

## DEVELOPMENT ASSESSMENT REPORT

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### PROPOSED WIND FARM

WIND FARM (STONY GAP), COMPRISING 41 WIND TURBINES, TWO PERMANENT WIND MONITORING TOWERS, FIVE TEMPORARY WIND MONITORING TOWERS FOR A PERIOD OF SIX MONTHS, THREE YEAR EXTENSION TO EXISTING TEMPORARY WIND MONITORING TOWERS, 275KV TRANSMISSION LINE TO ROBERTSTOWN SUBSTATION, ON-SITE ACCESS TRACKS AND ANCILLARY INFRASTRUCTURE

FOR: REGIONAL COUNCIL OF GOYDER

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<b>Applicant:</b>	TRUenergy Renewable Development Pty Ltd
<b>Development Application:</b>	422/115/11
<b>Location:</b>	Detailed in Attachment 1 and 2
<b>Proposal:</b>	Wind farm (Stony Gap), comprising 41 turbines, two permanent wind monitoring towers, five temporary wind monitoring towers for a period of six months, three year extension to existing temporary wind monitoring towers, 276kV transmission line to Robertstown substation, on-site access tracks and ancillary infrastructure
<b>Development Plan Zone:</b>	Primary Production Zone
<b>Development Plan:</b>	19 October 2011 (unconsolidated) and consolidated 23 February 2012
<b>Referrals:</b>	Environment Protection Authority  Murray-Darling Basin Natural Resources Management Board  State Heritage Unit, Department of Environment and Natural Resources  Transport Services Division, Department of Planning, Transport and Infrastructure



**Public Notification:**

Category 2

First notification until 1 February 2012

Second notification until 24 February 2012

Third notification until 28 March 2012

25 submissions received during the first round of notifications. Five submissions were in favour of the proposal and one additional representor was 'neutral'. The remaining 19 representors were against the proposal and raised various issues, including: noise; loss of amenity; visual impacts; health effects; separation between turbines and dwellings; shadow flicker; transportation and access; protection of flora and fauna; the industrial nature of wind farms; property values; impacts on groundwater; potential for soil erosion; impact on aerial agriculture application and fire fighting; threat of fires; electromagnetic interference; impacts on heritage and tourism; and the proposal being at variance with the provisions of the Development Plan.

A representation from Piper Alderman Lawyers was received during the second round of notifications.

During the third round of notifications an additional four representations were received.

**Key Issues:**

Nature of the development; efficient energy generation; noise; health; visual amenity; electromagnetic interference with telecommunications; impact on flora and fauna; impact on aerial agriculture application and fire fighting; impacts on heritage and tourism.

**Recommendation:**

Provisional Development Plan Consent be granted subject to Reserve Matters and conditions.



## 1.0 INTRODUCTION

The Regional Council of Goyder has requested an independent assessment of the development application and the preparation of a Development Assessment Report for consideration by Council's Development Assessment Panel, in relation to Development Application 422/115/11.

In preparing this report I have:

- reviewed the development application documents, including plans, correspondence to and from the applicant, letters of representation and the response by the applicant, the referral reports from the Environment Protection Authority, Murray-Darling Basin Natural Resources Management Board, State Heritage Unit of the Department of Environment and Natural Resources, Transport Services Division of the Department of Planning, Transport and Infrastructure and peer review of acoustic assessment;
- reviewed relevant legislations, including the *Development Act 2003*, *Development Regulations 2008*, the *Environment Protection (Noise) Policy 2007* and Wind Farms Environmental Noise Guidelines (EPA July 2009);
- undertaken a site and locality inspection; and
- reviewed the provisions of the Goyder Council Development Plan dated 17 February 2011 and the Statewide Wind Farms Development Plan dated 19 October 2011, which has now been consolidated into the Goyder Council Development Plan. The provisions of the Development Plan relevant to the assessment of the application, which was lodged in November 2011 thereby includes the provisions of the Statewide Wind Farm Development Plan.

## 2.0 BACKGROUND

A development application was lodged for the Stony Gap Wind Farm in June 2011 by Roaring 40s joint venture, comprising joint shareholders Roaring 40, Hydro Tasmania and TRUenergy. Following submission of the application, the Stony Gap Wind Farm was acquired by TRUenergy. A number of the application documents were prepared for Roaring 40s. This development application was DA 422/073/11 and the processing of the application included referrals to a number of Government agencies.

Development Application 422/073/11 was withdrawn by TRUenergy and a new development application was lodged on or about 3 November 2011. At that time TRUenergy requested that all application documents submitted with the previous application (DA 422/073/11) be utilised in the assessment of the new development application. The new development application, DA 422/115/11 was submitted after the Ministers Statewide Wind Farms Development Plan Amendment became operational on 19 October 2011 and consequently the application is assessed against the provisions of that Development Plan.



### 3.0 DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed wind farm is to be located approximately 5.0 kilometres south of the township of Burra and 5.0 kilometres east of the Barrier Highway. The proposed development incorporates the following elements:

- Up to 41 wind turbines, extending approximately 19 kilometres along Tothill Range.
- Final position of turbines to be within 100 metres of the site layout which forms part of the application documents.
- Vestas V90-3MW or similar turbines up to 3.4MW (final selection not yet made).
- Turbines are three-bladed, semi-variable speed, pitch regulated machines with rotor and nacelle mount on a reducing cylindrical steel tower.
- Tower height would be up to 85 metres and blade length up to 56 metres.
- Overall height of turbines would be up to 145 metres at the blade tip.
- Each turbine would be placed within a hardstand area of approximately 50 metres by 50 metres.
- Two permanent 80 metre high wind monitoring masts.
- Five temporary 100 metre high wind monitoring masts.
- On-site electrical substation and control room within the southern section of the site.
- A network of internal tracks (5.0 to 6.0 metres in width) linking turbines, new or upgraded tracks to provide access to the ridgeline from Springbank Road and Old Adelaide Road. The total length of track is approximately 30 kilometres of which approximately 8.0 kilometres will be upgrades of existing farm tracks.
- A series of 33kV electrical cables linking turbines to the on-site substation. The total length of cabling is approximately 50 kilometres.
- 275kV transmission line for approximately 25 kilometres from the on-site sub-station to the Robertstown sub-station.

The layout of the proposed wind farm is shown on the plans attached to this report, in **Attachment 1**.



## **4.0 PROCEDURAL MATTERS**

### **4.1 Public Notification**

Pursuant to the Statewide Wind Farms Development Plan Amendment, within the Primary Production Zone:

*"wind farms or wind monitoring masts, and ancillary development such as substations, maintenance sheds, access roads and connecting power-lines (including to the National Electricity Grid), where the base of any wind turbine is located 2 kilometres or more from the boundary of the Development Plan area or any of the following zones:*

- (a) Historic Mining Zone*
- (b) Residential Zone*
- (c) Rural Living Zone*
- (d) Township Zone",*

is designated as a Category 2 kind of development for public notification purposes.

Council undertook Category 2 notification of the application which concluded on 1 February 2012. During the notification period, concern was expressed by some parties that all documentation relating to the application were not readily available to view at Council. In response to this concern Council re-notified the application and this second round of notification concluded on 24 February 2012.

Representations made during the notification of the application highlighted that properties had been included in the description of the development, (that is the subject land) which were not agreed parties to the development. This resulted in the applicant amending the land included in the proposed development and the application being re-notified.

The third round of notifications concluded on 28 March 2012. A number of supplementary submissions were received by people who had previously lodged representations. A further four new representations were received.

A detailed summary of the submissions is contained in Section 6.1 of this Report.



#### **4.2 Nature of the Development - Question of Industrial Activity**

The Environment, Resources and Development (ERD) Court in its determination of an appeal against a wind farm within the District Council of Grant by Acciona Energy Oceania Pty Ltd (ERDC Number 106 of 2010, decision dated 17 June 2011) considered the question of whether a wind farm was an industrial activity in the form of a general industry. In considering this matter, the ERD Court stated that:

*"50... we would view the process of making an article in the definition of 'industry' to contemplate and be limited to the production of something physical or tangible.*

*51... accordingly, we do not regard the operation of a wind farm, where the activity in question is the conversion of wind energy into electrical energy, to be 'caught' by the definition in the Regulations."*

On this basis, the development is not deemed to be an industrial activity.

#### **4.3 Time to Commence and Complete Development**

The applicant has requested a period of four years in which to substantially commence the development from the operative date and substantial completion to be extended to nine years from the operative date of the consent.

Pursuant to Regulation 48(1) of the *Development Regulations 2008*, any consent or approval granted under Part 4 of the Development Act, will lapse at the expiration of 12 months from the operative date of the consent or approval. If the relevant development has been lawfully commenced within 12 months from the operative date of the approval, the approval will not lapse if it is substantially or fully completed within three years from the operative date of the approval. The period prescribed to commence or complete a development may be extended by the relevant authority either when the relevant consent or approval is given or at a later time (Regulation 48(2)).

In accordance with the Development Regulations, the request for an extended period of time in which to commence and complete the development can be determined by the relevant Planning Authority at the time the consent is given. Correspondence from the applicant (dated 13 October 2011) indicates an extended period is required due to long lead times for transmission connection modelling and construction and similarly long lead times for turbine delivery. There is also reference to the need to align the transmission line with another proposed wind farm and the upgrading of the Robertstown Substation.

Requests for extensions of time in which to commence and complete developments are reasonably common place for large scale developments which have numerous and complex issues to resolve.



Should the Council's Development Assessment Panel resolve to grant Development Plan Consent, it is recommended that the request for an extended period of four years in which to commence the development and nine years in which to complete the development be granted in accordance with the provisions of Regulation 48(2) of the *Development Regulations 2008*.

#### **4.4 Referrals**

##### **4.4.1 Environment Protection Authority**

Pursuant to Schedule 8 of the *Development Regulations 2008* a "windfarm means an undertaking where one or more wind turbine generators (whether or not located on the same site) are used to generate electricity that is then supplied to another person for use at another place". The proposed development is consequently a wind farm in accordance with this definition. A wind farm is a form of development listed in Schedule 8(9) of the *Development Regulations 2008* requiring referral to the Environment Protection Authority (EPA). The Planning Authority in determining the application must have regard to the response of the EPA.

The application was referred to the EPA and a response was provided by letter dated 5 January 2012. The Planning Authority must have regard to the report in determining the application. The EPA has advised on seven conditions and eight notes to be included on any consent granted by the Planning Authority. In its letter of 5 January 2012, it concludes:

*"Following construction it would be unlikely that noise emitted from the wind farm would impact on nearby residents. The actual noise levels must be measured at noise sensitive receivers following commissioning to determine their compliance with the noise criteria specified in Wind Farms: Environmental Noise Guidelines 2009 by the EPA. Any non-compliance must be addressed forthwith.*

*There would be a low risk of impacts on water quality during construction of the proposed wind farm, provided that work complies with a Construction Environment Management Plan incorporating a Soil Erosion and Drainage Management Plan prepared to the satisfaction of the EPA as recommended in the conditions below. During construction, noise and dust should be managed according to a Construction Environment Management Plan to avoid causing nuisance to nearby residents.*

*Earthmoving and heavy vehicle movement should be undertaken in such a manner that it would not cause soil degradation, erosion and sedimentation of watercourses".*



#### 4.4.2 State Heritage Unit

The application was referred to the State Heritage Unit of the Department of Environment and Natural Resources, as Council as the relevant authority deemed the development to *"materially affect the context within which the State heritage place is situated"*. The affected State Heritage Place is Old Koonoona Homestead, Springbank Road, Burra. A report was received from the State Heritage Unit dated 14 December 2011, to which Council must have regard in its determination.

The correspondence from the State Heritage Unit states that:

*"I have assessed the proposed development, both with regard to relevant heritage provisions of the applicable Development Plan, and its impact on the heritage significance of the above State Heritage place. I consider its heritage impact to be acceptable for the following reason/s:*

- *The location of the turbines is relatively distant to the State Heritage Place, and will not directly physically impact on the fabric of the homestead, nor any of the related outbuildings.*
- *The turbines will not impact substantially on the context of the State Heritage Place, given the location of the turbines on the ridgeline to the east of Old Adelaide Road."*

#### 4.4.3 Commissioner of Highways

The application was referred to the Transport Services Division of the Department of Planning, Transport and Infrastructure as it was deemed the development is adjacent a main road. The Transport Services Division does not object to the proposed development and has recommended eight conditions, including the preparation of a Traffic Management Plan.

#### 4.4.4 South Australian Murray-Darling Basin Natural Resources Management Board

Council referred the application to the South Australian Murray-Darling Basin Natural Resources Management Board (NRM Board) for comment. In a response dated 10 January 2012 the NRM Board noted that the *"proposed location of the wind farm is seen as an appropriate location according to the outcome of wind studies and the proposed management of the native flora and fauna"*. The NRM Board have suggested that the Planning Authority take into account a number of recommendations in relation to protection of native flora and fauna, including but not limited to the Pygmy Bluetongue (PBT) Lizard and Peregrine Falcon.



#### 4.4.5 Country Fire Service (CFS)

The Goyder Council Development Plan (unconsolidated 19 October 2011) does not contain any Bushfire Protection Area (BPA) or BPA Maps of bushfire risk. Consequently there are no maps designating potential bushfire risk, which would require referral of certain forms of development, particularly dwellings, tourist accommodation and other forms of habitable buildings in a High Bushfire Risk Area of a Bushfire Protection Area to the CFS. Given there is no designated Bushfire Protection Areas in the Development Plan, the wind farm application did not require referral to the Country Fire Service.

#### 4.5 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act is Commonwealth Legislation that focuses on the protection of the environment, especially matters of national environmental significance. The proponent of the wind farm has referred the proposed development to the Commonwealth Department of the Environment, Water, Heritage and the Arts for consideration under the EPBC Act.

It is not the role of the Planning Authority to determine if the EPBC referral or approval is required, as it is the applicants' responsibility to obtain all necessary approvals under all relevant legislation. However, the South Australian Murray-Darling Basin Natural Resources Management Board has identified that it would be pertinent for the Planning Authority to include a note in any approval granted which highlights that referral and approval under the EPBC Act that may be required.

TRUenergy have advised that the proposal has been submitted to the Commonwealth Department of the Environment, Water, Heritage and the Arts for consideration under the EPBC Act.

#### 4.6 Aboriginal Heritage Act 1998

The Aboriginal Affairs and Reconciliation Division (AARD) of the Department of the Premier and Cabinet, has advised the proponent that the site of the wind farm has no identified Aboriginal sites or objects.

### 5.0 NATURE OF SITE AND LOCALITY

The subject land and locality of the proposed wind farm is outlined below.

#### 5.1 Description of Subject Land

82 properties are incorporated into the proposed wind farm development, including the transmission line. The subject properties are legally described in the table in **Attachment 2** and illustrated on a drawing prepared by the applicant and included in **Attachment 1** (G4249\_148 Rev 2 Sheet 1 Wind Farm dated 28 July 2011 G4249\_148 Rev 2 Sheets 2 and 3 Wind Farm dated 24 February 2012 and G4249\_148 Rev 2 Sheets 1 – 3 Transmission Line dated 6 March 2012).



The operational wind farm is estimated to occupy approximately 20 hectares of the land which forms part of the application. A number of the properties listed in the table in **Attachment 2** do not specifically contain wind farm infrastructure at this time, but form part of the development site to provide the applicant with sufficient flexibility for future minor deviations of access road, internal reticulation, turbine and transmission line location following full engineering and design work being undertaken.

The proposed wind farm is located along the Tothill Range and the northern extension of Bluff Range, south of Burra. It is proposed to be located to the east of the Barrier Highway, which is a designated tourist route. Springbank Road is a major north-south road to the west of the proposed development. Old Adelaide Road, which is also a major north-south local road bisects the development site with wind turbines proposed on the ridges to the east and western side of the road. Porters Lagoon Road and Webster Road are east-west orientated roads which link the subject land with the Barrier Highway.

As the application documents note, *"the wind farm site occupies the northern section of a ridgeline approximately 65 km in length tending north-south and stretching from Burra to Waterloo Hill. The Ridgeline forms part of the Mount Lofty Ranges.... The transmission line route continues south east from the wind farm site along the valley floors to the Robertstown Substation north west of Robertstown"* (page 84 Volume 1 Main Report). In general terms the area contains a series of undulating ridges with pronounced escarpments and wide valleys.

Primary production and associated buildings and structures are dominant within the development site. The ranges are generally utilised for grazing with the valleys accommodating cropping and grazing activities. As described in the application documents *"the land use that occurs in the valleys between the ranges has a more diverse land use character with areas of arable cropping and grazing. This creates a patchwork character to the landscape, with changes in colour and texture as a result of the different agricultural practices"* (page 12 Volume 1 Main Report).

The development site contains areas of native vegetation, which has been described in detail in the Flora and Fauna Assessment Report (by EBS Ecology) which forms part of the application documents. The EBS Ecology Report notes that 56 flora species were identified within the wind farm area (excluding the transmission line) and 87 flora species (63 native species and 24 introduced species) along the transmission line route. Generally the areas of native vegetation are located on land which is not utilised for agricultural cultivation and provides a contrast to the farming land.

The area in which the wind farm is proposed is one of a pleasant open rural character.



## 5.2 Description of Locality

A locality, for the proposed development, is difficult to accurately define, not only because of the combined height of the turbine and blades (up to 145 metres), but also because of the topography of the area and the overall area covered by the proposed wind farm. Between the northern most and southern most turbines on the proposed wind farm there is approximately 13.8 kilometres (including spacing between turbines). There is approximately 3.4 kilometres between the most eastern and western turbine, which are on two separate ridgelines. The transmission line extends 25 kilometres from the wind farm to the Robertstown substation.

The locality can broadly be defined around the extent to which the turbines may be visible, however this will vary from different positions and with varying degrees of clarity. The Zone of Theoretical Visual Influence (ZTVI) prepared as part of the application documents illustrates that the wind turbines may be visible up to 24 kilometres from the site, due to the elevation along Tothill Range.

The locality is within the Northern Mount Lofty Ranges and is typified by ridgelines and valleys of the Tothill and Bluff Ranges and the predominant agricultural landscape. Tothill, Bluff and Scrubby Ranges create a series of defined ridgelines in a north-south orientation. The ridgelines transition to fragmented isolated hills and an undulating landscape south of these ranges. East of the ranges is a low-lying landscape which is formed by flood plains of Burra and Stone Chimney Creeks. To the west are the ridges and valley of the Clare Valley. The Visual Assessment Report by WAX Design in association with Swanbury Penglase identify 15 landscape units around the wind farm and transmission line.

Within this locality, the prominent features/elements include:

- open agricultural landscape dominated by grazing and open paddocks;
- areas of native vegetation, generally along ridgelines, road verges and creeklines;
- farm buildings including dwellings and other structures;
- the township of Burra approximately 5.0 kilometres to the north;
- existing Waterloo Wind Farm approximately 6.0 to 10 kilometres to the south-west;
- the Barrier Highway which is the primary road network, generally in a north-south orientation;
- other local roads, including Springbank Road, Old Adelaide Road, Porters Lagoon Road and Webster Road;
- infrastructure including the Morgan – Whyalla pipeline and electricity transmission lines of various capacities;



- Porters Lagoon and Burra Creek; and
- the Heysen Trail and Mawson Trail.

In determining the character and amenity of the locality, the following extracts from *Taralga Landscape Guardians Inc v Minister for Planning and Anor ((2007) 161 LGERA 1, at para 1)* cited in the *ERDC No 106 of 2010 R Paltridge and Anor v District Council of Grant (June 2011 at para 25)*, illustrates how a wind farm development can create disparate views that impact on the rural character:

*"The insertion of wind turbines into a non-industrial landscape is perceived by many as a radical change which confronts their present reality. However those perceptions come in differing hues. To residents, such as members of Taralga Landscape Guardians Inc (the Guardians), the change is stark and negative. It would represent a blight and the confrontation is with their enjoyment of their rural setting.*

*To others, however, the change is positive. It would represent an opportunity to shift from the societal dependence on high emission fuels to renewable energy sources. For them, the confrontation is beneficial - being one much needed step in policy settings confronting carbon emissions and global warming."*

The disparity of views is apparent in the representations received during the public consultation of this application. In my assessment, the locality retains a rural character, in which wind turbines are integrated with the landscape. The area has the characteristics of an open rural environment, as described in the Desired Character Statement of the Primary Production Zone.

## **6.0 PUBLIC NOTIFICATION**

Category 2 notification of the application was undertaken on three separate occasions, as detailed in Section 4.1 of this Report. During the notification, Council has deemed that there were 32 valid representations (including petitions).

Six of the representations stated they were in favour of the development, whilst one additional representation was neutral. The remainder (25) of the representations were against or primarily against the development.

19 of the representations expressed a desire to be heard personally (or by a representative) by the Development Assessment Panel in support of their submission. Table 6.1 below summaries the representors that wish to be heard.



## 6.1 Summary of Submissions

There are a number of similar issues raised in the submissions, including:

- form of development:
  - appropriateness of location;
  - industrial nature of wind farms;
  - loss of agricultural production;
  - impacts on aerial applications; and
  - interface between land uses;
- planning policies and procedures:
  - Development Plan policies restricting those notified;
  - consistency with Ministerial Statewide Wind Farm Development Plan Amendment and Goyder Council Development Plan (DPA); and
  - consistency with Mid North Regional Land Use Framework;
- environmental impacts:
  - impacts on flora and fauna;
  - vegetation clearance;
  - need for EPBC assessment;
  - impacts on ground water;
  - potential for soil erosion;
  - question the net benefit from energy generated and emission reduction; and
  - benefits of wind farms in energy generation;
- visual impact;
- impact of turbines:
  - impact of transmission line; and
  - landscape and heritage value of area;
- noise impact:
  - proximity to non-stakeholder dwelling;
  - issue of tonality;
  - issue of infrasound; and
  - questions of adequacy of acoustic assessment;



- social impacts:
  - division of the community;
  - health impacts;
  - impacts on long term farming families;
  - impact on Burra, Mawson Trail and tourist routes;
  - impacts on heritage properties and landscape qualities of heritage areas; and
  - concerns regarding inclusion of land in stakeholder agreements;
- shadow flicker;
- blade glint and blade throw;
- road infrastructure;
- bushfire hazard;
  - fire potential from turbines;
  - impacts on aerial bushfire support; and
  - interference with CFS communication;
- property values;
- telecommunication interference;
- decommissioning; and
- cumulative impacts of wind farms.

The following table provides a summary of the representations. It is understood that a copy of each of the submissions is included in the Development Assessment Panel agenda.



**Table 6.1 – Summary of Representations**

	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
1 and 1a	Andrew Coffey Springbank Road via Burra PO Box 93 Burra Supplementary submission dated 9 February 2012	Primarily Against	Yes	Offensive in sight and sound. Should have 2.0 or 3.0 kilometre separation from existing dwellings. Air safety around turbines means that households within radius denied water bombing support in event of fire, which does not seem fair or legal.
2	Henry Dunn Box 27 Burra	Against	Yes – represented by Bob Lamb	Development does not comply with Development Plan. Fire risk: <ul style="list-style-type: none"> <li>- CFS stand back 1.0 kilometre.</li> <li>- Aerial water bombers access restricted.</li> <li>- Turbines affect CFS pager transmission.</li> <li>- Fire suppression technology installed on turbines is far from fool proof.</li> </ul> Infrastructure, particularly road upgrades not provided economically and cost burden left to Council and community. Increase of heavy vehicle movements. Interference with telecommunications. No net community benefit from wind farms, but division within community. Question benefits to the state of electricity generated by wind farms and CO2 emission reduction. Visual impact of additional transmission line from the development. Shadow flicker. Noise and tonality of turbines requires further Acoustic Reports. The issue of noise still remains a current issue before the Courts. DAP should defer consideration of application until outcome of the Quinn appeal and independent noise monitoring is known.



