

EPA Reference: 34363

27 June 2018

Mr Lee Webb  
Senior Specialist (Environmental) Planner  
State Commission Assessment Panel  
L5  
50 FLINDERS Street  
ADELAIDE SA 5000

Dear Mr Webb

**Referral Response - Section 49 Development Act (Crown Development by State Agencies)**

<b>Development Application No.</b>	354/V003/18
<b>Applicant</b>	Neoen (GHD Pty Ltd)
<b>Location</b>	Various parcels of land and plans, Hundred Napperby, Hughes Gap Road/Heads Road, Crystal Brook SA 5523. Various parcels of land and plans, Hundred Howe, Collaby Hill Road/Wilkins Highway, Warnertown SA 5540.
<b>Activity of Environmental Significance</b>	Schedule 8 Item 9A - Wind farms; Section 49 - Crown Development
<b>Proposal</b>	Construction of 26 wind turbine generators (wind capacity approximately 125MW) and solar farm (single-axis tracking PV panels with 150MW capacity) supported by a 130MW energy storage facility, new overhead power transmission line and substation along with underground electrical cabling - to be known as Crystal Brook Energy Park and located across multiple sites in Crystal Brook and Warnertown. Includes associated infrastructure of a temporary compound and laydown areas.

<b>Decision Notification</b>	A copy of the decision notification must be forwarded to: Client Services Officer Environment Protection Authority GPO Box 2607
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The above development proposal was referred to the Environment Protection Authority (EPA) by the State Commission Assessment Panel (SCAP) for environmental advice to assist the SCAP in its report to the Minister for Planning in accordance with the requirements of Section 49(7a) of the *Development Act 1993*.

The following response is provided in accordance with Section 49(7a) of the *Development Act 1993*, and Schedule 8 of the *Development Regulations 2008*.

In determining this response the EPA had regard to and sought to further the objects of the *Environment Protection Act 1993*, and also had regard to:

- the General Environmental Duty, as defined in Part 4, Section 25 (1) of the Act; and
- relevant Environment Protection Policies made under Part 5 of the Act.

Please direct all queries relating to the contents of this correspondence to Robert De Zeeuw on telephone (08) 8204 1112 or facsimile (08) 8124 4673 or email Robert.DeZeeuw@sa.gov.au.

## THE PROPOSAL

The proposal is for a hybrid renewable energy project comprising an integrated wind and solar farm and energy storage facility. The proposal would include a total installed wind capacity of approximately 125MW for up to 26 wind turbine generators (WTGs), a solar farm comprising single-axis tracking PV panels with 150MW capacity and a 130MW energy storage facility, new overhead power transmission line and substation along with underground electrical cabling. The facility would be known as Crystal Brook Energy Park and located across 3,300ha of multiple sites in Crystal Brook and Warnertown.

The wind farm component of the proposal would comprise:

- up to 26 wind turbines (indicative model GE 4.8-158) WTG with a maximum tip height of 161 metres above ground level (240 metres to the blade tip)
- the construction of access tracks
- hard stand areas at the base of each turbine for construction purposes each measuring approximately 50 metres by 30 metres
- underground 33kV cabling linking turbines (including fibre)
- 275kV overhead transmission line approximately 300 metres in length located between the proposed substation and the 275kV Para to Bungama line on the east of the Augusta Highway (including replacement of at least two 275kV pole/towers of 47 metres in height)
- one main temporary construction facility of up to 300 metres x 300 metres which would include a site office and staff facilities, workshops, car parking and laydown areas.

The proposed solar farm would comprise:

- a fenced compound comprising 400,000 to 500,000 solar panels mounted on

- single-axis trackers
- cabling
- access tracks
- stormwater management infrastructure.

The proposed battery storage facility would comprise:

- a fenced compound 250 metres by 200 metres containing battery equipment with storage of up to 400MWh
- cabling
- control room.

It is proposed that once in commercial operation, the project would generate clean electricity for approximately 25 years prior to being either decommissioned or repowered.

## SITE DESCRIPTION

The site of the proposed development is located in the southernmost portion of the Flinders Ranges, approximately 23 kilometres south east of Port Pirie and 3.5 kilometres north east of Crystal Brook. The wider project area is bounded on the west by the Augusta/Princes Highway, the east by the Heaslip Highway, the north by the Wilkins Highway and then extending approximately 3.5 kilometres to the south.

It encompasses an area of approximately:

- 20ha for the battery storage facility, the substation and the operation & maintenance compound
- 170ha of solar panels
- a total footprint of around 30ha for the wind turbines
- a footprint of up to 10ha for a future hydrogen production facility and associated infrastructure (subject to future applications).

The site of the proposed hybrid renewable energy project is located entirely within the *Port Pirie Regional Council Development Plan* (consolidated 31 October 2017).

The project area lies within the northern agricultural district. The project area comprises predominantly gently sloping land to the west, rising to the elevated undulating terrain of the ranges and valleys to the east. The land is primarily used for cropping and grazing along with areas of remnant woodland and grassland vegetation and contains numerous rocky outcrops. The flat western regions are heavily cleared while the higher terrain to the east and north has some remnant vegetation, particularly on the steeper slopes.

Four beneficiary dwellings are located within the affected area.

## CONSIDERATION

Advice in this letter includes consideration of the location with respect to existing land uses and is aimed at protecting the environment and avoiding potential adverse impacts upon the locality.

It should be noted that the referral trigger to the EPA is for 'wind farm development' as per Schedule 8 Item 9A of the Development Regulations. The EPA has therefore only provided an assessment relating to potential noise impacts from the proposed wind farm turbines.

