located will not be adversely impacted by the turbines and associated infrastructure.

Summary

Due to the nature of the proposed works, and specifically the scale of the proposed WTG, this element of the environment has the **potential to be impacted** by the proposed activities.

Figure 6 Zone of Theoretical Visual Influence



7.2.12 Traffic

A Traffic Impact Assessment was prepared for the Project and the proposed options for oversized vehicle movements to the site (included in Appendix G). Access to the Project area is mainly via surrounding key routes – Birdseye Highway to the south, Cleve Road to the east, Plane Road and Evans Gum Flat Road to the north, and Old Drake Peak Road to the west. It then filters to local rural roads and access tracks, mostly unsealed bisecting the Project area and in some areas, new access tracks would be required within the site boundary to support the Project. The existing local roads within and bisecting the Project area include:

- Dreckow Road
- Syversten Road
- Kielpa-Gum Flat Road
- Kielpa-Plane Road

Due to the regional nature of the locality surrounding the Project area, it is determined that current traffic volumes in the surrounding road network are relatively low.

Impacts upon the traffic and transport network will primarily occur during the construction phase. The Traffic Impact Assessment identified that there will be a proportionally large increase in vehicle movements within a short period of time to support the construction works for the Wind Farm. This increase has the potential to impact the local community adjacent to the proposed site and the through-traffic using the Birdseye Highway.

This increase in road users will come from the movement of infrastructure for the site and the movement of the construction workforce. The usage of specific and gazetted routes can minimise the traffic impacts associated with the additional vehicular movements generated by the construction works. Further assessment of the adopted routes and site access will be required in the OMP.

Summary

The localities rural nature means that an increase of traffic movement during construction will have a notable impact on traffic levels, especially within the project area boundary. Further, potential road works to accommodate oversized vehicle movement may impact upon the flow of traffic during construction works.

This element of the environment has the **potential to be impacted** by the proposed activities.

7.2.13 Aviation

Aviation Projects undertook the Aviation Assessment for Cleve Wind Farm.

The report, included in (included in Appendix H), reviewed the impacts of the placement of up to 80 turbines and their impact on the operation of aerodromes within 30 nautical miles (nm) of the wind farm, as well as assessing any potential impacts of aircraft that operate within the airspace in and around the wind farm.

The report identified both the Cleve and Kimba Aerodromes as operating within 30nm of the project site.

Further, due to the design of the turbines, the proposed works were referred to Airservices Australia for review as the works will be higher than 100 metres above ground level.

The report found that there are no active verified uncertified aerodromes located within 3 nm of the Project site. However, the proposed wind farm may impact the operation of the Cleve and Kimba Aerodromes as both operate within 30nm of the project site.

The proposed wind farm has the potential to infringe upon the Procedures for Air Navigation Services—Aircraft Operations (PANS-OPS) surfaces and lowest safe altitude (LSALTS) surrounding the Cleve and Kimba Aerodromes. While these impacts have been identified as minor for Cleve and Kimba, the respective aerodromes, CASA, and Airservices will need to amend the controls to accommodate the wind farm and continue safe airport operations.

The report advises that obstacle lighting would not be necessary. However, CASA will review the proposed development and provide non-binding recommendations.

Summary

This element of the environment has the **potential to be impacted** by the proposed activities.

7.2.14 Social Infrastructure

The proposed development is not likely to result in any adverse impacts to the existing or wider community of the Eyre Peninsula.

There is no social infrastructure in the Project area that will be impacted or lost as part of the development. Further, existing public road network connections will either remain unaltered or improved.

As previously stated, the proposed development is expected to result in a positive economic benefit to the region, providing employment both during the construction and operational phases of the Project.

Further, Vestas is committed to introducing a community benefit scheme that will operate for the life of the Project and enhance the social and economic outcomes of the wider community.

Summary

The project is assessed as positively impacting the local economy and broader economic and social impacts for electricity grid customers.

7.2.15 Bushfire

The project area is contained within the Hazards (Bushfire—Regional) overlay of the Planning and Design Code. The overlay aims to guide development to respond to mitigate the threat and impact of bushfires on life and property taking into account the increased frequency and intensity of bushfires as a result of climate change and facilities access for emergency service vehicles.

As identified within Section 7.2.2, the region has a hot Mediterranean climate with very warm, dry summers and mild, somewhat wetter winters lending itself to the mainly agricultural land uses within the project locality.

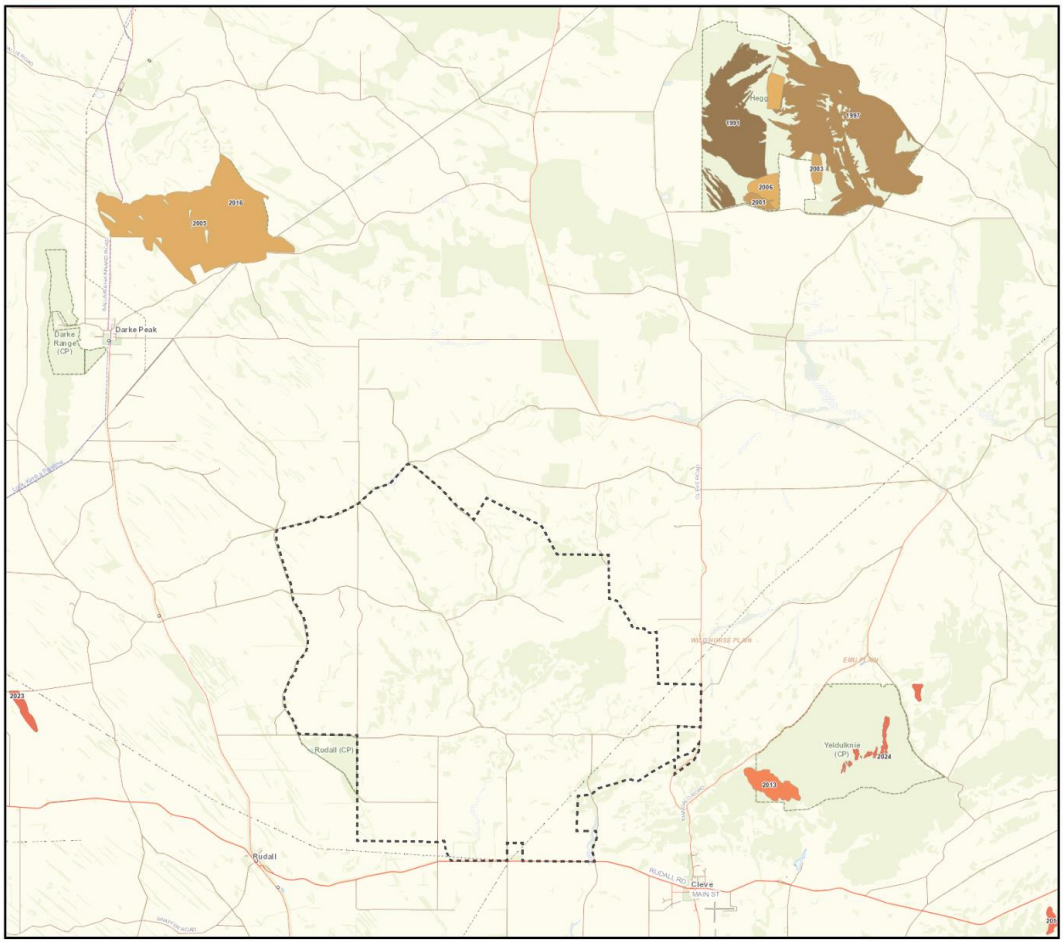
As per the NatureMaps Fire Management layer, and shown in Figure 7 below – the project site itself does not have a recorded bushfire or controlled burn-off registered within it.

In the wider region, it is noted that two controlled burn-offs (2013 and 2024) have taken place in Yeldulknie Conservation Park.

Further, two bushfires occurred in 2023 to the east and west of the site, the bushfire to the east of the site (approx. 9km from project boundary) burned 36 hectares of land, and the bushfire to the west of the site (approx. 10km from project boundary) burned 115 hectares.