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<p>Impacts of construction on sloping land and watercourses, including Logans Gap and Logans Creek in the locality. A desktop review of impact of development on such steep terrain is inadequate.</p> <p>Development would impact on environment, ecosystems and native vegetation. Development is in close proximity to remnant woodland and grasses, including EPBC critically endangered Irongrass. Wind farm cannot meet the Natural Resource provisions of the Development Plan. DPA changes policy relating to visual amenity and not Natural Resources</p> <p>Recommendations and approval of SA Murray-Darling Basin Natural Resources Management Board (NRM) is inadequate as it does not require a referral under EPBC or adequately address protection for raptors or Pygmy Bluetongue Lizard. EPA Report contains 'deplorable omissions'.</p> <p>The application reports do not address decommissioning.</p>
3 and 3a	Wayne and Tracey Mitchell PO Box 35 Burra Sodhut Farm, Old Adelaide Road, Burra	Against	Yes – Mr Harvey Neal	<p>Wind farm would alter landscape qualities of Old Adelaide Road area, which is part of the heritage story of Burra. Area one of outstanding natural and historical beauty and part of tourism drive.</p> <p>Proposal would involve locating wind turbines between two State Heritage Places, namely old Koonoona Homestead and Princess Royal Homestead. Also in close proximity to Local Heritage Places including Old Drovers Yards and Sod Hut Hotel. Important views and vistas are threatened from all of the heritage icons.</p> <p>Wind farms adversely affect tourist industry in Burra as it will be surrounded.</p> <p>Wind farm just over 1.0 kilometre from our home. Question by policy 2.0 kilometre radius from a dwelling in a town and only 1.0 kilometre from a dwelling outside of town.</p> <p>Peace and enjoyment of property to be threatened by location of turbines on Old Koonoona property opposite, which contains a number of proposed turbines, as well as native vegetation and biodiversity.</p>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				Concerns regarding: <ul style="list-style-type: none"> <li>- visual amenity;</li> <li>- property values;</li> <li>- noise;</li> <li>- erosion, dust and noise during construction;</li> <li>- heavy vehicle movements;</li> <li>- visual amenity;</li> <li>- noise levels;</li> <li>- medical problems;</li> <li>- telecommunication interference;</li> <li>- shadow flicker;</li> <li>- loss of production and impacts on businesses due to restrictions on spraying;</li> <li>- fire; and</li> <li>- biodiversity and native vegetation.</li> </ul>
4	Various Signatories			Concerns expressed with regard to the provision of information and request extended period in which to make representation.
5	Joanne Kotz RMD 20, Robertstown Black Springs Road, Emu Downs	Neutral	No	No objections, but question why a wind farm cannot be built out towards Sutherlands/Margot, where there is less population.
6	Kym Schaefer 11 Yattarna Crescent Nuriootpa	Against	Yes – Mr Colin Schaefer	Concerns regarding: <ul style="list-style-type: none"> <li>- misinformation from wind farm developers;</li> <li>- social unrest within community and poor distribution of wealth;</li> <li>- health issues;</li> <li>- fire hazard and potential impacts on emergency services levy;</li> <li>- hazard to aviation;</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<ul style="list-style-type: none"> <li>- proximity of turbines to dwellings and towns. Place for wind farm not in proximity to settled areas;</li> <li>- land values;</li> <li>- foreign ownership of companies;</li> <li>- Robertstown, Waterloo and Stony Gap are within critically endangered environmental region of fauna and flora;</li> <li>- noise addressed in decibels only and not sound frequencies;</li> <li>- Development Plan policies based on overseas studies which are different to Australian conditions; and</li> <li>- Elected members and conflict of interest.</li> </ul>
7	Colin Schaefer Woolbrae RMD 7, Brady Creek Road, Robertstown	Against	Yes	<p>Concerns regarding:</p> <ul style="list-style-type: none"> <li>- misinformation from wind farm developers;</li> <li>- social unrest within community and poor distribution of wealth;</li> <li>- health issues;</li> <li>- fire hazard and potential impacts on emergency services levy;</li> <li>- hazard to aviation;</li> <li>- proximity of turbines to dwellings and towns. Place for wind farm not in proximity to settled areas;</li> <li>- land values;</li> <li>- foreign ownership of companies;</li> <li>- Robertstown, Waterloo and Stony Gap are within critically endangered environmental region of fauna and flora;</li> <li>- noise addressed in decibels only and not sound frequencies;</li> <li>- Development Plan policies based on overseas studies which are different to Australian conditions. Policy of Government very poor;</li> <li>- elected members and conflict of interest; and</li> <li>- not against renewable energy.</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
8	Joe and Lauren Ross RSD 30, Robertstown	Against	Yes – Jim Dunstan, Mary Morris or others.	<p>As an adjoining land owner, I object on the following grounds:</p> <ul style="list-style-type: none"> <li>- Health effects as we can see, feel and hear the effects of the adjacent Waterloo Wind Farm. Waterloo Wind Farm can be heard up to 11 kilometres away.</li> <li>- True effects of wind farms becoming more evident and concerned about sleep deprivation.</li> <li>- Have interference on TV since Waterloo Wind Farm commissioned.</li> <li>- Cumulative effect of wind farm development on ridgelines.</li> <li>- Devaluation of property.</li> <li>- Impact on scenic qualities.</li> <li>- Restrictions on aerial spraying of property.</li> <li>- Noise and vibration.</li> <li>- Bushfire risk and restrictions on use of aerial fire fighting.</li> <li>- Environmental impacts.</li> </ul>
9	Trevor and Creina Ross RSD 30, Robertstown	Against	Jim Dunstan, Mary Morris or others	<p>As an adjoining land owner, I object on the following grounds:</p> <ul style="list-style-type: none"> <li>- Health effects as we can see, feel and hear the effects of the adjacent Waterloo Wind Farm. Waterloo Wind Farm can be heard up to 11 kilometres away.</li> <li>- True effects of wind farms becoming more evident and concerned about sleep deprivation.</li> <li>- Have interference on TV since Waterloo Wind Farm commissioned.</li> <li>- Cumulative effect of wind farm development on ridgelines.</li> <li>- Devaluation of property.</li> <li>- Impact on scenic qualities.</li> <li>- Restrictions on aerial spraying of property.</li> <li>- Noise and vibration.</li> <li>- Bushfire risk and restrictions on use of aerial fire fighting.</li> <li>- Environmental impacts.</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
10 and 10a	<p>Hamish J Dunn            Koo-Owie Koomooloo Stud Pty Ltd            PO Box 27, Burra            Supplementary letter dated 24 February and attached MechTest submission.</p>	Against	Yes	<p>Object to the proposal, which is of a size and capacity never built before in Australia for the following reasons:</p> <ul style="list-style-type: none"> <li>- Governments ridiculous planning guidelines and renewable energy targets.</li> <li>- Wind farms in populated areas are being developed without confirming and acknowledging the impacts on people and communities at large.</li> <li>- Insufficient information on long term health impacts.</li> <li>- Devalue property.</li> <li>- Impacts on landscape value and visual amenity.</li> <li>- Impact on heritage values of areas and Heysen Trail.</li> <li>- Impacts on tourism.</li> <li>- Environmental Assessment undertaken in 2009 during period of drought, conditions have altered and migratory birds now present.</li> <li>- Impacts on native flora and fauna.</li> <li>- Area recognised as a bird migratory corridor.</li> <li>- Impacts on waterways due to clearance for roads and infrastructure.</li> <li>- Effect on soil moisture due to changes in airflow created by turbines.</li> <li>- Potential impact on air strip used for crop dusting aircraft on land out of Koonoona adjacent Porter Lagoon Road and Springbank Road.</li> <li>- Impact on local roads and costs of upgrading.</li> <li>- Turbines being a visual distraction to drivers.</li> <li>- Noise pollution is an environmental nuisance and threat to public health. There is a need for in-depth studies into noise effects from wind farms.</li> <li>- Marshall Day Acoustic Report is inaccurate as it is based on 80 metre turbines with 3MW generators, but the proposal is 85 metre turbines with 3.4MW generators.</li> <li>- Limit of 1.0 kilometre is not a sufficient distance to meet the required maximum noise limit of residential homes.</li> <li>- Development should be deferred due to current legal matters and tests being undertaken at Waterloo.</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<ul style="list-style-type: none"> <li>- Acoustic testing not undertaken at periods of lowest wind speeds.</li> <li>- Authorities would be negligent to approve development without unequivocal proof of the health effects of wind farms.</li> <li>- Concerns regarding television and radio signal interference.</li> <li>- Bird strike.</li> <li>- Bushfire risk.</li> <li>- Question how decommissioning will occur.</li> </ul>
11	Roger Dunn PO Box 27, Burra	Against	Yes – Ally Fricker	No reasons stated.
12	Philip Ruediger RSD 17 Robertstown Niblett Gap Road, Emu Downs	Against	Yes – Jim Dunstan or Mary Morris	<p>As an adjoining landholder and resident I formally object on the following grounds:</p> <ul style="list-style-type: none"> <li>- Health effects, including sleep deprivation.</li> <li>- Appropriate studies are required on health effects.</li> <li>- Both Hallett and Waterloo Wind Farms are causing problems.</li> <li>- Experienced interference with TV reception since commissioning of Waterloo Wind Farm.</li> <li>- Tru-Energy does not have a good track record in dealing with problems from Waterloo Wind Farm.</li> <li>- High Risk Bushfire Area and concerns regarding aerial fire fighting.</li> <li>- Issues of noise levels in primary production areas versus rural living areas.</li> <li>- Linkages and interrelationship with Robertstown development.</li> <li>- Environmental concerns including Peppermint Box and Pygmy Bluetongue Lizard.</li> <li>- Cumulative effect of wind turbines on ridgeline.</li> <li>- Devalue property.</li> <li>- Scenic qualities of the landscape.</li> <li>- Restricted capacity to undertake aerial spraying for farm purposes.</li> <li>- Potential electromagnetic interference.</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<ul style="list-style-type: none"> <li>- Impacts of heavy vehicle movements particularly during construction.</li> <li>- Impacts on local roads and cost of upgrading and maintenance.</li> <li>- Need to protect Peregrine Falcon.</li> <li>- Question how decommissioning will occur.</li> <li>- Question source of water during construction.</li> </ul> <p>Letter from Aerotech Australiasia attached to the letter which estimates a 500 metre buffer would be required to ensure safety to allow parallel flying to the turbines and 3.0 kilometres for unrestricted agricultural spraying to allow for flying towards turbines for the manoeuvring of aircraft. Aerial Agricultural Association of Australia Wind Farm Policy March 2011 and Powerlines Policy March 2011 attached.</p>
13 and 13a	<p>Chris Ruediger RSD 17, Robertstown Niblett Gap Road, Emu Downs Supplement dated 27 March 2012</p>	Against	Jim Dunstan or Mary Morris	<p>As an adjoining landholder and resident I formally object on the following grounds:</p> <ul style="list-style-type: none"> <li>- Health effects, including sleep deprivation.</li> <li>- Appropriate studies are required on health effects.</li> <li>- Both Hallett and Waterloo Wind Farms are causing problems.</li> <li>- Experienced interference with TV reception since commissioning of Waterloo Wind Farm.</li> <li>- Tru-Energy does not have a good track record in dealing with problems from Waterloo Wind Farm.</li> <li>- High Risk Bushfire Area and concerns regarding aerial fire fighting.</li> <li>- Issues of noise levels in primary production areas versus rural living areas.</li> <li>- Linkages and interrelationship with Robertstown development.</li> <li>- Environmental concerns including Peppermint Box and Pygmy Bluetongue Lizard.</li> <li>- Cumulative effect of wind turbines on ridgeline.</li> <li>- Devalue property.</li> <li>- Scenic qualities of the landscape.</li> <li>- Restricted capacity to undertake aerial spraying for farm purposes.</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<ul style="list-style-type: none"> <li>- Potential electromagnetic interference.</li> <li>- Impacts of heavy vehicle movements particularly during construction.</li> <li>- Impacts on local roads and cost of upgrading and maintenance.</li> <li>- Need to protect Peregrine Falcon.</li> <li>- Question how decommissioning will occur.</li> <li>- Question source of water during construction.</li> <li>- Question the information available to SAMDBNRMB to respond to Council on DA and critical of their consultation and response in relation to numerous specific matters.</li> <li>- Peregrine Falcon and concerns with separation from turbines and suggest a 3.0 kilometre radius would be appropriate.</li> <li>- Disturbance of Peregrine Falcons likely during construction.</li> <li>- Critical of EBS Ecology Report in relation to specific bird species and failure to deal with species that would utilise the Porters Lagoon and Apoinga Wetland.</li> <li>- Area contains critically endangered ecological communities and a large scale development such as a wind farm will cause further decline.</li> <li>- Down draught from turbines may have impact on biodiversity.</li> </ul>
13 b and c	P and C Ruediger Valley View (no further contact details provided)			<p>The submission expresses concerns about the information contained in the application and raises numerous questions and issues, including:</p> <ul style="list-style-type: none"> <li>- who is responsible for compliance, particularly in relation to noise;</li> <li>- what is the cumulative effects of wind farms on the environment;</li> <li>- why isn't World's End Circuit excluded from a wind farm given it is a premier tourist drive;</li> <li>- what are the limitation and efficiencies of the transmission line and does the Stony Gap Wind Farm rely on Robertstown Wind Farm (yet to be approved) for efficient transmission network;</li> <li>- Certificates of Title incorrectly listed;</li> <li>- lack of information regarding concrete batching plant and type of turbines;</li> </ul>



NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
			<ul style="list-style-type: none"> <li>- are 3MW turbines or 3.4MW turbines to be utilised;</li> <li>- current legal action still pending in relation to noise from wind farms;</li> <li>- how is any non-compliance with noise addressed by EPA and in what timeframe;</li> <li>- Waterloo Wind Farm currently produces vibration and resonance issues up to 10 kilometres away;</li> <li>- interference with communication networks;</li> <li>- inadequate studies into impacts on essential communication;</li> <li>- high value cropping land should be excluded from wind farm development due to impacts on aerial spraying, fire bombing and heavy vehicle traffic movements;</li> <li>- source of water for construction of wind farm;</li> <li>- routes for heavy vehicles and who builds and maintains roads;</li> <li>- research is required into health concerns arising from Waterloo Wind Farm;</li> <li>- who is responsible for cleaning up site following any fire, breakdown or damage to a turbine;</li> <li>- property values;</li> <li>- decommissioning of wind farm; and</li> <li>- need for EPBC referral.</li> </ul> <p>All of these issues need to be addressed prior to DAP making a decision.</p>
14, 14a and 14 b	Grant and Anthea Ross RSD 13, Robertstown Supplementary Submissions dated 23 and 28 March 2012	Against	<p>Yes – represented by Mary Morris</p> <p>Concerns include:</p> <ul style="list-style-type: none"> <li>- future health concerns;</li> <li>- proximity to homes;</li> <li>- noise;</li> <li>- effects on tourism;</li> <li>- problems with aerial spraying and fire fighting; and</li> <li>- too many wind turbines in the district.</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<p>The additional submission includes reference to three attachments on the following:</p> <ul style="list-style-type: none"> <li>- The wind industry has misquoted the NHMRC and they do not say there are no health effects. The NHMRC recommends a precautionary approach.</li> <li>- A recent survey of Waterloo residents living within 5.0 kilometres of the turbines shows that 70% of respondents are moderately to severely affected by noise from turbines.</li> <li>- An article in the British Medical Journal of March 2012 which indicates a large body of evidence now exists to suggest that wind turbines disturb sleep and impair health.</li> <li>- Goyder DAP must use the precautionary principle in the face of the mounting evidence that there are enormous problems at Waterloo and TRU Energy must not be allowed to cause more harm to the community.</li> <li>- Concerned that other members of the community unable to make comment on the development.</li> <li>- Additional wind farms in the area will impact on family farming businesses as properties are purchased by wind farm operators.</li> </ul>
15	Kym Dixon Black Springs RMD Saddleworth	Against	Yes	<p>Residence is 1.3 kilometres from first northern wind turbine of Waterloo Wind Farm and the problems created include:</p> <ul style="list-style-type: none"> <li>- loss of quality of life;</li> <li>- sleep deprivation due to noise levels above EPA recommendations. Currently doing noise testing ourselves and readings sometimes double recommended EPA guidelines;</li> <li>- health problems including headaches, migraines, ears ringing;</li> <li>- no longer receive digital TV;</li> <li>- problems with am/fm radio, wireless broadband, CFS pager;</li> <li>- all of these effect our business; and</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<ul style="list-style-type: none"> <li>- effects on wildlife as prior to Waterloo Wind Farm eagles and hawks present in area, but no longer observed.</li> <li>Development application lists titles owned by K J Dixon are included in the plan without consent.</li> </ul>
16	Travis Friebel Fairview Trading Trust, RSD 19, Robertstown	Against	Yes	<ul style="list-style-type: none"> <li>- If development proceeds then we will be surrounded by wind turbines.</li> <li>- Decrease value of property.</li> <li>- Impact on the ability to use crop dusters.</li> <li>- Concerned about noise.</li> </ul>
17	David and Jo Gebhardt Box 101, Burra	Favour	Yes	<ul style="list-style-type: none"> <li>- As landholders directly affected by the wind farm we express our support for this project.</li> <li>- Confident proposal will be carried out in a sustainable manner.</li> <li>- Grazing and wind turbines can co-exist.</li> <li>- Better roads and infrastructure will result and safer access for emergency vehicles.</li> <li>- Wind farms create employment.</li> <li>- All districts need industry to survive.</li> <li>- District can produce electricity due to the suitable hills and wind resource.</li> <li>- Believe that environmental and social benefits of this project and opportunity to create a renewable energy resource should be balanced in the assessment of the proposed development.</li> </ul>
18	R L and C L Farrelly PO Box 18 Robertstown	Favour	No	<ul style="list-style-type: none"> <li>- No reasons stated.</li> </ul>
19	Travis and Jayde Thamm PO Box 335, Burra	Against	Yes	<p>Concerns include:</p> <ul style="list-style-type: none"> <li>- noise;</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<ul style="list-style-type: none"> <li>- health;</li> <li>- resale value of property;</li> <li>- proximity of towers to our residence;</li> <li>- effects on native wildlife; and</li> <li>- erosion.</li> </ul>
20	Paul and Tanya Williams PO Box 140, Burra	Against	No	<p>Concerns include:</p> <ul style="list-style-type: none"> <li>- ability to safely move stock and large farm machinery along Old Adelaide Road due to increased traffic;</li> <li>- Old Adelaide Road is in poor condition and extra traffic will make this worse;</li> <li>- the hills are high fire danger area and restrictions would be placed on aerial fire fighting; and</li> <li>- impacts on visual qualities of Burra due to number of wind farms and associated impacts on tourism and heritage.</li> </ul>
21 and 21a	Roy, Gloria and Damien Sachse PO Box 21, Robertstown Supplementary submission dated 9 February 2012	Favour	Yes	All wind farms should be approved as they are necessary for future power needs.
22	Peter and Judy Koch 1594 Hundred of Apoinga RMD Saddleworth	Against	No	Live close to Waterloo Wind Farm and currently experience health problems and don't want this to be further compounded by another development.
23	Paul Thompson PO Box 27 Hoyleton	Favour	No	As farmers concerned for the environment, we support the wind farm and renewable energy.



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<p>The Stony Gap Wind Farm site has few trees and is essentially rocky that provides little feed. It is in the middle of our 4,800 acre property well away from any non-stakeholder land.</p> <p>The Government Report on The Potential Health Impacts of Wind Turbines (May 2010) concludes that <i>"while some people living near wind turbines report symptoms such as dizziness, headaches and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects. The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct health effects, although some people may find it annoying"</i>.</p> <p>We consider that TruEnergy has been diligent in balancing impacts on the natural environment, providing energy services and protection of people and wildlife. Pleased to supply a green energy source.</p>
24	DL, MT, AC, JM Stockman PO Box 114, Burra	Favour	Not stated	No reasons provided.
25	Tracy and Gavin Rodda Geranium Plain Road, Robertstown	Against	Yes - Jim and Rhonda Dunstan	Opposed due to sight, sound and environmental and health effects.
26	David and Kay Smith Lot 6, Burra Road, Robertstown	Primarily Against	No	Concerned about health effects and impacts on quality of life. Suggest developer should <i>"buy them out"</i> .
27 and 27a	Tony Abbott Piper Alderman Lawyers PO Box 65 Adelaide SA 5001	Against	Representation written by Neil Mosey indicates he is to be represented by	<p>Written submission from Neil Mosey expresses two key concerns:</p> <ul style="list-style-type: none"> <li>- No agreement for his land to be used for wind farm or transmission line contrary to information included in application documents.</li> <li>- Excessive noise and subsequent impact on quality of life.</li> </ul>



NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
<p>For and on behalf of Neil Mosey            Letter dated 24 February 2012            Supplement 28 March 2012</p>		<p>Tony Abbott</p>	<ul style="list-style-type: none"> <li>- The submission written by Piper Alderman expresses extensive concerns, which include:</li> <li>- Proposal is seriously at variance with the Development Plan in that:               <ul style="list-style-type: none"> <li>- Contrary to "Interface between land use" provisions as it does not protect community health and amenity.</li> <li>- Contrary to "Interface between land use" PDC 1 the development is likely to produce excessive noise.</li> <li>- Contrary to "Orderly and Sustainable Development" provisions as there is a substantial risk of further community division, interference with health and quality of life.</li> <li>- Contrary to "Renewable Energy Facilities" Objective 1 as the development has not been shown to have been located in a way to benefit the environment, local community and the state.</li> <li>- Contrary to "Renewable Energy Facilities" Objective 1 and 3 as it has not been shown to have been located at a place which will avoid or minimise adverse impacts on the natural environment.</li> <li>- Contrary to PDC 9 of the Primary Industry Zone the development is not consistent with the Desired Character of the zone.</li> <li>- The DAP should have regard to the scale of the development and substantial community opposition to this wind farm and further wind farms in the vicinity of the Waterloo Wind Farm.</li> <li>- Council should commission experts to assist in scrutiny of the application.</li> <li>- The DAP should have no substantial confidence in the assertions or fact and opinion contained in the application documents.</li> <li>- Application documents and supporting material is 3 to 4 years old.</li> <li>- DAP should require proof of its agreements with landholders.</li> <li>- The applicant significantly undervalues the adverse social effects of the wind farm.</li> </ul> </li> </ul>



NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
			<ul style="list-style-type: none"><li>- Significant community opposition to wind farms on ground of health and noise effects, visual amenity, excessive number and disturbance to natural environment. These concerns noted in Goyder Councils submission to DPAC on the Statewide Wind Farms DPA and petition with 240+ signatories.</li><li>- Reliance on National Health and Medical Research Council (NHMRC) short paper statement in relation to health effects is demolished by other more recent studies (a number which is quoted).</li><li>- Evidence from the Quinn case (ERD Court appeal) in relation to health effects should not be dismissed.</li><li>- The DAP must take a <u>precautionary</u> approach rather than insisting on objectors having to prove that this particular wind farm will cause particular pathological effects on particular people.</li><li>- Economic benefits of the wind farm are over stated or incorrectly stated.</li><li>- Any benefits should be assessed against the enduring negatives on families adjacent the wind farm.</li><li>- Environmental benefits in terms of greenhouse gas emissions are overstated.</li><li>- The visual impact of the proposed development will be substantial and to a large number of people adverse.</li><li>- Desktop assessments of city architects run counter to the aesthetic judgments of the local community.</li><li>- There is no consideration of undergrounding the transmission line.</li><li>- The Landscape Assessment Report is significantly undermined because they do not refer to the Mid-North Region Plan that contains many references to preserving the scenic quality of the area.</li><li>- The applicant has not considered the cumulative effect on visual amenity. This assessment is required by the provisions of the Development Plan.</li></ul>



NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
			<ul style="list-style-type: none"> <li>- It is not correct to assume that visual impact is not a factor if requirements of PDC 2 of the Renewable Energy Facilities general section for the management of visual impact are achieved. Achievement of these conditions is a minimum requirement and does not mean that visual impact is not a factor.</li> <li>- The application does not demonstrate compliance with the Development Plan in relation to minimising impact of noise and on this basis alone should be rejected.</li> <li>- EPA guidelines have flaws and inadequacies.</li> <li>- The issue of tonality should be addressed.</li> <li>- Residents of a Primary Production Zone are entitle to just as much sound protection as residents in a Rural Living Zone to which the Guidelines accord a lower 35dba level.</li> <li>- The EPA Guidelines are after all only guidelines and have no binding force on a planning assessment.</li> <li>- The development is wrongly located and the applicant should give consideration to where in the whole of the state the location of a potential wind farm should or could occur.</li> <li>- It is wrong and contrary to the Development Plan for the applicant to confine its consideration to the mid north region of South Australia and application should be rejected on that ground alone.</li> <li>- The draft Mid North Regional Land Use Framework is relied upon with regard to site selection, however the final version of the Region Plan does not identify the area immediately south of Burra as being suitable for potential wind energy development.</li> <li>- Impacts on the natural environment have not been minimised or avoided, as detailed in submissions by Chris and Phillip Ruediger and Jim Dunstan.</li> <li>- The development is inconsistent with the dominant character of the zone.</li> </ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<ul style="list-style-type: none"> <li>- Whilst wind farms are a possible form of development within the Primary Production Zone it does not mean that wind farms can be placed anywhere and everywhere in every part of the zone.</li> <li>- The wind farm will result in too much of a diminution of the aspects of the desired character of the zone.</li> <li>- Decommissioning has not been adequately addressed.</li> </ul>
27b	<p>Tony Abbott Piper Alderman Lawyers PO Box 65 Adelaide SA 5001</p> <p>For and on behalf of Neil Mosey and Chris and Philip Ruediger Supplementary Submission dated 28 March 2012</p>	Against	Not Stated	<p>The supplementary submission covers some of the matters coming to the attention of the objectors since 23 February 2012, including:</p> <ul style="list-style-type: none"> <li>- the nature and quality of the development application;</li> <li>- risk of adverse health effects, quality of life damage;</li> <li>- excessive noise;</li> <li>- the status of the Quinn v Goyder and AGL litigation;</li> <li>- blade glint and shadow flicker;</li> <li>- blade throw; and</li> <li>- decommissioning.</li> </ul> <p>In further detail the supplementary submission states:</p> <ul style="list-style-type: none"> <li>- TRUEnergy have acknowledged that they did not in fact have agreements in place with all owners of land where the transmission line is planned to be located. The careless attitude to the truth of matters of fact contained in the development application is concerning.</li> <li>- The following elementary propositions are included in relation to risk of adverse health effects and damage to quality of life:               <ul style="list-style-type: none"> <li>- Some sounds especially if loud or prolonged can not only be unpleasant but can be bad for human health.</li> <li>- Audible Wind Turbine Noise (WTN) has different characteristics from other sound sources and these can make WTN more annoying.</li> <li>- WTN is likely to be the cause of adverse health effects for some people living up to 2.0-10 kilometres from a turbine.</li> </ul> </li> </ul>



NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
			<ul style="list-style-type: none"><li>- The health effects reported from WTN are not simply an annoyance.</li><li>- Sleep deprivation can cause depression and detectable changes in metabolic, endocrine and immune pathways.</li><li>- The likelihood of these health effects being caused by WTN is proved by a combination of:<ul style="list-style-type: none"><li>- Increasing number of anecdotal case studies and reports from residents near wind farms.</li><li>- A growing body of medical and other expert opinion in academic literature.</li></ul></li><li>- The wind industry claims that 'scientific' reports commissioned by the wind industry and the 2010 NHMRC Rapid Review have exonerated WTN as a cause of any health effects. There has been peer-reviewed academic publications in 2011 and 2012 which overtake and discount these reports.</li><li>- Current EPA guidelines do not adequately take account of low frequency noise and infrasound which are present with WTN, but which are dismissed by the EPA guidelines and therefore not measure in development applications.</li><li>- Predicted compliance of a wind farm with the EPA criteria is no safeguard against adverse health effects. Additionally, the guidelines and their prediction and compliance methodologies are logically and scientifically flawed.</li><li>- The DAP cannot ignore the weight of the most recent literature and reports such as the British Medical Journal article of this month.</li><li>- Application only measures noise at a distance less than 2.0 kilometres from any turbine. There would be many other residents and people within 3.0 and 4.0 kilometres of a turbine.</li><li>- The application takes no account of the impact of wind turbine noise on residents of the township of Burra.</li></ul>



NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
			<ul style="list-style-type: none"><li>- The application does not show compliance with the EPA guidelines and this submission is supported by a report from Professor Hansen. The report from Professor Hansen identifies 10 separate errors in the Marshall Day Acoustics Report.</li><li>- Profession Hansen's conclusion states that <i>"it is almost certain that even the 40dBA criteria proposed in the Marshall Day report following the SA guidelines will be exceeded at a number of residential locations on many occasions under stable atmospheric conditions and when some turbines are downwind of others"</i>.</li><li>- The calculations and conclusions in the Marshall Day Report can only be relevant if TRUenergy chooses the particular Vestas V90/3MW turbines used for those calculations. Any changes to that model, or to the dimensions of the Vestas turbine would require further assessment.</li><li>- Professor Hansen maintains the view that the SA EPA Guidelines are not scientifically justified, are against the weight of evidence, and are logically unsound. A consequence of these flaws in the EPA Guidelines is to further emphasise the lesson of experience (Hallett 2 and Waterloo), that the fact that an expert certifiers apparent compliance with the EPA Guidelines does not mean that people will not suffer adverse health effects.</li><li>- Assessment distance of 1.0 kilometre for blade glint is inadequate and draft NSW Guidelines require assessment for residents within 2.0 kilometres and other studies recommend avoidance of blade and shadow flicker by setting back turbines at least 2.5 kilometres from human habitation.</li><li>- It has been calculated that a turbine blade may be thrown up to 2.0 kilometres if they fail. Given the applicant has not secured the voluntary consent of all residences within 2.0 kilometres of a turbine, the application should be refused.</li></ul>



	NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
				<ul style="list-style-type: none"> <li>- The application should be refused if the applicant is not prepared to undertake bonding and/or Land Management Agreements for the decommissioning of the turbines.</li> </ul> <p>The submissions by Piper Alderman were accompanied by numerous attachments.</p>
28	Adrian and Julie Schutz PO Box 20, Point Pass via Eudunda	Against	No	Pressured into signing transmission line through their property and the information provided is now considered to be incorrect.
29	Ian and Kath Geier PO Box 107, Burra	Favour	No	Nil.
30	Martin Liebeknecht RMD 10, Brady Creek, via Robertstown	Against	No	Wind turbines are pollutants of the skyline. Every household with a view of a turbine should be compensated annually to the value of \$500 per tower or part thereof.
31	J R Lipschinski Robertstown (name may be incorrect due to legibility)	Against	Not stated	Maintenance of roads is Councils role.
32	Petition with various signatories	Against	Not stated	Petition entitled 'Inappropriate sighting of wind farms' and states that it is about <i>"the inappropriate sighting of wind farms in the area between Burra and Eudunda. This area should be wind farm free to protect our tourism, heritage, the visual quality of the landscape, land values, television and radio signal, the environment and our quality of life.</i>



NAME AND ADDRESS OF REPRESENTORS	SUPPORT OR OPPOSE	WISH TO BE HEARD	SUMMARY OF SUBMISSION
			<p><i>Keeping wind turbines out of the Stony Gap, Robertstown, Point Pass and Eudunda area will be beneficial to our community's quality of life, tourism and the future of the environment. Our community should not have to put up with the excessive noise produced by wind turbines. This petition is not against renewable energy it is against the inappropriate sighting of wind turbines".</i></p>



## 6.2 Applicant's Response to Representations

A response to representations was prepared by TRUenergy, in which they address the issues raised in the representations. The response to the issues raised are summarised by the following extracts from the TRUenergy response:

### 6.2.1 Policy Framework

The targeted nature of the Ministerial Statewide Wind Farm DPA for Renewable Energy Facilities provides preferential weight to this policy in the determination of a renewable energy facility development above all other relevant policies contained in the Goyder Development Plan.

The Mid North Regional Land Use Framework identifies that a number of elements that directly support the Stony Gap Wind Farm, including supporting adaption to climate change, providing greater employment opportunities, expanding local electricity generation through renewable energy sources and encouraging the development of wind farms in appropriate locations.

### 6.2.2 Social

TRUenergy understands that positive and negative social impacts will occur if the development was to proceed.

In relation to submissions that state that the proposal does not meet Objective 2 of the 'Interface between Land Uses', which requires the protection of community health and amenity, nor Objective 1 of the Orderly and Sustainable Development which requires *"orderly and economic development that creates a safe, convenient and pleasant environment to live"*, the Stony Gap DA clearly demonstrates compliance with all noise, shadow flicker and visual requirements that are designed to protect the amenity of local residents.

### 6.2.3 Health

A total of 16 submissions raised health as a concern in relation to the development of wind farms, including sleep deprivation, headaches, anxiety, annoyance and cognitive impairment of children. While no policy exists in South Australia that directly addresses health impacts of wind farms, the EPA Wind Farm Guidelines set criteria for noise, shadow flicker and visual impacts to protect the amenity of occupants of surrounding residences.



A number of submissions referred to anecdotal evidence of people living near wind farms suffering health impacts. However, there is no credible, peer reviewed medical evidence to suggest that the Stony Gap Wind Farm will have a direct, adverse impact on the health of people living nearby. There is no epidemiological study which has found any basis for health impacts being caused by wind farms, but there are studies carried out by appropriately qualified professionals which have looked for, and failed to find, any such health impacts.

The National Health and Medical Research Council (NHMRC) in its Public Statement on Wind Turbines and Health (July 2010) states that *"there is currently no published scientific evidence to positively link wind turbines with adverse health effects"*. A further study Wind Turbine Sound and Health Effects: an Expert Panel Review (December 2009) concluded *"there is no reason to believe, based on the levels and frequencies of the sounds and the panel's experience with sound exposures in occupational settings, that the sounds from wind turbines could plausibly have direct health consequences"*.

#### 6.2.4 Location of a Wind Farm

Submissions were critical of the location of the wind farm, particularly in proximity to dwellings and settled areas.

The Stony Gap DA identifies a total of 13 dwellings within 2.0 kilometres of the wind farm in the Primary Production Zone. Of these 11 are greater than 1.0 kilometre away from the nearest turbine. Six of these are non-stakeholders with the Stony Gap development; the remaining five are stakeholder dwellings. The two dwellings which are less than 1.0 kilometre are stakeholder dwellings. Therefore, all non-stakeholder dwellings are greater than 1.0 kilometre from the nearest turbine, which complies with PDC 2(a)(i) for visual impacts.

The nearest township is Burra, 4.0 – 5.0 kilometres to the north of the proposed Stony Gap Wind Farm. Accordingly, the base of any wind turbine is located 2.0 kilometres or more from the nearest boundary of the Development Plan area listed in the Goyder Development Plan, and as such is considered as a Category 2 development.

#### 6.2.5 Setbacks

Submissions indicate the wind farm is too close to dwellings and towns and there are various suggestions for minimum setbacks of between 2.0 and 5.0 kilometres.

The only setback requirement in the relevant legislation relates to PDC 2(a)(i) in the Ministerial DPA (MDPA) and states dwellings must be 1.0 kilometre from wind turbine locations to address the impact of visual amenity.



Setbacks are only directly referred to in the Renewable Energy Facilities, PDC 1(a)(i) to address visual amenity and the Stony Gap development demonstrates compliance to this policy by retaining a minimum of a 1.0 kilometre setback from non-associated dwellings. The proposal fully complies with this requirement.

All dwellings in the vicinity of the Stony Gap Wind Farm are shown to comply with 'A Planning Bulletin - Wind Farms - Draft for Consultation, 2002' in relation to shadow flicker, as all houses are in excess of 500 metres from wind turbines.

In accordance with the blade glint requirements in the Draft National Wind Farm Development Guidelines, the Stony Gap Wind Farm will specify a suitable non-reflective finish to mitigate the risk of blade glint.

The proposed Stony Gap Wind Farm site and its associated relevant receivers are located in a Primary Production Zone, which is not primarily intended for rural living. Consequently a baseline noise level of 40 dB(A) has been applied in this assessment. The Stony Gap DA has demonstrated its ability to comply with the EPA Wind Farm Guidelines.

#### 6.2.6 Visual

Numerous submissions commented on the impact of the wind farm on the surrounding landscape, its scenic quality and character; proximity to dwellings; cumulative visual impact and the methodology used to assess visual impact.

The ridges and wider landscape in the area has been highly modified and is an evolving cultural landscape containing a number of permanent vertical structures including wind turbines, communication towers and grain silos. The development of these vertical structures demonstrates the change in general community values as the primary economic value of the ridges move from primary production (farming and grazing) to newer industries including renewable wind energy.

The Landscape Assessment Report concluded the degree of visual change that will result from the development of the Stony Gap Wind Farm and transmission line will not cause a significant adverse visual impact and the existing landscape character can accommodate the proposed development. While the overall assessment found that the visual impact will not be significant, it is acknowledged that any impact will be localised. However, the weighting given to this impact needs to be balanced against the wider regional and state benefits.

#### 6.2.7 Noise

Noise was raised as a concern in an extensive number of submissions. The submissions included commentary on the EPA Guidelines; the ongoing legal action at Hallett; acoustic testing at Waterloo; and failure to comply with provisions of Development Plan to avoid or minimise noise and not detrimentally affect the amenity of a locality, along with issues of infrasound and tonality.



The Stony Gap DA must be assessed based on current South Australian planning policy, which is the Ministerial DPA, October 2011.

The EPA Wind Farm Guidelines set the relevant noise standard for wind farms in South Australia, and indicate the standard of care that is likely to be required to secure compliance with the statutory duty of care for the environment under Section 25 of the *Environmental Protection Act 1993 (SA)*. A high percentage of the noise related submissions on the Stony Gap DA pass comment on the appropriateness of the SA EPA Guidelines. In the context of this submission response document TRUenergy summarise the position of the Stony Gap Assessment relative to the guidelines and do not pass comment on the appropriateness of the Guidelines themselves.

The Stony Gap DA has demonstrated compliance with the noise criteria specified in the EPA Wind Farm Guidelines, which sets the noise criteria the EPA considers acceptable to protect local amenity. The predicted wind farm noise levels do not exceed the SA EPA Guideline baseline noise limit of 40dBA at any non-stakeholder properties. Therefore, at these locations, compliance with SA EPA Guidelines is achieved independently of background noise levels. Accordingly, compliance with the SA EPA Wind Farm Guidelines demonstrates that the wind farm:

- avoids excessive noise on nearby property owners/occupiers in accordance with PDC2(b)(c)(ii) of the Renewable Energy Facilities section of the Goyder Development Plan; and
- demonstrates that the wind farm does not detrimentally affect the amenity on the locality or cause an unreasonable interference through noise in accordance with PDC1(b) of the Interface Between Land Uses section of the Goyder Development Plan.

The noise impact assessment presented in the Noise Impact Assessment Report is based on a candidate turbine model (Vestas V90-3MW) and an associated layout. Sound power levels determined in accordance with IEC61400-11 have been used to predict noise levels from the Stony Gap wind farm, as required by the SA EPA Guideline. If the project is approved, the final turbine model may be different from the current candidate turbine. As detailed in Chapter 10 of the Stony Gap DA and Section 9.0 of the Marshall Day Acoustics (MDA) Noise Impact Assessment Report, Technical Appendices Volume 2B, if the turbine selection and/or layout are to be changed, compliance with the relevant noise limit will need to be reassessed.

It is worth noting that the SA EPA Guidelines noise criteria are not intended to achieve inaudibility. Wind farms compliant with the SA EPA Guideline may be audible for dwellings in the vicinity of the site.



Consideration of the adequacy of the EPA Wind Farm Guidelines is not relevant to the assessment of the Stony Gap DA required to be undertaken by the Development Assessment Panel. The EPA Wind Farm Guidelines note that the EPA is not aware of infrasound being present at any modern wind farm site. The issue of whether the EPA Wind Farm Guidelines need to be amended to ascribe importance to infrasound is an issue to be dealt with by the EPA if and when evidence becomes available that infrasound from wind turbines impacts human health or amenity.

In the Noise Impact Assessment by MDA provided to EPA in addition to the Technical Specification of the Vestas V90 used for noise modelling, the EPA responded in writing that no issues have arisen and that no evidence of tonality is known.

The current litigation regarding the Hallett Wind Farm, and any outcomes from that process, is not relevant to the Development Plan consideration of the Stony Gap DA.

TRUenergy are not aware of any evidence supporting any claims that wind turbines can generate sufficient vibration to be perceptible at neighbouring residential properties.

Submissions 10 and 27B include reports by Mechtest. The alternative review of the assessment methodology by Mechtest (submission 10) on the Marshall Day Stony Gap Wind Farm Noise Assessment, 2 March 2012 is only relevant in the context that it relates to the Stony Gap DA, the report does not undertake an assessment of the noise impact, it only passes high level comment on the technical or procedural shortcomings with the EPA Guidelines, not the assessment process itself.

#### 6.2.8 Biodiversity – Flora and Fauna

The concerns raised in the submissions relate to how the presence of a wind farm may impact on the natural environment, specifically the flora and fauna. The key issues raised in the submissions include consultation, EPBC listed species Pygmy Bluetongue Lizards and the Peppermint Box Grassy Woodland ecological association and the Lomandra grasslands, disturbance to raptors; and critique of flora and fauna surveys undertaken.

TRUenergy considers that these additional surveys (November and December 2010) and the original assessments provide a sufficient Flora and Fauna Assessment of the proposed wind farm site, and further studies are not required.

No threatened ecological communities were recorded within the wind farm study area. Neither of the two vegetation associations that were initially identified as potentially being threatened ecological communities on the EPBC Act met the criteria to be classed as the listed communities, Iron-grass Natural Temperate Grassland of South Australia or Peppermint Box Grassy Woodland of South Australia. One flora species listed on the EPBC Act (Silver Daisy Bush) was recorded however, it was confined to one population which is planned to be avoided.



A referral under the EPBC Act is not technically required, however as part of the TRUenergy approach to wind farm development matters an EPBC submission has been submitted.

The Pygmy Bluetongue Lizard (PBT) (*Tiliqua adelaidensis*) is listed as endangered on the EPBC Act, and during surveys of suitable habitat it was recorded as being present on-site. The details of the surveys and assessment are contained within the EBS Report in Technical Appendices Volume 2A, showing the locations of the specimen observed and the extent of the habitats that were mapped. Both habitat areas have been excluded from the wind farm development area.

Bird utilisation surveys did not record any EPBC Act listed bird species on-site. Furthermore, the risk of collisions by bird species and threatened bat species at the site has been assessed as low. However, as these were identified as an environmental concern during the community consultation process, surveys for raptors were undertaken to keep in good faith with the Guide for Applicants: Wind Farms (Planning SA, July 2002) and the Planning Bulletin: Wind Farms (Planning SA Draft for Consultation, August 2002) Guidelines. Three raptor species were recorded during the raptor nest survey, including *Aquila audax* (Wedge-Tailed Eagle), *Falco peregrinus* (Peregrine Falcon) and *Falco cenchroides* (Nankeen Kestrel). Of these only the Peregrine Falcon is a listed species in SA. There will be no heavy disturbance and prolonged construction activity within 180 metres of those viable Wedge-Tailed Eagle nests that are active during the breeding season. Details of the measures and controls to achieve this will be described in the CMP.

Wind Turbines 7-10 and 13-15 will be micro sited to maximise the distance, as much as practicable, from the four known viable eagle nests, taking into consideration construction constraints and the potential wind energy regime. A survey will be carried out in the Peregrine Falcon breeding season prior to construction to determine if there is an active peregrine nest present. If an active Peregrine Falcon nest is located, a buffer of 100 metres will be established around the nest site. No wind farm infrastructure will be located within the buffer and there will be no heavy disturbance and prolonged construction activity within 100 metres of the nest during the breeding season.

#### 6.2.9 Fire Hazard

Submissions raised concerns regarding impact of wind turbines on aerial bushfire support, inability to provide adequate water for fire fighting purposes and fire hazard of turbines.

TRUenergy recognises the importance of fire planning and management, however fires caused by modern wind turbines are considered rare.

The South Australian Country Fire Service (CFS) is yet to develop a formal policy relating to their response to bushfires in and around wind farms. It is understood that the CFS will attend any incident where required that threatens life, property or the environment, including at wind farms. The actions of CFS to manage the risk associated with that incident are dependent upon the risk to responding personnel and the specific operating environment associated with the incident. It is not true to say that the CFS has a policy of not approaching within 1.0 kilometre of a wind farm in case of bush fire.



The proposal is unlikely to interfere with mobile phone and mobile radio services in the vicinity of the wind farm. While there may be localised effects from wind turbines, these are no different to other physical structures in the environment (such as a wool shed) and reception can be improved by moving away from the signal obstruction. The claim that local wind farms have affected the local CFS Pager System is unsubstantiated and is believed to be untrue. Consultation with CFS representatives do not support this proposition and it is suggested that any issues with CFS Pager Systems are pre-existing and not the result of any wind farm development.

In case of a bushfire on land occupied by a wind farm, it has been asserted in some submissions that aerial water bombing will not be able to be utilised. Information received directly from the CFS indicates that CFS Aviation Services are currently developing a specific policy in relation to aerial support in the vicinity of wind turbines. It will be supported by an overarching CFS policy position.

#### 6.2.10 Aeronautical

Aviation risks and impacts were raised in 11 submissions, generally related to aerial fire fighting support should there be a fire in the vicinity of the wind farm. Concerns relating to aerial fire support have been discussed earlier.

The closest operational airfield to the proposed Stony Gap Wind Farm is located at Farrell Flat, approximately 13 kilometres west of the wind farm site. This airfield does not have OLS or PANS OPS surfaces. It is likely that there are other privately owned landing strips within the area surrounding the wind farm that are not included in aeronautical charts, however, these landing strips will not have OLS or PANS OPS surfaces.

The Aeronautical Assessment for the Gap Wind Farm found that the wind farm does not infringe any OLS. There are no PANS OPS surfaces of any airfield that are relevant to the development. The wind farm will not impact on nearby designated air routes. The wind farm will not impact on local aviation activities.

The airstrip located south of Koonoona, adjacent to Porter Lagoon Road and Springbank Road has not been in use in recent times and is not suitable to be rehabilitated in the near future. Discussions to date with Mr Piggott (land owner) have confirmed this is not in use and will not be used in the foreseeable future.

A number of submissions imply that crop dusting is not possible near, or within a certain distance from wind turbines, however turbines are no different to any structure in the environment and painted white so they can be seen by aviation operators. In circumstances where crop dusting is proposed the wind turbines are unlikely to be operating because spraying cannot be conducted on days with high wind speeds (because of drift). A number of submissions refer to the Aerial Agricultural Association of Australia (AAAA) policy. Whilst we recognise their internal policy and their desire to minimise impacts on aerial agricultural activities, the AAAA is not a statutory body and we are not required to comply with its policy.



