

**JOINT REGIONAL PLANNING PANEL**  
**(Southern Region)**

<b>JRPP No</b>	2011STH024
<b>DA Number</b>	2011.362
<b>Proposed Development</b>	Electricity Generating Works (7 Wind Turbines)
<b>Applicant</b>	Epuron Pty Ltd
<b>Report by</b>	Rob Quick, Development Control Planner (Bega Valley Shire Council)

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# ASSESSMENT REPORT AND RECOMMENDATION

## 1.0 EXECUTIVE SUMMARY

Epuron Pty Ltd is the proponent for the Eden Wind Farm project.

The proposal involves the construction of 7 wind turbines and associated infrastructure approximately 5 km to the south east of Eden. The proposed site is currently used for wood chipping operations and owned by South Eastern Fibre Exports (SEFE).

The project is defined as 'electricity generating works' and has a capital investment value of above 5 million dollars. The wind farm is therefore assessed by the Bega Valley Shire Council (BVSC) and presented to the Southern Region Joint Regional Planning Panel (SRJRPP) for determination.

The development application has been assessed in accordance with the Environmental Planning and Assessment Act 1979 (EP&A Act 1979) and relevant legislation.

There were 113 submissions which included 95 against and 18 in favour of the development application. A public briefing meeting was also held in Eden and these issues have been reviewed as part of the submissions. The majority of the objections raised concern about visual amenity, biodiversity, noise, tourism, property values and the location of the proposal.

The project involves the construction of a relatively small wind farm. It would be located on a headland including the existing Chipmill and would occupy a relatively small component of the visual panorama around Twofold Bay. The majority of the impacts have been adequately addressed in the Statement of Environmental Effects and Submissions Report. Concerns have been raised by referral agencies about biodiversity and the impact on cultural landscapes which has been assessed and advice provided that the project can be determined subject to adequate mitigation and monitoring of the site.

The original noise assessment did however identify an impact on Edrom Lodge and a private negotiated agreement was recommended. The impact of noise has been assessed by the proponent and measures have been recommended to reduce the impact. The EPA has reviewed this assessment and concluded that further monitoring is required or a private negotiated agreement will need to be reached with the owners of Edrom Lodge.

Council's Environmental Services Section recommended that the proponent either undertake additional monitoring or enter into a private negotiated agreement as suggested by the EPA. It has been recommended that the EPA should be formally requested to include the negotiated outcome in the environment protection licence as well as any development consent, which should reflect World Health Organisation (WHO) levels.

The owners of Edrom Lodge, Forests NSW have not agreed to a private negotiated agreement regarding the noise generation of the wind farm and requested that additional monitoring be undertaken in line with the advice of the EPA. The proponent has not established the suitability of the site in terms of noise generation or adequately addressed the potential impact on Edrom Lodge.

The development application is therefore recommended for refusal.

## 2.0 INTRODUCTION

The wind farm is a renewable energy project designed to meet the growing electricity demand through clean energy sources and contributing to Local, State and Federal renewable energy targets.

In February 2009 the NSW Government announced the creation of six renewable energy precinct's, with the purpose of enabling local communities to have a voice and a stake in renewable energy development. The site would be located within the South Coast Precinct.

The planning assessment process in NSW is governed by the Environmental Planning and Assessment Act 1979 (EP&A Act 1979). The following instruments are established underneath this Act. With all existing REPs now deemed as SEPPs.

- Regional Environmental Plans (REPs),
- State Environmental Planning Policies (SEPPs) and
- Local Environmental Plans (LEPs).

A Statement of Environmental Effects (SEE) has been prepared under Section 77(3) of the EPA Act 1979. The development classified as 'regionally significant development' as it involves 'electricity generating works' with a capital investment value of above 5 million dollars. The development is assessed by Council staff and determined by the Joint Regional Planning Panel (JRPP). **Definitions**

The following is a list of commonly used renewable energy terms used in this report;

**MW** is a Megawatt (A unit of power equal to one million watts)

**CO<sub>2</sub>** Carbon dioxide (A heavy odorless colorless gas formed during respiration and by the decomposition of organic substances)

**kV A** kilovolt-ampere (VA) is the unit used for the apparent power in an electrical circuit.

**(L<sub>Aeq</sub>)** when a noise varies over time, the Leq is the equivalent continuous sound which would contain the same sound energy as the time varying sound

**dB(A)** - A-weighted decibels, abbreviated dBA, or dBa, or dB(a), are an expression of the relative loudness of sounds in air as perceived by the human ear.

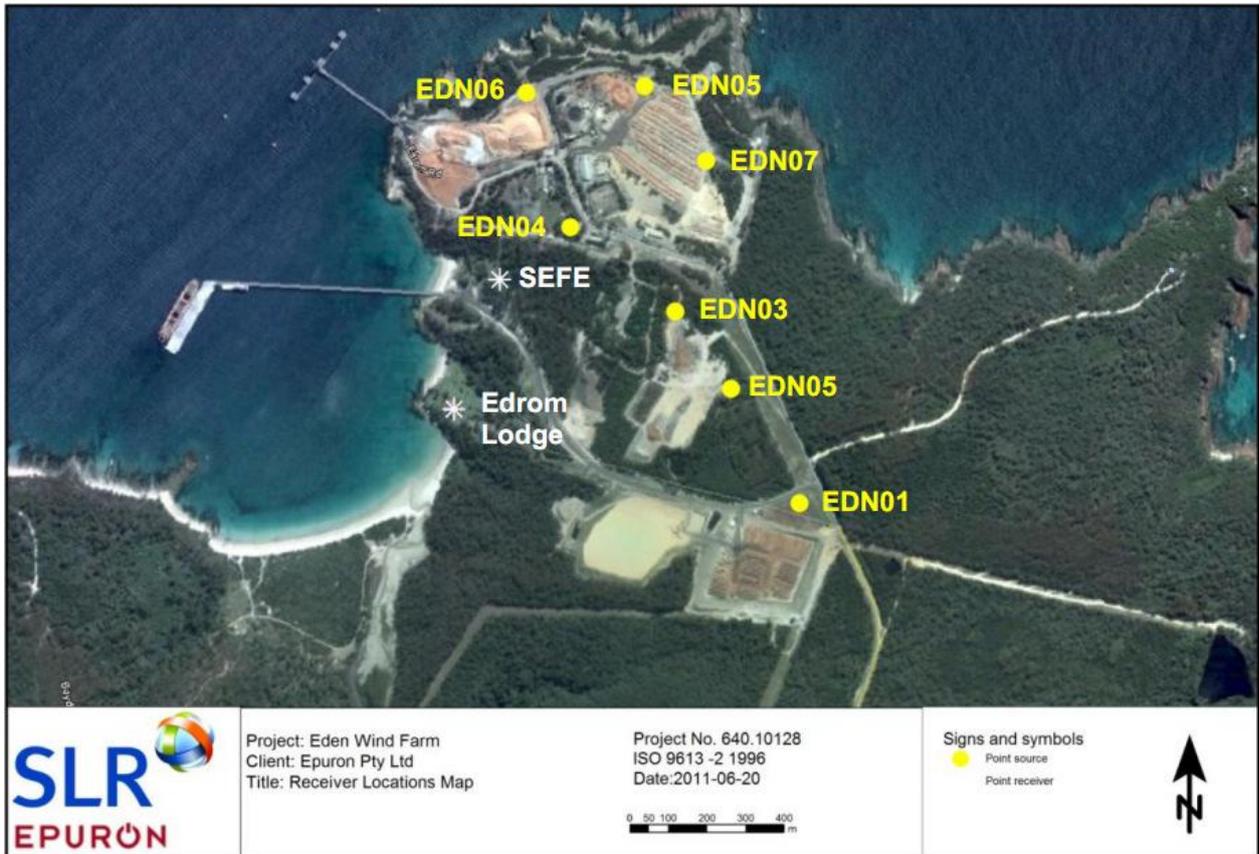
**Hz** hertz - A unit of frequency equal to one cycle per second.

### 3.0 DESCRIPTION OF PROPOSAL

The proposed development involves the construction of a wind farm.

The project would involve the construction and operation of 7 wind turbines approximately 5 kilometres south east of Eden, NSW. The project would have the ability to produce around 32,000 MWh of renewable energy every year, equivalent to the average consumption of around 4,200 homes.

**Figure 1 - Project Layout**



**Table 1 - The components of the wind farm;**

Project Element	Description
<b>Turbines</b>	3 blades mounted on a tubular steel tower with a combined height of blade and tower limited to a maximum tip height of 135m.  <i>(The exact turbine choice is to be determined based on these dimensions).</i>
<b>Footings</b>	An adjacent pad mounted turbine transformer, crane hard stand area, and related turbine lay down area.

<b>Electrical</b>	Electrical connections between wind turbines and the on-site substation would involve underground cables. This substation would include transformers to step up the voltage from 11kV to 66kV.
<b>Facilities Building</b>	An operation and maintenance facility incorporating a control room and equipment storage facilities. Temporary concrete batching plant facilities may also be required.  <i>(The concrete batching facilities would be subject to separate approval).</i>
<b>Access</b>	Access tracks approximately 5m wide required for each turbine. Minor upgrades to on site tracks, as required for the installation and maintenance of wind turbines and the related facilities.
<b>Monitoring</b>	A permanent monitoring mast for wind speed verification and monitoring.
<b>Capacity</b>	The project would have 7 turbines with an installed capacity in the order of 14 MW (based on a typical 2MW Turbine. The likely turbine capacity is in the range of 1.5 – 2.5MW each.
<b>Employment</b>	There would be a requirement for the equivalent of 1 full time ongoing operation and maintenance job.
<b>Project Life</b>	Once installed, the turbines would operate for an economic life of 20-30 years. After this time the turbines may be refurbished to improve their performance or decommissioned and removed from the site.
<b>Capital cost</b>	The project would have a capital cost of approximately \$19.4 million.

**Figure 2 – Typical wind turbine**



*(Photo courtesy of Repower Systems AG)*

The turbines under consideration have a typical hub height of approximately 80m and typical blade length of 40m – 55m (90m – 110m total diameter). The tallest tip height combination under consideration is 135m, while the likely tip height is expected to be between 120m – 130m.

Each wind turbine would be a three bladed type of the ‘up-wind’ design, meaning that the blades face into the wind and in front of the tower. This design reduces noise levels generated during operation.

Each wind turbine would have a rated power capacity of between 1.5 and 2.5 MW, subject to final turbine selection.

#### 4.0 DESCRIPTION OF THE SITE

The site is located approximately 5 km to the south east of Eden on the southern side of Twofold Bay.

The property is industrial in nature with the 'Chip Mill' and associated infrastructure already existing on the site. The land is slightly undulating being approximately 15 m above sea level and is located on a headland known as "Jews Head".

The land has been partially cleared with some areas of vegetation remaining.

**Figure 2 – Locality plan**



## 5.0 PLANNING ASSESSMENT

The proposal has been assessed in accordance with the Matters for Consideration under Section 79C of the Environmental Planning and Assessment Act 1979.

### 1(a)(i) Environmental Planning Instruments

The development application has been assessed in accordance with the following;

- Lower South Coast REP 1
- Lower South Coast REP 2
- SEPP (State and Regional Development) 2011
- SEPP (Infrastructure)
- SEPP (Rural Lands) 2008
- SEPP 44 Koala Protection
- SEPP 55 (Remediation of Land)
- State Environmental Planning Policy 71 – Coastal Protection
- Bega Valley Local Environmental Plan 2002

### Lower South Coast Regional Environmental Plan 1

Standard	Comment
<b>Clause 3 – Aims and objectives are;</b>	
<i>(a) to conserve the scenic and environmental character of the Region,</i>	<p>The proposed wind farm would be located on a headland location adjacent to Twofold Bay and surrounding nature reserves.</p> <p>The proposal would consist of 7 turbines. The wind farm would be visually prominent due to the location and height of the turbines, being 135m to the tip of the blades. The turbines would be visible from a range of public and private spaces within Eden and the surrounding area.</p> <p>A landscape and visual impact assessment has been prepared by the proponent and additional field work undertaken by Council staff. Although the turbines would be visible from both public and private spaces, it is not considered that this view impact should constitute a refusal of the application within the context of the site which is currently occupied by the Eden Chipmill with its associated infrastructure and industrial use.</p> <p>[Appendix A – Visual Assessment]</p>
<i>(b) to maintain the scale and character of the built environment,</i>	<p>The site is located approximately 5km from the built environment of Eden. The design of the proposed wind turbines are a reflection of their use and purpose.</p>

	<p>The mechanics of a wind turbine requires a certain height and scale in order to capture wind energy and produce a viable renewable energy resource. This is dictated by the location and the prevailing weather environment.</p>
<p><i>(c) to preserve views to and from public places,</i></p>	<p>An assessment has been undertaken by the proponent and Council staff to determine the visual impact of the proposal.</p> <p>The proposed turbines would be visible from a range of public places. Extensive field work has been undertaken to determine this impact from both land based and water based locations.</p> <p>The visual impact is reduced by the topography, vegetation and distance.</p> <p>[Appendix A – Visual Assessment]</p>
<p><i>(d) to protect public places from overshadowing,</i></p>	<p>The potential impact from overshadowing was raised as an issue with the proponent during the assessment process. The impact in terms of shadow flicker is detailed in the Section 8.5.2 of the Statement of Environmental Effects (SEE).</p> <p>The proposed wind turbines would cast shadows on the areas around them due to their height. The proponent has stated that where shadow flicker is found to be a nuisance at a particular residence, conditions would be pre-programmed into the control system so that individual turbines automatically shut down whenever these conditions were present.</p> <p>[Discussed under “Submissions”]</p>
<p><i>(e) to encourage development sympathetic to the natural landform, and</i></p>	<p>The wind turbines would contrast with the surrounding natural landform. It would however be located on a site where an industrial use has already been established.</p> <p>The wind turbines also represent the harnessing of green energy rather than less environmentally friendly uses.</p>
<p><i>(f) to enable flexibility in building design consistent with the general aims and objectives of this plan.</i></p>	<p>The design of a wind turbine is dictated by the need to capture wind energy.</p>

	The wind turbines under consideration would have a typical hub height of approximately 80m and blade length of 40m-55m. They would be similar in appearance to other wind farms in NSW.
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### **Conclusion**

**The visual impact has been assessed. Although the development would be visible from public and private spaces, this impact is sufficiently reduced by the relatively minor scale of the wind farm, the industrial location and small building envelope within the context of Twofold Bay and the surrounding hinterland.**

### **Lower South Coast Regional Environmental Plan 2**

<b>Standard</b>	<b>Comment</b>
<b>Clause 1 - The aims of this plan are:</b>	
<i>(a) to develop regional policies that protect the natural environment and promote the orderly and economic development and use of land and other resources in the region, consistent with conservation of natural and man-made features,</i>	This is not related to the assessment of this development application.
<i>(b) to consolidate and amend various existing policies applying to the region, to make them more appropriate to regional needs, and to place them in the context of regional policy,</i>	Not applicable to this assessment.
<i>(c) to provide a basis for the coordination of activities related to growth in the region and to encourage optimum economic and social benefit to the local community and visitors to the region, and</i>	The proposed wind farm would involve the generation of green energy. The contribution towards the local community and tourism has been raised in the submissions and the proponent has proposed to provide a monetary contribution.  [Discussed under "Submissions"]
<i>(d) to establish a regional planning framework for identifying priorities for further investigation to be carried out by the Department of Planning and other agencies.</i>	Not applicable to this assessment.
<b>Clause 21 - Policies for development control</b>  <i>Councils, before granting consent to the development of rural land for purposes other than agriculture must, where the land is classified as Class 1, 2 or 3 on the maps marked "Agricultural Land Classification Map—Lower South Coast Region" copies of which are deposited in the</i>	The project land is classified as Class 5 land which is defined as;  'Lands not suited to agriculture or suited only to rough grazing. Agricultural production, if any is very low'.