Additionally, in 2005/2006 a bushfire approximately 12 kilometres north-west of the site (outside of the township of Darke Peak) burned 3,618 hectares of land and a series of burn offs have been recorded within the Heggaton Conservation Park between 2000 to 2006. Approximately 17 kilometres north-east of the site.

Figure 7 Fire Management



CFS guidelines for Wind Farms state that ‘there is a risk of wind turbines catching alight but evidence in SA indicates that this risk is low’.

In line with the guidelines, the proposed Wind Turbines have been sited on open grassed areas previously cleared for agricultural purposes, with appropriate vehicle access provided.

The CFS guidelines also identify the following mitigation measures for wind farms:

- Emergency procedures for fires within, and near, wind turbines.
- Details of any triggers or circumstances for ceasing the operation of wind turbines or shutting down the facility, such as on Extreme or above days or approach of bushfire/grassfire to the facility.
- Maximum (safe) operational wind speed and temperature conditions and operating procedures to limit fire risk.

In regard to the BESS, recent data has shown that global failure rates of grid-scale BESS facilities is 0.2 failures for each GW of BESS deployment (EPRI 2024). Should they occur, the number of sensitive receptors that have the potential to be impacted are considered to be low.

Further, it is noted that during detailed design appropriate water supplies will be required to be considered and vegetation management implemented within the OMP.

Summary

Due to its regional context, the site has an existing bushfire risk. The Project introduces elements to the environment that, in rare circumstances, could start a fire.

This element of the environment has the **potential to be impacted** by the proposed activities.

7.2.16 Shadow Flicker

DNV undertook a shadow flicker analysis (included in Appendix I) of the proposed turbines and found that nine receptors are predicted to experience some level of shadow flicker above a moderate intensity.

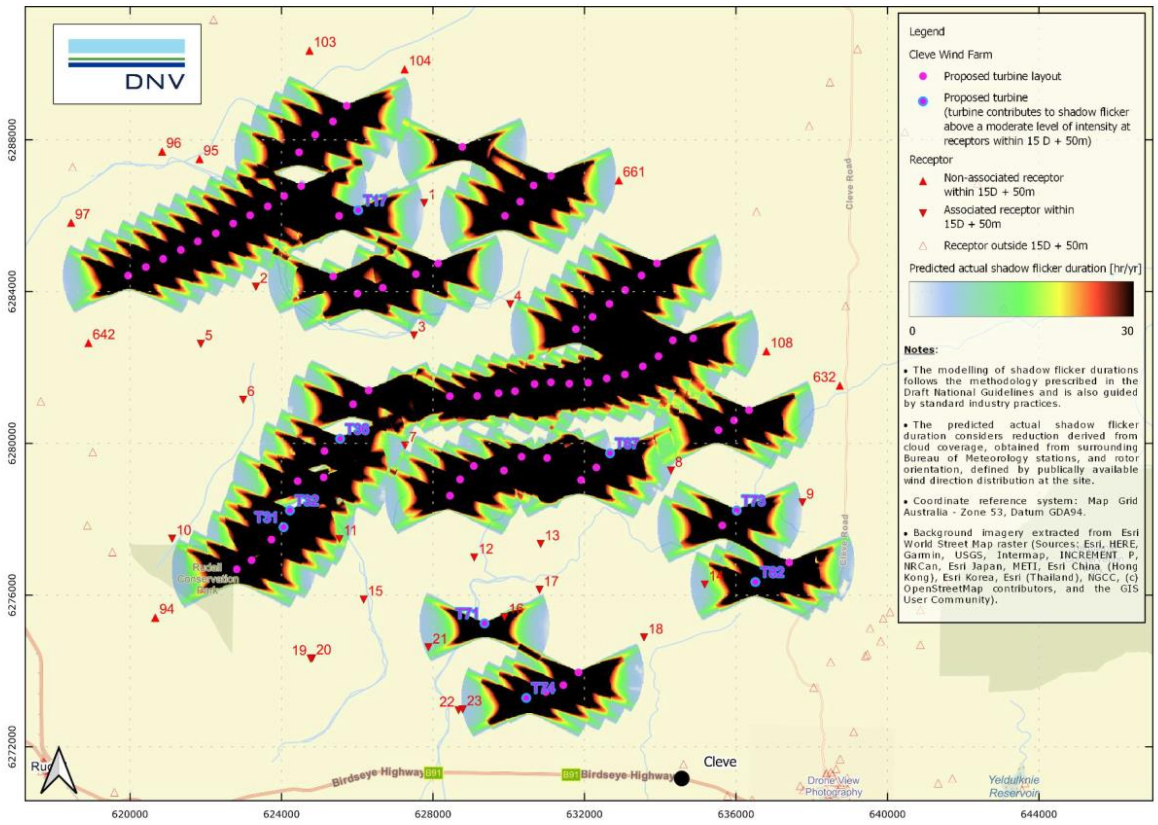
The recommended limit of time for a dwelling to experience shadow flicker is 30 hours per year within 50 metres of the receptor. DNV's analysis also provides a rationalised assessment of these impacts, considering the potential for cloud cover and rotor orientation, which is labelled as predicted actual annual. Figure 8 shows that two receptors, 11 and 16, will still exceed the actual and predicted shadow flicker. Receptor 16 significantly exceeds the recommended theoretical and actual limits.

Ground truthing has been undertaken and it has been identified that Sensitive Receptor 11 is an uninhabited and in disrepair, and Sensitive Receptor 16 is a shed.

Potential mitigations provided within the report are:

- Customer ensures the turbine blades are coated with a non-reflective paint in order to avoid the occurrence of blade glint from the wind farm. `
- Relocation of turbines,
- The use of turbines with a smaller rotor diameter,
- Installation of screening structures or planting of trees to block shadows cast by the turbines; or
- The use of turbine control strategies to shut down turbines when shadow flicker is likely to occur.

Figure 8 Shadow Flicker Analysis



Summary

Seven sensitive receptors were identified at being at risk of experience some level of shadow flicker.

This element of the environment has the **potential to be impacted** by the proposed activities.

7.2.17 Blade Glint

Blade glint involves the regular reflection of the sun off rotating turbine blades. Its occurrence depends on a combination of circumstances arising from the orientation of the nacelle, angle of the blade and the angle of the sun. The reflectiveness of the surface of the blades is also important. Blade glint is not generally a problem for modern wind turbines.

A methodology for the quantification of blade glint impacts as well as a regulatory limit are not provided by the Draft National Guidelines. However, the Draft National Guidelines suggest that the Customer ensures the blades of the wind turbines have a finish with low reflectivity.

Summary

This element of the environment has the **potential to be impacted** by the proposed activities.

7.2.18 Electromagnetic Interference

DNV undertook an Electromagnetic Interference (EMI) investigation (included in Appendix J), which assessed the use of various radio communications within and surrounding the site.

Due to the size and tactile nature of a wind turbine, the blades have the potential to interfere with radio communication while rotating.

There is a range of radio communication taking place within the Project area and its surroundings due to the size of the site, regional location, and the agricultural nature of the land. These types of radio communication included:

- Fixed licenses point-to-point
- Fixed license of point-to-multipoint
- Emergency Services
- Aircraft navigation
- Meteorological radar
- Trigonometrical stations
- Citizen band radio
- Mobile phones
- Wireless internet
- Satellite television and internet
- Radio broadcasting
- Terrestrial satellite services

A desktop assessment was undertaken to determine what stakeholders used the above equipment in the project area. Then, stakeholders were engaged to discuss current and planned usages of the infrastructure in the area and whether any turbines may impact these networks.

During stakeholder consultation, it was identified that there is a:

- High likelihood that the proposed windfarm layout may interfere with the SA Power Networks point-to-multipoint radio that operates through the south of the site
- Potential for the proposed windfarm layout to interfere with the Emmetts and Vision Media point-to-area radio operations
- Potential for the proposed windfarm layout to interfere with FM signals from transmitter within 4km of the Project area

Summary

Due to the nature of wind farm, and the wide-ranging uses of radio communication devices, this element of the environment **has the potential to be impacted** by the proposed activities.