By contrast, it is essential we meet the CASA regulations as they are the statutory body and regulator of aviation safety in Australia.

#### 6.2.11 Green House Gas Emissions

A number of submissions question the contribution of the development to CO<sub>2</sub> reductions. The Stony Gap Wind Farm development is located in an area with world class wind resources and as such will contribute significantly to the production of clean electricity, reducing greenhouse gas emissions. Based on conservative estimates, the wind farm will generate 470,000MWh of electricity annually, equating to the displacement of 394,800 tonnes of greenhouse gas emissions annually.

#### 6.2.12 Traffic

General concerns about traffic impacts and specific roads were raised in the submissions. Stony Gap Development Application considers and assesses traffic impacts, including the major transport routes and local roads used during construction. TRUenergy is committed to ensuring impacts on roads and the community during construction, are mitigated and managed wherever possible.

The traffic management sections of the Construction Management Plan and the Operational Management Plan will include measures to inform local residences of altered traffic conditions and potential disruptions and delays associated with the works. These plans will be prepared in consultation with the relevant authorities and Goyder Council to provide guidelines for all traffic movement associated with the project including signage and consultation processes/advertising. A Road Maintenance Strategy will also be implemented to ensure there is a Road Condition Assessment and reinstatement; and no degradation in road quality or public safety as a result of the project.

#### 6.2.13 Heritage

Submissions indicated that the wind farm would impact on the State Heritage Listed Old Koonoona Homestead and the Princess Royal Homestead and Local Heritage icons, including the Sod Hut Hotel and Old Dovers Yards. The Department of Environment and Natural Resources has assessed the proposed development with regard to relevant heritage provisions of the Goyder Development Plan, and its impact on all Heritage Items including the Old Koonoona Homestead. It considers the heritage impacts to be acceptable, relevantly because the turbines will not substantially impact on the context of this State Heritage Place. The Sod Hut Hotel was specifically assessed in relation to the location and design of the internal reticulation on a site visit with Douglas Alexander of Flight Path Architects, consultant to Goyder Council, and the impacts were deemed acceptable.



#### 6.2.14 Property Values

The concerns raised in the submissions state the presence of a wind farm may reduce the value of local properties. We note that it is a well-established planning principle that depreciation of land values as a result of a proposed development is not a relevant planning consideration. Nevertheless, the Stony Gap DA considered the issue and despite the conjecture, there has been no conclusive evidence in peer reviewed studies to date that property values are consistently or measurably impacted by the presence of wind farms.

#### 6.2.15 Natural Resources: Soil and Water

Concerns expressed by representors included erosion impacts during construction, changes to soil moisture, source of water and failure to meet the objectives of the Natural Resources section of the Development Plan.

Erosion and pollution of watercourses will be prevented by appropriately managing construction works and by ensuring long term soil stability at the completion of construction.

The water source for the construction of the wind farm is most likely to be sourced via a permit application process direct from SA Water. Consultation to date has identified that the Clare booster pump station located alongside the Barrier Highway near Hansen would be the preferred location of water extraction for SA Water and TRUenergy.

TRUenergy submits that the objective under the Natural Resources section of the Goyder Development Plan will be met, and the measures described above will sufficiently manage any potential erosion and water quality issues caused during the construction of the proposal.

#### 6.2.16 Air Quality

One submission expressed concerns regarding the potential impacts of dust during construction.

The potential exists for the creation of dust through construction activities, movement of vehicles and the operation of an on-site concrete batching plant, if required. Dust will be suppressed by applying appropriate dust suppression measures which may include wetting of access tracks and unstable surfaces (eg material stockpiles) and modifying construction activities during periods of high winds.

#### 6.2.17 Television Reception, Radio Reception, CFS Pager Reception

Representations expressed concern regarding loss of TV, UHF, Commercial Radio, mobile phone, internet, wireless broadband and emergency service pager reception.



Wind farm developments can have an impact on radio communications services principally by obstructing, reflecting or refracting the electromagnetic waves used by these services. TRUenergy has made commitments to mitigate impacts in Section 15.4 of the Stony Gap DA through local consultation and undertaking a baseline television and radio survey prior to wind farm construction. TRUenergy will rectify services that are degraded by the construction of the wind farm.

#### 6.2.18 Bureau of Meteorology (BoM)

One representation raised concerns regarding the impact of the wind farm on the Bureau of Meteorology (BoM) radar. The Bureau of Meteorology (BoM) conducts its own assessment of potential interference to weather radar from wind farms. Previous experience with BoM assessments indicate that the assessment is based on a Radar Line of Sight (RLOS) analysis, which takes into account topography and earth curvature, to determine whether the turbine blades are visible to the radar. If they are, then there will be some received echoes from the turbine blades, however, the intensity of the reflectivity from the blades is unpredictable. Stony Gap Wind Farm would be in the Notification Zone under the National Oceanic and Atmospheric Administration (NOAA) criteria, and the effects would be mitigated by BoM being made aware of the wind farms existence and developing suitable work-around as with other operational wind farms.

#### 6.2.19 Cumulative Impacts

A number of submissions raise concerns that multiple wind farms operating or proposed in the area will lead to cumulative visual impacts. In this context Waterloo is the only other wind farm (operating, approved or for which a planning application has been made) within the view-shed of the Stony Gap Wind Farm. Waterloo is located approximately 6.0 – 10 kilometres south-west of the proposal on a similar north-south linear ridge feature.

The specialist Landscape Assessment Report considers cumulative visual impacts in Chapter 6. The assessment notes that:

- views from the west (Barrier Highway) will receive cumulative visual impacts from the linear connection of the two wind farm projects. Whilst the increased visual effect will be varied according to localised vegetated screening, the ZTVI identifies that potentially 51 – 70 turbines could be visible from some locations;
- views from the combined developments in the eastern valleys will be limited due to topographical variations. The maximum number of turbines visible is 21 – 40, which is not out of context in this varied visual environment;
- views to the north and south will not be significantly impacted by cumulative visual impacts with limited views of both developments. The topographical variance will limit the combined effects of both developments leading to landscape character alteration; and



- the assessment concludes that the combined visual impact of the Stony Gap and Waterloo Wind Farms will not produce a substantial alteration to the landscape character of the regional area. The interrelationship of the north-south ridgelines and their vertical scale provides sufficient screening to divide the field of view of turbine clusters.

A number of commitments are made to mitigate visual impacts to the extent practical by:

- avoiding locating above ground electricity lines on ridgelines;
- using consistent turbine design to minimise visual contrasts;
- offering a voluntary landscaping program to residents within 2.0 kilometres of a turbine; and
- consideration any other mitigation measures following final wind farm and transmission line design, such as screening.

#### 6.2.20 Land Inclusion

Two representations stated that the Stony Gap DA identified land included in proposal without land owners consent.

The lots referred to in submission 15 (Kym Dixon) were accidentally included in the Stony Gap DA list of 141 titles. This was a genuine administrative error and was brought to our attention on 27 January 2012. A clarification of the error, apology and offer to further discuss was issued to the land owner the same day and further communication has been continued with the land owner since. The land in question is directly adjacent land owned by an involved party with the same surname, this is how the error arose.

The representation by and on behalf of Neil Mosey indicated his land was included in the Stony Gap DA without agreement. This land was included in the DA on the basis of the advanced and long term nature of the negotiations with the land owner. However, those negotiations have not proceeded to an agreement. This land related to the transmission line route and feasible alternative options have been secured. A clarification has been provided to Council on this matter.

#### 6.2.21 Decommissioning

A number of representations expressed concern that decommissioning of the wind farm was not addressed/adequately addressed in the Stony Gap DA.



Decommissioning is adequately addressed in Section 4.5 of the Stony Gap DA. Leasing arrangements provide tenure for the construction and operation of a wind farm with a 25 year term, with an option to extend for a further term. The decision on whether to decommission or extend the life of the wind farm by deploying newer technology will be made at that time considering the relevant factors. Should the wind farm be decommissioned, a Decommissioning Management Plan will be developed in consultation with and approved by the relevant authorities. Like any infrastructure, the wind farm owner retains responsibility for decommissioning and remediating the site.

Council does not have any responsibility or obligation in relation to wind farm decommissioning.

#### 6.2.22 Summary

In summary TRUenergy believe the Stony Gap Wind Farm, as described and detailed in the Stony Gap DA and associated Technical Appendices, has been designed and sited in a location to ensure compliance with the relevant planning policies and therefore based on a Development Plan Consent application against the Ministerial DPA policy should be granted consent.

Whilst not specifically stated in the response to representation, the application in other correspondence to Council has indicated a willingness to attend meetings as required to discuss the application.

## 7.0 DEVELOPMENT PLAN ASSESSMENT

The application was lodged with the Council in November 2011. The relevant Development Plan is the Goyder Council Development Plan dated 17 February 2011 and the Ministerial Statewide Wind Farms Development Plan dated 19 October 2011. The Goyder Council Development Plan was consolidated on 23 February 2012. The provisions of the Development Plan relevant to the assessment of the application, which was lodged in November 2011 thereby includes the now consolidated provisions of the Statewide Wind Farms Development Plan.

The applicant has submitted extensive documentation with its development application, which provided information with respect to the environmental and ecological assessment of the proposed wind farm, aboriginal heritage, aviation and socio-economic impacts, among others.

There are extensive provisions which are relevant to the assessment of the wind farm application. A copy of the provisions, as varied by the Ministerial Statewide Wind Farms DPA considered relevant, are included in **Attachment 3**, whilst the following assessment quotes those that are considered the most pertinent. In undertaking the assessment of this application, I note that the Development Plan is not to be construed like a statute; it is a planning document, couched in the language of planning objectives and principles, rather than that of legal obligation. The Development Plan is a practical guide for practical application and should be read as a whole and where any inconsistency may arise the specific policy prevails over the general.



An assessment of this application against the Development Plan requires the consideration of the following issues:

- land use;
- efficient energy generation;
- visual amenity;
- noise and infrasound;
- health and the precautionary principle;
- shadow flicker, reflection and blade glint;
- electromagnetic interference with telecommunications;
- impact on flora and fauna;
- soil erosion, water supply and stormwater management;
- traffic and access;
- cultural heritage; and
- bushfire.

These matters are discussed and assessed below.

### **7.1 Land Use**

The subject land is located entirely within the Primary Production Zone. The objectives for the Primary Production Zone are:

- Objective 1:** Economically productive, efficient and environmentally sustainable primary production.
- Objective 2:** Allotments of a size and configuration that promote the efficient use of land for primary production.
- Objective 3:** Protection of primary production from encroachment by incompatible land uses and protection of scenic qualities of rural landscapes.
- Objective 4:** Wind farms and ancillary development located in the zone, accepting that they may need to be sited in visually prominent locations to take advantage of natural resources such as wind.
- Objective 5:** Development that contributes to the desired character of the zone.



In addition to the objectives, the Primary Production Zone contains an extensive Desired Character Statement. Objective 1 and the Desired Character Statement reinforces the core focus of Primary Production Zone and the region is sustainable primary production. Objective 3 seeks to protect primary production from incompatible land uses and protect the scenic qualities of the rural landscape.

Objective 4 clearly supports the development of wind farms within the Primary Production Zone. Whilst Objective 3 seeks to protect the scenic qualities of the rural landscape, Objective 4 acknowledges that wind farms may be sited in visually prominent locations.

Support for the development of wind farms is further stated in the Desired Character Statement which envisages "*wind farms and ancillary development...*" and Principle of Development Control 1 lists "*wind farms and ancillary development*" as an envisaged land use.

Whilst wind farms are envisaged land uses within the Primary Production Zone, the Desired Character Statement contains 'key design elements', which "*should be given greater weight*" in determining whether or not a development proposal accords with the Desired Character Statement. The three design elements are firstly the "*impact on the sustainability and viability of primary production uses*", secondly "*the visual impact on the landscape character*" and thirdly the "*impact on the freight network*".

#### **Desired Character**

##### ***Function***

**The region will support a more sustainable approach to primary production with rural production forming the core focus of the region...**

**Wind farms and ancillary development are an envisaged form of development within the zone. Such facilities may be of a large scale, comprise a number of components and require an extended and/or dispersed development pattern. These facilities will need to be located in areas where they can take advantage of the natural resource upon which they rely and, as a consequence, may be located in visually prominent locations.**

##### ***Key Design Elements***

**When determining whether or not a development proposal is in accordance with the Desired Character, greater weight should be given to the following design elements:**

- **impact on the sustainability and viability of primary production uses;**
- **visual impact on the landscape character;**
- **impact on the freight network.**

#### **Principles of Development Control**

**1 The following forms of development are envisaged in the zone:**

- **tourist accommodation, including through the diversification of existing farming activities and conversion of farm buildings**
- **farming**
- **intensive animal keeping (especially within Enterprise Policy Area 2)**



- **wind farms and ancillary development.**
- 4 **Wind farms and ancillary development should be located in areas which provide the opportunity to harvest the wind resource for the efficient generation of electricity and as a result it is appropriate for such development to be located:**
  - (a) **in visually prominent locations in the landscape**
  - (b) **close to roads and not to be subject to the setback requirements of other forms of development.**
- 8 **Buildings, other than where required to facilitate wind farms and ancillary development, should primarily be limited to farm buildings, a detached dwelling associated with primary production on the allotment and residential outbuildings that are:**
  - (a) **grouped together on the allotment and set back from allotment boundaries to minimise the visual impact of buildings on the landscape as viewed from public roads**
  - (b) **screened from public roads and adjacent land by existing vegetation or landscaped buffers.**
- 10 **Development should not be undertaken unless it is consistent with the desired character for the zone.**
- 12 **Development should not occur within 500 metres of a national park, conservation park, wilderness protection area or significant stands of native vegetation if it will increase the potential for, or result in, the spread of pest plants.**

To satisfy the Desired Character Statement, the first test is the impact of the wind farm on the primary production function of the zone. Within the subject land and the locality, there is a range of grazing and cropping activities. The wind farm including the wind turbines, ancillary structures and the transmission line to Robertstown is sited over a large area, involving some 82 properties and 20 hectares for the siting of turbines, tracks, ancillary structures and the transmission line.

The wind turbines are generally sited on the sides of the steeper ridges which cannot be readily accessed for cultivation, whereas ancillary structures and the transmission lines are generally located on the lower slopes on land used for both grazing and cropping. In general terms the vast majority of land utilised for the wind turbines and ancillary tracks and infrastructure would continue to be available for agricultural land uses, which is likely to be for grazing purposes. Typically in excess of 95 percent of the subject area of the wind farm would continue to be available to existing land owners to continue agricultural uses.



Within the locality, there is high quality arable land. In selecting the layout of the wind turbines and transmission line the application documents indicate care was taken to minimise the impact on arable areas, via leases with minimal widths for corridors, tracks and the like. It is considered that the fundamental use of the land will remain for primary production purposes. However, a number of the representations expressed concern about the impact of the wind turbines would have on aerial spraying applications for their crops. Opinions have been expressed that indicate that aerial agricultural applications cannot occur within 500 metres parallel to a wind turbine and 3.0 kilometres for unrestricted agricultural spraying to allow for flying towards turbines for the manoeuvring of aircraft. This is an opinion expressed by an aerial agricultural company. This position does not have support in any legislative or policy documents affecting wind farms.

For discussion purposes, the area within 500 metres of the proposed turbines is almost entirely located within the boundaries of the subject land of the wind farm and along the ridgelines, which are not generally utilised for cropping purposes. Furthermore, the land owners which are party to the proposal would be aware of the potential for restricted aerial application.

The area within 3.0 kilometres of the wind turbines contains arable land that is not in the ownership of parties to the wind farm. These areas include land to the south-east around Koo-owie and Logan Gap and further south, along with land to the west particularly on the western side of Springbank Road. The advice provided does not indicate that aerial application could not occur within these areas, but rather may be restricted in terms of direction of application (ie towards the turbines).

On balance, it is considered that the area that aerial agricultural application may be restricted, that is the stated 500 metres of the turbine, does not contain the highly arable land. The capacity to utilise aerial agricultural application on land within 3.0 kilometres of a turbine is still available, albeit there may be additional restrictions on application methods (ie direction of application). On this basis, it is my view that the proposed development does not unduly restrict the ongoing sustainable agricultural practices on the subject land or within the locality.

The second test contained within the Desired Character Statement is *"the visual impact on the landscape character"*. The application documents contain an extensive visual assessment analysis, which will be discussed in the following sections of this assessment. However, the provisions of the zone, as now established by the Ministerial Statewide Wind Farms Development Plan clearly identifies that wind farms will be located within *"visually prominent locations to take advantage of natural resources such as wind"*. Therefore there is an acknowledgment within the provisions of the Primary Production Zone that there will be a visual impact by a form of development that is now envisaged in the zone.



Thirdly the Desired Character Statement seeks to determine if the proposal would “*impact on the freight network*”. The application documents contain a traffic and transport analysis and the application has been reviewed by the Department of Planning, Transport and Infrastructure (DPTI) – Transport Services Division. The nature of the proposed development incorporates movement of an extensive number of vehicles, many ‘over-sized’ on the state and local road network during the construction phase. On this basis there would be some ‘impact’ on the road network. Whilst there are recommendations in relation to upgrading of intersection(s) of the Barrier Highway, there is no suggestion by DPTI that there would be an adverse impact on freight networks.

#### *Summary – Land Use*

Wind farms are envisaged land uses within the Primary Production Zone. The proposal is not considered to have an adverse impact on the ongoing sustainability of primary production within the locality. The minimal reduction in productive farming area is unlikely to have an adverse impact on the principle function of the zone, as evidenced within the Goyder Regional Council area by the continuation of farming activities around existing wind farms.

The visible nature of the wind farm is anticipated within the zone and therefore the proposal does not offend the objectives and Desired Character Statement relating to this aspect. Furthermore, there is no evidence that there would be an adverse impact on the freight network. The proposed development satisfies the Primary Production Zone provisions in relation to land use.

## **7.2 Efficient Energy Generation**

Within the General Section of the Development Plan, there are a number of provisions under the heading of ‘Renewable Energy’, including the objectives and principles quoted below.

### **Renewable Energy**

#### **Objectives**

- 1**                    **Location, siting, design and operation of renewable energy facilities as essential infrastructure that benefits the environment, the local community and the State.**
- 2**                    **The development of renewable energy facilities, such as wind farms and ancillary development, in areas that provide the opportunity to harvest natural resources for the efficient generation of electricity, accepting that such facilities will often need to be sited in visually prominent locations.**
- 3**                    **Location, siting, design and operation of renewable energy facilities to avoid or minimise adverse impacts on the natural environment.**

#### **Principles of Development Control**

- 1**                    **Renewable energy facilities, including wind farms and ancillary developments, should be located in areas that maximise efficient generation and supply of electricity.**



- 2 Wind farms and ancillary development such as substations, maintenance sheds, access roads, wind monitoring masts and connecting power-lines (including to the National Electricity Grid), should be sited, designed and operated to:**
- (a) manage the visual impact of the development by achieving the following:**
    - (i) a setback of at least 1 kilometre of a wind turbine from a dwelling that is not associated with the development**
    - (ii) vegetated buffers to mitigate short to medium range visual impacts**
    - (iii) regular spacing of wind turbines in open/flat landscapes where vegetation is orderly**
    - (iv) irregular spacing in hilly/rugged landscapes where vegetation is varied**
    - (v) ensure that blades on wind turbines rotate in the same direction**
    - (vi) ensure that all wind turbines have uniformity in terms of colour, size and shape**
  - (b) avoid or minimise the potential for adverse impact on areas of native vegetation, conservation, the natural environment, geological, tourism or built or natural heritage significance**
  - (c) avoid or minimise the following impacts on nearby property owners and/or occupiers, road users and wildlife:**
    - (i) shadowing, flickering, reflection or blade glint impacts**
    - (ii) excessive noise**
    - (iii) interference with television and radio signals**
    - (iv) modification of vegetation, soils and habitats**
    - (v) striking of birds or bats.**
- 3 Renewable energy facilities, including wind farms and ancillary development, should be designed and sited so as not to impact on the safety of water or air transport and the operation of ports, airfields and designated landing strips.**

As stated in Objective 1, development of renewable energy facilities, are considered to be essential infrastructure for the State. Wind farms are sought to be developed in areas *"that provide the opportunity to harvest natural resources for the efficient generation of electricity, accepting that such facilities will often need to be sited in visually prominent locations"* (Objective 2). The development application documents identify the area of the proposed wind farm along Tothill Range and Bluff Range south of Burra as *"world class wind resource"* with suitable access to infrastructure. TRUenergy have determined through feasibility analysis that the Stony Gap Wind Farm provides an opportunity to harvest the natural wind resources of the region for efficient generation of electricity.

It is evident from the number of existing wind farms within the Council area and within the ranges south of Burra (Waterloo), that the area has been determined as an appropriate location by the wind farm industry. The application documents discuss technical opportunities and constraints in relation to the establishment of a wind farm. Broadly, Stony Gap has been assessed by TRUenergy as being an appropriate location for a wind farm based on a variety of factors (wind speed, cut-in wind speed, capacity factor) along with the location and capacity to connect to the electricity grid.



The application documents provide details of the potential capacity of the proposed wind farm to be 470,000 MWh of electricity annually, being 1.04 percent of the 2020 national Renewable Energy Target (RET) under the 45,000GWh expanded RET established by the Federal Government. It is estimated by the proponents that the proposed wind farm would displace approximately 394,800 tonnes of Co2 emissions per annum. Although the efficiency and benefits of wind farms is questioned by a number of representors, no contrary scientific evidence has been produced that satisfactorily indicates that the Stony Gap Wind Farm is not located in a suitable location from an energy production perspective. The application documentation provides sufficient information to indicate that the Stony Gap Wind Farm is located to harvest the natural wind resource and produce efficient energy, as sought by Renewable Energy Objective 2 and Principle of Development Control 1.

The appropriateness of the wind farm location in terms of managing visual impact; avoiding or minimising impacts on native vegetation, conservation, the natural environment, geological, tourism or built or natural heritage significance; and avoiding or minimising the impacts on nearby property owners and/or occupiers, as established in Renewable Energy Principle of Development Control 2; and impacts on water, air transport and ports, airfields and designated landing strips as established in Principle of Development Control 3; are discussed in detail in the following sections of this Assessment Report. The Renewable Energy provisions must be read in conjunction with all other relevant provisions of the Development Plan.

### 7.3 Visual Amenity

The Development Plan places a high value upon the scenic qualities of rural landscapes in the Primary Production Zone, as stated in Objectives 3 of the Primary Production Zone. The preservation of scenic qualities of the primary production area is further outlined in the Desired Character Statement.

**Objective 3: Protection of primary production from encroachment by incompatible land uses and protection of scenic qualities of rural landscapes.**

**Objective 5: Development that contributes to the desired character of the zone.**

The Desired Character Statement for the Primary Production Zone says, among other things:

#### **Public Realm**

**... the scenic qualities of the public routes and views across the primary production area will remain attractive and generally unobstructed by inappropriate development, including excessive advertising signs...**

**Areas of conservation and biodiversity significance will be protected from inappropriate new development.**



### **Built Form**

New buildings will generally be associated with existing clusters of buildings and will be of complementary scale and massing to those buildings, while also being of appropriate dimensions to serve their intended function. New dwellings will generally be single storey and will include pitched roofs, verandahs and porches to address climactic issues. Isolated new buildings, including large sheds, will be located and designed to blend with the existing landscape, with appropriate earthworks and building design to suit the natural landform. Other structures will be of a form that blends with, and does not detract from, the scenic qualities and function of the primary production area.