In its assessment, the EPA considered the plans and specifications supplied in the development application including the following documents:

- *Neoen Australia Pty Ltd Crystal Brook Energy Park - Development Application Volume 1- Project Description and Impact Assessment Findings* prepared by GHD dated March 2018
- *Neoen Australia Pty Ltd Crystal Brook Energy Park - Development Application Volume 2- Project Description and Impact Assessment Findings* prepared by GHD dated March 2018
- *Crystal Brook Energy Park Environmental Noise Assessment, S5089C6* dated March 2018 prepared by Sonus

## Environmental Issues

### Wind Farm Noise

The proposed wind farm layout is based on the installation of up to 26 wind turbine generators (WTGs). Noise from the proposed wind farm was assessed by the EPA against the provisions of the EPA's *Wind Farms Environmental Noise Guidelines 2009* (the Guidelines). The Guidelines outline noise criteria specific to the assessment of environmental noise impacts generated by wind farms. The acoustic report also contains key information relevant to the consideration of the proposal against the criteria contained in the Guidelines.

The acoustic report titled *Crystal Brook Energy Park Environmental Noise Assessment S5089C6*, prepared by Sonus Pty Ltd, March 2018 (Sonus assessment report) outlines potential noise impacts associated with both the WTGs, the proposed battery storage area, solar farm and substation. However, it should be noted that the EPA has only provided an assessment of the potential noise impacts associated with the proposed wind farm component of the development application.

The Sonus assessment report draws a distinction between beneficiaries (landowners holding a commercial agreement with the wind farm developer) and neighbours (landowners without a commercial agreement). The Sonus assessment report was prepared with regard to relevant zoning within the Port Pirie Regional Council, and the *Northern Areas Council Development Plan* within which some of the closest dwellings are located.

### Noise Sensitive Receivers Without Commercial Interest in the Development

Predicted noise impacts from new wind farm development are required to meet the following criteria at all relevant noise sensitive receivers (i.e. those not having a commercial interest in the development):

- 35 dB(A) at relevant receivers in localities which are primarily intended for rural living, or
- 40 dB(A) at relevant receivers in localities in other zones, or
- the background noise (LA90,10) by more than 5 dB(A).

The above criteria consists of a 'baseline' criteria which applies at lower speeds (either 35 dB(A) or 40 dB(A) depending on the development plan zoning applicable to the specific receiver), and a background noise level dependent criterion which recognises that as wind speed increases, background noise increases. As such, this would provide a level of masking of the wind farm noise.

The Sonus assessment report outlined background noise monitoring undertaken at five locations to assist in characterising the existing ambient noise environment at various wind speeds, and subsequently determine the noise criteria applicable to noise from the wind farm at integer wind speeds between cut-in and rated power.

### Beneficiary Land Owners

There are four beneficiary land owners. The Guidelines acknowledge that commercial agreements may be entered into with landowners having financial involvement in the wind farm. Where landowners enter into a commercial agreement with the wind farm developer, the noise criteria at their residences may be different to that of landowners without any such agreement.

The Guidelines indicate that meeting an indoor noise level of 30dB(A) and 45dB(A) outside is considered acceptable for land owners having a financial involvement in the wind farm. The Guidelines also state that in particular situations the expected noise impact may be above the recommended limits, and in such cases the landowner must agree in writing with the higher level of exposure. Furthermore, the Guidelines stipulate that the likely exposure should not result in adverse health impacts (i.e. causing sleep disturbance).

The Sonus assessment report identified that based on the predicted noise levels, the wind farm noise, including the WTGs, transformers and air conditioning units associated with battery storage and the solar farm would comply with the criteria at all residences, and for all wind speeds. This is acceptable to the EPA.

The EPA considers that the proposed wind farm would be capable of operating in accordance within the parameters of the Guidelines if the conditions recommended below are attached to any consent granted.

### **CONCLUSION**

The EPA considers that the proposed wind farm is appropriately located and designed to minimise noise impacts upon dwellings. The conditions advised below play an important role in reinforcing installation and commissioning requirements to ensure the wind farm development is compatible with the EPA's *Wind farm environmental noise guidelines (July 2009)* and the potential for adverse noise impacts at relevant receivers is minimised.

## ADVICE

The following advice is provided for the purposes of section 49 of the Development Act:

### Recommended conditions:

- a. Noise levels at the noise sensitive receivers in the vicinity of the wind farm development must meet the recommended noise levels contained in the Environment Protection Authority's *Wind farms environmental noise guidelines* (July 2009). The noise level at the relevant receivers\* must not exceed:
  - a. 35dB(A) if receivers are situated in the Rural Living zone, or
  - b. 40dB(A) if receivers are situated in zones other than the Rural Living Zone, or
  - c. 45dB(A) if receivers belong to commercial stakeholders\*\* of the project
  - d. the background noise (LA90,10) by more than 5dB(A) when assessed against the provisions of the EPA's *Wind Farms: Environmental Noise Guidelines* (2009).

\*A relevant receiver is defined as an occupied dwelling where the owners do not have an agreement with the wind farm developer. The above measured noise levels must be adjusted in accordance with the *Environment Protection Authority's Wind farm environmental noise guidelines* (July 2009) by the inclusion of a penalty for the tonal characteristic where necessary.

\*\*An occupied dwelling that belongs to a commercial holder. A commercial stakeholder typically has a formal agreement with wind farm developer that provides the landowner financial compensation for hosting wind turbines or other elements of wind farm's infrastructure.