<p><i>office of the councils, be satisfied that the development will not significantly reduce the agricultural potential of the land or adjoining lands.</i></p>	
<p><b>Clause 24 - Policies for development control</b></p> <p><i>In considering a development application relating to land in the vicinity of surface or groundwater water supplies, the council shall:</i></p> <p><i>(a) consider the impact the proposed development is likely to have on water quality and availability, and</i></p> <p><i>(b) only consent to the application if satisfied that adequate water quality and availability will be maintained if the proposed development is carried out.</i></p>	<p>The project would not have an impact on water quality. The proponent would need to ensure that adequate soil and water management was undertaken throughout the construction phase of the development.</p>
<p><b>Clause 29 - Policies for development control</b></p> <p><i>In considering an application to carry out development for any purpose within, adjoining or upstream of a fishery habitat area or within the drainage catchment of a fishery habitat area, the council shall consider:</i></p> <p><i>(a) the need to maintain or improve the quality or quantity of flows of water to the habitat,</i></p> <p><i>(b) the need to conserve the existing amateur and commercial fisheries,</i></p> <p><i>(c) any loss of habitat which will or is likely to be caused by carrying out the development,</i></p> <p><i>(d) whether the development would result in pollution of the waters and any measures to eliminate pollution,</i></p> <p><i>(e) the proximity of aquatic reserves dedicated under the Fisheries and Oyster Farms Act 1935 and the effect the development will have on those reserves, and</i></p> <p><i>(f) the need to ensure that native vegetation surrounding the fishery habitat area is conserved.</i></p>	<p>The Twofold Shelf Bioregion extends out to 3 nautical miles or approx 5.5km offshore. There are currently:</p> <ul style="list-style-type: none"> <li>• No marine parks</li> <li>• No Commonwealth marine reserves</li> <li>• No aquatic reserves</li> <li>• Four national parks and nature reserves with marine extensions (5.55km<sup>2</sup>).</li> </ul> <p>The project is land based and no impact on the marine environment has been assessed.</p>

## **Conclusion**

**The project is land based and has limited agricultural value. The impact on the coastal environment has been assessed and can be addressed through mitigation and ongoing monitoring of the use.**

**SEPP (State and Regional Development) 2011**

<b>Standard</b>	<b>Comment</b>
<b>Clause 3 - Aims of Policy</b>	
<i>(a) to identify development that is State Significant Development,</i>	The proposed development is not classified as State Significant Development.
<i>(b) to identify development that is State significant infrastructure and critical State significant infrastructure,</i>	Not applicable to this assessment.
<i>(c) to confer functions on joint regional planning panels to determine development applications.</i>	The development application is being determined by the Southern Region Joint Regional Panel (SRJRPP) as the development is classified as 'electricity generating works' under the standard instrument and has a capital investment of above 5 million dollars.

**Conclusion**

**The development is not classified as 'State Significant Development' and is being determined by the Joint Regional Planning Panel.**

**SEPP (Infrastructure)**

<b>Standard</b>	<b>Comment</b>
<b>Clause 2 - Aim of Policy</b>  <i>The aim of this Policy is to facilitate the effective delivery of infrastructure across the State by:</i>	
<i>(a) improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services, and</i>	The proposed development is consistent with this objective.
<i>(b) providing greater flexibility in the location of infrastructure and service facilities, and</i>	The site is already used for industrial purposes and the proposed zoning under the standard instrument is IN1 – General Industrial.
<i>(c) allowing for the efficient development, redevelopment or disposal of surplus government owned land, and</i>	Not applicable to this assessment.

<p><i>(d) identifying the environmental assessment category into which different types of infrastructure and services development fall (including identifying certain development of minimal environmental impact as exempt development), and</i></p>	<p>This proposal is defined as ‘electricity generating works’ and is ‘regionally significant development’.</p>
<p><i>(e) identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development, and</i></p>	<p>The proposed development has been assessed within the context of the existing infrastructure on the site and surrounding development.</p> <p>The impact on the site and surrounding uses, particularly the Chipmill and port operations is discussed in further detail later in this report.</p> <p>[Discussed under “Submissions”]</p>
<p><i>(f) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing.</i></p>	<p>The proposed development has been referred to the relevant public authorities during the assessment process in accordance with Development Control Plan 3 – Public Notification Policy.</p>
<p><b>Division 4</b></p> <p><i>Electricity generating works or solar energy systems</i></p>	
<p><b>Clause - 34 Development permitted with consent</b></p> <p><i>(1) Development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone.</i></p>	<p>The proposal is defined as ‘electricity generating works’ and would be located within the 1(a) Rural General Zone under Bega Valley Local Environmental Plan 2002 (BVLEP2002).</p>
<p><i>(2) Development for the purpose of a back-up electricity generating plant that operates for not more than 200 hours in any year may be carried out by any person with consent on any land.</i></p>	<p>Not applicable to this assessment.</p>
<p><i>(3) Development for the purpose of, or resulting in, a change of fuel source of an existing coal or gas fired generating works by a proportion of more than 5 per cent in any 12 month period may only be carried out with consent.</i></p>	<p>Not applicable to this assessment.</p>
<p><i>(4) If, under any environmental planning instrument (including this Policy), development for the purpose of:</i></p>	<p>This application involves the generation of energy by capturing wind.</p>

<p>(a) industry, or</p> <p>(b) a waste or resource management facility,</p> <p>may be carried out on land with consent, development for the purpose of electricity generating works that generate energy from waste, or from gas generated by waste, may also be carried out by any person with consent on that land.</p>	
<p>(5) Without limiting subclause (1), development for the purpose of a small wind turbine system may be carried out by any person with consent on any land.</p>	<p>The proposed wind farm is not classified as being a small wind turbine system and is assessed under a different regulatory framework.</p>
<p>(6) However, subclause (5) only applies in relation to land in a prescribed residential zone if:</p> <p>(a) the small wind turbine system has the capacity to generate no more than 10kW, and</p> <p>(b) the height of any ground-mounted small wind turbine in the system from ground level (existing) to the topmost point of the wind turbine is no more than 18m.</p>	<p>Not applicable to this assessment.</p>
<p>(7) Solar energy systems Except as provided by subclause (8), development for the purpose of a solar energy system may be carried out by any person with consent on any land.</p>	<p>Not applicable to this assessment.</p>
<p>(8) Development for the purpose of a photovoltaic electricity generating system may be carried out by a person with consent on land in a prescribed residential zone only if the system has the capacity to generate no more than 100kW.</p>	<p>Not applicable to this assessment.</p>

### **Conclusion**

**The project is permissible subject to consent and the proposed use is consistent with the aims and objectives of this policy.**

### **SEPP (Rural Lands) 2008**

<b>Standard</b>	<b>Comment</b>
<b>Clause 2 - Aims of Policy</b>	
<i>(a) to facilitate the orderly and economic use and development of rural lands for rural and related</i>	The site is located within the 1(a) Rural General Zone under BVLEP 2002. This

<p><i>purposes,</i></p>	<p>zoning provides for a range of uses. The wind farm is defined as 'energy generation' and is a permitted use in the zone with consent.</p> <p>Whilst the land is zoned rural 1(a) the existing use of the site is industrial and the proposed wind farm would be consistent with this current use.</p>
<p><i>(b) to identify the Rural Planning Principles and the Rural Subdivision Principles so as to assist in the proper management, development and protection of rural lands for the purpose of promoting the social, economic and environmental welfare of the State,</i></p>	<p>Not applicable to this assessment.</p>
<p><i>(c) to implement measures designed to reduce land use conflicts,</i></p>	<p>The wind farm has been referred to a number of external agencies for advice and mitigation measures to reduce land use conflicts have been provided.</p> <p><b>A noise assessment has been undertaken that identified an impact above acceptable levels on Edrom Lodge. Advice has been received from the EPA and Council's Environmental Services staff confirming that a formal agreement is required with the owners to address the noise impact or further monitoring undertaken which has not been provided. Forests NSW, the owner of Edrom Lodge have formally advised that they are not prepared to enter into an agreement and requested that further monitoring is undertaken. The proponent has therefore not established appropriate measures to address the potential land use conflict.</b></p> <p><b>[Refer to Appendix D – Referral Responses]</b></p>
<p><i>(d) to identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations,</i></p>	<p>The site is not identified as State significant agricultural land.</p>
<p><i>(e) to amend provisions of other environmental planning instruments relating to concessional lots in rural subdivisions.</i></p>	<p>Not applicable to this assessment.</p>

<p><b>Clause 7 - Rural Planning Principles</b></p> <p><i>The Rural Planning Principles are as follows:</i></p>	
<p><i>(a) the promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas,</i></p>	<p>The use of the site for a wind farm is consistent with this Clause. The proposal involves an activity that has an economic component within a rural area.</p>
<p><i>(b) recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State,</i></p>	<p>Although the site is identified as being rural, it has an industrial history.</p> <p>The site has limited agricultural viability due to the physical characteristics of the land in terms of vegetation, topography and location.</p>
<p><i>(c) recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits of rural land use and development,</i></p>	<p>The proposed wind farm would contribute towards the government targets for renewable energy.</p>
<p><i>(d) in planning for rural lands, to balance the social, economic and environmental interests of the community,</i></p>	<p>Consultation has been undertaken with the community in accordance with the notification policy and a public meeting with the Southern Region Joint Regional Planning Panel (SRJRPP).</p>
<p><i>(e) the identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land,</i></p>	<p>The site is located on a coastal headland location and the use has the potential to impact on biodiversity. The proponent has provided an assessment under Section 7.3 of the SEE and engaged nigh Environmental to complete a biodiversity assessment of the site.</p> <p>Concern has been raised as part of the consultation process by the community and the Office of Environment and Heritage (OEH). Additional information was provided by the proponent as part of Attachment 1 within the Submissions Report. A Species Impact Statement (SIS) was requested by OEH.</p> <p>This information was referred internally to Council's Environmental Services Section who advised that a SIS was not necessary subject to appropriate conditions of consent to mitigate the potential impact.</p> <p>[Appendix D – Referral Responses]</p>
<p><i>(f) the provision of opportunities for rural lifestyle,</i></p>	<p>Not applicable to this assessment.</p>

settlement and housing that contribute to the social and economic welfare of rural communities,	
(g) the consideration of impacts on services and infrastructure and appropriate location when providing for rural housing,	Not applicable to this assessment.
(h) ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General.	Not applicable to this assessment.

## **Conclusion**

**Although the site is located within a Rural Zone, the land is predominantly industrial in nature and has limited agricultural value. The project is consistent with these policies as they apply.**

***An agreement has not been reached between the proponent and the owners of Edrom Lodge, Forests NSW to address the potential noise impact on Edrom Lodge. The proponent has not established adequate measures to address the potential impact in terms of noise contrary to Clause 2(c) of SEPP (Rural Lands).***

## **SEPP 44 – Koala Protection**

<b>Standard</b>	<b>Comment</b>
<p><b>Clause 7</b></p> <p><i>Step 1—Is the land potential koala habitat?</i></p> <p><i>(1) Before a Council may grant consent to an application for consent to carry out development on land to which this Part applies, it must satisfy itself whether or not the land is a potential koala habitat.</i></p>	<p>The Bega Valley Shire is listed in Schedule 1, which encourages the conservation and management of koala habitats.</p> <p>The site is industrial in nature with an existing Chipmill. There is some remnant vegetation remaining, but the site is heavily disturbed with infrastructure.</p> <p>A Biodiversity Assessment has been undertaken and identifies these areas as being highly disturbed.</p> <p>The Koala has not been identified in this assessment and the subject site has not been identified as potential koala habitat.</p>
<p><i>(2) A Council may satisfy itself as to whether or not land is a potential koala habitat only on information obtained by it, or by the applicant, from a person who is qualified and experienced in tree identification.</i></p>	<p>A Biodiversity Assessment was undertaken on June 2011 by ngh Environmental.</p>
<p><i>(3) If the Council is satisfied:</i></p>	<p>The site is highly disturbed and has not been identified as being Koala habitat. The site is</p>

<p><i>(a) that the land is not a potential koala habitat, it is not prevented, because of this Policy, from granting consent to the development application, or</i></p> <p><i>(b) that the land is a potential koala habitat, it must comply with Clause 8.</i></p>	surrounded by nature reserves.
<p><b>Clause 8</b></p> <p>Step 2—<i>Is the land core koala habitat?</i></p> <p>(1) <i>Before a council may grant consent to an application for consent to carry out development on land to which this Part applies that it is satisfied is a potential koala habitat, it must satisfy itself whether or not the land is a core koala habitat.</i></p>	No
<p>(2) <i>A council may satisfy itself as to whether or not land is a core koala habitat only on information obtained by it, or by the applicant, from a person with appropriate qualifications and experience in biological science and fauna survey and management.</i></p>	Not applicable to this assessment.
<p>(3) <i>If the council is satisfied:</i></p> <p><i>(a) that the land is not a core koala habitat, it is not prevented, because of this Policy, from granting consent to the development application, or</i></p> <p><i>(b) that the land is a core koala habitat, it must comply with Clause 9.</i></p>	Not a core koala habitat.

### **Conclusion**

**The site is highly disturbed and has not identified the site as potential Koala habitat.**

### **SEPP 55 (Remediation of Land)**

<b>Standard</b>	<b>Comment</b>
<p><b><i>Clause 7 - Contamination and remediation to be considered in determining development application</i></b></p>	
<p><i>(1) A consent authority must not consent to the carrying out of any development on land unless:</i></p>	

<i>(a) it has considered whether the land is contaminated, and</i>	Although the site has historically been used for industrial purposes, the site is not identified as being contaminated.
<i>(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and</i>	Not applicable to this assessment.
<i>(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.</i>	Not applicable to this assessment.

### **Conclusion**

**The site is not classified as contaminated land.**

### **State Environmental Planning Policy 71 – Coastal Protection**

<b>Standard</b>	<b>Comment</b>
<b><i>Clause 2 - Aims of Policy</i></b>	
<i>(a) to protect and manage the natural, cultural, recreational and economic attributes of the New South Wales coast, and</i>	<p>The proposed wind farm would be located on a prominent headland. The impact on visual amenity and the impact on biodiversity of this coastal setting has been assessed by the proponent. The impact on Indigenous Cultural Heritage has been provided in Section 7.4 of the SEE.</p> <p>A referral was sent to the Eden Local Aboriginal Land Council who objected to the proposal on aesthetic grounds, noise pollution, environmental degradation and potential negative impact on Eden LALC enterprise.</p> <p>[ The objections raised in the submission are considered in Appendix C-‘Submissions’ and Appendix D– Referral Responses ]</p>
<i>(b) to protect and improve existing public access to and along coastal foreshores to the extent that this is compatible with the natural attributes of the coastal foreshore, and</i>	The development would not have a detrimental impact on foreshore access.