### **Building Materials/Character**

The open rural landscape is the dominant character element and new development will maintain that character, with new buildings appropriately sited, designed and screened by vegetation. New buildings will be constructed using materials and colours that blend with the rural landscape and are traditionally used within the rural environment including corrugated steel, stone and timber.

### **Key Design Elements**

When determining whether or not a development proposal is in accordance with the Desired Character, greater weight should be given to the following design elements:

- impact on the sustainability and viability of primary production uses;
- visual impact on the landscape character;
- impact on the freight network.

As outlined in the discussion regarding land use, the provisions of the Primary Production Zone also contain specific provisions relating to wind farms, which acknowledge that they may be sited in visually prominent locations, as stated in Objective 4, portion of the Desired Character Statement and Principle of Development Control 4.

**Objective 4** Wind farms and ancillary development located in the zone, accepting that they may need to be sited in visually prominent locations to take advantage of natural resources such as wind.

### **Desired Character**

Wind farms and ancillary development are an envisaged form of development within the zone. Such facilities may be of a large scale, comprise a number of components and require an extended and/or dispersed development pattern. These facilities will need to be located in areas where they can take advantage of the natural resource upon which they rely and, as a consequence, may be located in visually prominent locations.

- 4 Wind farms and ancillary development should be located in areas which provide the opportunity to harvest the wind resource for the efficient generation of electricity and as result it is appropriate for such development to be located:
- (a) in visually prominent locations in the landscape
  - (b) close to roads and not to be subject to the setback requirements of other forms of development.



In the Natural Resources section of the Development Plan, Objective 12 reinforces the desire to protect the scenic qualities of the landscape, whilst Principle of Development Control 2 specifically seeks to manage the visual impact of wind farms:

**Natural Resources**

**Objective 12: Protection of the scenic qualities of natural and rural landscapes.**

- 2 The visual impact of wind farms and ancillary development should be managed in accordance with the policies contained within the General Section headed Renewable Energy Facilities.**

The Primary Production Zone provisions establish that wind farms are appropriate within visually prominent locations in the landscape. There are however still a number of assessment criteria that need to be satisfied, particularly those established in Principle of Development Control – Renewable Energy 2(a):

- 2 Wind farms and ancillary development such as substations, maintenance sheds, access roads, wind monitoring masts and connecting power-lines (including to the National Electricity Grid), should be sited, designed and operated to:**
- (a) manage the visual impact of the development by achieving the following:**
- (i) a setback of at least 1 kilometre of a wind turbine from a dwelling that is not associated with the development**
  - (ii) vegetated buffers to mitigate short to medium range visual impacts**
  - (iii) regular spacing of wind turbines in open/flat landscapes where vegetation is orderly**
  - (iv) irregular spacing in hilly/rugged landscapes where vegetation is varied**
  - (v) ensure that blades on wind turbines rotate in the same direction**
  - (vi) ensure that all wind turbines have uniformity in terms of colour, size and shape**

In relation to the management criteria established in Renewable Energy PDC 2(a) above, I note the following from the application documentation:

- The closest setback of a wind turbine to a non-stakeholder dwelling is 1,263 metres, therefore exceeding the 1.0 kilometre minimum established in PDC 2(a)(i).
- TRUenergy have made a number of commitments to mitigate visual impacts to the extent practical by:
  - avoiding locating above ground electricity lines on ridgelines;
  - using consistent turbine design to minimise visual contrasts;
  - offering a voluntary landscaping program to residents within 2.0 kilometres of a turbine; and
  - consideration of any other mitigation measures following final wind farm and transmission line design, such as landscape planting/screening.



Mitigation of views is further discussed through the analysis of the Visual Assessment Report. The Visual Assessment Report does identify some areas along the transmission line where additional visual mitigation may occur via new/additional planting. In general terms the proposal seeks to manage the visual impact of the wind farm (turbines, ancillary structures and transmission line) via appropriate siting and avoidance of substantial areas of native vegetation and proposals for additional landscaping and screening, as sought by PDC 2(a)(ii).

Should the proposed development be granted Development Plan Consent, it is recommended that a Condition of Consent or Reserve Matter be included that requires further definition of additional landscaping/screening around dwellings and along the transmission line.

- The spacing of the wind turbines has been determined by the topography and engineering requirements and need to minimise impacts on the natural environment. The steep terrain of the subject land has resulted in a design which has turbines spaced irregularly as sought by PDC 2(a)(iv)
- The wind turbines are controlled by a central computer system (Supervisory Control and Data Acquisition (SCADA) system). The SCADA system controls all the functions of the turbine (including blade tip angle, direction, stop/start and electricity generation) and records operating data, energy production and environmental conditions. The computer in the nacelle can also turn the turbine to ensure that the rotor faces into the wind to maximise energy capture. The internal computer also controls the stopping and starting of the rotor, and the turbines will be stopped if the wind falls below 3.0 metres per second or exceeds 25 metres per second. The computer control system would ensure that blades on wind turbines rotate in the same direction, as sought by PDC 2(a)(v).
- The proposal is for 41 wind turbine generators installed on towers up to 85 metres high with a blade length of up to 56 metres and a maximum height of approximately 145 metres, with towers and blades finished in off-white non reflective matt finish. The proposed turbines are of a uniform design, size and colour as sought by PDC 2(a)(vi).

The application documents contain extensive assessment of the visual impact of the proposed wind farm, both in isolation and also in a cumulative manner taking account of existing wind farms in the locality. In the *Landscape Assessment Report Stony Gap Wind Farm* (16 February 2011, by WAX in association with Swanbury Penglase Architects) and *Landscape Assessment Report Stony Gap Transmission Line* (24 March 2011 and addendum dated 27 February 2012, by WAX in association with Swanbury Penglase Architects) it identifies 15 different landscape character areas around the wind farm (turbines and ancillary area) and transmission line route. Some of the landscape character areas overlap the wind farm and the transmission line.



The descriptions of the landscape character areas illustrate the diversity of the landscape within the locality of the wind farm, ranging from area dominated by undulating ridgelines to open rolling agricultural landscapes; areas devoid of vegetation to areas of remnant vegetation and features such as the low lying water body of Porter Lagoon. The regional locality of the wind farm is described in the Landscape Assessment Report as “a highly modified agricultural landscape with few natural features and relatively low scenic quality “(page 45).

The Landscape Assessment Reports discuss a number of viewpoints of the wind farm (turbines) and the transmission line with a descriptive qualification of the visual effect, that is, the extent to which the development will alter the existing landscape. The descriptive qualifications range from slight through to extreme.

The following table provides a summary of the findings of the Landscape Assessment for each of the viewpoints.

VIEWPOINT NUMBER	VIEWPOINT LOCATION	DESCRIPTION OF LOCALITY	VISUAL ASSESSMENT
Wind Farm (Turbines)			
1	Burra Mine Museum (looking south)	Viewpoint 1 is located on the rising landform to the south of the Burra Heritage Mine site looking towards the proposed development site. From Viewpoint 1 there will be an accumulative effect in relation to the Hallett Wind Farm to the north. While the two wind farms will not be visible within the same field of view, turbines will be visible to the north and south increasing the visual presence of this particular form of infrastructure within the regional landscape context.	The visual effect of the proposed development from this viewpoint is described as moderate. The linear array extends for some distance to the south-east, with minimal vegetation coverage to screen the scale both vertical and horizontal. Due to the underlying landform and pronounced ridgelines upon which the development is located, the turbines will be seen as large scale elements. However due to the separation of linear clusters the development will be sympathetic to the underlying landscape character preventing substantial visual change. Mitigation is not required.
2	Porter Lagoon on the Barrier Highway (looking north-east)	The area contains the Morgan-Whyalla Pipeline and Barrier Highway, reinforcing the agricultural or modified landscape context of the area, which contrasts with the natural landscape qualities provided by Porter Lagoon. The area contains the Morgan-Whyalla Pipeline and Barrier Highway, reinforcing the agricultural or modified landscape context of the area, which contrasts with the natural landscape qualities provided by Porter Lagoon.	The overall visual change is considered to be moderate from this viewpoint. However the underlying landscape character function will still be classified as rural, agricultural. There is limited opportunity for mitigation as vegetation screens would not be appropriate due to the elevated nature of the development and the horizontal extent. Furthermore the turbine layout configuration does not impose any isolated cause for design iteration.



VIEWPOINT NUMBER	VIEWPOINT LOCATION	DESCRIPTION OF LOCALITY	VISUAL ASSESSMENT
3	Emu Downs Valley on the Heysen Trail (looking north)	Viewpoint 3 is located on the Heysen Trail within the Emu Downs Valley. The viewpoint is surrounded to the east and west by prominent ridgelines that extend north/south to form an enclosed visual envelope.	<p>The visual effect of the wind farm will produce a substantial change to the field of view. The elevated scale of the development, coupled with the close proximity, extent of the horizontal field of view and limited screening within the landscape, defines the visual change. However the underlying agricultural character is still maintained.</p> <p>Due to the separation of linear clusters, the wind farm proposal provides legible elements, which become more subdued and recessed with distance and atmospheric cloudy conditions. There is limited rationale to provide mitigation to this viewpoint.</p> <p>The turbine layout provides a legible form transcending into the distance. Vegetation screening to this location would create its own visual effect by contrast to the surrounding denude, pastoral fields.</p>
4	Barrier Highway near junction of Black Springs Road (looking north-east)	<p>Viewpoint 4 is representative of the south-west sub-regional and regional areas.</p> <p>The landscape character surrounding the viewpoint is dominated by the Waterloo and Light River Valley that extends from the Tothill Range across the Barrier Highway to the elevated undulating landscape to the west.</p> <p>The viewpoint represents a more distant visual effect that will be experienced along Barrier Highway travelling north towards Burra. Viewpoint 4 experiences some accumulative visual effect with the northern end of the Waterloo development visible within the frame of view. This northern cluster of seven turbines appears as an isolated group of turbines located between the main portion of the Waterloo Wind Farm and the proposed Stony Gap development.</p>	<p>The presence of the wind farm diminishes with distance. Furthermore the separation of the development on two parallel ridgelines provides landscape absorption and reduces the horizontal visual effect. The existing landscape character is retained, with minimal visual change from this viewpoint. No mitigation required.</p>



VIEWPOINT NUMBER	VIEWPOINT LOCATION	DESCRIPTION OF LOCALITY	VISUAL ASSESSMENT
5	Intersection of Old Adelaide Road and The Barrier Highway (looking south-west)	Viewpoint 5 is located on the intersection of the Barrier Highway and the Old Adelaide Road. This viewpoint is typical of the lower lying visual effect that will occur along road corridors to the north of the wind farm.	The presence of the wind farm is distinctively within the centre of the field of view. The linear alignment of the development extends to the south for some distance. The vertical scale and close proximity to the northern cluster, amplifies the developments visual scale. However the existing landforms and isolated vegetation provide some contextual relief. No mitigation is required.
6	Princes Royal (looking southwest)	Viewpoint 6 is located on the main access road to the Princess Royal Estate. The viewpoint is located on the southern edge of Burra within the agricultural landscape that surrounds the town. This relationship between local landforms and turbine positions results in some turbines being permanently screened from the majority of locations north of the Princess Royal Estate and south of the township of Burra.	The visual character of this viewpoint will not alter. The foreground presence of the stonewall, provides a visual focus, limiting the significance of the turbines to the distance. The adjacent ridgelines and vegetation to the south increases the depth of field and screens the majority of the proposed development. No mitigation required.
7	Emu Downs township (looking north-west)	Viewpoint 7 is located at the intersection Hallelujah Hills Road and Old Adelaide Road close the Emu Downs township. The proposed wind farm is located north and north-west of the town at a distance of 10 kilometres. The Waterloo development provides an accumulative and more significant visual effect to the western side of Emu Downs due to the wind farms proximity. Whilst, five turbines visible (as part of the Waterloo development), there will be a visual separation between the two developments.	The Waterloo development provides an accumulative and more significant visual effect to the western side of Emu Downs due to the wind farms proximity. Whilst, five turbines visible (as part of the Waterloo development), there will be a visual separation between the two developments.



VIEWPOINT NUMBER	VIEWPOINT LOCATION	DESCRIPTION OF LOCALITY	VISUAL ASSESSMENT
8	Burra Oval (north-east of Burra)	Viewpoint 8 is located at Burra Oval looking west and south-west towards the wind farm development.	The low lying and distant character of the turbines means that individual tree canopies have the ability to provide substantial mitigation and potential screening. This ensures that the turbines do not dominate the visual character of the oval or the significance of Burra's urban form as a backdrop. Instead, the turbines are seen as recessive elements primarily visible due to their dynamic qualities that result from the rotation of the blades above or on the ridgeline.
9	Kooringa Road (eastern edge of Burra)	Viewpoint 9 is located on the outskirts of Burra on the Burra to Morgan Road. The viewpoint is typical of locations on the outskirts of the town and is defined by elevated undulating landforms that enclose Burra.	The location of the wind farm to the south-west of Burra provides a physical and visual separation from the township. The potential impact of the infrastructure on the more culturally sensitive historic character of Burra is not apparent and the development form of the wind farm is seen located in the surrounding agricultural landscape.
Wind Farm (Transmission Line)			
1	Old Adelaide Road	Viewpoint 1 is located at the intersection of Turners Road and the Old Adelaide Road. The viewpoint is typical of the visual effect that may be experienced to the north as a result of the introduction of the transmission line. The visual character surrounding the viewpoint is defined by undulating ridges that extend north/south to either side of the valley.	The presence of the transmission line will primarily be seen to the south-west aligned parallel to the Tothill Range in a direction south-east. Further to the south is a dense cluster of poles due to the oblique perspective. The transmission line does not provide any substantial sky lining, as the vertical scale of the poles are proportional to the landscape hence there are no poles on top of ridgelines from this perspective view. The visual effect is described as slight to moderate with no mitigation required.
2	Council Chamber Road	Viewpoint 2 is located on the rising slopes on the eastern side of the transmission corridor. The viewpoint provides a perpendicular aspect from which to appreciate the linear form of the development as it is aligned to the valley. The landscape character remains predominantly agricultural with an open field structure used for cropping and some grazing.	The visual effect is described as moderate. The transmission line will be seen to extend throughout the horizontal field of view with punctuated vertical elements contrasting to the horizontal underlying agricultural valley. To reduce the visual effect some tree copse planting could be implemented along the Old Adelaide Road corridor to the foreground, which would visually dissect the continuous horizontal presence of the transmission line.



VIEWPOINT NUMBER	VIEWPOINT LOCATION	DESCRIPTION OF LOCALITY	VISUAL ASSESSMENT
3	Exchange Road, Emu Downs	<p>Viewpoint 3 is located at the corner of Exchange Road. The viewpoint is located to the south-western side of the proposed transmission line in close proximity to Emu Downs. The topographic character of the viewpoint is defined by small scale hills and undulations, these local landforms are evident across the valley floor creating localised visual envelopes as well as visual screens to the area. The prominence of the Tothill Range and its vegetation and topographic character creates a defined visual contrast to the modified agricultural landscape of the valley and eastern ridgelines.</p>	<p>The visual effect from this viewpoint is described as moderate. The extent of the horizontal field of view and the rising vertical scale as the poles cluster and traverse the Bluff Range, provides a greater visual presence. Opportunities to reduce the visual effect at this location would be to implement some tree copse planting towards the Bluff Range, which would visually integrate the vertical scale of the poles with some vegetation of a proportionate scale. Thus would also reduce the linear characteristics of the corridor, enhancing the ability of the landscape to visually absorb the development.</p>
4	Koo-owie Gap Road	<p>Viewpoint 4 is located near the intersection of Black Springs Road and Koo-owie Gap Road. The landscape character is dominated by infrastructure of the Morgan-Whyalla Pipeline. The surrounding landscape is typical of the area with open agricultural fields transitioning to areas of grazing to elevated and inclined landscapes that define the local topography. The visual character has an open aspect with views to the surrounding ridgelines of the Bluff Range and elevated glimpsed views of the Tothill Range and beyond.</p>	<p>The visual effect from this perspective is described as substantial. The proximity, vertical scale and extent of the field of view occupied by the development will present a visual change that will adversely alter the amenity value. However the existing landscape character is of low amenity value with the presence existing transmission pole stay and the Morgan to Adelaide pipeline providing a dominant element. The landscape character from this perspective is slightly industrial in fabric, to which the additional poles will be within keeping of this context. Opportunities for mitigation are additional tree copse planting along Black Springs Road to provide integration of the vertical scale.</p>



VIEWPOINT NUMBER	VIEWPOINT LOCATION	DESCRIPTION OF LOCALITY	VISUAL ASSESSMENT
5	Stock Route Road	Viewpoint 5 is located on Stock Route Road. The viewpoint is to the south of the transmission line adjacent to the Black Springs Road. This slightly elevated location provides an appreciation of the linear form of the proposed transmission line as it is across the Black Springs and Emu Downs Valley and the Bluff Range landscape units.	The visual effect from this viewpoint is described as substantial. The number of poles visible and extent of the horizontal field of view affected limits the landscapes ability to absorb the linear character of the development form. The poles will present isolated vertical elements that will produce a continuous thread across the lower lying landscape. The dominance of the visual effect will primarily be to the north-east where the poles will be seen to sky line. To limit the degree of contrast and horizontal extent, copse tree planting to the Bluff Range and along Black Springs Road will provide a more sporadic vegetated vertical scale of a proportionate height to the poles; reducing their visual presence.
6	Northern Edge of Robertstown	Viewpoint 6 is located on the outskirts of Robertstown to the north. The viewpoint represents the anticipated visual effect that will occur from one of the population centres within the assessment region.	From the northern outskirts of Robertstown the visual effect of the proposed transmission line will be slight to negligible. The presence of vegetation to the mid ground and horizon in addition to the slight variance in topography provides absorption of the development from a distance of 4.0 kilometres.

I note that the Visual Assessment Report Stony Gap Transmission Line expresses an opinion that opportunity exists for additional screen landscaping/planting in a number of locations to further minimise the visual impact from certain viewpoints. Managing the visual impacts of a wind farm development by vegetation buffers is a technique sought by Renewable Energy PDC 2(a)(ii):

- (a) **manage the visual impact of the development by achieving the following:**
- (ii) **vegetated buffers to mitigate short to medium range visual impacts**

These viewpoints identified with the potential for additional mitigation are:

- Viewpoint 2 (Council Chamber Road: local – north-east) on page 26 it states *"to reduce the visual effect some tree copse planting could be implemented along the Old Adelaide Road corridor to the foreground, which would visually dissect the continuous horizontal presence of the transmission line"*.
- Viewpoint 3 (Exchange Road, Emu Downs: sub-regional-south-west): on page 29 it states *"...opportunities to reduce the visual effect at this location would be to implement some tree copse planting towards the Bluff Range, which would visually integrate the vertical scale of the poles with some vegetation of a proportionate scale..."*.



- Viewpoint 4 (Koo-owie Gap Road: local - east) on page 32 it states "*opportunities for mitigation are additional tree copse planting along Black Springs Road to provide integration of the vertical scale*".
- Viewpoint 5 (Stock Route Road: sub-regional - south) on page 34 it states "*to limit the degree of contrast and horizontal extent, copse tree planting to the Bluff Range and along Black Springs Road will provide a more sporadic vegetated vertical scale of a proportionate height to the poles: reducing their visual presence*".

In response to a request from Council to address the potential for additional screen landscaping in the locations of these viewpoints, TRUenergy provided further details in correspondence dated 17 April 2012 (as included in **Attachment 4**). TRUenergy have indicated that they "*are willing to negotiate the development of a native vegetation screening programme or plan once the detailed design for the transmission line has been determined during the Building Works Consent Stage*". On this basis, should the proposed development be granted Development Plan Consent, it is recommended that a Reserve Matter be included that requires further definition of additional landscaping/screening around dwellings and along the transmission line.

Having regard to the detailed visual assessment undertaken in the application documentation and having 'ground truthed' the viewpoints and other locations within the locality, I support the conclusions in the Visual Assessment Report, which state:

*"Wind Farm: In conclusion, the visual assessment illustrates that the visual absorption provided by the surrounding landscape, the grouping and clustering of the turbines and the underlying modified agricultural land use assist in mitigating the visual impact of the proposal. While the Stony Gap Wind Farm will be visible in the landscape, its visibility will not dominate the underlying landscape character and land use of the area. Based on the visual assessment, this report concludes that the degree of visual change that will result from the development of a Stony Gap Wind Farm will not cause a significant adverse visual impact and that the existing landscape character can accommodate the proposed development."* (Page 51 The Landscape Assessment Report Stony Gap Wind Farm 16 February 2011, by WAX in association with Swanbury Penglase Architects).



*"Transmission line: The visual effect of the transmission line will vary along the extent of the corridor depending on the relationship of the viewpoint to Tothill Range, The Bluff Range and the distance view to the poles. The visual effect has been defined as slight to the north in landscape character zones Adelaide Road Valley and Burra Gorge; moderate to the north of Black Springs Road and Emu Downs Valley; slight to moderate in areas adjacent Emu Downs to the south; substantial in areas located adjacent the Bluff Range and to the south of Burra Hill and Scrubby Range; negligible to the eastern plains and Robertstown."* (Page 38 Landscape Assessment Report Stony Gap Transmission Line 24 March 2011 and addendum dated 27 February 2012, by WAX in association with Swanbury Penglase Architects).

The proposed development does not in my view present a substantial adverse impact on the underlying visual character of the area and suitably manages the visual impact, thereby satisfying the relevant provisions of the Development Plan, for the following reasons:

- the landscape of the locality has been modified;
- the underlying rural landscape is retained and can be readily viewed;
- wind farms are a form of development which exists throughout the Council area and wider locality and subsequently this proposal does not introduce a new form of infrastructure or visual intrusion into the landscape;
- the locality contains a variety of natural landforms that provides ridges and valleys that assist in minimising the views of the proposed wind farm and transmission line. The wind turbines and transmission lines will come into and out of view depending on the location;
- the proposal does not result in significant visual impact for the residents of the township of Burra;
- the proposal does not result in significant visual impact on areas of defined landscape value such as Burra Creek;
- natural landforms within the locality have a vertical scale to limit the extent of potential substantial cumulative effects within the wider landscape;
- non-reflective paint is proposed to be utilised on the towers to minimise glinting; and
- the access tracks are unlikely to be visually obvious and therefore not a dominant element in the landscape.



#### 7.4 Noise and Infrasound

In assessing the impacts of noise of the Stony Gap Wind Farm, I have had regard to each of the following documents:

- Marshall Day Acoustics – Stony Gap Wind Farm Noise Impact Assessment dated 2 March 2011 (application document);
- Marshall Day Acoustics - Stony Gap Wind Farm Noise Impact Assessment dated 20 July 2011 (application document);
- EPA Referral Response (EPA Reference: 32497) dated 5 January 2012;
- MechTest Mechanical Engineering Testing and Consulting – Stony Gap Wind Farm Noise Impact Assessment dated 22 February 2012 (representor document);
- TRUenergy Response to Representations – letter dated 24 April 2012 (application document);
- The Acoustic Group Pty Ltd Consulting Acoustical and Vibration Engineers – Peer Review of Noise Impact Assessment Stony Gap Wind Farm dated 26 May 2012 (Peer Review document prepared for Regional Council of Goyder – **Attachment 5**);
- GHD – Stony Gap Wind Farm Application Independent Acoustic Review dated 26 June 2012 (Peer Review document prepared for Regional Council of Goyder – **Attachment 6**);
- South Australian Environment Protection (Noise) Policy 2007; and
- South Australian EPA Wind Farms Environmental Noise Guidelines July 2009.

Noise from the proposed wind farm was the subject of extensive commentary from representors, a number of which expressed concern regarding the applications assessment and ongoing concerns regarding the potential impact of the wind farm on their health and amenity. During the notification of the application, a report was prepared on behalf of the representors by MechTest Mechanical Engineering Testing and Consulting. The applicant provided a response to the matters raised in all representations, including the MechTest Report.