7.2.19 Acoustic

An acoustic assessment was undertaken by Sonus (included in Appendix K), which considered the wind speed at which the highest sound power level is generated by an indicative model of the WTG for Cleve Wind Farm.

The noise model considers the following factors:

- The sound power level of each noise source (the WTGs).
- The location of each noise source (WTG), and the height above ground level (hub height and blade tip height).
- The distance from each noise source to each noise sensitive receiver (dwelling).
- The topography between each noise source and each noise sensitive receiver location.
- Shielding provided by terrain, barriers and other structures.
- The influence of the ground.
- Air absorption.

- Meteorological conditions.

The predictions are based on an indicative make/model of WTG (Vestas V172-7.2 MW) with blades with serrated trailing edges. These WTGs have a rated power output of 7.2 MW and a rotor diameter of 172 metres. A hub height of 150 metres has been assumed, resulting in a tip height of approximately 236 metres.

The assessment used A-weighted decibels (dB(A)) which is an expression of relative loudness as it would be perceived by the human ear.

The predictions consider the highest broadband sound power level generated by the indicative WTG model of 107 dB(A) which occurs at hub height wind speeds of 8m/s and above.

In accordance with the Guidelines, the operational noise from the Wind Farm for non-associated receivers must not exceed the following external noise criteria at non-associated receivers (whichever is the greater):

- A baseline noise level of 35 dB(A) at non-associated receivers in localities which are primarily intended for rural living, or 40 dB(A) at non-associated receivers in other localities, or;
- The background noise level (LA90,10) by more than 5 dB(A).

Further, the following baseline noise criteria (to be achieved outdoors) have been adopted at associated receivers for the purposes of the noise impact assessment:

- An average noise level of 52 dB(A) during the day (7:00am to 10:00pm)
- An average noise level of 45 dB(A) during the night (10:00pm to 7:00am)

The investigation has found that based on the modelling, the above criteria are predicted to be achieved at all noise sensitive locations.

The construction phase will also produce noise and vibrations due to activities such as truck movements (including reverse signals), and excavation. Construction phase impacts are temporary and reversible.

Summary

Local residents being disturbed by noise from construction and operational activities has been identified as a potential environmental impact event during the construction and operational phases. While the impact has been determined as low as per the above investigations, this element of the environment **has the potential to be impacted** by the proposed activities.

7.2.20 Air Quality

Given its rural setting, air quality impacts due to dust are likely to be experienced by local residences as result of agricultural activities and the cleared nature of land throughout the locality.

During construction of the Project, there are expected to be short-term air-quality impacts due to dust.

The proposed activity does not include any outputs during operation that could affect air quality. Unplanned events such as the planned facility being impacted by fire (either originating within the facility itself or from bushfire) are considered to be at a low risk of occurring.

Summary

Local residents being disturbed by dust from construction and transport activities has been identified as a potential environmental impact event during the construction phase. Decreased air quality due to fire that originates at the facility has also been identified as a potential environmental impact during the operation phase.

This element of the environment **has the potential to be impacted** by the proposed activities.

7.3 Summary of Investigations

The following table summarises the results of the scoping study. Each of the elements of the environment that can reasonably be expected to be negatively impacted as a result of the proposed activities will be considered further in this EIR. Elements of the environment that cannot be reasonably expected to be affected by the proposed activities, or that are assessed as having a positive impact, are not considered further.

Table 7 Elements of the environment that can be reasonable expected to be affected by the proposed activities.

Element of the environment	Can the element of the environment be reasonably expected to be impacted by the project? (Y/N)	Is impact assessed and negative or positive?	If there is a negative impact, is this impact assessed as significant based on the sensitivity of the environment? (Y/N)
Land Use	N	N/A	N/A
Climate	N	Positive	N/A
Public Health and Safety	N	N/A	N/A
Ecology	Y	Negative	N
European Heritage	N	N/A	N/A
Indigenous Heritage	Y	Negative	N
Geology	N	N/A	N/A
Soil and Contamination	Y	Negative	N
Groundwater	Y	Negative	N
Surface Water	Y	Negative	N
Traffic	Y	Negative	N
Aviation	Y	Negative	N
EMI	Y	Negative	N
Shadow Flicker	Y	Negative	N
Blade Glint	Y	Negative	N
LCVI	Y	Negative	N

Element of the environment	Can the element of the environment be reasonably expected to be impacted by the project? (Y/N)	Is impact assessed and negative or positive?	If there is a negative impact, is this impact assessed as significant based on the sensitivity of the environment? (Y/N)
Acoustic	Y	Negative	N
Social Infrastructure	N	Positive	N/A
Bushfire	Y	Negative	N
Air Quality	Y	Negative	N

7.3.1 Identification of potential receptors and applicable legislation

Section 7.2 identifies the potential receptors and application legislation and standards relating to the elements of the environment expected to be affected.

Table 8 Applicable legislation

Environmental element	Views of affected parties	Applicable legislation	Applicable non-legislated standards	Environmental receptor
Aboriginal Heritage		*Aboriginal Heritage Act 1988* *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)* *Native Title Act 1993 (Commonwealth)*	The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance. Australia Engage Early: Guidance for Proponents on Best Practice Indigenous Engagement for Environmental Assessments under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) Australian Government (Department of the Environment). (2016) Ask First: a guide to respecting Indigenous heritage places and values. Australian Heritage Commission. (2002). Australian Natural Heritage Charter for the conservation of places of natural heritage significance (2nd Ed). The Australian Heritage Commission in association with the Australian Committee for the International Union for the Conservation of Nature (ACIUCN). Commonwealth of Australia. (2002).	Native title holders Local communities
Air Quality		*Environment Protection Act 1993* *Environment Protection (Air Quality) Policy 2016*	N/A	Local residents and other road users
Acoustic		*Environment Protection Act 1993*	Wind Farms Environmental Noise Guidelines (SA Environment Protection Authority, November 2021) ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors - Part 2: General method of calculation A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise May 2013 Environment Protection (Commercial and Industrial Noise) Policy 2023	Local residents

Environmental element	Views of affected parties	Applicable legislation	Applicable non-legislated standards	Environmental receptor
			Indicative noise factor guidelines for the Environment Protection (Commercial and Industrial Noise) Policy 2023 World Health Organisation Guidelines for Community Noise (1999)	
Ecology		*Environment Protection and Biodiversity Conservation Act 1999* *Native Vegetation Act 1991* *National Parks and Wildlife Act 1972* *Landscape South Australia Act 2019.*	Central Eyre Subregional Description (Landscape South Australia, 2021) The Eyre Peninsula Regional Landscape Plan (Eyre Peninsula Landscape Board, 2021-26) Landscape Plan for Eyre Peninsula (2021)	Local residents Local community Fauna and Fauna
Soil and Contamination		*Environment Protection Act 1993* *Environment Protection Regulations 2023*	ANSIS (2024) Australian National Soil Information System Department of Climate Change, Energy, the Environment and Water (2013), National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 Environment Protection Agency (2018) Guidelines for the assessment and remediation of site contamination	Local residents Local community
Aviation		*Civil Aviation Safety Regulations 1998*	Airservices Australia: • Aeronautical Information Package; including AIP Book, Departure and Approach Procedures and En Route Supplement Australia dated 5 September 2024 • Designated Airspace Handbook, effective 13 June 2024 Civil Aviation Safety Authority: • Civil Aviation Safety Regulations 1998 (CASR) • Advisory Circular (AC) 91-10: Operations in the vicinity of non-controlled aerodromes,	Local Residents Local Community Airspace users

Environmental element	Views of affected parties	Applicable legislation	Applicable non-legislated standards	Environmental receptor
			• Advisory Circular 139.E-01: Reporting of Tall Structures • Advisory Circular (AC) 139.E-05:Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome • CASR Part 139 (Aerodromes) Manual of Standards • Manual of Standards Part 173 – Standards Applicable to Instrument Flight Procedure Design Others • Department of Infrastructure and Regional Development, Australian Government, National Airport Safeguarding Framework, Guideline D Managing the Risk to Aviation Safety of Wind Turbine Installations (Wind Farms)/Wind Monitoring Towers • Government of South Australia, PlanSA, Planning and Design Code, Version 2024.17, 12 September 2024 • International Civil Aviation Organization (ICAO) Doc 8168 Procedures for Air Navigation Services—Aircraft Operations (PANS-OPS) • ICAO Standards and Recommended Practices, Annex 14—Aerodromes • OzRunways, aeronautical navigation charts extracts, dated September 2024 • Standards Australia, ISO 31000:2018 Risk management – Guidelines	

7.4 Risk Rating of Potential Impact Events

Using the environmental risk assessment method detailed in Section 6.0, the elements of the environment that could reasonably be expected to be affected by the proposed activities in section 7.3.1 were assigned a risk rating. All potential impact events are further assessed in Section 7.5.