<p><i>(c) to ensure that new opportunities for public access to and along coastal foreshores are identified and realised to the extent that this is compatible with the natural attributes of the coastal foreshore, and</i></p>	<p>The proposal does not afford new opportunities for public access to and along the foreshore area nor does it impact on existing access opportunities.</p> <p>The site is already industrial and contrasts with the surrounding landscape. The visual relationship of the turbines and the coastal landscape has been discussed previously.</p> <p>A landscape and visual assessment has been prepared by the proponent and a visual assessment undertaken by staff.</p> <p>[Appendix A – Visual Assessment]</p>
<p><i>(d) to protect and preserve Aboriginal cultural heritage, and Aboriginal places, values, customs, beliefs and traditional knowledge, and</i></p>	<p>The Eden Local Aboriginal Land Council has objected to the proposal as discussed previously.</p>
<p><i>(e) to ensure that the visual amenity of the coast is protected, and</i></p>	<p>A visual assessment of the proposed development has been undertaken as discussed previously.</p>
<p><i>(f) to protect and preserve beach environments and beach amenity, and</i></p>	<p>The proponent has undertaken an assessment of this impact within the SEE and Submissions Report. The proposed development would have a potential impact on Edrom Lodge and its foreshore area given the size of the turbines and proximity.</p> <p>The overshadowing, impact of shadow flicker and blade glint has been assessed and mitigation measures can be provided to address this impact and monitor any potential impact in the future.</p>
<p><i>(g) to protect and preserve native coastal vegetation, and</i></p>	<p>The site is predominantly cleared and the Biodiversity Assessment has suggested that the remaining vegetation is significantly degraded.</p>
<p><i>(h) to protect and preserve the marine environment of New South Wales, and</i></p>	<p>The impact on the marine environment has been investigated by the proponent and reviewed by referral agencies. The site is not located within a park as identified by the Marine Parks Authority.</p> <p>No detrimental impact has been found on marine species, including whale migration. This is detailed later in this report.</p> <p>[Discussed under “Submissions”]</p>

<i>(i) to protect and preserve rock platforms, and</i>	Not applicable to this assessment.
<i>(j) to manage the coastal zone in accordance with the principles of ecologically sustainable development (within the meaning of section 6 (2) of the Protection of the Environment Administration Act 1991), and</i>	The proposed use involves the harnessing of wind energy which is in accordance with the principles of ecologically sustainable development.  This is discussed in more detail later in this report.
<i>(k) to ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area, and</i>	As detailed previously in this report, wind turbines require a certain height and dimension to adequately capture wind.  The proposal involves 7 turbines and is a relatively small wind farm. It would sit on the headland, which is currently occupied by the Chipmill and occupy a relatively small component of the visual panorama around Twofold Bay.
<i>(l) to encourage a strategic approach to coastal management.</i>	Not applicable to this assessment.
<b>Clause 8 - Matters for consideration</b>  <i>The matters for consideration are the following:</i>	
<i>(a) the aims of this Policy set out in clause 2,</i>	As discussed above.
<i>(b) existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved,</i>	Not applicable to this assessment.
<i>(c) opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability,</i>	Not applicable to this assessment.
<i>(d) the suitability of development given its type, location and design and its relationship with the surrounding area,</i>	The proposed wind turbines would be located on a site that already has an industrial use.  <b>A noise assessment has been undertaken that identified an impact on Edrom Lodge. Advice has been received from the EPA and Council's Environmental Services staff to confirm that a formal agreement is required with the owners to address the noise impact which has not been provided.</b>

	<p><b>The owners of Edrom Lodge, Forests NSW have not agreed to the noise impact and requested further monitoring.</b></p> <p><b>The suitability of the site has therefore not been established.</b></p>
<p><i>(e) any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore,</i></p>	<p>Due to their height and location, the proposed wind turbines would cause some overshadowing of the coastal foreshore and would be visible from public places.</p> <p>It is not considered that this impact should preclude the use of the site for wind generation.</p>
<p><i>(f) the scenic qualities of the New South Wales coast, and means to protect and improve these qualities,</i></p>	<p>The proposed development would be visible from both public and private locations along the coast, within and around Twofold Bay.</p> <p>The proposed use is consistent with the existing use.</p> <p>[Appendix A – Visual Assessment]</p>
<p><i>(g) measures to conserve animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats,</i></p>	<p>The proponent has prepared a Biodiversity Assessment and subsequent Submissions Report. A Species Impact Statement (SIS) has been requested by the Office of Environment.</p> <p>Council’s Environmental Services Section has considered the request and based on the information provided conclude that an SIS is not required and that the application can be considered based on the findings within the Biodiversity Assessment.</p>
<p><i>(h) measures to conserve fish (within the meaning of Part 7A of the Fisheries Management Act 1994) and marine vegetation (within the meaning of that Part), and their habitats</i></p>	<p>The impact on the marine environment has been investigated and no adverse impact is considered.</p>
<p><i>(i) existing wildlife corridors and the impact of development on these corridors,</i></p>	<p>The proposed development would not adversely impact on wildlife corridors. Not applicable to this assessment.</p>
<p><i>(j) the likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards,</i></p>	<p>The development would not have a detrimental impact on coastal processes. The site would be exposed to coastal processes and the proposed development designed to meet these impacts.</p>

<p><i>(k) measures to reduce the potential for conflict between land-based and water-based coastal activities,</i></p>	<p>The relationship of the proposed wind farm with water based activities has been assessed through the consultation process.</p> <p>No detrimental impact has been determined.</p>
<p><i>(l) measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals,</i></p>	<p>The Eden Local Aboriginal Land Council has objected to the proposed development.</p>

<p><i>(m) likely impacts of development on the water quality of coastal waterbodies,</i></p>	<p>The site is already disturbed and would not have an impact on water quality or coastal waterbodies. Conditions could be applied to the construction phase should consent be issued addressing soil and water management control.</p>
<p><i>(n) the conservation and preservation of items of heritage, archaeological or historic significance,</i></p>	<p>The proponent has undertaken an assessment under Section 7.4 and Appendix 4 of the SEE.</p> <p>Additional information was provided in the submissions report.</p>
<p><i>(o) only in cases in which a Council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities,</i></p>	<p>Not applicable to this assessment.</p>
<p><i>(p) only in cases in which a development application in relation to proposed development is determined:</i></p> <p><i>(i) the cumulative impacts of the proposed development on the environment, and</i></p> <p><i>(ii) measures to ensure that water and energy usage by the proposed development is efficient.</i></p> <p><i>Note: Clause 92 of the Environmental Planning and Assessment Regulation 2000 requires the Government Coastal Policy (as defined in that Clause) to be taken into consideration by a consent authority when determining development applications in the local government areas identified in that Clause or on land to which the Government Coastal Policy applies.</i></p>	<p>The proposed development involves energy generation. The potential cumulative impact on the environment has been assessed through the SEE and mitigation measures provided to address the potential impact on the environment.</p>

## Conclusion

The impact on the coastal environment has been assessed and mitigation measures provided to address the potential impact.

***An agreement has not been reached between the proponent and the owners of Edrom Lodge, Forests NSW to address the potential noise impact on Edrom Lodge. The proponent has not established the suitability of the site in terms of noise impact contrary to Clause 8(d) of SEPP71 – Coastal Protection.***

### **Bega Valley Local Environmental Plan 2002**

The site is located within the 1(a) Rural General Zone. The proposal would be defined as Energy generation and is permissible subject to consent.

**Energy generation** means use of a building or place for the purpose of making or generating gas, electricity or any other form of energy, or for wind, hydro or solar power generation.

The following provisions apply;

- Clause 2: Aims of plan
- Clause 8: Zone objectives and development control table
- Clause 12: General controls for development - Zone 1(a) (Rural General Zone)
- Clause 56: Aims in relation to heritage
- Clause 61: Development within vicinity of heritage items
- Clause 63: Development affecting places or sites of known or potential Aboriginal heritage significance
- Clause 64: Development affecting known or potential archaeological sites of relics of on-Aboriginal heritage significance
- Clause 65: General principles for development and use of land and buildings
- Clause 75: Land subject to bushfire hazard
- Clause 76: Contaminated land
- Clause 78: Land filling and excavation
- Clause 79: Ecologically sustainable development
- Clause 85: Height of buildings

<b>Standard</b>	<b>Comment</b>
<p><b><i>Clause 2 - Aims of plan</i></b></p> <p><i>This plan aims to establish the framework for future development within the local government area of Bega Valley and to achieve the following objectives:</i></p>	
<p><i>(a) to ensure a balanced approach to development which is sensitive to both the economic and social needs of the community,</i></p>	<p>The project would have a capital cost of approximately \$19.4 million and generate 1 full-time ongoing operation and maintenance job.</p>
<p><i>(b) to protect and improve the economic, natural, social and cultural resources within the Council's area,</i></p>	<p>The direct benefit of the wind farm to the local community is limited. This was conveyed to the proponent who has proposed the 'Eden Community Fund'.</p>

	<p>This is detailed under Section 3.7 of the Submissions Report.</p> <p>The impact on cultural heritage is detailed under Section 7.4.3 (Appendix 4 of the SEE) and within the Submissions Report.</p> <p>As mentioned previously, The Eden Local Aboriginal Land Council has objected to the proposed development.</p>
<i>(c) to encourage the efficient and effective delivery of services, and</i>	The project involves the production of electricity through wind energy.
<i>(d) to recognise, protect and improve the inherent natural and built character of the Council's area,</i>	<p>The scale of the proposed wind farm would contrast with the surrounding natural landscape.</p> <p>The site is however already industrial in nature.</p>
<i>(e) to ensure that development has regard to the principles of ecologically sustainable development.</i>	<p>The proposed development is based on the principles of ESD. The development involves the production of renewable energy to meet the growing electricity demand, reducing greenhouse gas (GHG) emissions and would contribute towards Local, State and Federal energy targets.</p> <p>[Discussed further under 'Environmental Planning and Assessment Regulation 2000']</p>
<p><b>Clause 8 - Zone objectives and development control table</b></p> <p><i>(1) Consent must not be granted to development proposed within a zone unless the consent authority has taken into consideration such of the objectives of the zone as are relevant to the proposal and is satisfied that the development is consistent with those objectives.</i></p>	The proposed development has been assessed in accordance with the objectives of the zone and is consistent with those objectives.
<p><b>Clause 12 - General controls for development—Zone 1 (a) (Rural General Zone)</b></p> <p><i>The objectives of Zone 1 (a) are as follows:</i></p>	
<i>(a) to encourage continued growth in the area's rural economic base,</i>	The project would involve the construction of a wind farm. There are no other examples of wind farms within the Bega Valley Shire. The proposal would not adversely impact on the area's rural economic base.

<p><i>(b) to encourage other forms of development, including tourism, that are compatible with agricultural activities and do not create undesirable environmental and cultural impacts,</i></p>	<p>The agricultural activities in the immediate locality are limited however it is considered that the proposed wind farm is not incompatible with existing agricultural activities.</p>
<p><i>(c) to protect and conserve the productive potential of prime crop and pasture land,</i></p>	<p>The site has an existing industrial use with limited capacity for agriculture under the Agricultural Land Classification Atlas.</p>
<p><i>(d) to maintain the scenic amenity and landscape quality of the area,</i></p>	<p>As detailed previously in this report, the proposed wind farm would be visible from a range of public and private spaces. Although the wind farm would be visible it does not warrant its refusal.</p> <p>[Discussed under 'Submissions' and Appendix A – Visual assessment]</p>
<p><i>(e) to promote the protection, and the preservation and enhancement, of natural ecological systems and processes,</i></p>	<p>The proposal would be located on an existing industrial site. The proponent has undertaken a Biodiversity Assessment as part of the SEE and Submissions Report.</p> <p>No detrimental impact is envisaged on ecological systems and processes.</p>
<p><i>(f) to provide proper and coordinated use and protection of rivers, riparian corridors and water catchment areas,</i></p>	<p>No detrimental impact is envisaged as a result of this development.</p>
<p><i>(g) to promote the economic provision of services compatible with the nature and intensity of development and the character of the area,</i></p>	<p>The proposal would involve the economic provision of services. The wind farm is relatively small in terms of turbine numbers.</p>
<p><i>(h) to ensure that development and management of the land has minimal impact on water quality and environmental flows of receiving waters,</i></p>	<p>No adverse impact is envisaged.</p>
<p><i>(i) to maintain significant features of natural and cultural heritage.</i></p>	<p>An assessment has been made by the proponent within the SEE and Submission Report, as detailed previously.</p> <p>This information has been forwarded to the Eden Local Aboriginal Land Council who has objected to the proposed development.</p>
<p><b>Clause 56 - Aims in relation to heritage</b> The aims of this plan are:</p>	
<p><i>(a) to conserve the environmental heritage of</i></p>	<p>The site is not heritage listed However there</p>

<p><i>the local government area of Bega Valley.</i></p>	<p>are heritage items in the vicinity of the site.</p> <p>The proponent submitted a heritage assessment and the proposal referred to the Office of Environment and Heritage – Heritage Branch who supported the proposal subject to mitigating measures being implemented and conditions of consent.</p> <p>[Appendix D – Referral Responses]</p>
<p><i>(b) to conserve the heritage significance of existing significant fabric, relics, settings, and views associated with the heritage significance of heritage items,</i></p>	<p>The wind turbines would be visible from places of heritage significance, particularly Edrom Lodge and Fisheries Beach which forms part of the Bundian Way.</p> <p>The proponent prepared photomontages that were referred to the Heritage Branch and a visual assessment has been undertaken.</p> <p>It has been concluded that, although the turbines would be visible, they would not in themselves compromise the heritage significance of the surrounding area.</p> <p><b>The impact on the heritage setting of Edrom Lodge has been identified as an issue in terms of noise generation. The proponent has not reached an agreement with the owners of Edrom Lodge to ensure that the amenity impact has been addressed.</b></p> <p>[Appendix A – Visual Assessment and detailed under “Submissions”]</p>
<p><i>(c) to allow for the protection of places which have the potential to have heritage significance but are not identified as heritage items,</i></p>	<p>The site is industrial. No specific heritage significance was identified for the proposed turbine site locations.</p>
<p><i>(d) to integrate heritage conservation into the planning and development control processes,</i></p>	<p>Not applicable to this assessment.</p>
<p><i>(e) to provide for public involvement in the conservation of environmental heritage, and</i></p>	<p>Consultation has been undertaken with community and referral agencies as part of the assessment process.</p>
<p><i>(f) to ensure that any development does not adversely affect the heritage significance of heritage items and their settings.</i></p>	<p>As detailed previously, advice has been sought from the Heritage Branch who has not objected to the proposal.</p> <p><b>The generation of noise has been</b></p>