Given the technical nature of acoustic assessment, Council requested the peer review of relevant reports and this was undertaken by two parties concurrently, namely GHD and The Acoustic Group. As outlined in both of these Peer Review Reports, the purposes of the independent review was to assess the adequacy of the methodology used, the thoroughness of the study and the reasonableness of the conclusions reached. During the process of the peer review, additional clarification was sought from TRUenergy, which was provided by correspondence dated 14 June 2012 (contained in **Attachment 7**).



The provisions of the Development Plan establish that development of any form should not detrimentally affect the amenity of a location or cause unreasonable interference by noise and minimise negative impacts, as outlined by the Interface Between Land Uses provisions quoted below. Furthermore, Objective 2 of the Interface Between Land Uses provisions seek to protect community health and amenity. In relation to wind farms, the Renewable Energy Facilities provisions, also quoted below, require that excessive noise from wind farms should be avoided or minimised. In addition, the wind farm is required to satisfy the current Environment Protection (Noise) Policy.

#### **Interface Between Land Uses**

- Objective 1: Development located and designed to prevent adverse impact and conflict between land uses.**
- Objective 2: Protect community health and amenity and support the operation of all desired land uses.**
- 1 Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:...**
    - (b) noise...**
  - 2 Development should be designed and sited to minimise negative impact on existing and potential future land uses considered appropriate in the locality.**
  - 7 Development should be designed, constructed and sited to minimise negative impacts of noise and to avoid unreasonable interference.**
  - 8 Development should be consistent with the relevant provisions each of the following documents:**
    - (a) AS 2107 Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors**
    - (b) AS 3671 Acoustics - Road Traffic Noise Intrusion, Building Siting and Construction**
    - (c) the current Environment Protection (Noise) Policy.**

#### **Renewable Energy Facilities**

- 2 Wind farms and ancillary development such as substations, maintenance sheds, access roads, wind monitoring masts and connecting power-lines (including to the National Electricity Grid), should be sited, designed and operated to: ...**
  - (c) avoid or minimise the following impacts on nearby property owners and/or occupiers, road users and wildlife:...**
    - (ii) excessive noise**

To assess the potential impacts of the Stony Gap Wind Farm, I consider the most pertinent questions to be answered are:

- Does the wind farm create excessive noise?



- Does the wind farm avoid or minimise noise to nearby property owners and/or occupiers?
- Will the wind farm comply with the current Environment Protection (Noise) Policy?
- Is the health and amenity of the community adequately protected?

In assessing these matters, I note and consider:

- The developer has a general environmental duty pursuant to the *Environment Protection Act 1993*.
- The current Environment Protection (Noise) Policy specifically refers the assessment of wind farms to the SA EPA Wind Farm Guidelines as the relevant standard.
- 'Excessive noise' is a term utilised in the Development Plan particularly Renewable Energy Facilities PDC 2(c)(ii) and the SA EPA Wind Farm Guidelines, although it is not defined by either of these documents. I have interpreted 'excessive noise' to be that exceeding the criteria established by the SA EPA Wind Farm Guidelines.
- The use of the terms 'avoid or minimise' is to be read as a disjunctive and that 'avoid' does not impose a higher standard than that of a containment to the acceptable level, in accordance with the discussion on this matter in *Paltridge & Ors v District Council of Grant & Anor (2011) SAERDC 23 (17 June 2011)* at paragraphs 39 to 41.
- The comments and criticisms made by a range of representors relating to the inadequacies of the SA EPA Wind Farm Guidelines is not a matter for discussion or assessment. Assessment of the adequacy or otherwise of these guidelines is outside of the assessment of this application. Any inadequacies of the SA EPA Wind Farm Guidelines is a matter for legislative review. This approach is supported by previous consideration of the SA EPA Guidelines by the ERD Court in the matter of *Quinn & Ors v Regional Council of Goyder & Anor (2010) SAERDC 63 dated 24 November 2010* in which Professor Hansen (of MechTest) provided evidence. In relation to that matter, the Court noted at paragraph 106 that "*Professor Hansen criticised those standards. He wished for more rigorous methods for noise prediction and compliance testing. Those are largely matters for those bodies which generate the policies and standards, and for the framers of the policy documents which adopt them. Generally, it is our task to apply the policies and standards as they exist.*" This is the approach I have adopted in my assessment.



- The locality is within a Primary Production Zone and not a 'rural living' area as purported by a number of representors and consequently is the relevant criteria for assessment against the SA EPA Wind Farm Guidelines, which contains the following definitions:

*"locality means an area to which a Development Plan applies (whether described in the Plan as a locality, or as a zone or a precinct or otherwise) that is—*

- (a) made subject to a set of land use rules by provisions of the Plan; and*
- (b) not itself further divided by the Plan into areas that are made subject to separate sets of land use rules.*

*Rural living: A 'rural living' zone is a rural–residential 'lifestyle' area intended to have a relatively quiet amenity. The area should not be used for primary production other than to produce food, crops or keep animals for the occupiers' own use, consumption and/or enjoyment. The noise amenity should be quieter than in an urban–residential area."*

- Infrasound is "low frequency noise below the audible frequency range that manifests as a rattle in lightweight materials such as glass" (EPA Wind Farm Guidelines). Infrasound is not regulated either in the Development Plan or by the EPA Wind Farm Guidelines. I note that the EPA Wind Farm Guidelines state:

*"Infrasound was a characteristic of some wind turbine models that has been attributed to early designs in which turbine blades were downwind of the main tower. The effect was generated as the blades cut through the turbulence generated around the downwind side of the tower.*

*Modern designs generally have the blades upwind of the tower. Wind conditions around the blades and improved blade design minimise the generation of the effect. The EPA has consulted the working group and completed an extensive literature search but is not aware of infrasound being present at any modern wind farm site."*



In assessing noise impacts, the provisions of the Primary Production Zone, and, in particular, the Desired Character Statements for that zone; and General provisions contained within the Renewable Energy Facilities and Interface Between Land Uses are considered. As discussed previously, the relevant provisions of the Development Plan, clearly seek the development of renewable energy facilities such as wind farms in areas where the generation of electricity can be maximised. Those provisions also seek to have wind farms located in such a way as to avoid or minimise nuisance from excessive noise. Compliance with Environment Protection (Noise) Policy is sought. As noted in SAERDC 63 decision (Quinn & Ors v Regional Council of Goyder) relating to the proposed AGL Wind Farm, the Court stated that "*in setting those policies, the framers of the Development Plan must have known that, even in a sparsely populated rural area such as the locality of the proposed wind farm, there will be residents who will be able to hear the turbines, and a small percentage of those residents are likely to be annoyed*" (paragraph 102).

Detailed Noise Impact Assessment Reports have been prepared by Marshall Day Acoustics for the proponents of the wind farm, in relation to the compliance of the proposed Stony Gap Wind Farm against the current Environment Protection Policy and specifically the SA EPA's *Windfarms: Environmental Noise Guidelines July 2009 (Noise Guidelines)*. These Assessment Reports have been assessed by the Environment Protection Authority and subsequently have been independently reviewed by The Acoustic Group and GHD on behalf of Council.

The Noise Impact Assessment Report by Marshall Day (July 2011) contains the following comments and conclusions:

- *The wind farm is proposed to consist of forty-one (41) Vestas V90-3MW wind turbines with a cut-in wind speed of approximately 4m/s at hub height.*
- *The Guidelines require that other noise sources associated with the wind farm, such as transformer stations, be included in the noise impact assessment. Predicted wind farm noise emission levels presented in this report include contribution from a transformer substation.*
- *It can be seen from Table 6 that predicted noise emissions comply with the Guidelines noise limits at all assessed non-stakeholder properties. The Guidelines noise limits are exceeded at three (3) of the seven (7) stakeholder properties. Predicted noise levels at these three (3) stakeholder properties comply with the Guidelines/ETSU-R-97 base noise limit of 45dBA.*
- *At all non-assessed properties further from the wind farm the expected worst-case noise levels are below the base noise limit of 40dBA.*



- *Noise emissions from the transformer station are predicted at  $L_{eq}$  10dBA at the nearest residential property, House 10. Transformer noise emissions are generally considered tonal and with a high level of low frequency noise. Clause 14.3 of the EPP requires that an 8dBA penalty be applied if the noise source contains two special audible characteristics. Therefore the effective noise level of the transformer station is 18dBA. Predicted noise emissions from the transformer station associated with the proposed Stony Gap Wind Farm comply with the EPP noise limit presented in Section 3.2.*
- *At this stage the proposed Stony Gap Wind Farm is being based on forty-one (41) Vestas V90-3MW wind turbines with a nominal hub height of 80 m, operating in Mode 0. This turbine model is considered to be typical of the large wind turbine generators currently available on the market.*
- *An assessment has been performed in accordance with the requirements of the SA EPA Guidelines at eleven (11) properties in the vicinity of the proposed wind farm comprising of seven (7) stakeholder properties and five non-stakeholder properties. Background noise monitoring has been completed at nine (9) noise monitoring locations. Background noise monitoring data has been used to determine noise limits at the eleven (11) assessable residential properties.*
- *The land surrounding the proposed Stony Gap Wind Farm is a Primary Production one in accordance with the Goyder Regional Council Development Plan, therefore a 40dBA base noise level has been applied in this assessment.*
- *Furthermore, an increased base noise level of 45dBA has been applied at stakeholder residential properties, in accordance with ETSU-R-97.*
- *Predicted noise levels, including contribution from a proposed substation, have been calculated at each of the eleven (11) assessable residential properties using the ISO9613-2:1996 algorithm with the range of operating wind speeds for which sound power level data has been provided. These predicted levels were compared with the appropriate noise limits.*
- *It was found that all assessed residential properties comply with the applicable Guidelines noise limits based on the Vestas V90-3MW turbines, operating in Mode 0. At all non-assessed properties further from the wind farm the expected worst-case noise levels are below the lowest possible limit of 40dBA.*
- *Noise emissions from the transformer station associated with the proposed Stony Gap Wind Farm also comply with the Environment Protection (Noise) Policy 2007.*
- *If the turbine selection and/or layout are to be changed, compliance with the relevant noise limit will need to be reassessed.*



In their assessment of application, the Environment Protection Authority (letter dated 5 January 2012) concluded that *"following construction it would be unlikely that noise emitted from the wind farm would impact on nearby residents. The actual noise levels must be measured at noise sensitive receivers following commissioning to determine their compliance with the noise criteria specified in Wind Farms: Environmental Noise Guidelines 2009 by the EPA"*. The EPA recommended conditions to ensure that the proposed development was in compliance with the current Environmental Protection (Noise) Policy.

A peer review of the Marshall Day Acoustics Noise Impact Assessment Report has been undertaken by Dr Steven Cooper of The Acoustic Group. In the conclusions of this peer review, Dr Cooper states:

- *Marshall Day Acoustics has relied solely upon the EPA Guidelines and has ignored the acoustic characteristics that residents will actually receive as a result of the Stony Gap Wind Farm. They have not addressed the actual acoustic impact of the wind farm on the community.*
- *The Marshall Day acoustic assessment provides a set of predicted noise levels in terms of the A-weighted values set out in the Guidelines and concludes that there are no tonal or modulation characteristics requiring modification to the predicted noise levels.*
- *The assessment does not specifically address the influence or effect of winds and temperature inversions which have the potential to result in higher noise levels than have been predicted.*
- *Professor Hansen has raised the issue that the acoustic assessment has under-predicted the noise that residents will receive and taking into account the above matters, there is the distinct possibility that at times noise generated by the proposed wind farm will be greater than that set out in the acoustic assessment.*
- *In relation to background levels, the attached measurement results confirm (as expected) that ambient background levels inside rural properties in the subject region are significantly lower than 30dB(A) and that external noise levels are lower than the nominated Environment Protection (Noise) Policy 2007 night time Indicative Level of 40dB(A) for rural areas. As such, the noise generated by the wind farm is likely to be significantly greater than background +5dB(A) and therefore to have an impact significantly greater than for an 'annoyance'.*
- *The issue of low frequency noise and infrasound has been raised and discussed above. Documentation from the world's leading supplier of turbines has identified that computer models are inadequate for low-frequency noise propagation. As high frequencies are rapidly attenuated over distance (when compared to low frequencies) audible characteristics of the turbines may be reduced to a low frequency hum and can also include frequencies below the normal range of human hearing.*



A number of the conclusions of Dr Cooper, in my view relate back to the inadequacy of the EPA Guidelines for Wind Farms. Whilst I acknowledge the ambient background levels inside rural properties are significantly lower than those nominated by the *Environment Protection (Noise) Policy 2007*, this policy and the EPA Guidelines for Wind Farms is the framework required for assessment. Furthermore, Dr Cooper's conclusions relating to non-compliance with the objectives of the Development Plan in relation to the protection of health and amenity of property owners/occupiers must be balanced against all of the relevant provisions of the Development Plan.

In relation to health impacts from wind farms, I note that this matter was extensively reviewed in the Environment Resources and Development Court matter of *Paltridge & Ors v District Council of Grant & Anor (2011) SAERDC 23*. In general terms, the appellants in this matter argued that even at noise levels which otherwise meet the levels sought in the EPA Guidelines for Wind Farms, there still may be detrimental health effects. Evidence of health impacts of wind farms was provided by Dr Laurie and Professor Wittert and the Court preferred the conclusions of Professor Wittert who concluded that:

*"There is no credible evidence of a causal link, between the physical outputs of a turbine (or sets of turbines), at the levels that are described in the statement of Mr C Turnbull \* and adverse effects on health"* (paragraph 120 SAERDC 23).

\* Mr Turnbull of Sonus Acoustics provided evidence on noise and infrasound to the ERD Court on behalf of the applicant in this matter.

Furthermore, in the *Paltridge & Ors v District Council of Grant & Anor (2011) SAERDC 23* matter, the appellants sought to invoke the 'precautionary principle'. This principle dictates that measures to prevent or forestall damage (in this case to human health) should not be postponed, merely because of the lack of full scientific certainty as to the need for such measures. The ERD Court were referred by Professor Wittert to a recent *Wind Turbines and Health - A Rapid Review of Evidence - National Health and Medical Research Council - July 2010*, which concluded that *"there are no direct pathological effects from wind farms and any potential impact on humans can be minimised by following existing planning guidelines"*. The ERD Court accepted this as being the most up-to-date and reliable research on this issue and accordingly considered there was no basis to invoke the precautionary principle.

On the question as to whether the Marshall Day Acoustics Assessment of the wind farm has been undertaken appropriately and the conclusions are reasonable, I note the conclusions of the GHD peer review, which in conclusion states:

- *the Noise Impact Assessment undertaken by MDA for the Stony Gap DA demonstrates compliance with the noise criteria set by the SA EPA Wind Farm Guidelines; and*
- *conclusions and recommendations reached by MDA are considered generally reasonable.*



On the basis of all information provided and the conclusions reached by the EPA, GHD and the ERD Court in recent wind farm appeal matters, I am satisfied that the proposed wind farm would comply with the current Environment Protection (Noise) Policy and not create excessive noise. Furthermore, I am satisfied that the design, layout and operational conditions proposed for the wind farm minimises adverse impacts on nearby property owners and/or occupiers and road users, and the health and amenity of the community is adequately protected and satisfies the provisions of the Development Plan.

### **7.5 Shadow Flicker, Reflection and Blade Glint**

Renewable Energy Principle of Development Control requires that wind farms are sited, designed and operated to avoid or minimise shadowing, flickering, reflection and blade glint on nearby property owners and/or occupiers, road users and wildlife. The application documents note that all dwellings in the vicinity of the Stony Gap Wind Farm comply with 'A Planning Bulletin - Wind Farms - Draft for Consultation, 2002', which establishes a guideline separation of 500 metres from wind turbines. In addition, the applicant notes that all residential dwellings are shown to comply with the Draft National Wind Farm Development Guidelines (July 2010), which establishes the limit for the duration of shadow flicker within 50 metres of any dwelling to 30 hours per year. It is noted that utilising this model stakeholder dwelling (reference 23) could experience up to 21 hours per year shadow flicker in a 'worst case scenario', however this is still less than the maximum of 30 hours per year.

Blade glint refers to the regular reflection of the sun off one or more rotating turbine blades. The application document indicates that in accordance with the blade glint requirements in the Draft National Wind Farm Development Guidelines, the Stony Gap Wind Farm incorporates a suitable non-reflective finish to mitigate the risk of blade glint. Blade glint is not expected to be a significant issue given the altitude of the turbines relative to the viewer location, the finish applied (low reflective) to the blades, the low density of the locality and low traffic volumes expected on the local roads.

Overall, the proposal is suitably designed and located to satisfy the following Development Plan provisions in relation to shadow flicker, reflection and blade glint.

#### **Renewable Energy**

**2 Wind farms and ancillary development such as substations, maintenance sheds, access roads, wind monitoring masts and connecting power-lines (including to the National Electricity Grid), should be sited, designed and operated to:**

...

**(c) avoid or minimise the following impacts on nearby property owners and/or occupiers, road users and wildlife:**

**(i) shadowing, flickering, reflection or blade glint impacts;**



### **Interface Between Uses**

**Objective 1:** Development located and designed to prevent adverse impact and conflict between land uses.

- 1** Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:
  - (a) the emission of effluent, odour, smoke, fumes, dust or other airborne pollutants;
  - (b) noise;
  - (c) vibration;
  - (d) electrical interference;
  - (e) light spill;
  - (f) glare;
  - (g) hours of operation; and
  - (h) traffic impacts.

### **7.6 Electromagnetic Interference with Telecommunications**

- 2** Wind farms and ancillary development such as substations, maintenance sheds, access roads, wind monitoring masts and connecting power-lines (including to the National Electricity Grid), should be sited, designed and operated to:
  - ...
  - (c) avoid or minimise the following impacts on nearby property owners and/or occupiers, road users and wildlife:
    - ...
    - (iii) interference with television and radio signals

The potential for telecommunications interference associated with the development has been assessed in the application documents, with reference to the Best Practice Guidelines – For Implementation of Wind Energy Projects in Australia (2006) and the Draft National Wind Farm Development Guideline (July 2010). The assessment concluded that wind turbines would not interfere with point-to-point radio links but further consultation would be required with ElectraNet in relation to the powerline route once the final pole locations were determined. In relation to point-to-multipoint services (broadcast services such as radio, mobile broadband, TV and pagers) the assessment concluded that given the distance of the transmitters from the wind farm it is unlikely to have any broad-scale effects on these services. There may however be some localised interference in proximity to wind turbines and the wind farm itself. The applicant has made commitments to mitigate impacts on the Stony Gap DA through local consultation and undertaking a baseline television and radio survey prior to wind farm construction. TRUenergy will rectify services that are degraded by the construction of the wind farm.

Having regard to this information, I am satisfied that the application appropriately addresses the issues regarding interference with television and radio signals.



## 7.7 Impact on Flora and Fauna

The Renewable Energy Facilities section of the Development Plan seeks the development of renewable energy facilities in appropriate locations, with those facilities sited, designed and operated in such a manner as to avoid or minimise adverse impacts on native vegetation, conservation, the natural environment, geological or natural heritage significance and wildlife (Objectives 3 and Principle of Development Control 2).

### Renewable Energy

**Objective 3** Location, siting, design and operation of renewable energy facilities to avoid or minimise adverse impacts on the natural environment.

**2** Wind farms and ancillary development such as substations, maintenance sheds, access roads, wind monitoring masts and connecting power-lines (including to the National Electricity Grid), should be sited, designed and operated to:

...

(b) avoid or minimise the potential for adverse impact on areas of native vegetation, conservation, the natural environment, geological, tourism or built or natural heritage significance

(c) avoid or minimise the following impacts on nearby property owners and/or occupiers, road users and wildlife:

...

(iv) modification of vegetation, soils and habitats

(v) striking of birds or bats.

The Desired Character Statement of the Primary Production Zone seeks to ensure that

*"Areas of conservation and biodiversity significance will be protected from inappropriate new development".*

Within the General section of the Development Plan there are numerous provisions that support the protection, retention and conservation of native flora, fauna and ecosystems, including but not limited to Objective 7 and Principles of Development Control 28, 31, 33 and 34 under the heading of Natural Resources.

### Natural Resources

**7** Native flora, fauna and ecosystems protected, retained, conserved and restored.

**28** Development should retain existing areas of native vegetation and where possible contribute to revegetation using locally indigenous plant species.

**31** Native vegetation should be conserved and its conservation value and function not compromised by development if the native vegetation does any of the following:

(a) provides an important habitat for wildlife or shade and shelter for livestock;



- (b) has a high plant species diversity or includes rare, vulnerable or endangered plant species or plant associations and communities;
- (c) provides an important seed bank for indigenous vegetation;
- (d) has high amenity value and/or significantly contributes to the landscape quality of an area, including the screening of buildings and unsightly views;
- (e) has high value as a remnant of vegetation associations characteristic of a district or region prior to extensive clearance for agriculture; and
- (f) is growing in, or is characteristically associated with a wetland environment.

**33** Development that proposes the clearance of native vegetation should address or consider the implications that removing the native vegetation will have on the following:

- (a) provision for linkages and wildlife corridors between significant areas of native vegetation.

**34** Where native vegetation is to be removed, it should be replaced in a suitable location on the site with vegetation indigenous to the local area to ensure that there is not a net loss of native vegetation and biodiversity.

As indicated previously in this Report, the proponent has referred the proposed development to the Commonwealth Department of the Environment, Water, Heritage and the Arts for consideration under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Environmental Assessment Reports forming part of the application comprise numerous parts, including:

- Stony Gap Wind Farm Bird Utilisation Study August and November 2008 by EBS (Environment and Biodiversity Services).
- Stony Gap Wind Farm Flora Survey and Fauna Habitat Assessment 13-16 May 2008 by EBS (Environment and Biodiversity Services).
- Additional Stony Gap Wind Farm Flora and Fauna Survey November 2008 by EBS (Environment and Biodiversity Services).
- Stony Gap Wind Farm – Additional Flora and Fauna Assessment November and December 2010 by EBS (Environment and Biodiversity Services).
- Stony Gap Proposed Transmission Line Flora and Fauna Survey (February 2012) by EBS (Environment and Biodiversity Services).
- Peregrine Falcon surveys at the proposed Stony Gap Wind Farm, South Australia, February 2011 by Biosis Research.