2. Warranted maximum sound power characteristic for the wind turbine generators (WTGs) must be installed in accordance with the proposed layout must not exceed levels in Table 9 of the acoustic report (*Crystal Brook Energy Park Environmental Noise Assessment, March 2018, Document ref.: S5089C6*, prepared by Sonus Pty Ltd). The warranted sound power levels must be measured and reported in accordance with *IEC61400-11, Ed.3.0: Wind turbines - Part 11: Acoustic noise measurements techniques*.
3. Noise emissions of the wind turbine generators (WTGs) intended for installation must not include tones audible at the noise receivers ( $\#L_{a,k} > 0$ ). The tonality test procedure is defined in *IEC 61400-11, Ed.3.0: Wind turbines - Part 11: Acoustic noise measurement techniques*. In the case where the proponent cannot submit technical information confirming this, absence of tones audible at the noise sensitive receivers must be confirmed by the results of a post-construction acoustic test performed at locality H15 as shown in the acoustic report *Crystal Brook Energy Park Environmental Noise Assessment, March 2018, Document ref.: S5089C6*, prepared by Sonus Pty Ltd.

4. Rated sound power of the substation's transformer must not exceed the levels indicated in Table 4 in the acoustic report *Crystal Brook Energy Park Environmental Noise Assessment, March 2018, Document ref.: S5089C6*, prepared by Sonus Pty Ltd.
5. Sound power of the solar inverters and battery site inverters must not exceed the levels indicated in Table 1 in the acoustic report *Crystal Brook Energy Park Environmental Noise Assessment, March 2018, Document ref.: S5089C6*, prepared by Sonus Pty Ltd
6. Sound power of electric transformers at the solar power site must not exceed levels indicated in Table 2 in the acoustic report *Crystal Brook Energy Park Environmental Noise Assessment', March 2018, Document ref.: S5089C6*, prepared by Sonus Pty Ltd.
7. Sound power of cooling/air conditioning units installed on the battery site must not exceed levels indicated in Table 3 in the acoustic report *Crystal Brook Energy Park Environmental Noise Assessment, March 2018, Document ref.: S5089C6*, prepared by Sonus Pty Ltd.
8. The applicant must appoint an independent acoustical consultancy (other than company who prepared the predictive acoustical report) to monitor noise levels at the following five localities (as a minimum): H13, H15, H16, H17 and H51 (as shown on the map in the acoustic report, report *Crystal Brook Energy Park Environmental Noise Assessment, March 2018, Document ref.: S5089C6*, prepared by Sonus Pty Ltd). Alternative noise monitoring locations can be considered by agreement with the Environment Protection Authority (EPA). Monitoring must be executed in accordance with the EPA Wind Farms: Environmental Noise Guidelines where all of the noise sources associated with the wind farm are in operating mode. The results of the monitoring must be submitted to the EPA not later than three months from the date of the wind farm commissioning.
9. If post-construction noise monitoring results reveal non-compliance with the specified noise criteria, the applicant must arrange for the noise monitoring of other relevant noise sensitive receivers. The measures to assure compliance with the specified noise criteria must be undertaken by the applicant for all of the localities where non- compliance with the noise criteria is revealed. Agreement with the land owners of the noise affected premises can be considered as an option in accordance with the Environment Protection Authority's *Wind farms environmental noise guidelines* (July 2009).

The following notes provide important information for the benefit of the applicant and are requested to be included in any approval:

- The applicant is reminded of its general environmental duty, as required by section 25 of the *Environment Protection Act 1993*, to take all reasonable and practicable measures to ensure that the activities on the whole site, including during construction, do not pollute the environment in a way which causes or may cause environmental harm.
- The applicant is reminded that construction will need to be undertaken in accordance with Division 1 of Part 6 of the *Environment Protection (Noise) Policy 2007* at all times.
- EPA information sheets, guidelines documents, codes of practice, technical bulletins etc. can be accessed on the following web site: <http://www.epa.sa.gov.au>

Yours faithfully

A handwritten signature in black ink, appearing to read 'Hayley Riggs', with a stylized, flowing script.

Hayley Riggs  
Delegate  
**ENVIRONMENT PROTECTION AUTHORITY**



In reply please quote 2018/01915, Process ID: 518830  
Enquiries to Marc Hryciuk  
Telephone (08) 7109 7877  
E-mail dpti.luc@sa.gov.au



**Government of South Australia**

Department of Planning,  
Transport and Infrastructure

31 July 2018

**DEVELOPMENT DIVISION**  
Transport Assessment  
and Policy Reform

GPO Box 1533  
Adelaide SA 5001

ABN 92 366 288 135

Mr Lee Webb  
State Commission Assessment Panel  
GPO Box 1815  
ADELAIDE SA 5001

Dear Mr Webb,

### **SCHEDULE 8 - REFERRAL RESPONSE**

<b>Development No.</b>	354/V003/18
<b>Applicant</b>	Neoen (sponsored by DPC)
<b>Location</b>	Collaby Hill, Crystal Brook
<b>Proposal</b>	Hybrid renewable energy project comprising an energy storage facility (Lithium-ion battery with a capacity up to 130MW / 400MWh), a solar farm (400,000-500,000 solar panels with a capacity up to 150MW), a wind farm (26 turbines with a capacity up to 125MW) and associated infrastructure connected to the national grid. The energy storage facility (and substation, operations & maintenance building and storage facilities) would be located on a separate site (Lot 56 in DP 20184, Collaby Hill Road), with the wind farm and solar farm sites connected to the battery site via an underground transmission line comprising 33kV cables.

I refer to the above development application forwarded to the Commissioner of Highways (CoH) in accordance with Section 49(7a) of the *Development Act 1993*. The proposed development involves development adjacent a main road as described above.

The following response is provided in accordance with Section 49(7a) of the *Development Act 1993* and Schedule 8 of the *Development Regulations 2008*.