	<b>identified as an issue for Edrom Lodge that has not been adequately addressed.</b>
<b>Clause 61 - Development in the vicinity of heritage items</b>	
(1) <i>Before granting consent to development in the vicinity of a heritage item, the consent authority must assess the impact of the proposed development on the heritage significance of the heritage item.</i>	The heritage significance of the surrounding area has been assessed.
(2) <i>This clause extends to development:</i>  (a) <i>that may have an impact on the setting of a heritage item, for example, by affecting a significant view to or from the item or by overshadowing, or</i>  (b) <i>that may undermine or otherwise cause physical damage to a heritage item, or</i>  (c) <i>if the heritage item is a place, that will otherwise have any adverse impact on the heritage significance of the place within which it is situated.</i>	The wind turbines would be visible from heritage items.  The development would not have a physical impact on the surrounding heritage items. The visual impact has been assessed and is considered acceptable.  The size of the turbines and their proximity would have the potential to cause overshadowing during certain times of the day and year. The impact of shadow flicker and blade glint has been assessed and mitigating measures can be put in place to adequately address this impact.  <b>The generation of noise has been identified as an issue for Edrom Lodge that has not been adequately addressed.</b>
(3) <i>The consent authority may refuse to grant any such consent unless it has considered a heritage impact statement that will help it assess the impact of the proposed development on the heritage significance, visual curtilage and setting of the heritage item.</i>	The proponent has prepared a heritage assessment that has been referred to the Heritage Branch. It is concluded that there would be no adverse impact on the heritage significance of adjoining properties.
<b>Clause 63 - Development affecting places or sites of known or potential Aboriginal heritage significance</b>  <i>Before granting consent for development that is likely to have an impact on a place of Aboriginal heritage significance or a potential place of Aboriginal heritage significance, or that will be carried out on an archaeological site of a relic that has Aboriginal heritage significance, the consent authority must:</i>	
(a) <i>consider a heritage impact statement</i>	An Indigenous Cultural Heritage Assessment

<p><i>explaining how the proposed development would affect the conservation of the place or site and any relic known or reasonably likely to be located at the place or site, and</i></p>	<p>has been undertaken by the proponent under Section 7.4 of the SEE and additional information provided within the Submissions Report.</p>
<p><i>(b) except where the proposed development is integrated development, notify the local Aboriginal communities (in such way as it thinks appropriate) of its intention to do so and take into consideration any comments received in response within 21 days after the relevant notice is sent.</i></p>	<p>The proposal has been referred to the Eden Local Aboriginal Land Council who has objected to the proposed development.</p> <p>[Appendix D – Referral Responses]</p>
<p><b>64 Development affecting known or potential archaeological sites of relics of non-Aboriginal heritage significance</b></p> <p><i>(1) Before granting consent for development that will be carried out on an archaeological site or a potential archaeological site of a relic that has non-Aboriginal heritage significance (whether or not it is, or has the potential to be, also the site of a relic of Aboriginal heritage significance), the consent authority must:</i></p>	
<p><i>(a) consider a heritage impact statement explaining how the proposed development will affect the conservation of the site and any relic known or reasonably likely to be located at the site, and</i></p> <p><i>(b) be satisfied that any necessary excavation permit required by the Heritage Act 1977 has been granted.</i></p>	<p>This impact is detailed under Section 7.4 of the SEE.</p> <p>The development has been undertaken in accordance with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (NSW DECCW 2010).</p>
<p><i>(2) This clause does not apply if the proposed development:</i></p> <p><i>(a) does not involve disturbance of below-ground deposits and the Council is of the opinion that the heritage significance of any above-ground relics would not be adversely affected by the proposed development, or</i></p> <p><i>(b) is integrated development.</i></p>	<p>The site is industrial but located on a headland location.</p> <p>The proponent has undertaken an assessment of the Aboriginal Heritage Information Management System (AHIMS).</p> <p>[Detailed under 'Submissions']</p>
<p><b>Clause 65 - General principles for development and use of land and buildings</b></p> <p><i>(1) Before granting consent for development within any zone, consideration shall be given by the consent authority to such of the following as are relevant to the proposed</i></p>	

<i>development:</i>	
<i>(a) the impact of that development on:</i>	
<i>(i) the water quality of waterbodies, and</i>	Not applicable to this assessment.
<i>(ii) the ability of rural land to be used for agricultural production or industry, or both, and</i>	No detrimental impact.
<i>(iii) soil resources, and</i>	The construction of the wind turbines would not impact on the site.
<i>(iv) existing vegetation, native flora and fauna and riparian corridors, and</i>	The site is heavily disturbed and the vegetation is in poor condition.
<i>(v) the topography and setting of the land, and</i>	The proposed wind turbines would be visible within the context of Twofold Bay and the surrounding landscape.  The level of visibility is related to the vegetation, topography and distance. The impact is largely governed by an individual perception of wind farms and their appearance.
<i>(vi) the streetscape character of the locality, and</i>	The proposed wind turbines would be visible from Eden, but would not be located within the streetscape.
<i>(vii) the scale and design of neighbouring development, and</i>	The proposed wind turbines would be located within an industrial site. They would be larger than neighbouring development due to the nature of their use.
<i>(viii) significant views enjoyed from parks, reserves, roadways, footpaths and other public places, and</i>	The proposed wind turbines would be visible from public spaces as detailed in the Visual Assessment.  [Appendix A – Visual Assessment]
<i>(ix) the energy efficiency of the site and any buildings on the site, and</i>	Not applicable to this assessment.
<i>(x) the availability of a water supply to adequately provide for domestic, agricultural and fire fighting purposes and, where that proposed water supply is from a river, creek, dam or other waterway, the effect upon the other users of that water supply, and</i>	Not applicable to this assessment.
<i>(xi) waste generation, and</i>	Not applicable to this assessment.

(xii) <i>the cultural significance of the land, and</i>	This has been assessed under Section 7.4 of the SEE and Submissions Report. There is no evidence of the site having cultural significance.
(xiii) <i>the treatment of stormwater prior to discharge or the use of stormwater, and</i>	Not applicable to this assessment.
(xiv) <i>traffic generation and appropriate vehicular access into and around the site, and</i>	The site is already industrial and supported by an existing road network that is capable of supporting the proposed development.
(xv) <i>any measures necessary to mitigate any of these impacts,</i>	The project would be subject to a number of conditions if it was to proceed.  The proponent has provided a number of assessments including biodiversity, noise and visual amenity with mitigation measures provided.
(b) <i>the cumulative impact on the environment of:</i>	The development would not have an adverse cumulative impact as detailed in the SEE and previously in this report.
(i) <i>the development, and</i>	
(ii) <i>other development in the vicinity of the proposed development.</i>	The impact on surrounding development has been assessed during the notification process and as part of the referral process. In particular the potential noise impact on Edrom Lodge is discussed in detail in this report.
<b>Clause 75 - Land subject to bushfire hazard</b>  <i>Consent must not be granted to the subdivision of land or the erection of a building on land which is, in the opinion of the consent authority, subject to bushfire hazards unless it is satisfied that:</i>	The site identified is bushfire prone land.
(a) <i>adequate provision will be made for access for fire fighting vehicles,</i>	Access is available and adequate.
(b) <i>adequate safeguards will be adopted in the form of fire breaks, reserves and fire radiation zones, and</i>	The proposed wind farm would be developed within an existing industrial development.
(c) <i>adequate water supplies will be available for fire fighting purposes as recommended by the New South Wales Rural Fire Service.</i>	Yes
<b>Clause 76 - Contaminated land</b>	The site has an existing industrial use

<p>(1) Consent must not be granted to the subdivision of land or the erection of a building on any land unless the consent authority has made an assessment of:</p> <p>(a) any contamination of the land resulting from previous use of the land, and</p> <p>(b) any measures to mitigate against any adverse impacts arising from the contamination of the land.</p>	<p>however there is no evidence of land contamination.</p>
<p>(2) This Clause does not affect any requirement made by the State Environmental Planning Policy No 55—Remediation of Land.</p>	<p>This has been assessed.</p>
<p><b>Clause 78 - Land filling and excavation</b></p> <p>(1) A person shall not, without development consent, excavate or fill any land or waterbody (other than a farm dam) to which this plan applies.</p>	<p>The construction of the proposed wind turbines would involve excavation of the site.</p>
<p>(2) Before granting an application for consent required by subclause (1), the consent authority must have regard to:</p> <p>(a) the likely disruption of, or detrimental effect on, existing drainage patterns, vegetation, sedimentation and soil stability in the locality that would be caused by the proposed work, and</p> <p>(b) the effect of the proposed work on the likely future use or redevelopment of the land, and</p> <p>(c) the effect of the proposed work on the existing and likely amenity of adjoining properties.</p>	<p>The proposed locations are already extensively cleared. No detrimental impact is envisaged on the site or surrounding development.</p>
<p>(3) Subclause (1) does not apply to:</p> <p>(a) any excavation or filling of land necessarily carried out to allow development for which a consent was granted under the Act, or</p> <p>(b) any excavation or filling of land which, in the opinion of the prospective consent authority, is of a minor nature, including minor landscaping works.</p>	<p>Not applicable to this assessment.</p>
<p><b>Clause 79 - Ecologically sustainable</b></p>	

<p><b>development</b></p> <p><i>Before determining an application for consent to development, consideration shall be given by the consent authority to the following in so far as they are relevant to the proposed development and may promote the principles of ecologically sustainable development:</i></p>	
<p>(a) <i>building and allotment orientation,</i></p>	<p>Not applicable to this assessment.</p>
<p>(b) <i>conservation, protection and enhancement of natural resources (including riparian areas and remnant native vegetation),</i></p>	<p>The site is heavily disturbed. No detrimental impact is envisaged as a result of this development.</p>
<p>(c) <i>optimisation of the use of natural features of the site,</i></p>	<p>The headland location provides a wind resource and is deemed the most appropriate location for the intended use.</p>
<p>(d) <i>reduction of car dependence,</i></p>	<p>Not applicable to this assessment.</p>
<p>(e) <i>use of landscaping to improve air, soil and water quality,</i></p>	<p>Not applicable to this assessment.</p>
<p>(f) <i>optimisation of energy efficiency,</i></p>	<p>The proposal involves the harnessing of wind to produce electricity.</p>
<p>(g) <i>waste minimisation.</i></p>	<p>Not applicable to this assessment.</p>
<p><b>Clause 85 - Height of buildings</b></p> <p><i>(1) A building shall not be erected on land to which this plan applies where:</i></p>	<p>The proposed wind turbine structures are not considered to be buildings in accordance with clause 85(3)</p>
<p>(a) <i>in the case of land within 50 metres of the mean high water mark:</i></p> <p>(i) <i>the building contains more than 2 storeys, or</i></p> <p>(ii) <i>the vertical distance between any part of the building and the natural ground level exceeds 7.5 metres, or</i></p>	<p>.</p>
<p>(b) <i>in all other cases:</i></p> <p>(i) <i>the building contains more than 3 storeys, or</i></p> <p>(ii) <i>the vertical distance between any part of the building and the natural ground level exceeds 10 metres.</i></p>	
<p><i>(2) When the number of storeys in a proposed building are counted for the purposes of this</i></p>	

<p><i>clause, any storeys that are basements, cellars or similar structures and that do not protrude more than 1.2 metres above finished ground level at the perimeter of the building are excluded.</i></p>	
<p><i>(3) A reference in this clause to a building does not include a reference to any of the following:</i></p> <ul style="list-style-type: none"> <li><i>(a) an aerial,</i></li> <li><i>(b) a chimney stack,</i></li> <li><i>(c) a mast,</i></li> <li><i>(d) a pole,</i></li> <li><i>(e) a receiving tower,</i></li> <li><i>(f) a silo,</i></li> <li><i>(g) a transmission tower,</i></li> <li><i>(h) a utility installation,</i></li> <li><i>(i) a ventilator,</i></li> <li><i>(j) a building erected</i></li> </ul>	

## **Conclusion**

**The project has been assessed in accordance with the aims and objectives of this plan and the relevant Clauses. The majority of these matters have been addressed and adequate mitigation provided.**

***However an agreement has not been reached between the proponent and the owners of Edrom Lodge, Forests NSW to address the potential noise impact on Edrom Lodge. This would have an impact on this heritage setting contrary to Clauses 56(b) and (f) of the BVLEP 2002.***

## **1(a)(ii) Draft Environmental Planning Instruments**

### **Draft Bega Valley Local Environmental Plan 2012**

The site is proposed to be zoned IN1 – General Industrial Zone under the draft LEP 2012. The proposal would be defined as “Electricity Generating Works” under the standard instrument as detailed below;

**Electricity Generating Works** means a building or place used for the purpose of making or generating electricity.

The proposed use is permissible subject to consent.

The following provisions apply;

- Clause 1.2: Aims of Plan
- Clause 2.3(2) Objectives of the Zone
- Clause 5.5: Development within the coastal zone
- Clause 6.2: Biodiversity
- Clause 6.6: Coastal Risk Planning

Standard	Comment
<p><b>Clause 1.2 - Aims of Plan</b></p>	<p>The project complies with the objectives of the plan.</p> <p>The proposed development embodies the principles of Ecologically Sustainable Development (ESD). The project would provide for employment during the construction phase. The impact on the landscape has been assessed and discussed previously in this report.</p> <p>[Appendix A – Visual Assessment]</p> <p>The site has an existing industrial use with limited agricultural viability. The proposed zoning is Industrial under the BVLEP 2012.</p> <p>The impact on cultural heritage has been discussed previously. The application has provided an assessment in the SEE and Submissions Report.</p> <p>The Heritage Branch has not objected to the development.</p>
<p><b>Clause 2.3(2) – Objectives of the zone</b></p>	<p>The proposed development complies with the objectives of the IN1 – General Industrial Zone and is prohibited permitted use with development consent.</p>
<p><b>Clause 5.5 - Development within the coastal zone</b></p>	<p>The project would be located within the coastal zone. The use is consistent with the objectives of Ecologically Sustainable Development (ESD).</p> <p>The proposal complies with the principles of the NSW Coastal Policy as they apply to this development. The proponent has lodged a SEE and a range of assessments involving landscape and visual amenity, biodiversity and cultural heritage.</p>

<p><b>Clause 6.2 – Biodiversity</b></p>	<p>The potential impact on biodiversity is detailed in the Biodiversity Assessment and Submissions Report.</p> <p>Advice has been received from OEH that a Species Impact Statement (SIS) should be provided. Advice has been obtained from Council’s Environmental Services that the information is sufficient to determine the proposed development subject to mitigation.</p> <p>[Appendix D – Referral Responses]</p>
<p><b>Clause 6.6 - Coastal Risk Planning</b></p>	<p>The site of the proposed wind farm development is likely to be impacted by coastal hazards.</p>

The following overlays apply;

- Biodiversity
- Natural Resource land
- Riparian land
- Height of buildings

Standard	Comment
<p><i>Biodiversity</i></p>	<p>The site is already significantly disturbed and the potential impact on Biodiversity assessed as part of the Biodiversity Assessment Report, the referral process to government agencies and appropriate Council staff.</p>
<p><i>Natural Resource land</i></p>	<p>The site is located within the natural resource land, but would have no detrimental impact.</p>
<p><i>Riparian land</i></p>	<p>The project is mapped riparian, but would have no detrimental impact.</p>
<p><i>Height of buildings</i></p>	<p>The building involves infrastructure that is not for residential use and therefore is not subject to the height limitations specified in this Clause.</p>

## Conclusion

**The proposal has been assessed in accordance with the relevant provisions of the draft LEP 2012 and was found to be satisfactory and consistent with those provisions. At the time of writing this report, the draft LEP was considered to be imminent.**

### **1(a)(iii) Development Control Plans**

The development application has been assessed in accordance with the following;

#### **Development Control Plan 3 – Notification Policy**

<b>Standard</b>	<b>Comment</b>
<i>Clause 5 – Aims of the Plan</i>	The project has been notified in accordance with the aims of the plan.
<i>Clause 7.2 – When notification is required</i>	Notification was undertaken beyond the minimum requirements of the DCP.  Properties were notified within 2km of the site. The period of exhibition was extended, additional residences notified and submissions accepted after the nominated closing date.  A copy of the project was available at Council's Administration Centre, Bega as well as Council's three branch offices and on Council's website for review.
<i>Clause 9.4 - Consideration of submissions</i>	The submissions have been reviewed.  [Appendix C – Summary of Submissions]

## Conclusion

**The project has been notified in accordance with DCP 3 and additional consultation undertaken where possible.**

### **Draft NSW Planning Guidelines - Wind Farms**

These draft guidelines were released in December 2011 after the lodgement of this proposed development application. This project had already been notified and most referral comments received at this stage in the assessment process.