Table 9 Risk Rating of Potential Impact Events

Environmental element	Phase of project	Impact ID	Potential impact event	Source	Pathway	Environmental receptor	Uncertainty and assumptions	Sensitivity to change	Confirmation of source – pathway - receptor	Risk rating
Aboriginal Heritage	Construction	AH1	Damage or disturbance of unregistered Aboriginal heritage sites, objects and/or other places	Earthworks	Soil disturbances	Aboriginal heritage and communities	The site has previously undergone Aboriginal Heritage assessment. There is a high level of understanding of the heritage significance of the site. The design and construction methodology is not known and the level of excavation and depth of excavation is unknown.	Due to the recent investigations at the site and previous land clearing due to the agricultural nature of the site, there is considered to be a low sensitivity to change.	Uncertain – While the source and the pathway is confirmed, the presence of a receptor is unconfirmed	Medium: Unlikely likelihood, Moderate consequence
Air Quality	Construction	AQ1	Dust from construction activities and vehicle movements are a nuisance to local residents and other users	Created by earth moving activities and traffic	Atmosphere	Local residents / users of local roads	The number and type of vehicle movements per day is currently unknown. The extent of construction works is currently unknown Severity of impacts is related to climatic conditions.	Severity of impacts is related to climatic conditions. Depending on construction methodology, number of truck movements can change.	Source, pathway and receptor confirmed	Medium: Possible likelihood, Minor consequence

Environmental element	Phase of project	Impact ID	Potential impact event	Source	Pathway	Environmental receptor	Uncertainty and assumptions	Sensitivity to change	Confirmation of source – pathway - receptor	Risk rating
Bushfire	Operation	B1	Fire originating from the BESS facility/ turbines, or associated infrastructure	Failure of battery units/ turbine or associated infrastructure	Fire spreading through burning of flammable materials	The BESS facility, turbines, neighbouring properties, Native vegetation Agricultural land	Fire originating from WTG, BESS and associated infrastructure are a rare occurrence due to a high level of controls. It is therefore uncertain that this impact will occur.	During the detailed design of the site, there is potential to reduce impacts through implementation of controls.	Uncertain – While the pathway and receptor are confirmed, the source is unconfirmed.	Medium Rare likelihood Major consequence
Soil and Contamination	Construction and Operation	SC1	Potential Contaminating Activities on Site which may include Agricultural activities General site works General site use	Earthworks / general construction activity / existing site uses	Soil disturbances	Internal and external property owners	The design and construction methodology has not yet been determined to determine risk of or controls for potentially contaminating activities.	During the detailed design and construction methodology planning, there is potential to reduce risk of contaminating activities through implementation of controls for construction works.	Uncertain - while the receptor is identified the specific source and pathway are yet to be determined, and will be informed by detailed design.	Medium Possible likelihood Minor consequence
	Operation	SC2	Potential Contaminating Activities from onsite Infrastructure	Ongoing operation of the site	Infrastructure	Internal and external property owners	The project design is not yet finalised and details regarding risk of potentially contaminating activities during operation are not yet known.	Impacts from potential contaminating activities during operation can be mitigated through implementation of controls.	Uncertain - while the receptor is identified the specific source and pathway are yet to be determined, and will be informed by detailed design.	Medium Possible likelihood Minor consequence
Ecology	Construction	E1	Disturbance and fauna habitat fragmentation	Burial of transmission cables, turbine infrastructure and access pathways	Physical disturbance or removal for wind farm operations	Fauna habitat	Fauna habitat present at the site has been mapped. Project infrastructure has been micro-sited to avoid native vegetation clearance which provides the	During the detailed design of the site, there is potential to reduce impacts though implementation of controls (i.e. avoid areas of intact	Uncertain – While the source and pathway are confirmed, ecological surveys are still being	Medium Possible likelihood Minor consequence

Environmental element	Phase of project	Impact ID	Potential impact event	Source	Pathway	Environmental receptor	Uncertainty and assumptions	Sensitivity to change	Confirmation of source – pathway - receptor	Risk rating
							highest value habitat for fauna species whereever possible. Where not possible, alternatives will be sought such as directional drilling to avoid interference with native vegetation.	vegetation/habitats, utilising existing access tracks, mitigate indirect impacts to native vegetation).	undertaken to confirm receptors.	
	Operation	E2	Injury and mortality to fauna	Ongoing operation of the turbines.	Collision with turbines and associated infrastructure	Fauna	Higher-flying species with soaring habits pose collision risk during windfarm operations. State and Commonwealth listed species currently known to occur at the site are low flying and ground dwelling, however bird and bat surveys are still being undertaken.	Severity of potential impacts is related to the fauna assemblage present. Bat and bird surveys are currently being undertaken which will inform the assessment	Uncertain – While the source and pathway are confirmed, ecological surveys are still being undertaken to confirm receptors.	Medium Likely likelihood Minor consequence
	Construction	E3	Loss of biodiversity and/or ecological value.	Clearance	Physical disturbance or removal of native vegetation for wind farm operations	Native Vegetation	Project infrastructure has been sited to avoid native vegetation where applicable. Clearance required for turbine sites, cable routes, access tracks and associated infrastructure will primarily be contained within previously disturbed agricultural land where possible	During the detailed design of the site, there is potential to reduce impacts though implementation of controls (i.e. avoiding areas of intact vegetation and utilising existing access tracks).	Uncertain – While the source and pathway are confirmed, detailed design will inform the level of native vegetation removal required.	High Possible likelihood, Moderate consequence

Environmental element	Phase of project	Impact ID	Potential impact event	Source	Pathway	Environmental receptor	Uncertainty and assumptions	Sensitivity to change	Confirmation of source – pathway - receptor	Risk rating
Traffic	Construction	T1	Increased traffic on local roads	Truck movements delivering components to site / work force movement	Local roads	Users of local roads	The number and type of vehicle movements per day is currently unknown. The route that will be taken to site is also unknown.	Depending on construction methodology, number of truck movements can change.	Source, pathway and receptor confirmed	Low Possible likelihood, Minor consequence
	Construction	T2	Realign or modify roadways to allow for oversized traffic	Oversized vehicle movements delivering components to site	Local / State Roads	Users of Local and State Roads	The location of realignment and modification works are currently unknown. The route that will be taken to site is also unknown.	Depending on construction methodology, number of truck movements, impacts on road users can change.	Uncertain – While the source and the pathway is confirmed, the receptor is unconfirmed	Medium: Possible likelihood, Minor consequence
Acoustic	Construction	AC1	Local residents disturbed by noise due to construction activities	Movement of vehicles including reverse signals; Excavation; Pile driving	Acoustic waves through air	Local residents	The design and construction methodology has not yet been determined and therefore noise modelling for this portion of works has not been undertaken.	During the detailed design of the site, there is potential to reduce impacts through implementation of controls. .	Uncertain – while the pathway and receptor are identified, noise modelling for construction works will be required to determine the source,	Medium: Possible likelihood, Minor consequence
	Operation	AC2	Local residents disturbed by noise on an ongoing basis	WTG, Battery units; electricity transmission infrastructure		Local residents	The current design of the wind farm has been investigated regarding noise modelling, this will require potential updates once detailed design is finalised.	During the detailed design of the site, there is potential to reduce impacts through implementation of controls. There is potential to implement physical controls such as noise walls at the site and potential to	Uncertain - While the source, pathway and receptors have been identified and a preliminary investigations has determined that no notable impact will be experienced by sensitive	High Possible likelihood, Moderate consequence