### **CONSIDERATION**

#### **Access and Road Safety**

The subject development is proposed to occur on two separate sites. The northern site abuts Augusta Highway, Wilkins Highway and Collaby Hill Road. The southern site abuts Wilkins Highway, Hughes Gap Road, Hatters Road, Heads Road and Pipe Line Track.

The adjacent sections of Augusta Highway, Wilkins Highway and Hughes Gap Road are arterial roads under the care, control and management of CoH. All other roads are local roads under the care, control and management of the Port Pirie Regional Council.

Under the Department of Planning, Transport and Infrastructure's (DPTI's) '*A Functional Hierarchy for South Australia's Land Transport Network*', the adjacent section of Augusta Highway is a Major Traffic Route, Primary Freight Route and Tourist Route. The adjacent section of Wilkins Highway is a Primary Freight Route and Tourist Route.

The adjacent sections of Augusta Highway, Wilkins Highway and Hughes Gap Road carry approximately 5,700 vehicles per day (14.0% commercial vehicles), 1,200 to 1,800 vehicles per day (11.5% to 15.0% commercial vehicles) and 550 vehicles per day (13.5% commercial vehicles) respectively. All three arterial roads have posted speed limits of 110 km/h. Furthermore, the adjacent section of Augusta Highway was proclaimed a controlled-access road on 13 April 1989, pursuant to Part 2A of the *Highways Act 1926*. Departmental records show that there is no proclaimed or permitted means by which persons and vehicles may directly enter or leave the controlled-access road to/from Lot 56 in DP 20184.

Both Augusta Highway and Wilkins Highway are gazetted for vehicles up to 36.5 metres Road Trains and Hughes Gap Road and portion of Collaby Hill Road are gazetted for vehicles up to 26.0 metres B-Doubles. Hatters Road, Heads Road and Pipe Line Track are not gazetted for use by vehicles larger than a General Access Vehicle. The applicant will need to apply to the National Heavy Vehicle Regulator via [www.nhvr.gov.au](http://www.nhvr.gov.au) for permits to utilise these roads for access by Restricted Access Vehicles.

It is understood that the southern site will be used for the solar and wind farms and that the northern site will be utilised for the energy storage facility and associated substation. GHD has undertaken a traffic impact assessment for the proposed development which indicates that during the construction phase a significant amount of traffic will be generated. However, the assessment does not clearly identify the proposed access locations to the site or fully assess the impacts of the increased traffic on the safety of the adjacent road network. Notwithstanding this, DPTI has reviewed the options for access to the subject facilities. Accordingly, it is advised that safe direct access to Wilkins Highway to serve the wind farm is unlikely to be achievable as the adjacent section of road has vertical and horizontal curves that limit sightlines along the site's frontage and an overtaking lane also exists within this area. Furthermore, it is noted that the existing Wilkins Highway/Heads Road junction has poor sightlines and is unsealed, thus potentially resulting in this road being unsuitable for extensive use. Consequently, access to this part of the development will need to be predominantly via Hughes Gap Road at a location that achieves adequate sightlines.

With respect to the proposed solar farm it is noted that access to the site will be either via Hatters Road or via Hughes Gap Road. In the event that Hatters Road is to be used for access purposes it is likely that upgrading of its junctions with the arterial road network will need occur. The extent of this upgrading would be dependent on the level of traffic likely to utilise the junction(s).

It is noted that the location of the proposed energy storage facility and substation will be immediately adjacent to Collaby Hill Road and that subsequently access to the site will be via this road. Whilst the Augusta Highway/Collaby Hill Road junction is sealed and provided with an auxiliary left turn lane (AUL), no right turn facility is provided. Accordingly, it will be necessary to review the traffic impacts at this location to determine what upgrades, if any, are required to safely cater for the projected traffic volumes.

In view of the above, there is a need for further traffic assessment to be undertaken in order to quantify the traffic impact of the construction phase of the development on



the adjacent road network and to identify what infrastructure improvements/modifications are required to facilitate safe access to the development. Consequently, it is recommended that these matters be addressed via the provision of a traffic management plan to the satisfaction of both DPTI and Council prior to the commencement of on-site works.

### **Transmission Lines**

It is understood that it is intended to connect each of the three sites via underground electrical cables. However, no detail has been provided relating to how any road crossings will be undertaken. Whilst it is understood that these will not require development approval, any crossing of arterial roads will need to be undertaken to the satisfaction of DPTI.

### **Visual Impact**

The subject development has the potential to have some visual impact on traffic utilising the adjacent roads. In this case, the most likely impact would be associated with the wind turbines located adjacent to Wilkins Highway. From a review of the road environment, it would appear that whilst the turbines are located a reasonable distance from the adjacent road reserves (i.e. no closer than 200 metres), the greatest potential for distraction would be on the eastbound approach to the Wilkins Highway/Hughes Gap Road junction (at least one of the turbines may appear directly in front of a driver as they negotiate the incline and reverse curves at this location) and to a lesser extent on both sides of the bend in Wilkins Highway adjacent the site (between Heads Road and Tanks Road) for westbound vehicles. In order to assess the potential impact, it is recommended that photo montages are prepared to show position and scale of the turbines visible on these approaches prior to full approval being granted. It should be noted that depending on the outcome of the assessment of these montages, modifications to the final position of the turbines may be required.

With respect to the solar farm, whilst this will be visible from adjacent roads, it is unlikely to have a significant impact on the arterial road network.

### **CONCLUSION**

DPTI does not object in-principle to the proposed development.