These guidelines relate predominantly to State Significant Development.

<b>Standard</b>	<b>Comment</b>
<i>Clause 1 - Planning framework for wind farms</i>	

<b><i>in NSW</i></b>	
<i>Clause 1.1 Where are wind farms permissible?</i>	<p>The wind farm is defined as ‘electricity generating works’ and classified as ‘permitted with consent’ under the Infrastructure SEPP as mentioned previously.</p> <p>The wind farm is permissible within the 1(a) Rural General Zone under the BVLEP 2002 and within the proposed IN1 – General Industrial Zone under draft BVLEP 2012.</p>
<i>Clause 1.2 Which development assessment process applies?</i>	<p>The project has a capital investment value of \$5-\$30 million under Schedule 4A of the EP&amp;A Act 1979 and is classified as ‘Regionally Significant Development’. The development requires assessment by Council and is determined by the Joint Regional Planning Panel (JRPP).</p>
<b><i>Clause 1.3 Key matters in the assessment process</i></b>	
<p><i>(a) Proximity of turbines to existing residential dwellings</i></p> <p><i>The proposed wind farm would be located within 2km of residences.</i></p> <p><i>A Gateway for an increased level of initial assessment of the proposed development applies if the applicant does not receive written consent from landowners with residences within 2km of proposed turbines.</i></p> <p><i>A Site Compatibility Certificate needs to focus on noise and visual amenity issues and include;</i></p> <ul style="list-style-type: none"> <li><i>• Predicted noise levels at any house within 2km.</i></li> <li><i>• Photomontages from each non-host residence.</i></li> <li><i>• Any studies undertaken in relation to likely impacts on landscape values.</i></li> <li><i>• Information on the potential for blade glint and shadow flicker.</i></li> </ul> <p><i>This is assessed by the Department and any submissions received. A recommendation is made to the JRPP. The Department and the</i></p>	<p>The applicant has provided an assessment of noise levels, visual amenity, blade glint and shadow flicker as part of the SEE and subsequent Submissions Report. A public meeting was also held on the 2 February 2012.</p> <p>The level of information is commensurate with the process outlined in this draft document despite the application being lodged prior to it being released.</p> <p>The proponent has provided comment on the draft Guidelines as part of the Submissions Report.</p>

<p><i>JRPP may seek independent experts to consider the acceptability of noise and visual amenity.</i></p> <p><i>A public meeting may be held by the JRPP to provide for further public comment.</i></p>	
<p><i>(b) Community consultation</i></p> <p><i>These requirements involve the attainment of a Site Compatibility Certificate. It encourages community consultation prior to lodgement, during assessment and as part of the construction phase.</i></p> <p><i>An EIS is to demonstrate effective communication and the Department is to exhibit development applications for 60 days.</i></p>	<p>This wind farm is not State Significant. Consultation has been undertaken over and above the statutory requirements and is detailed within Section 2.4 of the SEE.</p>
<p><i>(c) Visual amenity</i></p> <p><i>The visual impact needs to take into account;</i></p> <ul style="list-style-type: none"> <li>• <i>The visibility of the development.</i></li> <li>• <i>The location and distance from which the development can be viewed.</i></li> <li>• <i>Landscape values and significance.</i></li> <li>• <i>The sensitivity of the landscape features to change.</i></li> </ul>	<p>The guidelines provide further guidance on the level of information to be provided to assess visual amenity. The proponent submitted a Landscape and Visual Assessment with the SEE and additional information with the Submissions Report, including an assessment of Edrom Lodge.</p> <p>This methodology is consistent with this approach and additional field work has been undertaken by staff.</p> <p>[Appendix A – Visual Assessment]</p>
<p><i>(d) Noise</i></p> <p><i>Reference is made to the NSW Wind Farm Noise Guidelines that provide greater guidance about;</i></p> <ul style="list-style-type: none"> <li>• <i>Low frequency noise.</i></li> <li>• <i>Tonality.</i></li> <li>• <i>Excessive amplitude modulation. (including the van den Berg effect)</i></li> <li>• <i>Auditing and compliance.</i></li> </ul> <p><i>The noise criteria must be established in day time and night time periods.</i></p>	<p>A noise assessment has been undertaken in accordance with Section 7.2 of the SEE and has been supported by an Environmental Noise Assessment in accordance with the Wind Farms Environmental Noise Guidelines, South Australian EPA Authority 2009.</p> <p>The predicted noise level at Edrom Lodge and the SEFE receiver is above 35 dB(A). The proponent has suggested that the closest turbine (EDN04) is run in Sound Management Mode.</p> <p><b>The EPA raised concern about the impact on Edrom Lodge which has been referred internally to Environmental Services for comment who have reiterated the advice of the EPA and requested further monitoring or a formal agreement to be established with the owners of Edrom Lodge.</b></p>

	<p><b>The owners, Forests NSW have not agreed to sign this agreement and have requested that further noise monitoring is undertaken.</b></p> <p>[Appendix D – Referral Responses]</p>
<i>(e) Health</i>	<p>A precautionary approach is recommended for the assessment of health issues.</p> <p>The proponent has considered this aspect of the proposal under Section 8.5.1 of the SEE. This assessment concluded that the wind farm would not impose any threat to the public, workers or property owners.</p> <p>Further information was provided in the Submissions Report with specific reference to the impact on human health, shadow flicker, asbestos use and turbine failure.</p> <p>[Detailed under 'Submissions']</p>
<i>(f) Decommissioning</i>	<p>The guidelines require that the proponent/wind farm owner rather than the 'host' landowner must retain responsibility for decommissioning the turbines.</p> <p>This would be reinforced as a condition of consent if the development is approved.</p>
<i>(g) Auditing and compliance</i>	<p>Conditions about auditing and compliance would be included as conditions of consent if the wind farm is approved.</p> <p>This would involve particular reference to noise monitoring and assessment of sensitive receivers as required by the draft guidelines.</p>
<b>Clause 2 - Consulting with the community and stakeholders</b>	
<b>Clause 2.1 Requirements</b>	
<i>(a) Document that effective engagement has occurred</i>	<p>Consultation has been undertaken as detailed in Section 2.4 of the SEE.</p>
<i>b) Engagement with neighbours early in the process</i>	<p>This encourages prelodgement consultation which was undertaken with this proposal.</p>
<i>c) Community Consultation Committees</i>	<p>Not applicable to 'Regionally Significant Development'.</p>

<b>Clause 2.2 Who to consult</b>	
<i>(a) Consultation with Local Government</i>	Consultation was undertaken with Council prior to lodgement of the development application.
<i>(b) Consultation with State Government</i>	<p>Consultation was undertaken in accordance with the notification policy and included referrals to a range of external agencies and this advice has formed part of this assessment.</p> <p>This was undertaken prior to the draft guidelines being released.</p>
<i>(c) Consultation with the Commonwealth Government</i>	<p>Approval may be required under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) if it is likely to have a significant impact on threatened or migratory species.</p> <p>As mentioned previously, OEH requested a Species Impact Statement (SIS). This request was not considered necessary by the Council's Environmental Services Section.</p> <p>Consultation has also been undertaken with the Civil Aviation Safety Authority (CASA) and the Department of Defence.</p>
<b>Clause 2.3 Consultation approaches</b>	
<i>(a) Consultation tools</i>	Many of these consultation techniques have been used in the assessment process.
<i>(b) Community and stakeholder consultation plan</i>	A Community and Stakeholder Consultation Plan as detailed in the draft guidelines, has not been specifically undertaken for this project.
<b>Clause 3 - Meeting assessment requirements</b>	
<i>3.1 Matters for consideration</i>	These matters for consideration relate specifically to State Significant Development.
<i>3.2 Identifying relevant assessment issues</i>	Not applicable to this assessment.
<i>3.3 Conditions of consent and compliance</i>	This provides examples of conditions for State Significant Development (SSD).
<i>3.4 Community infrastructure contributions</i>	The proponent has offered to contribute to a community fund for Eden, as mentioned previously. This is likely to form part of a

	Voluntary Planning Agreement (VPA).  This is investigated in more detail under “Planning Agreement”.
<i>Appendix A: Meeting assessment requirements</i>	This applies to SSD and the preparation of an Environmental Impact Statement (EIS).
<i>Appendix B: NSW wind farm noise guidelines</i>	This has formed part of this assessment and information provided by the proponent as part of the SEE and Submissions Report.
<i>Appendix C: Guidelines for wind farm community consultative committees</i>	A community consultation committee is likely to be required as a condition of consent if the project is approved.
<i>Appendix D: Information to include in an EIS</i>	Not applicable to this assessment.
<i>Appendix E: Conditions of consent and compliance</i>	Whilst these conditions have been recommended for SSD it would be relevant to consider them in any approval of the proposed development application.
<i>Appendix F: Additional information and resources</i>	Noted as part of this assessment.

## **Conclusion**

**The project has been assessed in accordance with the relevant matters for consideration as they apply. The guidelines primarily relate to State Significant Development and were released after lodgement of this development application.**

***The impact of noise on Edrom Lodge has not been adequately addressed contrary to Clause 1.3 of the Draft NSW Planning Guidelines – Wind Farms.***

## **Draft Bega Valley Development Control Plan**

<b>Standard</b>	<b>Comment</b>
<b><i>Clause 2.5 - General Commercial and Industrial Development</i></b>	This Clause applies to industrial land as proposed within the BVLEP 2012. It relates to the traditional built environment, including elements of design, access, landscaping and energy efficiency.
<b><i>Clause 4 – Rural Development</i></b> <b><i>Clause 4.1 Rural Development Objectives</i></b>	The site has limited agricultural value and the use is not a traditional rural use.
<b><i>Clause 4.5 Rural Landscapes</i></b>	Tourism Australia has recognised the Bega Valley Shire’s landscapes as part of the National Landscapes Program being the coastline from Lakes Entrance to Bermagui.

	<p>The proponent has undertaken a landscape and visual assessment as part of the SEE and additional assessment has been undertaken by staff. The “wilderness coast landscape” does not preclude development with several townships being included.</p> <p>The site is already occupied by the Chipmill and the use involves the harnessing of wind energy.</p> <p>[Appendix A – Visual Assessment].</p>
<p><b>Clause 5 – General Development Controls</b></p>	<p>The impact on heritage has been detailed in the SEE and Submissions Report. A heritage assessment has been provided.</p> <p>As mentioned previously the Eden Local Aboriginal Land Council has objected to the proposed development. The site itself has not been identified as being significant, but it would be visible from heritage sites.</p>

## **Conclusion**

**The project involves the construction of a wind farm and would be visually prominent within the rural landscape and coastal setting. This impact has been assessed and it has been determined that this would not have a significant detrimental impact on the wilderness coast landscape.**

### **1(a)(iia) Planning Agreement**

The proponent has proposed to contribute towards an annual fund in the form of monetary contribution for local initiatives which would benefit the Eden Community as detailed under Section 3.7 of the Submissions Report.

These initiatives could include environmental initiatives, provision of local sporting facilities, support for local sports clubs or community groups or events, assistance with regional promotion, provision of playground equipment or any other local initiative which would benefit the Eden Community.

The proponent has suggested an annual figure of \$11,669, which equates to nearly a quarter of a million dollars over 20 years. This would begin in the first year of operation and be established in consultation with the local community and the Bega Valley Shire.

The proponent has not provided advice whether this would form part of a Voluntary Planning Agreement (VPA) however it is considered reasonable that a suitable condition of consent should be included in any consent, should the application be approved.

#### **1(a)(iv) Environmental Planning and Assessment Regulation 2000**

The project has been assessed and processed in accordance with the relevant sections of the Environmental Planning and Assessment Regulation 2000.

#### **1(a)(v) Any coastal zone management plan (within the meaning of the Coastal Protection Act 1979)**

The site is not located within a coastal zone management plan as identified under the Coastal Protection Act 1979.

#### **(b) The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality**

The principles of ESD arose out of the 1987 World Commission on Environment and Development report titled Our Common Future (the Brundtland Report). The report identified that the current patterns of economic growth could not be sustained without significant changes in attitudes and actions, and that lifestyles would need to be adopted that could sustain development within the planet's means.

Australia's response was to develop a National Strategy that was adopted by the three tiers of government in 1992 (i.e. Federal, State, and Local government).

ESD, according to the National Strategy, means using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained and the quality of life for both present and future generations is increased. Sustainable development in the National Strategy is embraced in four principles which are also expressed in Schedule 2, Clause 6 (Justification of Development).

These include:

- The Precautionary Principle
- Intergenerational Equity
- Conservation of Biological Diversity and Ecological Integrity
- Improved Valuation, Pricing and Incentive Mechanisms

The environmental consequences of the proposed wind farm have been assessed based on the advice of a range of specialists in different fields such as biodiversity and noise. The potential impacts have been identified and mitigation measures recommended where necessary to ensure that the potential impact is acceptable. This approach has been applied to the assessment of the potential environmental impacts.

The economic and social impact has been assessed in the SEE and Submissions Report. The project would have an economic benefit to the Eden community. The proponent has proposed to establish the "Eden Community Fund" to provide annual monetary contribution towards the township of Eden. The social impact has been harder to gauge with health concerns such as "Wind Farm Syndrome". The impact has been assessed by the World Health Organisation (WHO) and numerous studies undertaken on the health impacts of wind farms.

Studies have found that people could experience stress or irritation caused by the swishing sounds wind turbines produce, but that the symptoms are similar to those seen in the general population due to the stresses of daily life.

**(c) The suitability of the site for the development**

The site has been chosen by the proponent as it provides a strategic location for the capturing of wind energy within the Bega Valley Shire as measured in the NSW Wind Atlas.

[Appendix F – Wind Speed Mapping]

The suitability of the site has been assessed as part of the SEE and Submissions Report with assessments being undertaken to determine the impact of the development on such issues as visual amenity, biodiversity and noise.

***With reference to noise, an agreement has not been reached between the proponent and the owners of Edrom Lodge, Forests NSW to address the potential noise impact on Edrom Lodge. The proponent has not established the suitability of the site in terms of noise impact contrary to this Clause.***

**(d) Any submissions made in accordance with the Act or the regulations**

Public exhibition was undertaken in accordance with Council's Notification Policy from the 29 September 2011 until the 28 October 2011.

A notice was sent to adjacent and adjoining owners within a 2km radius of the site, an advertisement was placed in the local media and a copy placed at the Eden Library , Bega Council Offices and website.

Additional information has been requested throughout the assessment process as detailed in Appendix B.

[Appendix B – Chronology of Assessment]

## 6.0 PUBLIC SUBMISSIONS

A number of submissions were received during the exhibition period, with the majority objecting to the proposal. Of the 113 submissions there were 95 raising objection to the proposal and 18 who expressed support for the proposal. A public briefing meeting was also held on the 2 February 2012.