Environmental element	Phase of project	Impact ID	Potential impact event	Source	Pathway	Environmental receptor	Uncertainty and assumptions	Sensitivity to change	Confirmation of source – pathway - receptor	Risk rating
								implement noise mitigations at the receptor.	receptors, this will require a review once detailed design is finalised	
LCVIA	Construction	LC1	Local residents impacted by the presence of construction equipment, earthworks activities and an overall increase in the number of people and large vehicles at each site and at roadside locations	Construction associated infrastructure	Visual plain	Local residents / users of local roads	While identified within the preliminary design, the final location of construction compounds and WTG's are yet to be finalised	During the detailed design of the site, there is potential to reduce impacts through implementation of controls.	Uncertain - While the receptor and pathway are identified, the final location of the source of visual impact are yet to be finalised	Medium: Possible likelihood, Minor consequence
	Operation	LC2	Visual disturbance of WTG and associated infrastructure	WTG and associated infrastructure		Local residents / users of local roads	The detailed design of the wind farm and associated infrastructure is not yet finalised and therefore affect of visual impacts can not be fully determined		Uncertain - While the receptor and pathway are identified, the final location of the source of visual impact are yet to be finalised	High Possible likelihood, Moderate consequence
Aviation	Construction and Operations	A1	Infringements to the PANS-OPS surfaces and nearby designated air routes through the grid LSALT	WTG and Crane heights	Aviation operations	Air space users	The design and construction methodology has not yet been finalised and therefore realignment of the PANS-Ops and grid LSLAT services have not yet been determined	Potential scope of change required for the PANS-OPS and grid LSALT will be determined once the design is finalised	Uncertain - While the receptor and pathway are identified, the final location of the source are yet to be finalised	Medium: Possible likelihood, Moderate consequence

Environmental element	Phase of project	Impact ID	Potential impact event	Source	Pathway	Environmental receptor	Uncertainty and assumptions	Sensitivity to change	Confirmation of source – pathway - receptor	Risk rating
	Construction and Operations	A2	General Aviation operations including: - Aircraft collision with WTG - Harsh manoeuvring leads to controlled flight into terrain (CFIT) - Effect of the Project on operating crew	WTG		Air space users, local residents	Due to the nature of aviation usage within the area, the assumption is the likelihood of such an event is low	Due to the height at which planes are recommended to fly at there is limited potential of impacts	Uncertain - While the receptor and pathway are identified, the final location of the source are yet to be finalised	Medium: Minor likelihood, Severe consequence
EMI	Operation	EM1	Interruption of operation of electronic communication including: - Interference of Point to Point radio communication - Interference of SAPN fixed to multi point radio communications - Emergency Services broadcasting interference - Wireless Internet interference	WTG and associated infrastructure	Radio waves through air	Radio communication users	The final locations of the turbines will determine the level of impact for sensitive receivers within the project area It is assumed that due to the height of the turbines and the sporadic nature of the land that impacts can be minimised or avoided during the final design	During the detailed design of the site, there is potential to reduce impacts through implementation of controls and the final placement of turbines and associated infrastructure	Uncertain - while pathways and receptors are identified, the final location of the turbine and associated infrastructure will inform the source	Medium: Possible likelihood, Moderate consequence

Environmental element	Phase of project	Impact ID	Potential impact event	Source	Pathway	Environmental receptor	Uncertainty and assumptions	Sensitivity to change	Confirmation of source – pathway - receptor	Risk rating
Groundwater	Construction	G1	Reduced groundwater quality caused by: • Hazardous leaks, spills and littering during construction	Extraction of groundwater during construction works	Groundwater	Environment, groundwater uses (primary industry)	The design and construction methodology has not yet been finalised and the extent of dewatering works / interaction with groundwater required is currently unknown.	The final design will inform potential impacts to groundwater during the construction phase, once the design is finalised there will be opportunities to mitigate potential impacts through the implementation of control measures.	The receptor, pathway and source are known	Low: Possible likelihood, Moderate consequence
Stormwater	Construction	S1	Poor stormwater quality during construction caused by: - construction, Hazardous leaks, spills and littering during construction - sedimentation transfer	Created by construction works	Water courses	Local residents, wider community	While identified within the preliminary design, the final location of construction compounds and WTG's are yet to be finalised which will inform the potential sites for interventions and mitigations	The final design will inform the potential impacts to stormwater during the construction phase, once detailed design is finalised there will be potential opportunities to reduce impacts through the implementation of control measures	The receptor, pathway and source are known	Medium: Possible likelihood, Moderate consequence
	Operation	S2	Exacerbating existing stormwater quality issues in downstream watercourses/ waterbodies by: -Hazardous leaks, spills and littering during operation - sedimentation transfer	Non permeable surfaces			While identified within the preliminary design, the final location of construction compounds and WTG's are yet to be finalised which will inform the potential sites for interventions and mitigations	The final design will inform the potential impacts to stormwater during the operation phase, once detailed design is finalised there will be potential opportunities to reduce impacts through the implementation of controls	The receptor, pathway and source are known	Medium: Possible likelihood, Moderate consequence

Environmental element	Phase of project	Impact ID	Potential impact event	Source	Pathway	Environmental receptor	Uncertainty and assumptions	Sensitivity to change	Confirmation of source – pathway - receptor	Risk rating
Shadow Flicker	Operation	SF1	Shadow flicker of WTG	WTG	Local residents	Local residents	The design has not yet been finalised and therefore appropriate risks and mitigations have not yet been finalised	During the detailed design of the site, there is potential to reduce impacts through implementation of mitigations for sensitive receptors	Uncertain - while the receptor and pathway is identified the location of the source is yet to be determined, and will be informed by detailed design.	Medium: likely likelihood, Minor consequence
Blade Glint	Operation	BG2	Blade Glint	WTG	Local residents	Local residents	Paint treatments have not yet been specified, and will be finalised during detailed desing	The use of matte paint will reduce this risk to a negligible level	Uncertain - while the receptor and pathway is identified the location of the source is yet to be determined, and will be informed by detailed design.	Low: Likely likelihood, Minor consequence
Remediation of site	Decommissi on	D1	Substandard remediation of site	Site infrastructure	Land contained within the project area	Local Residents Wider community			N/A	N/A

7.5 Control and Management Strategies

This section introduces the potential control measures that have been identified for any potential impact identified in section 7.3.1. Control measures identified in this section are based on mitigations that have been committed to as part of project design, standard management procedures and requirements under other legislation.

Table 10 Control measures, environmental objectives and criteria

Impact event ID	Control measures	Proposed environmental objective	Assessment criteria	Leading performance criteria
AH1	Develop Heritage Management Plan Establish unexpected finds protocol Conduct heritage induction and regular training for all personnel **Where damage is unavoidable:** Authorisations under the Aboriginal Heritage Act 1988 are sought Appropriate consultation with Aboriginal parties Employ Risk management approach	No damage, disturbance or interference to sites or objects.	Avoid damage, disturbance or interference to Aboriginal sites or objects as required by the SA *Aboriginal Heritage Act 1988.* Where damage or interference to Aboriginal heritage is unavoidable then application for authorisation in accordance with section 23 of the Aboriginal Heritage Act 1988 will be sought.	Heritage Management Plan is adhered to and effective. Activities confined to existing cleared areas. Training and induction for all personnel to educate on the importance of heritage controls. Procedures, systems and plans in place if heritage values encountered.
AQ1	Establish Traffic Management Plan including controls for the number of truck movements per day Implement dust suppression management measures such as watering of roads and earthworks through CEMP Establish stakeholder complaints management procedure including documentation No unresolved reasonable complaints.	No public nuisance impacts from dust as a result of construction activities.	No public nuisance impacts from dust as a result of construction activities. Procedures, controls, and reporting requirements in relation to air quality to be outlined in the CEMP. A Traffic Management Plan will be established to reduce air quality impacts associated with vehicle movements. Stakeholder complaints related to dust are documented and reasonable steps taken to resolve complaints can be demonstrated.	Traffic management plan developed in collaboration with local government and is adhered to. Dust suppression measured addressed in the CEMP are adhered to. Consultation with local residents on implementation of dust suppression.