### **ADVICE**

The planning authority is advised to attach the following conditions to any approval:

1. All direct access to the development shall be via Hughes Gap Road or the abutting roads under the care, control and management of the Port Pirie Regional Council. The development shall not be provided with direct access to Wilkins Highway or Augusta Highway.
2. A Traffic Management Plan (TMP), prepared in consultation with DPTI, Port Pirie Regional Council and Northern Areas Council (if relevant) shall be submitted for approval by the Minister for Planning prior to commencement of construction. As part of the TMP, the applicant shall engage an accredited Road Safety Auditor to undertake a safety audit of the route to be used by vehicles servicing the development. The TMP shall address matters including, but not limited to, the following:
3. Definition of routes, roads and access points to be used for vehicles during construction and for on-going maintenance purposes.

- a. The types and number of vehicles servicing the development, including the construction traffic peaks.
  - b. A route risk assessment for roads (including junctions/intersections) and identification of upgrade of roads and junctions/intersections required to safely accommodate all vehicles servicing the development.
  - c. A management schedule for the construction stage of the development to minimise impact on road users.
  - d. A maintenance program for roads utilised by the vehicles servicing the development.
  - e. An agreement with the Commissioner of Highways and/or the Port Pirie Regional Council that all necessary road upgrading (including drainage and water run-off measures), junction/intersection treatments and on-going maintenance costs are to be borne by the applicant.
  - f. All necessary road works on the arterial road network shall be designed and constructed to Austroads Guidelines and Australian Standards and to DPTI's satisfaction, with all associated costs to be borne by the applicant. The applicant shall contact DPTI's Ms Cheong Doherty, Asset Enhancement Manager on (08) 8648 5234 or [cheong.doherty@sa.gov.au](mailto:cheong.doherty@sa.gov.au) to discuss the requirements.
4. Any infrastructure (i.e. roads, kerbs, drains, crossovers, cabling, pipe work etc.) within the road reserve that is demolished, altered, removed or damaged during the construction of the project shall be reinstated to the satisfaction of the relevant asset owner, with all costs being borne by the applicant.
  5. A review of the potential impact of the wind turbines on road safety along Wilkins Highway shall be undertaken to the satisfaction of DPTI prior to the commencement of construction. This work shall include photo montages to show the impacts of the turbine locations where they will appear within or close to a driver's view of the road or within or close to a driver's view to important traffic control devices/junctions.
  6. No stormwater from this development shall be permitted to discharge on-surface to the adjacent arterial roads. In addition, any existing drainage of the adjacent arterial roads shall be accommodated by the development and any alterations to road drainage infrastructure as a result of this development are to be at the expense of the applicant.

The following notes provide important information for the benefit of the applicant and are required to be included in any approval:

- I. The adjacent section of Augusta Highway was proclaimed a controlled-access road on 13 April 1989, pursuant to Part 2A of the *Highways Act 1926*. Departmental records show that there is no proclaimed or permitted means by which persons and vehicles may directly enter or leave the controlled-access road to/from Lot 56 in DP 20184.
- II. The applicant should contact DPT's Vehicle Permits Team on telephone 1300 882 249 to discuss the required permits and processes for the use of oversize/overmass vehicles on public roads. Furthermore, as Hatters Road, Heads Road and Pipe Line Track are not gazetted for use by vehicles larger than a

General Access Vehicle, the applicant will need to apply to the National Heavy Vehicle Regulator via [www.nhvr.gov.au](http://www.nhvr.gov.au) for permits to utilise these roads for access by Restricted Access Vehicles.

- III. The applicant will need to seek approval from DPTI for the installation of any electrical infrastructure within the road reserve of any arterial road. Any infrastructure will need to be located and installed to the satisfaction of DPTI, with all costs being borne by the applicant.

Yours sincerely,



*for* **MANAGER, TRANSPORT ASSESSMENT AND POLICY REFORM**  
for **COMMISSIONER OF HIGHWAYS**

A copy of the decision notification form should be forwarded to [dpti.developmentapplications@sa.gov.au](mailto:dpti.developmentapplications@sa.gov.au)





DEWNRD 00015136

Date: 20 June 2018

Mr Lee Webb  
Department for Planning Transport and Infrastructure  
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Strategic Policy and  
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Dear Lee

## RE. NEOEN CRYSTAL BROOK ENERGY PARK REQUEST FOR ADVICE

DEW provides the following advice in relation to Neoen's proposal for the Crystal Brook Energy Park.

The ecological surveys completed are considered appropriate to the scale of the development. The mitigation actions proposed in the CEMP also seem appropriate to the level of impact reported. The following advice is provided for information to assist in the preparation of any subsequent management plans.

### Raptor species

DEW supports the application of a 500m buffer to reduce impacts to raptors.

DEW notes that the nest present on site has been abandoned however the likelihood of raptors such as the wedge-tailed eagle utilising the site remains as highly likely, particularly given their prevalence along ridgelines in the region. Numerous studies and monitoring programs have attempted to quantify the collision risk of raptor species. In most instances, this has been achievable but from an applied perspective is only relevant to the specific site.

DEW suggests that if the wind farm component is expanded beyond the current footprint then a collision risk model is developed that looks at local populations of raptors within a 2-5km radius of the site. The collision risk model may produce outcomes that inform the extent of a buffer (if required) and provide a robust baseline for monitoring programs.

Wind farms present a level of difficulty in the concept of adaptive management. It is difficult to shift turbines and other infrastructure to accommodate environmental sensitivities such as breeding raptors. In addition the innate behaviour of raptor's puts them at high risk from the outset. In this particular region of the state, there are a growing number of windfarm developments on ridgelines providing a cumulative impact on regional raptor populations. While the concept of cumulative impact is not typically considered, the inclusion of collision risk modelling may go some way to address this aspect.

DEW has included the 2006 publication by Biosis for the Australian Government Department of Environment and Heritage to provide some context as to the requirements and outcomes of collision risk modelling.