The following is a summary of the issues raised;

**Table 2 – Issues raised in the submissions**

<b>Category</b>	<b>Number of times mentioned</b>
<i>Landscape and visual amenity</i>	<b>69</b>
<i>Noise impact</i>	<b>38</b>
<i>Biodiversity</i>	<b>21</b>
<i>Heritage</i>	<b>15</b>
<i>Health and safety</i>	<b>23</b>
<i>Tourism and the wilderness coast</i>	<b>65</b>
<i>Legislation</i>	<b>7</b>
<i>Blade glint</i>	<b>6</b>
<i>Light and shadow flicker</i>	<b>9</b>
<i>Existing infrastructure</i>	<b>6</b>
<i>Port facilities and defence operations</i>	<b>4</b>
<i>Renewable energy</i>	<b>19</b>
<i>Precedent</i>	<b>3</b>
<i>Property Values</i>	<b>31</b>
<i>Consultation</i>	<b>10</b>

[APPENDIX C – SUMMARY OF SUBMISSIONS]

### LANDSCAPE AND VISUAL AMENITY

The visual impact of the wind farm from private and public places within the township of Eden and surrounding areas has been a primary concern. Particularly, the view from the public vantage points, Twofold Bay, National Parks areas and places of heritage significance.

## **Comment:**

The majority of submissions against the wind farm have raised concern about the visual impact of the development.

- **Landscape and Visual Impact Assessment**

This assessment was lodged with the application under Section 7.1 and Appendix 1 of the SEE. This assessment was undertaken by Green Bean Design and based on the following guidance;

- Wind Farms and Landscape Values National Assessment Framework, June 2007.
- National Wind Farm Development Guidelines.
- The New Zealand Institute of Landscape Architects Best Practice Guide.

The methodology included;

- A desktop study.
- Identification of view locations.
- Fieldwork and photography.
- Identification of zone of visual influence.
- Assessment of landscape sensitivity.
- Visual impact assessment.
- Preparation of photomontages and illustrative figures.

The study has taken into account the period of view and level of visibility with the impact being given a rating from low to high. Photos have been taken from various locations within and around Twofold Bay with photomontages being submitted with the proposed development application. The photomontage locations included;

- The town of Eden.
- Imlay Street.
- Eagles Claw Lookout.
- Cocora Street and Beach.
- Aslings Beach.
- Leggles Beach.
- Breirly Point.

## Conclusion

The landscape and visual impact assessment concluded that the wind farm would have an overall low visual impact on the majority of public and residential view locations surrounding the wind farm site.

This conclusion was based on the following;

- The existing industrial nature of the site.
- The number of residential view locations.
- Existing vegetation, screening
- Low visual impact from public vantage points due to topography and vegetation.
- Not visible from the majority of local roads including the Princes Highway.
- Construction works would have a minimal impact.
- The electrical works including substation and transmission lines are unlikely to result in a significant visual impact from residential and public vantage points.
- It would not have a direct, indirect or sequential cumulative impact when considered against other wind farms in NSW.

- Night time obstacle lighting would have the potential to be visible from surrounding view locations if required.
- Mitigating measures have been recommended.

### Mitigation

<b>Safeguard</b>	<b>Implementation</b>
<i>Consider options for use of colour to reduce visual contrast between turbine structures and background, eg use off white rather than white, and use matt finish to avoid reflected sunlight.</i>	<ul style="list-style-type: none"> <li>• Design</li> </ul>
<i>Avoid use of advertising, signs or logos mounted on turbine structures, except those required for safety purposes.</i>	<ul style="list-style-type: none"> <li>• Construction</li> <li>• Operation</li> </ul>
<i>If necessary, design and construct site control building and facilities building sympathetically with nature of locality.</i>	<ul style="list-style-type: none"> <li>• Design</li> <li>• Construction</li> </ul>
<i>If necessary, locate substations away from direct views from roads and residences to minimise additional line needed, and to 'blend in' with existing transmission infrastructure.</i>	<ul style="list-style-type: none"> <li>• Design</li> <li>• Construction</li> </ul>
<i>Enforce safeguards to control and minimise fugitive dust emissions.</i>	<ul style="list-style-type: none"> <li>• Site preparation</li> <li>• Construction</li> </ul>
<i>Restrict the height of stockpiles to minimise visibility from outside the site.</i>	<ul style="list-style-type: none"> <li>• Site preparation</li> <li>• Construction</li> </ul>
<i>Minimise activities that may require night time lighting, and if necessary use low lux (intensity) lighting designed to be mounted with the light projecting inwards to the site to minimise glare at night.</i>	<ul style="list-style-type: none"> <li>• Construction</li> <li>• Operation</li> </ul>
<i>Minimise cut and fill for site tracks and revegetate disturbed soils as soon as possible after construction.</i>	<ul style="list-style-type: none"> <li>• Site preparation</li> <li>• Construction</li> </ul>
<i>Maximise revegetation of disturbed areas to ensure effective cover is achieved.</i>	<ul style="list-style-type: none"> <li>• Operation</li> </ul>
<i>Consider options for planting screening vegetation in vicinity of nearby residences and along roadside to screen potential views of turbines. Such works to be considered in consultation with local residents and authorities.</i>	<ul style="list-style-type: none"> <li>• Design</li> <li>• Site preparation</li> </ul>

*Undertake revegetation and off-set planting at areas around the site in consultation and agreement with landholders.*

- Design
- Site preparation
- Construction

- **The Submissions Report**

A number of concerns were raised during the exhibition period and conveyed to the proponent. Additional assessment was provided in the Submissions Report. Concerns were raised about the visual impact from Boyds Tower, Greencape Lighthouse and Edrom Lodge.

#### Boyds Tower and Greencape Lighthouse

The walkway around Boyds Tower is surrounded by tall trees that would block the view of the wind turbines and Green Cape Lighthouse is over 20km from the site.

#### Edrom Lodge

The applicant has suggested that a photomontage from Edrom Lodge is not technically possible due to the proximity of the house to the wind farm. Additional cross sections were provided as Attachment 2. This assessment concludes that the view from Edrom Lodge is oriented towards Twofold Bay and the north-west and that only the top sections of the turbines would be visible above the trees.

- **Visual Assessment**

The submissions questioned the accuracy of the photomontages and subsequent field work has been undertaken by Council staff to assess the view impact from various locations around and within Twofold Bay. This assessment has been undertaken to assess the information provided by the proponent and concerns raised as a result of notification.

This methodology is based on the framework identified within the draft NSW Planning Guidelines Wind Farms.

The proposed turbines would be visible from both private and public areas of Eden and the surrounding catchment of Twofold Bay. After visiting a number of sites it is evident that the visual impact is influenced by a number of factors such as distance, topography, vegetation and the sensitivity of the receiver. The site is located on a prominent headland on the southern shores of Twofold Bay with the existing Chip Mill providing a visual reference for the proposed location.

The visual assessment concludes that the proposed wind farm would be visible from both public and private locations. While the impact is governed by a range of geographic factors, the impact is largely dependent on the sensitivity of the receiver i.e. whether that individual likes the look of a wind turbine. In this respect the visual impact is subjective. For those who do not like the view of a wind farm, the view impact will never be defined as 'low', while others may enjoy the view of a wind turbine and what it represents.

The mitigation measures for those who object to the appearance of the proposed wind farm would not satisfy these concerns. For instance, the screening of the wind farm from individual residences is unlikely to be supported as it would compromise the existing view.

The proposed wind farm involves the construction of 7 wind turbines with a height of 135m to the tip of the blades. It is evident that the project would be visible from both public and private spaces to varying degrees due to a range of geographic factors including distance, topography and vegetation.

### **Conclusion**

**The proposed wind farm would be confined to a relatively small building envelope where the Chipmill already exists. The project involves the harnessing of renewable energy which is more in keeping with the natural landscape when compared with less environmentally friendly forms of power generation.**

**In this context, the fact that the proposed turbines would be seen is not in itself a fact that should preclude the development being considered or refused on this basis.**

[Appendix A – Visual Assessment]

### **NOISE IMPACT**

**The impact of noise has been raised as an issue by residents. Concern was raised about the impact of audible and non-audible noise with reference to its duration within the context of surrounding land uses, Twofold Bay and natural land sources.**

#### **Comment:**

The proponent has undertaken an assessment of the noise impact in Section 7.2 of the Statement of Environmental Effects and Appendix 2 – Noise Assessment.

- **Noise Assessment**

This assessment was undertaken in accordance with the Wind Farms Environmental Noise Guidelines, South Australian Environmental Protection Authority, 2009 (SA EPA Guidelines). The SA Guidelines specify the following noise criteria for new wind farms;

The predicted equivalent noise level ( $L_{Aeq}$ ) adjusted for tonally in accordance with these guidelines should not exceed:

**35dB(A); or  
The background noise ( $L_{A90}$ ) by more than 5 dB(A)**

Whichever is the greater at all relevant receivers for each integer wind speed from the cut-in to rated power of the wind turbine generator.

The SA EPA Guidelines require that background noise measurements be carried out on surrounding sensitive receivers likely to be impacted by noise from the proposed wind turbines. The EPA interprets the sensitive receiver as an existing dwelling or premise, or a site where a dwelling or premise has received an approval (i.e. consent) to be built. Generally, a valid measurement position is within 20 metres of the dwelling (or at a site where a development approval has been granted for the dwelling), in the direction of the proposed wind farm, and at least 5 metres from any reflecting surface.

The SA Guidelines state that:

Background noise is measured at relevant receiver locations over continuous 10-minute intervals and particularly over the range of wind speeds at which the WTGs operate. The

data must adequately represent conditions at the site and cover approximately 2,000 intervals.

Two potentially affected receiver locations have been identified for this assessment, Edrom Lodge and SEFE (South East Fibre Exports). Edrom Lodge is located approximately 530m from the nearest turbine and the SEFE receiver is located approximately 200m from the nearest turbine. The SEFE receiver is used occasionally by staff at the Chipmill, while Edrom Lodge is occupied throughout the year. The cumulative impact of noise has been assessed as follows;

Receiver	Chipmill	Wind farm	Total Noise	Change
<b>Edrom Lodge</b>	50	41	50.5	+0.5
<b>SEFE</b>	51	47	52.5	+1.5

*Maximum predicted noise levels ( $L_{aeq}$  dBA)*

### Conclusion

For both identified noise sensitive receivers, noise from the turbines complies with the South Australian EPA Guidelines and WHO (World Health Organisation) noise limits, provided that the closest turbine, EDN04, is running in Sound Management Mode. This involves an adjustment of the turbine to low noise mode in certain weather conditions.

### Mitigation

The following mitigation measures have been suggested;

#### Operation of the wind farm

- Adjustment of the turbine locations.
- Operating specific turbines in low-noise mode under particular conditions.
- Providing acoustic treatment to affected residences (if required and on agreement with the landowner).
- Entering into an appropriate noise agreement with the affected landowner.

#### Site Management

- Select and locate centralised site activities and material stores as far from noise-sensitive receivers as possible
- Care should be taken not to drop materials such as rock, to cause peak noise events, including materials from a height into a truck. Site personnel should be directed as part of an off-site training regime to place material rather than drop it
- Plant known to emit noise strongly in one direction, such as the exhaust outlet of an attenuated generator set, shall be oriented so that the noise is directed away from noise sensitive areas if practical.
- Machines that are used intermittently shall be shut down in the intervening periods between works or throttled down to a minimum.

#### Equipment and Vehicle Management

- Ensure equipment is well maintained and fitted with adequately maintained silencers which meet the design specifications. This inspection should be part of a monitoring regime.

- Ensure silencers and enclosures are intact, rotating parts are balanced, loose bolts are tightened, frictional noise is reduced through lubrication and cutting noise reduced by keeping equipment sharp.
- **The Submissions Report**

Additional information was provided to address the matters raised in the submissions and by the EPA about background noise, whale migration and different weighed noise.

#### Whale migration

The proponent does not expect land based turbines would have an impact on whales migrating near Twofold Bay. The Submissions Report states as follows;

Concern about wind turbines affecting whale migration is usually related to offshore wind turbines and the related increase in boat traffic.

#### Background noise

The Submissions Report has stated that;

Background noise from waves and from the operational Chipmill is likely to be more significant than any noise from the wind turbines. Atmospheric stability has been assessed and would not affect the predicted noise levels.

#### A Weighted and C Weighted noise

Wind turbines are not a significant source of low frequency noise. The following quote is from a report into low frequency noise by the British Wind Energy Association (British Wind Energy Association, 2005).

It has been repeatedly shown by measurements of wind turbine noise undertaken in the UK, Denmark, Germany and the USA over the past decade, and accepted by experienced noise professionals, that the levels of infrasonic noise vibration radiated from modern, upwind configuration wind turbines are at a very low level; so low that they lie below the threshold of perception, even for those people who are particularly sensitive to such noise, and even on an actual wind turbine site.

The Submissions Report was referred externally to the Environment Protection Authority (EPA) and internally to Council's Environmental Services Section. Advice has been received that further monitoring is required to determine the impact on Edrom Lodge or a formal agreement would need to be reached with the owners to accept a higher level of noise impact..

[Appendix D – Referral Responses]

#### **Conclusion**

***The applicant has not undertaken further monitoring or reached a formal agreement with the owners of Edrom Lodge. The project would therefore have a detrimental impact on the Edrom Lodge in terms of noise generation.***

#### **BIODIVERSITY**

**The wind farm will cause a threat to whales, birds and other wildlife. Blade strikes are inevitable. Concern has been raised about the studies undertaken by Epuron as they do not take into account seasonal changes and local weather conditions.**

## **Comment:**

An assessment of biodiversity has been undertaken under Section 7.3 of the SEE and Appendix 3.

- **Biodiversity Assessment**

The proponent engaged an environmental professional who prepared this biodiversity assessment based on a risk assessment methodology. The report evaluates the likelihood that a significant impact may result on any species, population or ecological community listed under the following legislation;

- Commonwealth Environmental Protection and Biodiversity Conservation Act 1999
- Threatened Species Conservation Act 1995.

An assessment has been made of flora, fauna and ecological communities through extensive fieldwork, and desktop assessment to identify species and communities of conservation significance which may be present in the study area.

Existing studies and guidelines have been used to inform this assessment including;

- Threatened Species search tool.
- The Atlas of Living Australia Database.
- Atlas of NSW Wildlife.
- State Forests database.

## Conclusion

This assessment concludes that the site is highly disturbed, but the geographic location on an elevated coastal headland of a large bay with considerable tracts of surrounding forest increases the risk of biodiversity impacts.

Assessments of significance concluded that there is the possibility of impacts to several threatened species including;

- The Powerful Owl.
- Masked Owl.
- Little Eagle.
- Square Tailed Kite.
- Eastern Bent-Wing Bat.

The level of impact is not expected to be significant for any other these species.

An assessment of the White Bellied Sea-Eagle has determined that there is unlikely to be an impact to an ecologically significant proportion of the population.

For several Threatened Species the consequence of any collision would be high and therefore additional mitigation has been proposed for the following;

- Hooded Plover.
- Orange Bellied Parrot.
- Pied Oystercatcher.
- Little Tern.