Impact event ID	Control measures	Proposed environmental objective	Assessment criteria	Leading performance criteria
B1	Ensure compliance with all relevant standards and requirements including the Fire and Emergency Service Act Conduct regular fire safety audits, document incident reports, and document compliance with regulations Appropriate fire-fighting equipment to be available on site and maintained, including dedicated firewater storage Employ weatherproof design elements to reduce the risk of water ingress and short-circuiting, with consideration of the challenges in extinguishing fires in affected racks Implement fire prevention procedures such as designated smoking areas, operational procedures, firebreaks and regular inspections of vegetation Conduct regular fire safety and emergency response training for all personnel Implement safety, testing, maintenance and inspection procedures for firefighting equipment Obtain any necessary permits such as safe work permits Regularly review and update fire safety and emergency response procedures	No injuries, deaths or adverse risk to public or third party health and safety as a result of fire or smoke from the BESS No adverse impact to native vegetation surrounding the site as a result of fire for the BESS	Ensure compliance with all relevant standards and requirements including the *Fire and Emergency Service Act* Conduct regular fire safety audits, document incident reports, and document compliance with regulations Appropriate fire-fighting equipment to be available on site and maintained, including dedicated firewater storage Employ weatherproof design elements to reduce the risk of water ingress and short-circuiting, with consideration of the challenges in extinguishing fires in affected racks Implement fire prevention procedures such as designated smoking areas, operational procedures, firebreaks and regular inspections of vegetation Conduct regular fire safety and emergency response training for all personnel Implement safety, testing, maintenance and inspection procedures for firefighting equipment Obtain any necessary permits such as safe work permits Regularly review and update fire safety and emergency response procedures	Comprehensive fire management plans included in the CEMP and OEMP are adhered to and effective. Auditing demonstrates compliance

Impact event ID	Control measures	Proposed environmental objective	Assessment criteria	Leading performance criteria
SC1	Detailed management measures in CEMP.	Reduce the risk of any unnecessary soil disturbance on the site from Agricultural activities, general site works and General site use	Ongoing assessment of soil in the area will be made against existing evidence and the ANSIS (2024) Australian National Soil Information System and the Department of Climate Change, Energy, the Environment and Water (2013), National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013. Mitigations will be aligned with guidance provided by the Environment Protection Agency (2018) Guidelines for the assessment and remediation of site contamination and carried out as per the Environment Protection Act 1993 and the Environment Protection Regulations 2023.	Measures provided within the CEMP and OEMP are adhered to, to minimise any adverse impacts to soil as a result of potentially contaminating activities.
SC2	Detailed management measures in OEMP.	Reduce the risk of any damaging activities on the site caused by infrastructure on the site		
E1	Vegetation clearance limited to permitted clearance areas, existing disturbed areas and access tracks, avoiding intact native vegetation and fauna habitat.	Damage and disturbance to native vegetation and fauna habitat will be limited and avoided	No clearing of vegetation unless approved under the relevant legislation. Native vegetation and/or scattered trees to be retained will be clearly demarcated during the construction phase. The CEMP will detail environmental management strategies to reduce indirect impacts to fauna habitat including noise, dust, lighting and weed management measures.	Activities confined where possible to existing cleared areas. Environmental management measures in the CEMP are adhered to.
E2	Bird and bat monitoring surveys pre and post-construction.	Reduced bird and bat fatalities	Bird and bat monitoring surveys are currently being undertaken at the site, and will be undertaken post-construction to monitor any adverse impacts on bird and bat species as a result of the project. The CEMP and OEMP will detail environmental management measures to reduce impacts to birds and bats, including noise, dust, lighting and weed management measures.	Environmental management measures in the CEMP and OEMP are adhered to.
E3	Detailed management measures in CEMP.	No loss of abundance or diversity of native vegetation unless prior approval under the relevant	No clearing of native vegetation unless approved under the relevant legislation. Native vegetation and/or scattered trees to be retained will be clearly demarcated during the construction phase. The CEMP will detail environmental management strategies to	Activities confined where possible to existing cleared areas. Environmental management measures in the CEMP are adhered to.

Impact event ID	Control measures	Proposed environmental objective	Assessment criteria	Leading performance criteria
		legislation is obtained	reduce indirect impacts to native vegetation. No flora to be removed without appropriate permits. High quality or significant remnant vegetation will not be cleared. Activities are not carried out in parks or reserves established under the *National Parks and Wildlife Act 1972*. All biodiversity data collected by an appropriately qualified professional and reported in accordance with HRE Regulation 32(2)(c).	
T1	Implement management procedures to reduce impacts through a Traffic Management Plan. Establish stakeholder complaints management procedure including documentation No unresolved reasonable complaints.	No notable delays and impacts to road users during construction	A Traffic Management Plan will be established to implement traffic management strategies to reduce impacts associated with construction vehicle movements. Obtains relevant permits and approvals for oversized vehicle movements and require road works from the Department for Infrastructure and Transport and/or District Council of Cleve. Stakeholder complaints related to dust and traffic impacts are documented and reasonable steps taken to resolve complaints can be demonstrated.	Traffic Management Plan developed in collaboration with local government and is adhered to.
T2	Implement road upgrades / traffic movement/management procedures to reduce impact through a Traffic Management Plan	No notable delays and impacts to existing road infrastructure		Traffic movement will be managed by a Traffic Management Plan and appropriate works will be undertaken prior to the projects construction in consultation with local and state government to ensure the safe movement of equipment from the chosen port
AC1	Implement noise management strategies through a CEMP and ongoing consultation with land owners to minimise unplanned disturbance No unresolved reasonable complaints.	No public nuisance impacts from noise as a result of construction activities.	Noises should not exceed levels deemed appropriate within the *Wind Farms Environmental Noise Guidelines (SA Environment Protection Authority, November 2021)* No public nuisance impacts from noise as a result of construction activities.	Construction noise management addressed in the CEMP are adhered to. Site activities planned and undertaken to minimise disturbance to local community.

Impact event ID	Control measures	Proposed environmental objective	Assessment criteria	Leading performance criteria
			Procedures, controls, and reporting requirements in relation to construction noise to be outlined in the CEMP. Compliance with the *SA EPA Environment Protection (Commercial and Industrial Noise) Policy 2023.* Stakeholder complaints related to noise are documented and reasonable steps taken to resolve complaints can be demonstrated.	Infrastructure and equipment operated and maintained in accordance with manufacturer specifications.
AC2	Maintenance of turbines to minimise any changes in Wind Turbine acoustic emissions No unresolved reasonable complaints.	No public nuisance impacts from noise as a result of operation.		Operational noise management addressed in the OEMP and adhered to. Site activities planned and undertaken to minimise disturbance to local community. Infrastructure and equipment operated and maintained in accordance with manufacturer specifications. Noise levels do not exceed indictive noise levels.
LC1	Pre-construction consultation to provide screening measures where possible No unresolved reasonable complaints.	Reduce visual disturbance to existing landscape	Visual impacts will be assessed and managed in regard to the setback requirements outlined within the *Planning and Design Code* and guided by best practice outlined within the site's Landscape, Character and Visual Impact Assessment	The preferred screening measures with land owners are identified and reduce the visual impact from sensitive locations
LC2	Pre-construction consultation to provide screening measures where possible No unresolved reasonable complaints.	Reduce visual disturbance to existing landscape		The preferred screening measures with land owners are identified and reduce the visual impact from sensitive locations
A1	Compliance with PANS-OPS surfaces and LSALT levels to accommodate the WTG and construction phase infrastructure (i.e. cranes)	Minimise aviation operation risks and impacts	Compliance with the *Civil Aviation Safety Regulations 1998*	Compliance with relevant aviation design, operation and safety requirements.
A2	Implement design, operation and notification measures as per the Aviation Impact Assessment	No impact to general aviation activities		Compliance with relevant aviation design, operation and safety requirements.
EM1	Implement design mitigations as per the EMI assessment No unresolved reasonable complaints from associated operators	No adverse interruption of electronic communications	Operation of communication services maintained within and surrounding the project area.	Compliance with relevant EMI operational standards.