From a whole of ecosystem perspective, it should be noted that reduction in raptor numbers may have a flow on effect. In this particular region, there is a risk of increases in pest animal populations such as rabbits. This then places additional pressures on remaining vegetation and agriculture lands.

#### **Threatened ecological community**

The EBS survey identifies some of the patches of remnant vegetation as being Peppermint Box Woodland, listed as a Threatened Ecological Community (TEC) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

DEW notes that in order to determine whether or not the community present is a TEC, a condition assessment against the relevant EPBC criteria is required. Based on the information provided it does not appear that a condition assessment has been completed.

In order to understand their EPBC obligations in this regard it is suggested that Neoen complete a condition assessment (if not completed already) and then complete a self-assessment to determine the need for a referral to Australian Government Department of Environment and Energy (DoEE).

#### **Threatened flora and fauna species**

DEW acknowledges that floristic surveys have been completed by Biosis, however the GHD report provides no further information as to what year they were completed. A gap (not knowing when the earlier Biosis surveys were done) is that the "possible" threatened orchids listed in Table 5 on p. 16 would not have been present during EBS's summer and autumn visits.

These species flower in the Aug-Nov period. Other potentially significant plant species may also have been missed if surveys were not undertaken at suitable times in their life-cycles. Most of the annual/herbaceous plant species listed for the area appear to be from 2001 or before, suggesting that surveys since then have not been undertaken at suitable times to detect such species.

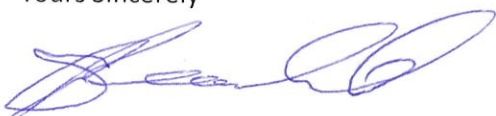
If the development progresses it is suggested that either preclearance surveys at a suitable time of year are completed along with annual surveys as part of ongoing monitoring requirements.

#### **Seed collection**

DEW seeks to promote the conservation of protected plant species across South Australia. Neoen may wish to consider the collection and storage of seeds of significant / threatened plant species for the State Seed Conservation Centre. Current information about plant species images and seed collections for the IBRA sub-region where this development is proposed can be seen at: [http://saseedbank.com.au/main-content\\_ibrasearchresults\\_mv.php](http://saseedbank.com.au/main-content_ibrasearchresults_mv.php) ..

For further information on delegations, please email @sa.gov.au.

Yours Sincerely



Sarah Reachill

**Coordinator Planning and Impact Assessment**



**DEVELOPMENT ASSESSMENT SERVICE**

Your Ref: DA 354/V003/18  
Our Ref: PTP-30  
Please refer to: FSO Julian Aggiss

14 June 2018

DPTI  
Development Division  
Level 3, 77 Grenfell Street  
ADELAIDE SA 5000

Dear Sirs

**RE: NEOEN PV SOLAR FARM, WIND TURBINE & BESS AND ASSOCIATED  
INFRASTRUCTURE – CRYSTAL BROOK**

The South Australian Country Fire Service (SACFS) welcomes and supports development in regional and rural areas of South Australia. While the SACFS has no direct concerns with the proposal the proposed development does pose a number of fire safety and fire service response issues for the Fire Service.

Based on the submission dated 22 May 2018, comprising the following:

- Development Application Vol 1;
- Development Application Vol 2;
- Noise Impact Assessment; and
- Appendices

the SA Country Fire Service (CFS) seeks to comment as follows:

**Current infrastructure concerns in the area**

- There is a lack of accessible reticulated water in the area. Static fire water tanks for both bush fire and building fires will be required to assist in effective Fire Service intervention and suppression.
- There is a possible lack of reliable communication networks to meet the basic requirements of mobile communication.

60 Waymouth Street, Adelaide, 5000  
T 088115 3372 E [das@cfs.sa.gov.au](mailto:das@cfs.sa.gov.au)  
ABN 97 677 077 835 [www.cfs.sa.gov.au](http://www.cfs.sa.gov.au)



## Fire response capability

- The site will be serviced as first response by the Crystal Brook (SACFS) fire station.
- Due to the regional nature of the site location secondary and subsequent fire service crews may have some distance to travel, therefore, additional on-site firefighting infrastructure may need to be considered to reduce the severity of any incident.

## ALL ACCESS/EGRESS ROADS ON THE PROJECT SITE:

- Perimeter fencing to any site or compound enclosure shall provide unrestricted access (gateway minimum 4m clearance) to emergency services vehicles at maximum 1km intervals,
- Access roadways shall be constructed with a formed, compacted all-weather, self-draining surface,
- Shall be a minimum width of 6m -
- If constructed less than 6m wide, shall incorporate passing bays with a minimum formed width of 6 m (including the roadway width) and a minimum formed

length of 17metres. The passing bays shall be constructed at 200m intervals along the roadway. Where it is necessary to provide adequate visibility (at corners) a greater number of bays may be required.

- Shall be constructed with a minimum external radius of 12.5m for all road curves,
- Shall not exceed a gradient of 16 degrees (29%),
- Shall incorporate solid all-weather crossings over any water-course or subterranean services capable of supporting fire-fighting vehicles with a gross vehicle mass (GVM) of 21 tonnes,
- Vegetation overhanging the access roads shall be pruned and maintained to achieve a minimum vehicular clearance of not less than 4 metres width and vertical height clearance,
- Shall allow fire-fighting vehicles to safely enter and exit the site in a forward direction by incorporating either:
  - a loop road around the site outside of a fenced compound, OR
  - a turning area with a minimum radius of 12.5metres, OR
  - a 'T' or 'Y' shaped turning area with a minimum formed length of 11metres and minimum internal radii of 9.5metres.