## Mitigation measures

The following mitigation measures have been recommended;

- Ensuring infrastructure design does not encourage fauna to the site (perching opportunities, lighting that attracts prey species).
- Micrositing of infrastructure to habitat features onsite.
- Implementing construction management protocols to manage excavation and clearing activities.
- Monitoring and adaptive management of blade strike to address the inherent uncertainty related to operational impacts.
- An environmental management plan for decommissioning.

The OEH (Office of Environment and Heritage) and the public raised a number of concerns which were conveyed to the proponent who has provided additional information but does not believe that a Species Impact Statement is necessary as requested by the OEH.

The need for a Species Impact Statement (SIS) has been reviewed internally by Council's Environmental Services Section who have advised that this assessment is not required.

[Appendix D – Referral Responses]

### **Conclusion**

**The impact on biodiversity has been assessed and the project can be considered subject to the mitigation measures being implemented, conditions being placed on any approval and ongoing monitoring of the facility is undertaken.**

### **HERITAGE**

**The impact on European and Indigenous heritage has been raised as an issue, and more specifically the impact on Bilgalera, the Bundian Way, Edrom Lodge and Boyd's Tower.**

#### **Comment:**

The proponent has provided an assessment of Indigenous Cultural Heritage under Section 7.4 of the SEE and Appendix 4 and provided additional assessment of the overall heritage impact within the Submissions Report.

The project has been undertaken in accordance with the NSW Office of Environment and Heritage – Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW - 2010. The 5 steps of this process are;

- To assess whether or not the activity would disturb the ground surface or any culturally modified trees
- To assess the landscape and search the Aboriginal Heritage Information Management System to identify any objects.
- To determine the potential harm to an Aboriginal object or disturbance of a landscape feature can be avoided.
- To conduct a desktop assessment to examine and collate readily available information and to carry out a visual inspection.
- If the desktop assessment or visual inspection indicates that there are Aboriginal objects, a detailed investigation and Aboriginal Heritage Impact Permit application must be made (AHIP).

An assessment was undertaken by New South Archaeological Pty Ltd. The AHIMS search found ten previously recorded objects within the search area.

(East Boyd 8 – AHIMS Site ID 63-3-0219) is located within the area of the proposed activity.

## Mitigation

Following preliminary advice provided to Epuron in respect of the location of the East Boyd 8 Aboriginal object site, Epuron has decided to avoid harming the site. The section of track on which this site is located is now situated outside the object area.

## Conclusion

The section of the proposed track would be now be located outside the area of the 10 identified objects.

The Due Diligence Code of Practice (NSW DECCW 2010) – Step 4 indicates that where the desktop or visual assessment does not indicate that there are (or are likely to be) Aboriginal objects, the proponent can proceed with caution without an AHIP application.

- **Submissions Report**

The Eden Local Aboriginal Land Council (ELALC) was notified in accordance with the Bega Valley Memorandum of Understanding (MOU) and objected to the proposal and no further comment has been received.

[Appendix D – Referral Responses]

Consultation has been undertaken with the Office of Environment and Heritage (OEH) – Heritage Branch who support the proposal subject to the mitigation measures being implemented. The site itself is highly disturbed and has limited heritage value. It is however, located within proximity of a number of heritage items.

The objection by the ELALC relates to visual amenity, noise and biodiversity. These matters have already been discussed in this report. The wind turbines would be located between 670m to 1.2km from Fisheries Beach. The wind turbines would be visible from this location. Edrom Lodge would be the closest of the heritage items and the wind turbines would be visible from this location as discussed previously. The impact of noise on Edrom Lodge does however remain unresolved.

## Conclusion

**It is not considered that being able to see the wind turbines from some of the nearby heritage items would compromise their integrity. The noise impact on Edrom Lodge does however remain unresolved and is considered unacceptable.**

## **HEALTH AND SAFETY**

**Concerns have been raised about the potential health issues associated with wind farms, including low frequency waves and Wind Farm Syndrome. The location within an active site has also been raised as an issue in terms of occupational health and safety and risk in the event of turbine failure.**

### **Comment:**

The impact on health and safety has been considered in Section 8.5.1 of the SEE and Section 3.3 of the Submissions Report.

A recent Australian report by the 'National Health and Medical Research Council' concluded that 'there is currently no published scientific evidence to positively link wind turbines with adverse health effects.

#### Wind Turbine Syndrome

Wind Farm Syndrome is a term and book created by Nina Pierpont. Relevant documents were obtained from the NSW Government. In these documents NSW Health stated that

published in peer-reviewed literature. The findings are not scientifically valid, with major methodological flaws stemming from the poor design of the study.

#### Occupational Health and Safety

The submissions report has provided additional information about the rare occurrence of turbine failure and the mitigation measures. Examples have been provided of other turbines above active work sites in the United Kingdom.

#### Mitigation

- Turbine cut out in extreme weather conditions.
- Multiple redundancy braking system
- Individual feathering of turbine blades
- Closed oil systems
- Oil particulate measuring
- Grid isolating protection
- Routine maintenance
- Monitoring of the turbines 24/7
- Shut down of the system in an emergency

No scientific link has been established between wind turbines and adverse health effects. This does not discount the fact that some people feel affected by their presence. The wind farm, like any activity, workplace or even home has inherent risks that need to be managed with appropriate risk management and health and safety measures.

#### Conclusion

**There is no established link between wind turbines and human health and the minor chance of turbine failure can be further reduced through new technology and appropriate risk management.**

## **TOURISM AND THE WILDERNESS COAST**

Some of the responses have suggested that the facility would become a tourist attraction and bring people into the Shire. It is also suggested that the wind farm will have a detrimental impact on tourism in the area.

The site is not considered suitable due to its proximity to reserves and wilderness areas containing an abundance of flora and fauna species. Ben Boyd National Park is a State priority area for nature tourism. The proposed towers would be very close to Boyds Tower, Fisheries Beach, Edrom House and Davidson Whaling Station and impact on the tourism plans for the "Light to Light Walk", Greencape and Fisheries Beach. The towers would have a detrimental impact on the setting of these significant landmarks.

**The area is being marketed as the wilderness coast as part of tourism campaigns and recently published documents. The construction of a wind farm would be counterproductive to this new growing tourism market.**

**Comment:**

Section 8.4 of the SEE and Section 3.5 of the Submissions Report has investigated the impact on tourism.

- **Submissions Report**

The proponent has provided an assessment under Section 3.5 of the submissions report stating that the proposed facility would provide an opportunity to increase the regional tourism industry, which is currently a main contributor to the economy. The proponent has advised that;

The southernmost wind turbine in particular would be an excellent location for tourist information and parking. The wind farm could be utilised as an additional attraction to secure visitors to the local township. The Eden area could become a unique locality on the NSW south coast where the local people with a history of primary industry are embracing renewable energy and tourism for the future of their economy. This may entice tourists who visit the Bega area to visit Twofold Bay.

Examples have been provided of wind farms in NSW, Victoria and Western Australia where wind farms have had a positive impact on tourism.

The impact on tourism is difficult to quantify as it could have both a positive and negative impact on the choice of visitors to visit the area. A visual assessment has been made of the project from the surrounding landscape and the objectives of the wilderness coast have been taken into consideration.

The site is already significantly disturbed and it is not considered that the juxtaposition of the turbines and the surrounding landscape would significantly compromise the objectives of the wilderness coast brand.

**Conclusion**

**There is limited evidence to suggest that wind farms can have a positive impact on tourism, however it is not considered that the turbines would compromise the integrity of the wilderness coast brand.**

**LEGISLATION**

**The proposed development is contrary to the building and height restrictions for coastal development. The development is contrary to the draft wind farm guidelines for New South Wales. Wind Farms have been banned from locating near significant landscapes and tourist icons in Victoria (prohibited near the Great Ocean Road). Twofold Bay is just as important to NSW as the Great Ocean Road is to Victoria.**

**Comment:**

The proponent lodged the application with a SEE and provided additional comment about the Draft NSW Planning Guidelines – Wind Farms as part of the Submissions Report. The proposed development is exempt under the BVLEP 2002 and can be considered.

An assessment has been undertaken of the Draft NSW Planning Guidelines – Wind Farms as detailed previously in this report. This project was lodged prior to the exhibition of these guidelines. Nevertheless, the proponent has provided information that is commensurate with these requirements as they apply to Regionally Significant Development.

### **Conclusion**

**The project has been assessed in accordance with the relevant legislation and is permissible.**

- **Social and Economic Impact**

The social impact of wind farms has been raised as an issue. Reference was made to the Senate (Parliament of Australia) May 2011 which called for submissions about social and economic impact.

Some of the responses mention the positive impact that the project will have directly and indirectly on employment in Eden. The majority of the responses raised concern that the proposal would make little contribution to the local economy. The value of wind generation has been questioned with specific reference to the expense of construction, operation and the need for the base generation of power. The wind farm would be too small to produce sufficient renewable energy.

### **Comment:**

Section 8.4 of the Statement of Environmental Effects (SEE) has stated that the project would provide temporary employment opportunities during construction and decommissioning of the facility.

While it is hard to predict the exact amount of investment that will be injected into the local economy, there is an opportunity for local contracting and manufacturing services to be utilised during the site development and other service related employment would follow.

The proponent has stated that the project would have a positive economic impact for the south-east region of Australia as stated in the CSIRO document 'Acceptance of Rural Farms in Australia'. There is stronger community support for the development of wind farms than might be otherwise assumed from media coverage.

The document prepared by OEH – 'Wind Energy in NSW – Myths and Facts' states that wind farms demonstrably create jobs and attract significant income into local communities through;

- Income to landowners and host turbines.
- Direct jobs in comparison with other energy generating sources.
- Community Enhancement Programs.
- Economic 'multiplier' or 'flow on' effects.

The concern about the lack of community benefit has however been raised with the proponent who has proposed to contribute to the local community as part of the Eden Community Fund as detailed previously in this report.

### **Conclusion**

**The social and economic impact has been assessed and the proposed development would contribute to the local community of Eden.**

## **BLADE GLINT**

The impact of blade glint has been raised as an issue. The sun would be reflected off wet moving blades in the mornings and when the turbines are lit up by the Chip Mill lighting. The sea mist and local atmospheric conditions would cause heavy moisture condensation on all metallic and similar hard surfaces from sunset to midmorning at all times of the year.

### **Comment:**

The proponent has assessed this impact under Section 8.5.2 of the SEE and Section 3.3 of the Submissions Report. Blade glint occurs when sunlight is reflected off turbine blades. The concern is that this may affect some motorists or cause annoyance to residences.

### Mitigation

Turbine manufacturers have acknowledged the possibility of blade glint and use a low reflectivity gel finish to reduce any reflectivity. The turbines proposed for this project would be finished in a matte, non-reflective finish to ensure blade glint impacts do not occur.

### Conclusion

<p><b>The mitigating measures should adequately reduce the potential for blade glint from the proposed turbines.</b></p>
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## **LIGHT AND SHADOW FLICKER**

Concern has been raised about light flicker at low sun angles. The sun would appear to rise from behind the wind turbines and giant moving shadows would be cast over the landscape and private property.

### **Comment:**

The impact of shadow flicker has been detailed under Section 8.5.2 of the SEE. Due to their height, wind turbines do have the potential to cast shadows. When viewed from stationary position, when the turbine is between the viewer and the sun, the moving shadows appear as a flicker giving rise to the phenomenon of 'shadow flicker'.

Two issues have been raised in relation to shadow flicker;

- Flicker Vertigo – Is an imbalance in brain cell activity caused by exposure to low frequency of flashing of a light or sunlight seen through a rotating propeller. It is associated with a light flashing sequence, or flicker frequency between 4 hertz and 20 hertz.
- Photosensitive Epilepsia – Flicker from turbines that interrupt or reflect sunlight at frequencies greater than 3 Hz poses a potential risk of inducing photosensitive seizures.

The flicker frequency of the proposed wind turbines have been rated 0.45 to 0.95 Hz with a frequency of 1 Hz. This is below the range that would pose a health risk.

### Mitigation

If shadow flicker is found to be a nuisance at a particular residence, conditions would be pre-programmed into the control system so that wind turbines automatically shut down whenever these conditions are present.

### Conclusion

**The mitigating measures should adequately reduce the potential for light and shadow flicker from the proposed turbines.**

## **EXISTING INFRASTRUCTURE**

The proposed site is already occupied by a Chip Mill and this is mentioned as a positive aspect of the proposal. The land is already industrial and the infrastructure is in place to cope with the additional energy load with a good road network and access to wharf facilities.

### **Comment:**

The site consists of an industrial site where the majority of the infrastructure including the existing substation is already in place. Additional work would be required in the form of access tracks, underground cabling and may require the installation of an operations and maintenance facility.

### Conclusion

**The site is a practical location for a wind farm as it has the inherent wind and the existing infrastructure to support the use.**

## **PORT FACILITIES AND DEFENCE OPERATIONS**

There are very little sites around Twofold Bay for future use as the port is developed. The Chip Mill site is one of them. The future expansion of naval operations could be compromised by the proposed wind farm. The turbines would have an impact on radiowaves, communication systems for defence operations, commercial and private vessels.

### **Comment:**

This has been detailed under Section 4.2 and 4.5 of the Submissions Report. Wind turbines can have an impact on electromagnetic (or radio-communication) signals. Advice has been received from Maritime NSW and the Department of Defence. Risks that wind farms will cause Electromagnetic interference can be managed through appropriate location and design of turbines.

### Mitigation

- The Department of Defence has requested the proponent provide notification of all turbines and wind monitoring mast locations and heights to the RAAF Aeronautical Information Services once design has been finalised and again when construction has been complete.

## **Conclusion**

**The proposed development was referred to the relevant agencies and the impact on port and defence operations considered to be acceptable.**

## **RENEWABLE ENERGY**

The creation of renewable energy has been raised as a positive. The project involves harnessing renewable energy and will reduce the dependence on fossil fuels and Carbon Dioxide. It will contribute towards local, state and federal renewable energy targets and the Bega Valley Shire commitment of achieving 50:50 by 20:20.

### **Comment:**

The strategic justification for the proposal is the growing electricity demand and the reduction in greenhouse gas (GHG) emissions through clean energy sources. The project has the potential to generate 32,000 MWh of renewable energy which is the equivalent of 4,200 households. It is estimated that the project would reduce Carbon Dioxide emissions by approximately 250,000 tonnes per year.

Under all but extraordinary circumstance, every unit of wind power sent into the electricity grid will reduce greenhouse gas emissions to meet any given level of market demand.

## **Conclusion**

**The proposed use involves the generation of renewable energy through the use of wind to meet the growing demand for electricity from clean energy sources.**

## **PRECEDENT**

Concern has been raised that the wind farm would set a precedent for the development of wind farms between Eden and Bermagui. The precedent set by the proposed wind farm would have serious implications for the economy and the inherent landscape values.

### **Comment:**

The location of any wind farm requires a reliable wind source. The site at Eden provides an adequate wind supply and existing infrastructure. The potential for any other wind farms on the south coast is limited by statutory requirements and the inherent wind source.

## **Conclusion**

**The proposed wind farm is being assessed in accordance with the relevant statutory framework and any future wind farm would be considered on its merit.**

## **PROPERTY VALUES**

The impact on property values has been raised as an issue. Reference has been made to an example in Canada where property values fell by 30% to 35%.

### **Comment:**

The proponent has provided an assessment under Section 3.4 of the Submissions Report. The most comprehensive Australian study of land values found no impacts on rural and township properties and no clear relationship for lifestyle properties.