Impact event ID	Control measures	Proposed environmental objective	Assessment criteria	Leading performance criteria
G1	Detailed management measures in CEMP.	No pollution of groundwater during construction, and no impact to environmental values (primary industries).	Detailed management measures would be prepared as part of the Construction Environmental Management Plan (CEMP). Management measures would focus on the prevention of pollution of groundwater, and are to meet the requirements for protection of waters as per the *Environment Protection (Water Quality) Policy 2015*, and *Environment Protection Act 1993* and in accordance with the EPA's Environmental management of dewatering during construction activities (June 2021) guideline.	Project specific controls and procedures would be developed and implemented as part of the CEMP to reduce the risk of leaks, spills and litter entering groundwater during construction.
S1	Detailed management measures in CEMP	No pollution of surface water during construction	A Soil and Water Management Plan (SWMP) and Erosion and Sediment Control Plan (ESCP) would be prepared as part of theCEMP. Stormwater Management Plan prepared as part of the OEMP. Compliance with the *Environment Protection (Water Quality) Policy 2015*	Construction stormwater management activities addressed in the CEMP are adhered to.
S2	Detailed management measures in OEMP reasonable complaints.	No pollution or adverse impact to the existing movement and capture of surface water during operations		Stormwater management activities addressed in the OEMP and adhered to.
SF1	Shadow flicker assessment on final design and implementation of any required design and operational recommendations	Minimise shadow flicker impacts on sensitive receivers within the project site	Final design to adopt optimum design and layout to minimise shadow flicker impacts Procedures and controls in relation to management of shadow flicker outlined in the OEMP.	Control measures to minimise shadow flicker via the final design and OEMP are adopted and adhered to
BG1	Turbine blades constructed with a matte to reduce the risk of glint to a negligible level	No blade glint impact to sensitive receivers	Design and maintenance measures included in the OEMP to minimise blade glint impacts	Control measures to minimise blade glint via the final design and OEMP are adopted and adhered to.
R1	Remediation can take place on all infrastructure bar the below ground concrete pads for the turbines	Return site to state it was prior to development	The site remediation will be managed against the current site, and contextually managed in the future when remediation works take place.	The Decommissioning and Rehabilitation plan is addressed and adhered to.

Impact event ID	Control measures	Proposed environmental objective	Assessment criteria	Leading performance criteria
			Due to the 30 years+ operational time for the wind farm, it is noted that the assessment criteria for remediation will be assessed against the relevant standards at that time to ensure best practices are followed	

7.6 Environment Significance Assessment

This section assesses the significance of the residual environmental impact, taking into account the application of mitigation measures identified in section 6.4.

The assessment of significance takes into account the frequency, duration, extent and severity of residual impacts, as well as the sensitivity of the receiving environment and any cumulative impacts. See section 6.4 for a description of the criteria applied.

The assessment demonstrates that the potential impacts of proposed activities can be reduced to as low as reasonably practicable (ALARP) with standard management procedures and legislative requirements. No project specific mitigations have been identified as necessary.

Table 11 Environment Significance Assessment

Impact ID	Avoidance	Frequency	Duration	Extent	Severity	Cumulative Effects	Sensitivity of receiving environment	Outcome
AH1	No – based on uncertainty, the potential exists to encounter heritage values not previously identified during surveys	Rare – exceptional circumstances only	Permanent – damage to heritage values is permanent	Localised – impacts confined to project site	High – permanent loss of Aboriginal heritage	Yes – aboriginal heritage values in the project area have already been disturbed due to the existing agricultural farm uses	Low – Site has previously been surveyed to identify and record Aboriginal heritage values.	Potential impacts managed to ALARP by adoption of control measures through Heritage Management Plan
AQ1	No - due to the nature of construction works and the agricultural nature of the site, dust can not be completely mitigated	Low - impacts will be experienced during construction, with minor impacts occurring on an ad hoc bases during operation	Short term - impacts will only occur on a notable level during construction	Localised - impacts will be primarily experienced within the project area	Low - minor change, similar impacts during agricultural operations	yes - receptors currently experience dust disturbance due to large vehicle usage for agricultural activities	Low - impacts should be generally experienced by landowners within the study area which has a low population density	Potential impacts managed to ALARP by adoption of a traffic management plan and dust suppression measures detailed in the CEMP.
B1	No – based on uncertainty, the potential for their to be a fire on site is possible	Rare – would require adverse climatic conditions or a critical failure in infrastructure	Short term - damage to the wind farm and properties can be repaired or remediated	Localised or regional - depending on the extent of the fire it could be contained within a small area or impact the larger region	High - potential risk to life, vegetation, us of land in region for agriculture	No - due to the addition of the wind farm infrastructure the site does not experience this risk	High - land is used for agriculture purposes with associated dwellings	Potential impacts managed to ALARP by adoption of fire management plans to be detailed in the CEMP and OEMP.

SC1	No - based on the existing nature of the site contamination can not be avoided completely	Constant - ongoing use of the land for farming and associated uses is assumed to continue to occur for the life of the project	Long term - the current land uses are expected to continue after the life span of the project. However, remediation can take place if the land uses change.	Regional - due to the existing topography and seasonal creeks on the site, soil contamination can spread beyond the boundary of the project site	Low - there are existing works that already have the potential to impact the soil	Yes - existing farming uses already impact the soil quality	High - soil contamination can spread through water courses and impact the wider region	Potential impacts managed to ALARP by detailed management measures in CEMP.
SC2	No - based on the proposed infrastructure on site the risk can not be minimised	Rare - Potential contamination may occur when infrastructure fails	Long term - depending on the contaminant there can be long term impacts, however they can be remediated	Regional - due to the existing topography and seasonal creeks on the site, soil contamination can spread beyond the boundary of the project site	Low - there are existing works that already have the potential to impact the soil	no - the infrastructure on site currently is predominately aligned with agricultural works, and the proposed works will introduce new types of infrastructure	High - soil contamination can spread through water courses and impact the wider region	Potential impacts managed to ALARP by detailed management measures in OEMP.
E1	No - the project will require fauna habitat clearance to allow for turbine access and infrastructure works	Constant - the clearance will occur during construction works and the sites will remain cleared for the life of the project	Permanent – damage to fauna habitats is permanent	Localised - the proposed works have been minimised during the design process	High - the clearance of vegetation will change the usage of the land	no - other patches of vegetation are not impacted	low - design changes have been made to minimise necessary clearance	Potential impacts will be managed to ALARP through application of the mitigation hierarchy to reduce impacts to fauna habitat.
E2	No - the project will involve infrastructure such as turbines which present a risk to fauna	Constant - operation of turbines and use of access tracks will occur for the life of the project.	Permanent - mortality of fauna is permanent	Localised - direct impacts to fauna are localised to the project infrastructure and immediate surrounds	Low - occasional injury or mortality of individuals will not result in a significant change	no- identified receptors are not already impacted by similar activities at the site	low - a low number of Commonwealth or Sate protected fauna species have been identified as known or having potential to occur at the site	Potential impacts managed to ALARP through adoption of mitigation measures to be detailed in the CEMP and OEMP.
E3	No - the project will require native vegetation clearance to allow for turbine access and infrastructure works	Constant - the clearance will occur during construction works and the sites will remain cleared for the life of the project	Permanent – damage to vegetation is permanent	Localised - the proposed works have been minimised during the design process	High - the clearance of vegetation will change the usage of the land	no - other patches of vegetation are not impacted	low - design changes have been made to minimise necessary clearance	Potential impacts will be managed to ALARP through application of the mitigation hierarchy to reduce impacts to native vegetation.