## FIRE-FIGHTING EQUIPMENT – (DURING CONSTRUCTION PHASE):

- shall be readily available and in good operable condition at all times mounted on a suitably designed vehicle(s) or trailer(s) dedicated to serve as the 'site initial fire response vehicle' for the construction site;
- the 'initial emergency response vehicle' shall consist of –
  - 2000 litres fire-fighting water
  - 1 x 5HP (3.7Kw) fire-fighting pump
  - 2 x 30metre x 19mm ID fire hose reels with spray/jet nozzles
  - 4 x fire-fighting knapsacks



- 4 x rake-hoes
- 4 x long handled shovels
- 2 x 9 litre stored water pressurised extinguishers
- 2 x 9kg dry powder extinguishers
- Where remote parts of the entire site are under construction simultaneously then each discrete part shall be serviced by a separate fire-fighting resource vehicle.

#### VEGETATION MANAGEMENT:

- A vegetation management zone (VMZ) shall be established and maintained to 50 metres of each infrastructure enclosure as follows:
  - The number of trees and understorey plants within the VMZ shall be maintained such that when considered overall a maximum coverage of 30% is attained, and so that the leaf area of shrubs is not continuous.
  - No understorey vegetation shall be established within 10m of the fenced enclosures (Understorey is defined as plants and bushes up to 2m in height)
  - Grasses within the zone and throughout the site shall be reduced to a maximum height of 10cm during the fire danger season (eg by grazing, slashing or chemical treatment)
  - The VMZ shall be maintained to prevent the accumulation of dead vegetation during the fire danger season.

#### WATER SUPPLY:

- CFS recommends a temporary water supply to supplement the portable fire-fighting water supply as required during the construction phase – refer *Fire-fighting Equipment During Construction Phase (as noted above)*,
- CFS will require provision of a static water supply for protection of the infrastructure being not less than 22.5kL located at each entry point to the site, each tank fitted with SAFA Policy 14 suction fittings,
- The water storage tank and any supporting structure shall be constructed of non-combustible materials,
- Generally above ground water supply pipework for fire fighting purposes shall be metal. All non-metal pipework except flexible connections and hoses for fire-fighting shall be buried below ground to a minimum depth of 300mm,
- Water supply suction outlets for fire service use shall be easily accessible and clearly identifiable at each access point,
- Stand alone tanks shall be identified with signage “WATER FOR FIRE FIGHTING ONLY” and each tank capacity written in 100mm high lettering visible from approach to the tank and the suction point.
- Signage shall be in fade-resistant lettering in colours contrasting with that of the background,
- Access to the tank suction points shall be constructed as a formed roadway,
- Provision shall be made adjacent to the water suction points for a horizontal hardstand capable of supporting fire service vehicles of 21T GVM to Policy 14





## EMERGENCY RESPONSE PROCEDURES:

- CFS notes the reference in the submitted documents to a CEMP is to be developed to address potential project and weather related emergencies prior to and during construction, to be modified and adopted for post-construction operation of the site,
- A manifest box at the main site entry shall be provided to include, but not be limited to, site plan, points of access, trafficable routes, buildings/enclosures/structures and the like, fire-fighting equipment and location and quantities of hazardous materials.

## COMMENTARY:

Whereas Vol.1, Table 2-2 'Summary of Previous Studies' refers to considerations for bushfire risks in wind farms, no further reference is specifically made to the other components of the project being the PV panel installation, BESS compound, hydrogen production facility, substation and associated buildings.

Of particular interest to SACFS is the reference to hydrogen production facility where there appears to be no detail. SACFS would appreciate further information to assess the implications on fire fighting operational capability in respect of this risk.

With particular reference to Vol.1, s3.6 'Fire Prevention', Table 5 'Fire Prevention Outline Plan', SACFS draws the Proponents attention to:

- Mitigation: "...during construction...grass must be no more than 200mm in height..." This should be amended to 100mm
- "Maintenance works such as mowing and tree pruning...under CFS supervision"  
CFS do not undertake the role of supervisors
- "Leaf litter must be less than 20mm deep"  
This should be amended to 10mm depth
- Generally, hot works including welding and grinding in the Fire Danger Season and on Total Fire Ban Days are prescribed activities governed by the Fire and Emergency Services Regulations 2005.
- There is a reference to 'High Fire Danger (p.15). CFS interprets this to be a Total Fire Ban, but seeks confirmation of such.

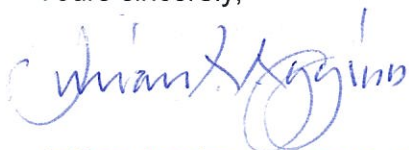
## **Bushfire safety**

The Bushfire Protection zone for the area has been designated as *HIGH*. SACFS advises that the subject area has a history of uncontrollable bushfires, varying in intensity and behavior depending on the weather and local environmental conditions. The Proponent should consider the safety of personnel in the event of a bushfire, the protection of infrastructure from fire impact and the importance of fire escape from the subject land into the wider landscape, threatening environmental and economic assets.

Should clarification or further information be required please contact the undersigned at the SA CFS Development Assessment Service on (08) 8115 3372.



Yours sincerely,



**Julian Aggiss, GFireE, JP**

Grad.Cert. Fire Safety Engineering

BA(Hons), DipArch, DipUD, MA, LLB(Hons)

CertIV Public Safety (Firefighting Supervision)

CertIV Training & Assessment

**FIRE SAFETY OFFICER**

**South Australian Country Fire Service**





8 June 2018

Lee Webb  
Senior Specialist (Environmental) Planner  
Development Division  
Department of Planning, Transport and Infrastructure

Aboriginal Affairs &  
Reconciliation  
GPO Box 320  
Adelaide SA 5001  
DX 452  
Tel 08 8226 8900  
Fax 08 8226 8999

Dear Lee

Thank you for your correspondence (email) dated 22 May 2018, regarding referral 354/V003/18 by applicant Neoen for the Crystal Brook Energy Park - development of a wind and solar electricity generating plant, energy storage facility and associated infrastructure. The search was based on Table 2.1 'Involved land parcels' as per the 'Crystal Brook Energy Park - Development Application Volume 1 - Project Description and Impact Assessment Findings report.