The following findings are noted from the Executive Summary of the EBS November 2008 and November and December 2010 flora and fauna investigations and the Biosis Research Report:

- *A total of 130 flora species (72 native and 58 exotic) have been identified within the Study Area as a result of the two surveys that have been undertaken.*
- *Two threatened ecological communities, the Eucalyptus odorata (Peppermint Box) +/- Eucalyptus leucoxylon ssp. pruinosa (Inland South Australian Blue Gum) Woodland over Exotic/Native Grassland and Lomandra multiflora ssp. dura (Hard Mat-rush)/Lomandra effusa (Scented Mat-rush) Open Tussock Grassland were located within the project site. These areas were assessed against the relevant criteria to determine if they are listed as **critically endangered** ecological communities under the Environment Protection and Biodiversity Conservation Act 1999. The assessment found that all areas of the Lomandra multiflora ssp. Dura (Hard Mat-rush)/Lomandra effusa (Scented Mat-rush) Open Tussock Grassland are condition class .C. and therefore not listed under the Act. This was due to a lack of species diversity, a lack of broadleaf herbaceous species and, in some areas, a low density of perennial tussocks.*
- *The Eucalyptus odorata (Peppermint Box) +/- Eucalyptus leucoxylon ssp. Pruinosa (Inland South Australian Blue Gum) Woodland over Exotic/Native Grassland association was generally found to be of condition class .C. due to the lack of broadleaf herbaceous species. Several areas are considered to be of higher quality, however, these areas were small in size (<200 square metres) and therefore do not meet the necessary criteria to be listed under the Act.*
- *No flora species of national conservation significance were identified within the Study Area, however, seven species of state conservation significance were recorded. Three of these species were not detected in the original survey and were found as either scattered individuals or in small groups. A total of 12 flora species of regional conservation significance (Northern Lofty Botanical Region) were also identified within the Study Area.*
- *The targeted survey for Pygmy Bluetongue Lizards was undertaken across areas of likely habitat which included the areas of Exotic/Native Grassland and Lomandra multiflora ssp. dura (Hard Mat-rush)/Lomandra effusa (Scented Mat-rush) Open Tussock Grassland. Two individual Pygmy Bluetongue Lizards were located within the Exotic/Native Grassland. The two individuals were located close to an existing farm access track which has also been utilised for access to a wind monitoring mast.*
- *The targeted surveys undertaken for the Flinders Worm-lizard did not detect the species within the Study Area. This species is cryptic and it is considered likely that it does occur within the Study Area.*



- *The bat surveys used several methods for identifying bat species within the Study Area. These included setting up Anabat detectors at several sites, using a harp trap and mist netting a farm dam. One individual bat (Nyctophilus geoffroyi Lesser Long-eared Bat) was captured using the harp trap whilst a total of six species were confidently identified from calls recorded on the Anabat detectors. An additional species was identified to a probable level and one species to a possible level based on the calls recorded. No individuals were captured during the mist netting.*
  
- *The key findings of the additional surveys within the wind farm survey area are:*
  - *"An additional 15 flora species (seven native and eight introduced) were identified;*
  - *Six vegetation associations were recorded and included areas of cropping land;*
  - *Areas of potential PBT habitat were identified and surveyed and three PBT's were detected*
  - *Potential habitat for the nationally vulnerable Aprasia pseudopulchella (Flinders Worm-lizard) was identified in one location and subsequently surveyed. No FWL's were detected during active searched for the species*
  - *Three raptor species were recorded within the specific raptor nest survey area and included Wedge-tailed (Aquila audax), Peregrine Falcom (Falco peregrinus) and Nakeen Kestrel (Falco cenchroides)*
  - *Four Wedge-tailed Eagle nests were recorded with one eagle fledging oserved close to Nest Site 4*
  - *One Peregrine Falcon was observed with a potential nest location within close proximity to the falcon*
  - *No nationally threatened ecological communities were recorded".*
  
- *The key findings of the transmission line survey are:*
  - *"A total of 87 flora species (63 native and 24 introduced) were identified across the proposed transmission line survey area*
  - *Two plants of Oleria pannosa ssp. pannosa (Silver Daisy Bush) were recorded which is listed as vulnerable under the EPBC Act and NPW Act*
  - *Seven vegetation associations were recorded across the site plus areas of cropping land*
  - *Potential habitat for the nationally endangered Tiliqua adelaidensis (Pygmy Bluetongue Lizard) was identified and surveyed within the northern section of the proposed transmission line route. No PBT's were detected*
  - *No nationally threatened ecological communities were recorded".*
  
- *The key findings of the supplementary flora and fauna survey undertaken as part of the amended transmission line route in February 2012 are:*
  - *"One plant Maireana rohrlachii (Rohrlach's Bluebush) was recorded which is listed as rare under the NPW Act*



- *Three vegetation associations were recorded across the site plus areas of cropping land*
  - *No nationally threatened ecological communities were recorded*
  - *No potential habitat for the nationally endangered *Tiliqua adeaidensis* (Pygmy Bluetongue Lizard) was identified"*
- The results of the Biosis Research to identify and highlight the utilisation pattern of the Peregrine Falcon states:
    - *"Surveys were undertaken from 14-20 December 2010*
    - *Survey methods included point surveys, ridgeline roaming surveys, woodland roaming surveys and vehicle roaming surveys*
    - *During a total of 69 hrs 51 mins of survey time for two observers, only 13 Peregrine Falcon flights were observed, and of these flights, only seven crossed the ridgeline. It is likely so few flights were observed due to the current surveys being undertaken outside the breeding season*
    - *During the breeding season Peregrine Falcon flights are more concentrated within the breeding territory when compared to the non-breeding season, when their movements are more dispersed and less certain. In order to achieve the aim of identifying hotspots and flyways on the ridgeline which correspond to higher usage by Peregrine Falcons, it is recommended that future surveys be undertaken during the core breeding period for the species when concentrated activity may occur close to nests.*
    - ▶ *In addition to flight observations of Peregrine Falcons, numerous flights of other birds of prey were noted throughout the survey period. This included observations of Wedge-tailed Eagles, Nankeen Kestrels and Brown Falcons.*
    - ≡ *During roaming surveys along the ridgelines and within the adjacent woodland, several potential Peregrine Falcon nests were observed and recorded (Figure 4). However, none of these nests were occupied by Peregrine Falcons, or showed evidence of occupancy of any other birds when they were recorded.*
    - *One Wedge-tailed Eagle was observed on a nest on the east side of the ridge in Property #4 (Figure 4c). An additional potential Wedge-tailed Eagle nest was also recorded nearby (Figure 4c)".*



The South Australian Murray-Darling Basin Natural Resources Management Board reviewed the application in relation to the protection of native flora and fauna and made the following comments and recommendations:

- **Pygmy Bluetongue Lizard (PBT):**

- *"The three identified PBT burrows located between turbines 35 and 36 are in very close proximity to the defined works area, which are to involve the upgrade of the existing track. The EBS report states that one burrow was located 2 metres from the existing track and the other two were located 8 metres from the fence line*
- *These three PBT site will need to be protected during the construction phase and also with ongoing site access through this area. To ensure this we recommend the area be cordoned off in an appropriate manner to ensure no offsite damage occurs*
- *The track upgrade will need to be undertaken in a very sensitive manner due to the very close proximity of the burrow and should be outlined in the Operation plan or appropriate documentation*
- *Conservation grazing is required to ensure the PBT habitat is maintained as they require inter tussock spacing which is enhanced by grazing. Recommend that management arrangements with landholders include the requirement for conservation grazing in areas where PBT habitat exists*
- *There is a concern that construction activities near turbine sites 15 to 17 may impact on potential PBT's as 21 burrows could not be adequately observed. The EBS report states that, 'it is probable that more PBT lizards may have been present during the survey, but remained undetected due to the limited ability to see within spider holes that were curved when using the torch method'. Ensure that minimal impact occurs to this area with storage of construction materials being confined to areas that are not potential habitat of this species.*
- *Recommend that procedures be put in place to ensure that vehicles stick to tracks and do not drive across paddocks as can be tempting in this type of landscape".*

- **Peregrine Falcon:**

- *"Recommend that the proposed turbines sited 1km from this known nesting site Figure 8-12 Fauna map identifies the PF nest significantly closer than this. The need to locate turbines a distance from the known nesting site of the Peregrine falcon has been discussed with SAMDB NRM staff previously*
- *Suggest that a 100 metre buffer is not sufficient. Recommend a 300 m buffer from any newly identified nesting sites. Note that the EBS report stated that the 'female falcon showed signs of distress during the survey – distress calls'. Potential nest is in close proximity to the site".*



- Wedge-Tailed Eagles:
  - *"Commend offer to contribute to an education program to increase awareness about wedge tailed eagles within the Goyder Council local government area".*
- Flinders Worm-lizard:
  - *"The EBS report states that 'the absence of records of the Flinders Worm-lizard during this survey does not confirm its absence within the study area, as suitable habitat is still considered available within the study area'*
  - *Recommend placing a statement in the mitigations table that 'efforts will be made to minimise the impact on potential habitat for this species, such as rocky outcrops'".*
- State listed birds. Diamond Firetails, Vulnerable Elegant Parrots:
  - *"Suggest that SEB may be able to enhance the habitat in the area of these two listed species".*
- Silver Daisy-bush:
  - *"Appropriate actions have been recommended to be taken*
  - *Precautions should be taken to ensure vegetation is not unnecessarily damaged during the cabling and that further surveys for this species be undertaken in areas where access tracks to transmission lines are to be located".*
- Lomandra multiflor ssp.dura/Lomandra effuse open tussock grassland
  - *"All areas surveyed were identified as being under class C and thus did not qualifying for listing under the EPBC Act 1999*
  - *The surveys identify that degraded examples of this nationally listed environmental community occur within and surrounding some locations through the site. We recommend that as part of the SEB for vegetation clearance that these areas be assessed for their potential to respond to management actions to bring up to a higher Condition Class".*
- State listed flora:
  - *"Figure 8-2 Vegetation Associations and Flora; Site 31 appears to be located where a number of state listed have been recorded*
  - *Recommend implementing strategies to minimise impact on these plants if the turbine location cannot be moved".*



- EBS Recommendation:
  - *"The EBS report recommends that if any of the flora and fauna values identified are likely to be impacted by the final layout of the wind farm it is recommended that further survey and assessment is carried out".*
- Site restoration and rehabilitation of construction areas:
  - *"Ensure that locally native species are used and any rehabilitation works do not impact on flora and fauna values of the area".*

Having reviewed the Environmental Assessment Reports and commentary from the NRM Board, along with the commitments from the proponent, I am satisfied that the siting and design of the wind farm (subject to suitable micro-siting) satisfactorily addresses the provisions of the Development Plan relating to avoiding or minimising the impact on flora and fauna. The commitments of the proponent are:

- that all areas used for construction will be confined to areas located in cropland or exotic/native grassland;
- the wind farm and transmission line development envelopes will target infrastructure in the areas of lowest vegetation condition and will avoid areas of significant native vegetation;
- the development footprint for the wind farm will avoid the areas of habitat occupied by Pygmy Bluetongue Lizards;
- the transmission line will avoid the two individual plants of *Olearia pannosa* subsp. *pannosa* that were located during surveys. During construction these plants will be marked and fenced off and they will be identified in the Construction Management Plan, so that they will not be inadvertently impacted by any proposed works in the area or by vehicles accessing the works area;
- the location of the two *Olearia pannosa* subsp. *pannosa* will be permanently marked and their presence will be recorded in the Operations Management Plan so that they are not inadvertently disturbed by any maintenance activities that are carried out in their vicinity;
- all construction activities will occur in a defined works area and will be rehabilitated after construction (if not used for operation);
- measure to prevent the potential spread of weeds and plant diseases on-site will be included in the CMP and OMP;
- a submission will be made to the Native Vegetation Council for the clearance of native vegetation to construct the wind farm in accordance with Regulation 5(1)(d) of the *Native Vegetation Act 1991*;



- there will be no heavy disturbance and prolonged construction activity within 180 metres of those viable Wedge-Tailed Eagle nests that are active during the breeding season. Details of the measures and controls to achieve this will be described in the CMP;
- Wind Turbines 7-10 and 13-15 will be micro sited to maximise the distance, as much as practicable, from the four known viable eagle nests, taking into consideration construction constraints and the potential wind energy regime;
- contribute to an education program to increase the awareness about Wedge-Tailed Eagles within the Goyder Council region with the aim of providing a regional benefit to these species;
- a survey will be carried out on the Peregrine Falcon breeding season prior to construction to determine if there is an active peregrine nest present; and
- if an active Peregrine Falcon nest is located, a buffer of 100 metres will be established around the nest site. No wind farm infrastructure will be located within the buffer and there will be no heavy disturbance and prolonged construction activity within 100 metres of the nest during the breeding season.

In addition to these commitments by the proponents, a number of conditions are recommended relating to flora and fauna management, should the Planning Authority determine to grant Development Plan Consent to the wind farm development.

The proposed wind farm (including the transmission line) would require some clearance of native vegetation. The final extent of the clearance and the impact of the clearance is proposed to manage through further micro-siting and design. The requirements of the EPBC Referral and Native Vegetation Council application will determine the extent of area that may be cleared and the 'significant environmental benefit' (SEB)/'off-set' areas to be replanted within the project site. In relation to protection of native vegetation, the proposed development does not satisfy all of the provisions of the Development Plan, as some vegetation clearance would be required. This failure of the proposal needs to be assessed in a balanced manner against all other relevant provisions of the Development Plan and on balance it is not considered to be fatal to the proposal, particularly when opportunities exist within the development site to incorporate SEB.

## **7.8 Soil Erosion, Water Quality, Air Quality and Stormwater Management**

### **Natural Resources**

**Objective 2:** Protection of the quality and quantity of South Australia's surface waters, including inland, marine and estuarine, and underground waters.

**Objective 3:** The ecologically sustainable use of natural resources including water resources, including marine waters, ground water, surface water and watercourses.



- Objective 4:** Natural hydrological systems and environmental flows reinstated, and maintained and enhanced.
- Objective 5:** Development sited and designed to:
- (a) maximise the use of stormwater;
  - (b) protect stormwater from pollution sources;
  - (c) protect or enhance the environmental values of receiving waters;
  - (d) prevent the risk of downstream flooding; and
  - (e) minimise the loss and disturbance of native vegetation.
- Objective 9:** Minimal disturbance and modification of the natural landform.
- Objective 10:** Protection of the physical, chemical and biological quality of soil resources.
- Objective 11:** Protection of areas prone to erosion or other land degradation processes from inappropriate development.
- Objective 12:** Protection of the scenic qualities of natural and rural landscapes.
- 1** Development should be undertaken with minimum impact on the natural environment, including air and water quality, land, soil, biodiversity, and scenically attractive areas.
- 12** Development should be sited and designed to:
- (a) minimise surface water runoff;
  - (b) not obstruct a watercourse;
  - (c) prevent soil erosion and water pollution;
  - (d) protect stormwater from pollution sources; and
  - (e) protect and enhance natural water flows required to meet the needs of the natural environment.

The EPA Assessment reviewed the impact on air quality during construction and advised that the significant amount of earthworks required in constructing access tracks, trenching and preparing each wind turbine site would create a risk of causing a dust nuisance. This issue would be addressed through a Construction Environmental Management Plan (CEMP) to be prepared by the applicant prior to commencement of work.

The EPA has recommended a condition specifying the requirements for appropriate dust management, although it states that it does not anticipate any adverse dust impacts during the operation of the wind farm.

In regard to water quality issues, the EPA advises that there would be a low risk of impact on water quality during construction, provided that work complies with a Construction Environment Management Plan (CEMP) incorporating a Soil Erosion and Drainage Management Plan for each site, prepared to Council's satisfaction. The EPA advise that any CEMP should also detail how noise, dust and waste can be managed to avoid causing a nuisance to nearby residents. In addition, earthmoving and heavy vehicle movement should be undertaken in such a manner that it would not cause soil degradation, erosion and sedimentation of watercourses.



Subject to the provision of an appropriate Construction Environment Management Plan (CEMP), incorporating a Soil Erosion and Drainage Management Plan, the development application appropriately addresses the relevant provisions of the Development Plan relating to air and water quality.

## **7.9 Traffic and Access**

As outlined in the relevant provisions of the Development Plan, there are numerous considerations in relation to traffic and access, including the provision of safe and efficient movement from public roads, minimising visual impacts of internal access tracks, ensuring that the wind farm does not interfere with airfields, that the landform is not altered significantly and any potential impacts on flora and fauna. Matters of landform, visual amenity and impacts on flora and fauna have been discussed in previous sections of this report.

The impacts on aviation in the area have been considered by the proponents, to ensure that the wind farm does not impact on safety and the operation of airfields and designated landing strips. There are no licensed airfields with instrument approach procedures within 55.6 kilometres of any part of the wind farm and the Farrell Flat Airfield is located approximately 13 kilometres west of the proposed development. The Farrell Flat Airfield does not have Obstacle Limitation Surface (OLS) or Procedures for Air Navigation Services – Aircraft Operations (PAN OPS) surfaces overlying, or in proximity to the development site. The proposal is within a Military Low Flying Training Area associated with the RAAF Base Edinburgh, which is used irregularly.

In relation to aviation conditions, I note the following from the application documents:

- The wind farm does not infringe any OLS.
- There are no PANS OPS surfaces on any airfield that are relevant to the development.
- The wind farm will not impact nearby designated air routes.
- The wind farm will not impact local aviation activities.
- The wind farm is located outside the clearance zones associated with air traffic control radar facilities and aviation navigation aids.
- The wind farm is located at a sufficient distance from airfields are not to have an impact on contingency procedures and engine inoperative flight paths.
- The wind farm is within a designated Danger Area (D258B) and may have an effect on irregular Military Low Flying Training operations in the area.
- Notification to CASA and The Department of Defence will be undertaken in accordance with Advisory Circular AC 139-08(0) 'Reporting of Tall Structures'.



The Aviation Assessment undertaken as part of the application notes that other private airstrips may be located within 30 kilometres of the site, however they are not shown on aeronautical charts or detailed in aeronautical publications and do not require OLS. There is reference in the representations regarding the impact on the airstrip located south of Koonoona, adjacent Porter Lagoon Road and Springbank Road, which has been used for crop dusting and to refuel aircraft. I note from the response to representations that personal communication between the proponent and the owner of the land on which the airstrip is located indicates that it has not been used in recent times and is not suitable to be rehabilitated in the near future and would not be used in the foreseeable future. Should this or any other private airstrip be used in the vicinity of the wind farm, pilots using those strips would be responsible for ensuring they are aware of the conditions on and surrounding these landing sites to ensure the safety of their flying operations.

As there are no licensed aerodromes within the 30 kilometre radius of the site, there are no concerns regarding aerodrome operation of an Obstacle Limitation Surface (OLS) that are relevant to the wind farm. The conclusion of the Aeronautical Impact Assessment study prepared as part of the application documents was that there was no impact on prescribed airspace. On this basis, it is considered that the proposed wind farm complies with Renewable Energy Principle of Development Control 3.

The Development Plan contains a number of provisions relevant to the assessment of traffic and access to developments, including wind farms, both within the Infrastructure and Transportation and Access sections. In determining the impacts of the wind farm on the road network and assessing access, it is noted that the access roads to service the wind farm, along with the proposed routes for use during construction are yet to be finalised. The Transport Assessment Report prepared as part of the application documents identified four options for accessing the proposed development with the preferred routes being via Porter Lagoon Road and Webster Road from the Barrier Highway.

I note the following matters relevant to traffic and access from the application documents:

- the intersections with the Barrier Highway will require some minor widening, potential realignment, and pavement upgrade and new signage;
- during the construction there is potential disruption to local and regional traffic flow and volumes;
- on average, construction of the wind farm is expected to generate an average additional 36 heavy transport movements per day, 18 loaded and 18 unloaded on the access roads;
- on average 150 light vehicle movements per day each way is predicted during construction of the wind farm;
- there will be on-site and local movements, particularly cranes and concrete mixers for construction of tower footings;



- preparation of access roads and tracks for construction traffic will result in a number of local roads and existing farm tracks being utilised and upgraded; and.
- all access roads and tracks will be maintained during the life of the wind farm.

The Transport Assessment Report prepared as part of the application has been assessed by the Transport Services Division of the Department of Planning, Transport and Infrastructure (DPTI). DPTI generally support the preferred access routes identified by the proponent, but have specific comments in relation to the upgrading of the intersection of Porter Lagoon Road and Barrier Highway and have requested that further detailed assessment occur for two of the upgrading options. DPTI have recommended that details of the upgrading works required and final access route to the wind farm be detailed in a Traffic Management Plan (TMP) to be prepared in conjunction with DPTI and Council. Eight conditions of consent outlining the matters to be addressed in the TMP have been recommended by DPTI, should the application be granted Development Plan Consent.

The proposed development would in my opinion have suitable access from the existing road network, and accord with the relevant provisions of the Development Plan. However there is a need for management of traffic movements and impacts on road safety that need to be detailed and addressed through the preparation of a Traffic Management Plan. On this basis, should the application be granted consent, I consider the Traffic Management Plan should be a 'reserved matter' that requires it to be prepared to the satisfaction of Council and the Department of Planning, Transport and Infrastructure prior to the issuing of Development Approval.

#### **Renewable Energy Facilities**

- 3 Renewable energy facilities, including wind farms and ancillary development, should be designed and sited so as not to impact on the safety of water or air transport and the operation of ports, airfields and designated landing strips.**

#### **Infrastructure**

- 11 Utilities and services, including access roads and tracks, should be sited on areas already cleared of native vegetation. If this is not possible, their siting should cause minimal interference or disturbance to existing native vegetation and biodiversity.**

#### **Transportation and Access**

**Objective 2: Development that:**

- (a) provides safe and efficient movement for all motorised and non-motorised transport modes**
- (b) ensures access for vehicles including emergency services, public infrastructure maintenance and commercial vehicles**
- (c) provides off street parking**
- (d) is appropriately located so that it supports and makes best use of existing transport facilities and networks.**



- 4 Roads should be sited and designed to blend with the landscape and be in sympathy with the terrain.
- 13 Development should make sufficient provision on site for the loading, unloading and turning of all traffic likely to be generated.
- 22 Development should have direct access from an all weather public road.
- 23 Development should be provided with safe and convenient access which:
  - (a) avoids unreasonable interference with the flow of traffic on adjoining roads
  - (b) accommodates the type and volume of traffic likely to be generated by the development or land use and minimises induced traffic through over-provision
  - (c) is sited and designed to minimise any adverse impacts on the occupants of and visitors to neighbouring properties.
- 27 Driveways, access tracks and parking areas should be designed and constructed to:
  - (a) follow the natural contours of the land
  - (b) minimise excavation and/or fill
  - (c) minimise the potential for erosion from run-off
  - (d) avoid the removal of existing vegetation
  - (e) be consistent with Australian Standard AS 2890 Parking facilities.

## 7.10 Heritage

The Development Plan Heritage Conservation Objective 1 and Principle of Development Control 1, along with Heritage Places seeks to conserve and minimise the impact on built or natural heritage, including places of indigenous and non-indigenous cultural significance.

The subject land does not contain any items of State or Local Heritage significance.

### Heritage Conservation

**Objective 1** The conservation of areas, places and their settings of indigenous and non-indigenous cultural significance.

- 1 Development should conserve and not adversely impact on the cultural or natural significance of places, areas, artefacts and shipwrecks that display any of the following values:
  - (a) aesthetic
  - (b) anthropological
  - (c) archaeological
  - (d) architectural
  - (e) ecological
  - (f) economic
  - (g) educational
  - (h) geological
  - (i) historic
  - (j) palaeontologic
  - (k) scientific
  - (l) social



- (m) speleological
- (n) spiritual
- (o) technological.

#### Heritage Places

5 Development that materially affects the context within which the heritage place is situated should be compatible with the heritage place. It is not necessary to replicate historic detailing, however design elements that should be compatible include, but are not limited to:

- (a) scale and bulk
- (b) width of frontage
- (c) boundary setback patterns
- (d) proportion and composition of design elements such as rooflines, openings, fencing and landscaping
- (e) colour and texture of external materials.

The locality of the wind farm comprises an identified State Heritage Place, namely the Old Koonoona Homestead which was the subject of referral to the State Heritage Unit of the Department of Environment and Natural Resources. The State Heritage Listed Princess Royal Homestead and the Sod Hut Hotel and Old Dovers Yards, are referenced in a number of the letters of representation. The Princess Royal Homestead was assessed by Council and the State Heritage Unit not to be materially affected by the development, whilst the Development Plan does not specifically identify any Local Heritage Places.