T1	No - appropriate management can reduce any adverse impacts on current road users	Low - notable increases of traffic will only be experienced during construction	Short term - notable increases of traffic will only be experienced during construction	regional - increases will be experienced within the subject site, as well as in the township of Cleve and the wider region	High - the increase in traffic movement will be comparably high compared to current levels	no - at this time there are no notable changes in traffic loads on the site	low - the impacts will primarily be experienced by land owners within the project area, with some additional minor impacts being experienced within the wider area	Potential impacts will be managed to ALARP through the implementation of management procedures to reduce impacts through a Traffic Management Plan
T2	No - the works, if deemed necessary, will impact vehicle movement during construction	Low - work will take place over a short period	Short term - impacts will only be experienced during the period that the upgrade works are being completed	regional - works may be needed outside the extent of the study area	low - roads will still operate during construction of upgrades	no - roadworks during upgrade works will impact how the roads currently operate	low - while a relatively large number of vehicles use wider road network within the region, the level of impact will be relatively low	Potential impacts will be managed to ALARP through a Traffic Management Plan
AC1	no - noise can be mitigated but not avoided completely	low - noise will be experienced during the construction phase of works	short term - noise will be experienced during the construction phase of works	localised - noise will be experienced by those contained within the study area	Low - due to mitigations and infrastructure placement during detailed design the impacts should be minimised	no - there are no similar impacts on in the region currently	low - investigations have shown that impacts will be predominately contained within the project boundary	Potential impacts managed to ALARP by the CEMP and ongoing consultation with land owners to minimise unplanned disturbance
AC2	no - noise can be mitigated but not avoided completely	constant - noise will be experienced during the life of the project	long term - the noise will be experienced for the life of the project			no - there are no similar impacts on in the region currently	low - investigations have shown that impacts will be predominately contained within the project boundary	Potential impacts managed to ALARP by the final design and layout of turbine and ongoing maintenance and monitoring

LC1	no - visual impacts from sensitive receivers can be mitigated but not avoided completely	low - visual impacts will be experienced during the construction phase of works	short term - visual impacts will be experienced during the construction phase of works	Regional - visual impacts will be experienced predominately from within the study area but also from outside from certain areas	Low - due to mitigations and infrastructure placement during detailed design the impacts should be minimised	no - there are no similar impacts on in the region currently	low - there are a large number of visual receptors within the wider region, however the impact is low	Potential impacts managed to ALARP by pre-construction consultation to provide screening measures where possible
LC3	no - visual impacts from sensitive receivers can be mitigated but not avoided completely	constant - visual impacts will be experienced during the life of the project	long term - visual impacts will be experienced for the life of the project	Regional - visual impacts will be experienced predominately from within the study area but also from outside from certain areas	Low - due to mitigations and infrastructure placement during detailed design the impacts should be minimised	no - there are no similar impacts on in the region currently	low - there are a large number of visual receptors within the wider region, however the impact is low	Potential impacts managed to ALARP by pre-construction consultation to provide screening measures where possible
A1	yes - changes to PANS-OPS and LSAT will mitigate the potential impact	N/A	N/A	N/A	N/A	N/A	N/A	Potential impacts fully mitigated.
A2	no - though unlikely the risk of aviation impact via the Project can not be completely mitigated	rare - the likelihood of such an incident is very low	Long term - there is potential for an incident to occur during the operation of the wind farm	Localised - risk of impact to aviation users is contained within the project area surrounding the turbines	low - there is a minor degree of change due to the normal operating altitude of aviation in the region	no - there are no other windfarms of this scale in the region	low - a relatively low number of aviation movements happen in the region	Potential impacts managed to ALARP by compliance with relevant aviation design, operation and safety requirements
EM1	no - turbines in motion can impact upon signal	regular - as turbines are moving signal strength could be impacted	Long Term - these impacts will be experienced during the life span of the site	regional - due to the scale of turbines, impacts could be experienced outside the study area	low - it is not expected that signal will be lost at any point, just that there may be changes in its strength	no - there are no similar impacts on the network in the region currently	low - a limited impact of a relatively less dense area	Potential impacts managed to ALARP by design mitigations and compliance with relevant EMI operational standards

G1	no – while managed, the risk of adverse impacts to groundwater quality is possible	rare – potential for impact only during construction	short term – any impacts to groundwater could be remediated	regional - due to connectivity of groundwater systems	low – mitigation measures will limit the impacts where possible	no – identified receptors are not already impacted by similar activities at the site	low – environmental values of the groundwater are limited to primary industries	Potential impacts managed to ALARP by detailed management measures in CEMP.
S1	no - the nature of construction will impact upon stormwater quality	low - the impact on stormwater are identified during the construction period	short term - the impact on stormwater are identified during the construction period	regional - stormwater can impact the water bodies of the region due to the nature of the land	low - mitigations proposed will limit the impacts where possible	yes - due to the agricultural nature of the site stormwater impacts are experienced, however the scale and what pollutants are at risk of being introduced to the site may differ	low - there are a large number of stormwater receptors within the wider region, however the impact is low	Potential impacts managed to ALARP through adoption of mitigation measures to be detailed in the CEMP
S2	no -while managed, the risk of adverse impacts to stormwater quality is possible	rare- impacts would only be experienced during periods of substantial flooding	long term - impacts may be experienced throughout the life span of the project	regional - stormwater can impact the water bodies of the region due to the nature of the land	low - the percentage of non permeable surfaces being introduced by the project are minor in the scheme of the project area	yes - there are already non permeable surfaces in the region	low - there are a large number of stormwater receptors within the wider region, however the impact is low	Potential impacts managed to ALARP by design mitigations and through the adoption of mitigation measures to be detailed in the OEMP
SF1	no - shadow flicker will occur in regard to all turbines, and impact upon some sensitive receptors	regular - due to the location of sensitive receivers, shadow flicker will only be experienced by some sensitive receptors at limited periods through the year	long term - the impacts will be experienced throughout the life of the project	localised -due to the location of sensitive receivers, shadow flicker will only be experienced by some sensitive receptors in the project area	minor - impacts will only be experienced for limited periods by some sensitive receptors throughout the year	No	low - impacts will only be experienced for limited periods by some sensitive receptors throughout the year	Potential impacts managed to ALARP by the final design and layout and management procedures and controls in the OEMP

BG1	yes - a matte paint finish can reduce the impact to a negligible level	N/A	N/A	N/A	N/A	N/A	N/A	Potential impacts reduced to negligible.
R1	no - the site can be remediated however the bases of the turbines will remain	Constant	permanent	localised	minor - top soil will be placed on top of the concrete	no - no constructions works have taken pace, only the met mast exists on the site	low - the cumulative percentage of land within the study area where the turbine bases will remain is minute in regard to the project areas size	

8.0 Conclusion

Vestas propose to develop and operate the Cleve Farm Wind.

The EIR has been prepared in accordance with the relevant requirements of the HRE Act and HRE Regulations and DEM guidelines.

The EIR has identified that all potential impacts can be reduced to ALARP via standard environmental management practices and design measures to achieve legislative requirements.

Additional investigations are to occur during the detailed design stage with any necessary design measures implemented prior to the operation of the facility which will further assist to minimise environmental impacts..

Appendix A

Site Plan and Elevations

Appendix B

Certificate of Titles

Appendix C

Soil and Contamination Assessment

Appendix D

Ecology Assessment

Appendix E

Surface Water Assessment

Appendix F

Landscape Character Visual Impact Assessment

Appendix G

Traffic Impact Assessment

Appendix H

Aviation Assessment

Appendix I

Shadow Flicker Assessment

Appendix J

Electromagnetic Interference Assessment

Appendix K

Acoustic Assessment

Appendix L

Consultation Report