I advise that the central archive, which includes the Register of Aboriginal Sites and Objects (the Register), administered by the Department of the Premier and Cabinet, Aboriginal Affairs and Reconciliation (DPC-AAR), has entries for Aboriginal sites within the proposed development location.

These entries for Aboriginal sites are described two scarred trees and one archaeological site. The enclosed map identifies the approximate site location. It should be noted however that the site indicator does not reflect the actual area of the site; as this will vary from site to site, depending on the site information contained in the Central Archive.

The applicant is advised that sites or objects may exist in the proposed development area, even though the Register does not identify them. All Aboriginal sites and objects are protected under the *Aboriginal Heritage Act 1988* (the Act), whether they are listed in the Register or not. Land within 200 metres of a watercourse (for example the River Murray and its overflow areas) in particular, may contain Aboriginal sites and objects.

Pursuant to the Act, it is an offence to damage, disturb or interfere with any Aboriginal site, object or remains (registered or not) without the authority of the Minister for Aboriginal Affairs and Reconciliation (the Minister). If the planned activity is likely to damage, disturb or interfere with a site, object or remains, authorisation of the activity must be first obtained from the Minister under Section 23 of the Act. Section 20 of the Act requires that any Aboriginal sites, objects or remains, discovered on the land, need to be reported to the Minister. Penalties apply for failure to comply with the Act.

It should be noted that this Aboriginal heritage advice has not addressed any relevant obligations pursuant to the Native Title Act 1993.

Please be aware in this area there are various Aboriginal groups/organisations/traditional owners that may have an interest, these may include:

**NUKUNU PEOPLES COUNCIL INC**

**Chairperson:** Doug Turner  
**Email:** [dmturner@internode.on.net](mailto:dmturner@internode.on.net)  
**Mobile:** 0421 612 236  
**Address:** PO Box 110 Greenock SA 5360

**Terms and conditions for use of information derived from the central archive:**

- Information derived from the central archive may not be re-utilised and/or copied (whether electronic or hard copy format) for any commercial or business purpose including but not limited to, trading, building commercial databases, reselling or redistribution of such information.
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  - Inform DPC-AAR immediately if they become aware of a third party using information derived for the central archive in contravention to these terms and conditions.

If you require further information, please contact the Aboriginal Heritage Team on telephone (08) 8226 8900 or send to our generic email address [dsdaarheritagesites1@sa.gov.au](mailto:dsdaarheritagesites1@sa.gov.au)

Yours sincerely



Perry Langeberg  
**SENIOR INFORMATION OFFICER (HERITAGE)**  
**ABORIGINAL AFFAIRS & RECONCILIATION**



**Australian Government**  
**Civil Aviation Safety Authority**

AIR NAVIGATION, AIRSPACE AND AERODROMES

*File Ref: F18/1791-1*

15 June 2018

Mr Lee Webb  
Planning Officer  
Department of Planning Transport and Infrastructure

Email: Lee.Webb@sa.gov.au

Dear Mr Webb,

**PROPOSED CRYSTAL BROOK ENERGY PARK, PORT PIRIE, SA**

Thank you for your email dated 22 May 2018 requesting CASA comment regarding the Crystal Brook Energy Park, Port Pirie, South Australia.

The proposal consists of two parts, a wind farm comprising 26 turbines with a maximum blade tip height of 240m AGL, and a solar farm consisting of 170ha of single axis tracking photovoltaic panels facing north.

**Solar Farm**

The solar farm is located at a distance from the nearest aerodrome that would not be a hazard to air navigation and therefore does not require a glare analysis.

**Wind Turbines**

Due to their height above ground level, CASA considers the turbines to be a potential hazard to air navigation. The risk can be suitably mitigated by the installation of steady red medium intensity hazard lights installed in accordance the NASF Guideline D – Wind Turbines, para 35 to be operational at night and at times of reduced visibility.

ICAO recommends that: *the obstacle lights should be installed on the nacelle in such a manner as to provide an unobstructed view for aircraft approaching from any direction. (Ref ICAO Annex 14 Vol 1 para 6.2.4.4).*

NASF Guideline D – Wind Turbines, para 36 states: *To minimise the visual impact on the environment, obstacle lights may be partially shielded, provided it does not compromise their operational effectiveness.*

Should obstacle lighting be considered to have a negative impact on visual amenity and result in resident objection, CASA recommends that an Aircraft Detection Lighting System (as recommended in the United States Federal Aviation Administration Advisory Circular AC 70/7460-1L CHG1 – Obstruction Marking and Lighting), be installed. Such a system would only activate the lights when an aircraft is detected in the near vicinity and



deactivate the lights once the aircraft has passed. This would be a reasonable and feasible alternative to having the lights activated from dusk to dawn and in low light levels during the day. It would also ensure that aviation hazard lighting is implemented in a manner that minimises visual intrusion to surrounding residences.

In support of subpart 175.E of the Civil Aviation Safety Regulations 1998, CASA recommends that all permanent obstacles 100 m or more above ground level are reported to the Aeronautical Information Service (AIS) provider, Airservices Australia.

Any decision to light, or not light, the proposed turbines remains with the planning authority to determine.

Yours sincerely

A handwritten signature in black ink, appearing to be 'K. Scrimshaw', with a long horizontal flourish extending to the right.

Kevin Scrimshaw  
Acting ANAA Branch Manager

15<sup>th</sup> June 2018