The State Heritage Unit Referral Report indicates that the heritage impact is considered acceptable for the following reasons:

- *The location of the turbines is relatively distant to the State Heritage Place, and will not directly physically impact on the fabric of the homestead, nor any of the related outbuildings.*
- *The turbines will not impact substantially on the context of the State Heritage Place, given the location of the turbines on the ridgeline to the east of Old Adelaide Road.*

A Cultural Heritage Survey of the Stony Gap Wind Farm forms part of the application documents. The cultural heritage survey notes the following in its Executive Summary:

*"The cultural heritage survey did not find any sites of Aboriginal cultural heritage as defined by the Aboriginal Heritage Act 1988, but did record a number of historic/colonial heritage items in the vicinity of the proposed works area. Past land use has heavily impacted subsurface deposits and as such the landscape is presumed to have a very low potential for subsurface archaeological deposits, although there are discreet areas of higher potential.*



*As a result of this survey and consequent consultation with the Ngadjuri Traditional Owners, the following recommendations are made:*

- a. Areas of remnant native vegetation retain a high potential for subsurface archaeological deposits and as such when work is conducted in areas of native vegetation, these works should be monitored.*
- b. Areas near or around creek lines have a high potential for subsurface archaeological deposits and as such should be monitored during earthworks. As the course of creeks and waterways change and evolve with time all work in areas near to creeks and waterways should be monitored.*
- c. A Cultural Heritage Management Plan should be developed for both European and Aboriginal cultural heritage, this should include a site discovery procedure similar to the one provided in this report (9. Appendix). This should be developed in association with the proposed works to ensure a smooth work program*
- d. A Work Area Agreement (WAA) should be developed between the developer and the Ngadjuri Walpa Juri Lands and Heritage Association. This should be developed prior to the commencement of any work.*

The application documents incorporate commitments to development procedures for management of cultural heritage during construction and these will be included in the Construction Management Plan.

Since the preparation of the Cultural Heritage Survey there has been an amendment to the transmission line route. The area of the amended transmission line route is located within predominantly cropping land, and the survey undertaken in this general area deemed it unlikely to contain anything of Aboriginal or European heritage. However, the proponent is committed to undertake a full evaluation of the amended transmission line route (adjacent Black Springs Road). Should the application be granted Development Plan Consent, it is considered appropriate that this additional survey be undertaken prior to Development Approval being issued.

Whilst not designated heritage items, the Heysen Trail and Mawson Trail are located in the vicinity of the development. The only interaction between the wind farm site and the Heysen Trail is where they both cross Burra Road, which coincides with part of the transmission line route. The visual impacts on the Heysen Trail are considered to be acceptable in a manner similar to those of the wind farm generally within the locality.

Given the findings outlined in the application documents and the response by the State Heritage Unit, I am satisfied that the proposed wind farm would not adversely affect areas of cultural or natural or built heritage significance, and will therefore satisfy the relevant provisions of the Development Plan.



## 7.11 Bushfire

The Goyder Council Development Plan does not contain designated Bushfire Protection Areas, but rather contains principles of development control in the General section of the Development Plan under the heading of Hazards, including Principles 6, 7 and 11. Concerns regarding fire potential and the capacity for the local CFS to service any fires in the wind farm and impacts on aerial fire fighting were raised in a number of the representations.

The application documents outline a range of fire management procedures which will be developed into a Fire Management Plan in consultation with the CFS and include:

- emergency response procedures;
- consideration of the construction activities and schedule considering fire risks;
- vegetation management on-site;
- access requirements for equipment, vehicles and machinery;
- Induction and training of on-site personnel;
- provision of adequate fire fighting equipment at construction sites and at the operating wind farm; and
- ongoing liaison, co-operation and consultation with the CFS and other key emergency stakeholders.

It is considered that these measures form a suitable approach to fire fighting on the subject land, satisfying the intent of the Development Plan. The requirements for fire fighting as utilised on other wind farms within the Council area, as incorporated in conditions of consent, are proposed as conditions should the application be granted Development Plan Consent, to ensure a consistent approach to fire fighting for this form of land use within the region.

### Hazards – Bushfire

- 6 Buildings and structures should be located away from areas that pose an unacceptable bushfire risk as a result of one or more of the following:**
- (a) **vegetation cover comprising trees and/or shrubs**
  - (b) **poor access**
  - (c) **rugged terrain**
  - (d) **inability to provide an adequate building protection zone**
  - (e) **inability to provide an adequate supply of water for fire-fighting purposes.**



- 7 **Buildings and structures should be designed and configured to reduce the impact of bushfire through using simple designs that reduce the potential for trapping burning debris against the building or structure, or between the ground and building floor level in the case of transportable buildings**
- 11 **Vehicle access and driveways to properties and public roads created by land division should be designed and constructed to facilitate safe and effective operational use for fire-fighting, other emergency vehicles and residents.**

## 8.0 CONCLUSION

Following an assessment of the proposed development against the whole of the Goyder Development Plan, I am of the opinion that the proposed development is not significantly at variance with the Development Plan. It is understood that the establishment of a wind farm will result in some alteration to the rural landscape, however I am satisfied that the proposed development suitably addresses the potential impacts of the proposal and warrants the granting of Development Plan Consent.

## 9.0 RECOMMENDATION

- A. That pursuant to Section 35(2) of the *Development Act, 1993*, the proposal is not seriously at variance with the relevant provisions of the Goyder Council Development Plan dated 17 February 2011 and the Statewide Wind Farms Development Plan dated 19 October 2011.
- B. That pursuant to Section 33 of the *Development Act, 1993*, Development Application 422/115/11 by TRUenergy Renewable Development Pty Ltd for a wind farm (Stony Gap), comprising 41 turbines, two permanent wind monitoring towers, five temporary wind monitoring towers for a period of six months, three year extension to existing temporary wind monitoring towers, 276kV transmission line to Robertstown substation, on-site access tracks and ancillary infrastructure be GRANTED Development Plan Consent subject to the following reserved matters and conditions:

### Reserved Matters:

The following detailed information shall be submitted for further assessment and approval by the Chief Executive Officer as delegate of the Development Assessment Panel as Reserved Matters under Section 33(3) of the *Development Act 1993*:

1. A detailed Traffic Management Plan prepared by a qualified consultant and an accredited road safety auditor shall be provided to Council and Department of Planning, Transport and Infrastructure and incorporate the following:
  - The final access route.
  - Details of all road upgrades required to facilitate the development.



- Details of delivery times.
- Details of proposed road closures and their management.
- Details of the permits required.
- Details of all required road signs and advisory signs.
- A Route Risk Assessment for roads intended for transportation of over-dimensional wind farm components.

The plan shall also reference the guidelines pertaining to the transportation of indivisible items in South Australia.

Reason: To ensure that off-site impacts on the road network are minimised during the construction phase of the development.

2. A supplementary Cultural Heritage Survey be prepared by a qualified consultant to undertake an assessment of the Aboriginal and European cultural heritage of the transmission line (as amended by TRUenergy letter dated 5 March 2012).

Reason: To confirm the appropriateness of the transmission line route without adverse impact on cultural heritage.

3. A supplementary Landscape Assessment Report be prepared by a qualified consultant to define areas of additional landscaping and screening around dwellings and along the transmission line.

Reason: To further minimise the visual impact of the development.

4. A supplementary survey be undertaken by a qualified consultant to confirm nesting sites of the Peregrine Falcon. A copy of the additional survey be submitted to Council and the South Australian Murray-Darling Basin Natural Resources Management Board.

Reason: To ensure that potential impacts on the nesting sites of the Peregrine Falcon are suitably addressed and the need for conditions of consent relating to the siting of turbines from identified nesting site of the Peregrine Falcon be established. Any such conditions may be imposed in relation to the siting of the turbines, would then address the need for a 300 metre buffer, or other suitable buffer from nesting sites of the Peregrine Falcon.

Note: Council require the information requested in the Reserve Matters to be provided within 12 months of the date of this consent.



**Conditions:**

1. Extension of operative period of consent:

Pursuant to Regulation 48(2)(a) of the *Development Regulations 2008*, the operative periods prescribed by Sub-Regulation (1)(a) of that Regulation are extended so that this consent will lapse at the expiration of:

- (a) subject to the operation of paragraph (1)(b), four years from the operative date of this consent; and
- (b) if the development has been lawfully commenced by substantial work on the site of the proposed development, within five years of the operative date of the consent, any work authorised must be substantially completed within seven years of the operative date of the consent.

Reason: To ensure the development is undertaken and completed within a suitable period having regard to the nature and scale of the development.

2. That except where minor amendments may be required by other relevant Acts, or by conditions imposed by this application, the development shall be established in strict accordance with the details and plans, including:

- (a) Plans:
  - (i) Stony Gap Wind Farm Development Plan Wind Farm HTC File Ref: G4249\_148 Rev 0 Date 28/07/2011 – plan 1 of 3 - turbines 20-31, 36-41.
  - (ii) Stony Gap Wind Farm Development Plan Wind Farm HTC File Ref: G4249\_148 Rev 0 Date 24/02/2012 – plan 2 of 3 - turbines 17-20 and 32-37.
  - (iii) Stony Gap Wind Farm Development Plan Wind Farm HTC File Ref: G4249\_148 Rev 0 Date 24/02/2012 – plan 3 of 3 - turbines 1-9.
  - (iv) Stony Gap Wind Farm Development Plan Transmission Line HTC File Ref: G4249\_148 Rev 2 Date 6/03/2012 – plan 1 of 3.
  - (v) Stony Gap Wind Farm Development Plan Transmission Line HTC File Ref: G4249\_148 Rev 2 Date 6/03/2012 – plan 2 of 3.
  - (vi) Stony Gap Wind Farm Development Plan Transmission Line HTC File Ref: G4249\_148 Rev 2 Date 6/03/2012 – plan 3 of 3.
- (b) Stony Gap Wind Farm Development Application Volume 1 Main Report, June 2011 (Roaring 40s).



- (c) Stony Gap Wind Farm Development Application Volume 2a and 2b Technical Appendices, April 2011 (Roaring 40's).
- (d) Correspondence from TRUenergy Renewable Developments Pty Ltd dated:
  - (i) 3 November 2011.
  - (ii) 5 March 2012.
  - (iii) 13 March 2012.
  - (iii) 17 April 2012.
  - (iv) 24 April 2012.
  - (v) 14 June 2012 .
- (e) Peregrine Falcon surveys at proposed Stony Gap Wind Farm, South Australia by Biosis Research February 2011.
- (f) Stony Gap Proposed Transmission Line Flora and Fauna Survey (February 2012) by EBS (Environment and Biodiversity Services).
- (g) Marshall Day Acoustics - Stony Gap Wind Farm Noise Impact Assessment dated 20 July 2011 (application document).

Reason: To ensure the development proceeds in an orderly manner.

- 3. Prior to the commencement of construction the final layout and turbine selection (and associated reporting) of the wind turbines and transmission line shall be approved by the Planning Authority.

Reason: To ensure the development proceeds in an orderly manner and that further acoustic assessment is undertaken should the turbine model selected vary from the one modelled and assessed by the EPA.

- 4. The location of Turbine 31 shall be sited to minimise impact on state listed flora in the locality.

Reason: To minimise impact on native vegetation.

- 5. The site, buildings and materials to be utilised in the construction of the development shall be of a high quality and shall be maintained at all times to the reasonable satisfaction of the Planning Authority.

Reason: To preserve and enhance the amenity of the locality and to ensure that the proposal is established in accordance with the approved plans.



6. The applicant shall provide the Planning Authority with engineering details for the construction and maintenance of all internal access roads (not forming part of the public road network) prior to the commencement of construction works. Such engineering detail will document the width, length and slope of the roads, as well as the construction method, materials and drainage systems to be utilised and satisfy the following design criteria:
- (a) Heavy vehicle access will be necessary during the assembly and erection phases.
  - (b) Access roads on the project site will be required to a minimum width of 5.0 metres.
  - (c) Access roads are to be all weather construction and surfaces.
  - (d) Access road gradients shall not exceed a 16 degree slope.
  - (e) Crossovers on any water course shall be constructed to support a minimum 15 tonne vehicle.
  - (f) Access road curves shall have an inside radii of 9.0 metres minimum.
  - (g) Dead end access roads shall have a 25 metre diameter all weather turnaround, or a 'Y' or 'T' shaped turnaround area with each leg being no less than 17 metres long.

Reason: To ensure the safe and orderly movement of vehicles and access roads minimise scarring to the landscape.

7. The applicant shall provide the Planning Authority with engineering design details for the hardstand areas as proposed for each of the turbine sites prior to the commencement of construction works.

Reason: To ensure the development proceeds in an orderly manner.

8. The applicant shall provide the Planning Authority with procedures to be established to ensure that vehicles utilise only the designated internal access roads and do not drive indiscriminately across paddocks.

Reason: To minimise scarring to the landscape and adverse impact on areas of flora and fauna.

9. Following construction, all site work areas, including access roads, not required for ongoing maintenance shall be rehabilitated including replanting with crops or native species and by nurturing such plantings to the reasonable satisfaction of the Planning Authority.

Reason: To preserve and enhance the amenity of the locality and to minimise landscape scarring via replanting with crops or native species.



10. Clearance or damage to native vegetation on the site or public road for access during construction shall be minimised.

Reason: To preserve areas of native vegetation.

11. The wind farm shall be designed and operated in a manner so as to not interfere with existing telecommunication facilities. The implementation of off-site mitigation measures for affected receivers shall be at the cost of the developer.

Reason: To ensure telecommunication facilities of property owners and occupiers in the locality are adequately provided and/or maintained.

12. The final Construction Environmental Management Plan for the construction and operational phases of the development shall be submitted for the approval of the Planning Authority prior commencement of construction and include the following additional management/mitigation measures:

- (a) Habitat of the Flinders Worm-lizard, such as rocky outcrops be protected.
- (b) Precautions should be taken to ensure the Silver Daisy-bush is not unnecessarily damaged during the cabling of the wind farm
- (c) Areas of degraded *Lomandra multiflor ssp.dura/Lomandra effuse open tussock grassland* be incorporated in the Significant Environmental Benefit for vegetation clearance, in an endeavour to raise these areas to a higher condition class.

Reason: To ensure orderly development and protect and enhance native vegetation and fauna habitat on the site.

13. A Rehabilitation Plan for the site, including options for environmental offsets and a management program (to be undertaken during the operation life of the project) and end-of-project decommissioning works (to outline the extent of reinstatement and restoration activities upon the removal of the wind farm and associated infrastructure), shall be submitted for approval by the Planning Authority prior to commencement of construction.

Reason: To enhance native vegetation in the locality.



14. The development shall incorporate the following bushfire management requirements:
- (a) During the period from 1 November to the following 30 April (Fire Danger Season), a 10 metre wide fuel managed zone on either side of all access roads upon the project land shall be maintained by mechanical slashing to a finished height of no greater than 100 millimetres. This may need to be completed more than once in any one Fire Danger Season, due to the weather conditions and vegetation regrowth.
  - (b) Tower sites are to be cleared of all flammable vegetation for an area of 40 metres by 40 metres during the construction phase, and maintained post construction phase during subsequent/each Fire Danger Season, to the same dimensions of 40 metres by 40 metres.
  - (c) Fire Fighting Equipment: During any Fire Danger Season whilst the wind farm is being constructed, the following fire fighting equipment is to be readily available at all times at the site, and mounted on an appropriate four wheel drive vehicle:
    - 2,000 litres of fire fighting water.
    - One 5hp fire fighting pump.
    - Two 30 metre and 19 millimetre fire hose reels with spray/jet nozzles.
    - Four fire fighting knapsacks.
    - Four rakes/hoses.
    - Four long handled shovels.
    - Two 9.0 litre stored water pressurised extinguishers.
    - Two 9.0 kilogram dry powder extinguishers.

Reason: To ensure suitable bushfire management on-site.

15. During the construction phase and ongoing maintenance processes into the future, the local emergency services be provided with:
- (a) tower identification mapping;
  - (b) security gate numbers and key sets; and
  - (c) wind farm company all-hours emergency contact telephone numbers.

Reason: To ensure the development is undertaken in an orderly manner with minimal impact on adjoining owners and occupiers.

16. That prior to the construction of the approved wind farm layout (as required by Condition 3), a Cultural Heritage Management Plan shall be developed for both European and Aboriginal cultural heritage and include an appropriate site discovery procedure.



17. That prior to the construction of the approved wind farm layout (as required by Condition 3), a Work Area Agreement (WAA) should be developed with the Ngadjuri Walpa Juri Lands and Heritage Association.

Reason for Conditions 16 and 17: To ensure that no sites of European or indigenous heritage are damaged through the installation of the wind farm and associated infrastructure (including associated earthworks and road construction).

#### **Environment Protection Authority Conditions:**

17. The development must be undertaken in accordance with the plans and specifications supplied in Development Application 422/115/11, and the revised Acoustic Report provided by Marshall Day Acoustics dated 22 July 2011 contained within Development Application 422/073/11; and including the email from Clint Purkiss (TRUenergy) dated 2 December 2011.
18. Noise generated by the wind farm must not exceed:
  - 40dB(A) for noise sensitive receivers in the Primary Production/General Farming Zone;
  - 35dB(A) if receivers are situated in the Rural Living Zone; or
  - the background noise (LA90,10) by more than 5dB(A) at noise sensitive receivers.
19. An independent acoustical consultant (other than the company who prepared the predictive Acoustic Report) must be appointed to monitor noise levels at Houses 11, 16, 20, 23 and 30 (as shown on the map in the Marshall Day Acoustics dated 20 July 2011). Note: monitoring must be performed in accordance with the *EPA Wind Farms: Environmental Noise Guidelines 2009* when all of the noise sources associated with the wind farm are in operating mode. The results of the monitoring must be submitted to the satisfaction of the Environment Protection Authority within two months from the date of the wind farm commissioning.
20. Noise emissions of wind turbine generators (WTG's) intended for installation must not include audible tones ( $\Delta L_{a,k} > 0$ ). The tonality test must be conducted in accordance with the international standard *IEC 61400-11: Wind turbine generator systems- Part 11: Acoustic noise measurement techniques*.

Reason for Conditions 18 to 20: To ensure the development is undertaken in accordance with the approved plans and complies with the *Windfarms: Environmental Noise Guidelines 2009*.



21. Prior to work commencing on-site, a Construction Environment Management Plan (CEMP) must be submitted to the satisfaction of the Environment Protection Authority and the measures contained in the Construction Environment Management Plan must be implemented during the construction and rehabilitation phases of the work. The CEMP must include, as a minimum:
- a. Soil Erosion and Drainage Management Plans (SEDMP) prepared according to the EPA's Stormwater Pollution Prevention Code of Practice (for the Building and Construction Industry), March 1999; and
  - b. Measures to manage potential noise and dust emissions, solid and liquid wastes and concrete wastes from construction works.

Reason: To minimise the impact on the natural environment and ensure the development is undertaken in accordance with the EPA's *Codes of Practice*.

22. The storage and use of hazardous materials must be managed so as to avoid the contamination of soil or receiving waters. Such materials must be stored in a bunded area with the capacity to contain 120 percent (or 133 percent in the case of flammable materials) of the volume of the largest container within the bund. Note: further guidance on bunding and spill management can be found in the *EPA Guideline: Bunding and Spill Management*.

Reason: To avoid contamination of soil and receiving waters.

23. Following the completion of construction works on-site, the tracks and disturbed areas must be rehabilitated and bare areas revegetated as soon as possible, taking advantage of natural rainfall, which is mostly between May and September. If bare areas are still present at the end of spring, they must be temporarily protected and stabilised by geotextile matting or other suitable methods, until they can be effectively revegetated.

Reason: To ensure appropriate rehabilitation of the site.

#### **Department of Planning, Transport and Infrastructure (Transport Services Division) Conditions**

24. The final design of the transmission line shall be designed to minimise its impact on the arterial road network.
25. All power poles on or adjacent arterial roads shall be located outside of the road clear zone (minimum 8.0 metres).
26. All powerlines over arterial roads shall provide a minimum vertical clearance of 7.5 metres.



27. All upgrades to the Porter Lagoon Road/Barrier Highway junction and Webster Road/Barrier Highway junction required to facilitate site access (including realignment and sealing) shall be completed prior to the commencement of construction.
28. In the event that Farlays Road is used for access purposes, any upgrades required to the Farlays Road/Barrier Highway junction shall be undertaken prior to commencement of construction.
29. All road works shall be designed and constructed to the satisfaction of DPTI, with all costs (including design, project management, construction and any road lighting or drainage upgrades required as a direct result of the development) being borne by the developer. Prior to undertaking the required road works, the developer shall contact the Departments Northern and Western Region (Port Augusta Office), Planning Unit Manager, Mr Bob Bemmerl on telephone (08) 8648 5234 or mobile 0417 815 703 to discuss permitted hours of disruption to traffic flows and technical requirements (which may include upgrades to drainage) for works on or adjacent to a Departmental maintained road.

Reason for conditions 24 to 29: To ensure the safe and orderly movement of vehicles to arterial roads.

30. Prior to the commencement of construction, the applicant shall consult with the Civil Aviation Safety Authority, Royal Australian Air Force and the operators of any airstrips in the vicinity of the proposal.

Reason: To ensure safety of aviation operations.

#### **General Notes:**

A rock crushing plant and/or concrete batching plant, which if required, would be the subject of separate development applications.

#### **Environment Protection Authority Notes:**

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, to take all reasonable and practical 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.



- Construction noise resulting in noise with an adverse impact on amenity must comply with Part 6, Division 1 of the *Environment Protection (Noise) Policy 2007*. The CEMP should include appropriate measures for minimising noise emissions during construction.
- The warranted maximum sound power characteristic for the WTG's installed in accordance with the proposed layout should not exceed the levels in Figure 1 of the Acoustic Report (Marshall Day Acoustics, 20 July 2011). The warranted sound power levels are to be measured in accordance with the international standard IEC61400-11, Ed.2.1: *Wind turbine generator systems- Part 11: Acoustic noise measurements techniques*.
- If the post-construction Noise Monitoring Report, as per the condition above, reveals non-compliance at any noise affected receivers with the noise criteria specified in the *EPA Wind Farms: Environmental Noise Guidelines 2009*, the developer should arrange for the noise monitoring of all other relevant noise sensitive receivers. Measures to ensure compliance should be undertaken by the developer at all of the localities where non-compliance with the noise criteria is revealed.
- Earthworks and heavy vehicle movement resulting in site disturbance including track construction or upgrading, erection of overhead transmission lines and cable trenching should not be undertaken when soil damage, degradation or erosion is likely to occur as a result of the activity or exposure to wind or rain.
- Construction and operational activities resulting in the exposure of soil or the stockpiling of soil and spoil must be managed to avoid erosion and/or sediment entering any wetland, watercourse or drainage line. Further guidance can be found in the *EPA Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry*.
- The use of a mobile concrete batching plant would require an environmental authorisation under the *Environment Protection Act 1993*. The applicant must contact the EPA in sufficient time to determine licensing requirements.
- Any information sheets, guideline documents, codes of practice, technical bulletins, etc that are referenced in this response can be accessed on the following website: <http://www.epa.sa.gov.au>

**Department of Environment and Natural Resources Notes:**

The following requirements of the *Heritage Places Act 1993* apply:

- (a) If an archaeological artefact believed to be of heritage significance is encountered during excavation works, disturbance in the vicinity shall cease and the SA Heritage Council shall be notified.



- (b) Where it is known in advance (or there is reasonable cause to suspect) that significant archaeological artefacts may be encountered, a permit is required prior to commencing excavation works.

**Environment Protection and Biodiversity Conservation Act Note:**

The applicant is advised that the area of the development may be subject to the *Environment Protection and Biodiversity Conservation Act 1999*. A check of <http://www.environment.gov.au/epbc/assessments/process.html> may assist in determining if the proposal needs approval or ring 1800 803 772 for assistance with this matter.

**Julie Jansen** MPIA, CPP  
BA, BA(Hons), GDURP

20 July 2012