The NSW Valuer General Commissioned a study in 2009, which is the most comprehensive study that has been undertaken to date on the relationship between wind farms and property values in Australia.

The key findings of the study are as follows;

- No negative impacts on property values were found for either rural or township properties.
- Lower sale prices than expected were found for four of the 13 lifestyle properties, but as they were located next to lifestyle properties with no observed impacts on sale prices, it was unclear if the wind farm had an impact.
- In total, just 5 out of 45 properties studied may have been negatively impacted (i.e. lower sale prices than expected). However, as other nearby property sales prices were not affected, further work is required to determine this was due to the presence of a wind farm or other factors.

The impact on property values is difficult to quantify due to a range of factors that influence property value.

### **Conclusion**

**There is currently no statistical evidence to suggest that wind farms have an impact on property value.**

## **CONSULTATION**

**The correspondence raised concern about the lack of public consultation with the local community regarding the impact of the turbines on the local community.**

### **Comment:**

Consultation was undertaken by the proponent with Council, the community and relevant agencies prior to lodgement. The project was notified in accordance with DCP 3 – Public Notification Policy. The exhibition period was extended and notification captured properties within 2km of the site. Additional notification was also sent to properties outside of this radius and submissions were accepted over 2 months from the cut off date. A public meeting was also held with the community and the JRPP on the 2 February 2012.

### **Conclusion**

**Consultation has been undertaken in accordance with statutory requirements for notification of regionally significant development.**

## 7.0 CONCLUSION

The project involves the establishment of a wind farm at Eden.

The development would involve the construction of 7 turbines with a height of 135m to the tip of the blades. The site would be located on the existing Chipmill site which is located approximately 5 kilometres to the south east of Eden.

The proposed wind farm would involve the generation of renewable energy to meet the growing demand for electricity from clean energy sources with the Commonwealth 20% renewable energy target to be achieved by 2020. The project would have the ability to produce renewable energy for the average consumption of 4,200 homes and reduce the amount of Carbon Dioxide (CO<sub>2</sub>) emissions by approximately 250,000 tonnes per year. The wind farm would have an installed capacity in the order of 14 MW (based on a typical 2MW turbine).

The project is defined as 'electricity generating works' and has a capital investment value of above 5 million dollars. The wind farm is therefore assessed by the Bega Valley Shire Council (BVSC) and presented to the Southern Region Joint Regional Planning Panel (SRJRPP) as the consent authority.

The development application has been assessed in accordance with the Environmental Planning and Assessment Act 1979 (EP&A Act 1979) and relevant legislation.

There were 113 submissions which included 95 letters against and 18 in favour of the development application. Referrals were sent to a range of external agencies and staff internally for comment. Objections were received from the Eden Local Aboriginal Land Council (ELALC) and the Office of Environment and Heritage (OEH). These concerns have been investigated and measures identified to reduce the potential impact.

The following issues have been investigated and can be addressed with appropriate mitigation, management and ongoing monitoring;

- Biodiversity
- Heritage
- Health and safety
- Blade glint
- Light and shadow flicker
- Existing infrastructure
- Port facilities and defence operations

The majority of the submissions raised concern with the impact of the proposal on the landscape and visual amenity of the area. These concerns have been investigated by the proponent and an analysis provided to assess the impact. A visual assessment has also been undertaken by staff to determine the impact on the landscape and visual amenity of private and public places within Eden, Twofold Bay and the surrounding area.

This assessment has concluded that the proposed wind turbines would be visible from private and public spaces. The visibility of the turbines is primarily dictated by vegetation, topography and distance from the proposed development site. While the turbines are likely to be highly visible from some locations, the actual impact relates more to the sensitivity of the receiver.

In this instance the proposed development site is proposed to be located on a site that is already industrial in nature and the project would be contained within a relatively small building envelope within a heavily disturbed area. The scale of the wind farm is also relatively

small within the context of other wind farms that have been approved or are currently under consideration within NSW.

[Appendix E – Location of Wind Farms in NSW]

The site is surrounded by a natural landscape but involves the harnessing of wind energy for renewable energy. The site has been selected because of this natural element. The project therefore has a relationship with the coastal setting. Although the wind turbines would be visible from both public and private spaces, it is not considered that being able to see the turbines should preclude them from being approved subject to mitigating measures being put in place.

The impact of noise has been assessed by the proponent. The EPA has reviewed this assessment and concluded that further monitoring is required or an agreement will need to be reached with the owners of the nearby property at Edrom Lodge.

Council's Environmental Services Section recommended that the proponent either undertake additional monitoring or enter into a private negotiated agreement as suggested by the EPA.

The owners of Edrom Lodge, Forests NSW have not agreed to a private negotiated agreement regarding the noise generation of the wind farm and requested that additional monitoring be undertaken in line with the advice of the EPA. The proponent has not established the suitability of the site in terms of noise generation or adequately addressed the potential impact on Edrom Lodge.

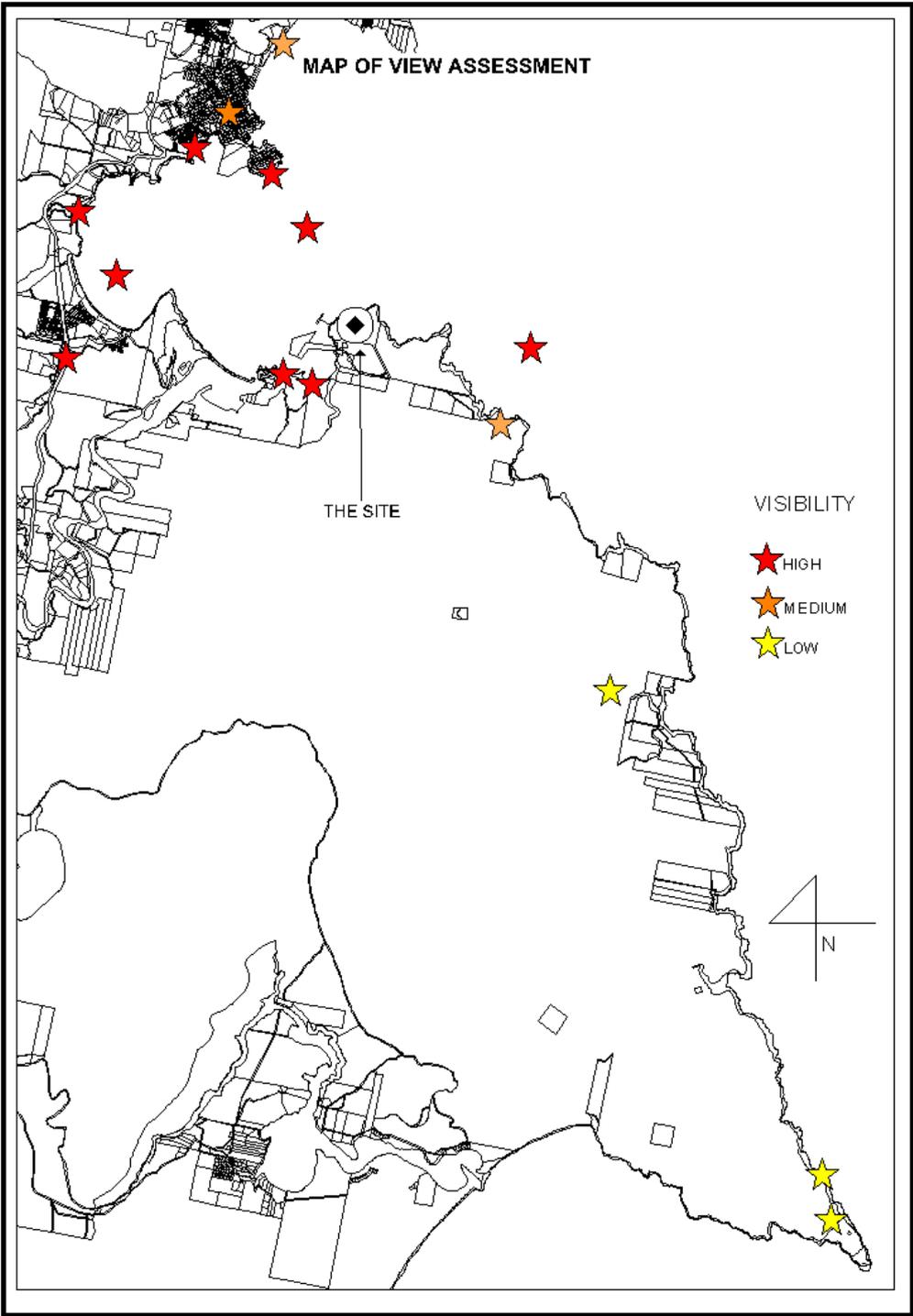
The development application is therefore recommended for refusal.

## **8.0 RECOMMENDATION**

1. That Development Application 2011.362 for the erection of an Electricity Generating Works comprising 7 wind turbines at Lot 11, 16 and 17 DP 1066187, Edrom Road, Edrom via Eden be refused for the following reasons;
  - a. The proposed development would have an unacceptable noise impact on an adjoining sensitive receptor, being Edrom Lodge, based on the requirements of the NSW Industrial Noise Policy.
  - b. For the purpose of Section 79C(1)(c) of the Environmental Planning and Assessment Act 1979 (as amended), the application fails to demonstrate that the development site is suitable for the intended use, in terms of impact on the amenity and heritage setting of the adjoining property, Edrom Lodge.
  - c. The development would be contrary to Clause 56(b) and (f) of the Bega Valley Local Environmental Plan 2002 in terms of conserving the heritage significance and setting of an adjoining heritage item.

**APPENDIX A – VISUAL ASSESSMENT**

An assessment has been made of the potential impact of the turbines on the landscape from areas within and around Eden. It has been determined that the wind turbines would be visible from a range of locations. This visibility is influenced by vegetation, topography, distance and orientation.



## PHOTOMONTAGES



An estimate of the proposed location is identified with a circle on the attached photos to give a visible reference.

## VIEW FROM LOCATIONS AROUND TWOFOLD BAY

### View Corridor – Eagles Claw – Visibility HIGH

The turbines would be clearly visible from this location. The turbines would be approximately 3.5km from the site.

Panorama View from lookout



View from lookout



### View Corridor Imlay Street – Visibility MEDIUM

The wind turbines would be visible from within the Eden township, particularly those properties that are oriented towards Twofold Bay. The visibility is reduced by the layout of the streets and existing buildings and infrastructure within the town. The project would be located over 5km from the site.

Panorama view from Imlay Street



View from Imlay Street (Near Whale Museum)



**View from Cocora Beach – Visibility HIGH**

The wind turbines would be clearly visible from Cocora Beach. The impact is slightly reduced by the distance being approximately 4.5km from the site.

Panorama view from Cocora Beach



View from Cocora Beach



**View from Nullica River – Visibility HIGH**

The wind turbines would be visible from this site. The impact is slightly reduced by existing vegetation and distance being approximately 5.5km from the site.

Panorama view from Nullica River



View from Nullica River



**View from Aslings Beach – Visibility MEDIUM**

The wind turbines would be visible from Aslings Beach. The impact is slightly reduced by the orientation of the beach and distance being approximately 5.2km from the site.

Panorama view from Aslings Beach



View from Aslings Beach



## PHOTOS FROM NEARBY LOCATIONS

### Panorama view from the wharf – Visibility HIGH

The wharf would be located approximately 500m-700m from the turbines. The impact would be slightly reduced by existing vegetation.



### View from Fisheries Beach – Visibility HIGH

The turbines would be visible from Fisheries Beach. The impact from the surrounding walks and road network is reduced by the vegetation canopy and forest.



### View towards Edrom Lodge – Visibility HIGH

This is a view from near Fisheries Beach looking back towards the Chipmill. It is not a readily accessible vantage point.



### View from the northern lookout near Boyds Tower – Visibility HIGH

This is a view from the lookout near Boyds Tower looking back towards the Chipmill. It is an easily accessible vantage point and regularly visited.



This location was quite difficult to reach and not readily accessible but provided a vantage point of Edrom Lodge and the surrounding landscape.



**Photo from near Boyds Tower – Visibility MEDIUM**

The impact of Boyds Tower would be minimal due to the orientation of the lookout, existing vegetation and topography. The turbines may be visible due to proximity, being approximately 1 -1.5km away.



**Photo from the northern lookout near Boyds Tower – Visibility HIGH**

This provides a view from behind the Chipmill and Eden to the north-west.



**PHOTOS OF THE LIGHT TO LIGHT WALK**

**Start of the walk – Visibility NIL**

The walk commences from the south near Greencape. Visibility on much of the walk would be NIL to very low due to the canopy, topography, orientation and distance being approximately 20km away.



**View from Pulpit Rock near Greencape – Visibility LOW**

The visibility would be very low due to orientation and distance being approximately 19km away.



**View from Greencape – Visibility NIL**

The view impact from Greencape would be minimal due to distance being approximately 20km away.



**View from Saltwater Creek – Visibility LOW**

The view from Saltwater Creek is marginal due to vegetation, topography, orientation and distance being around 10km from the site.



**View from beach at Saltwater Creek camping ground – Visibility LOW**

The view from Saltwater Creek is low due to vegetation, topography, orientation and distance being around 10km from the site.



**View of Disaster Bay from Lookout – Visibility NIL**

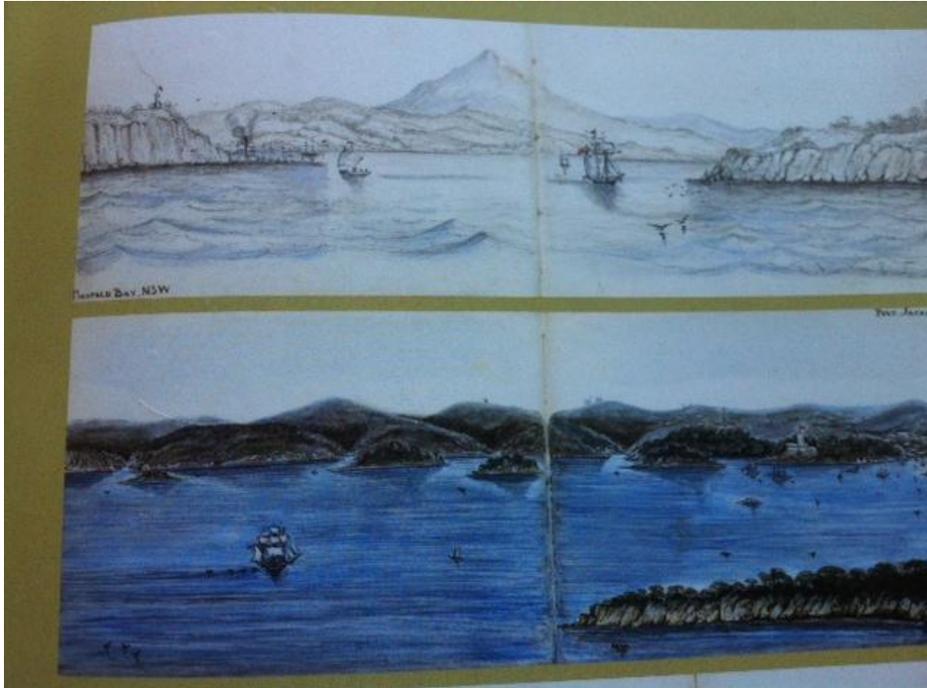
The turbines would not be visible from this location.



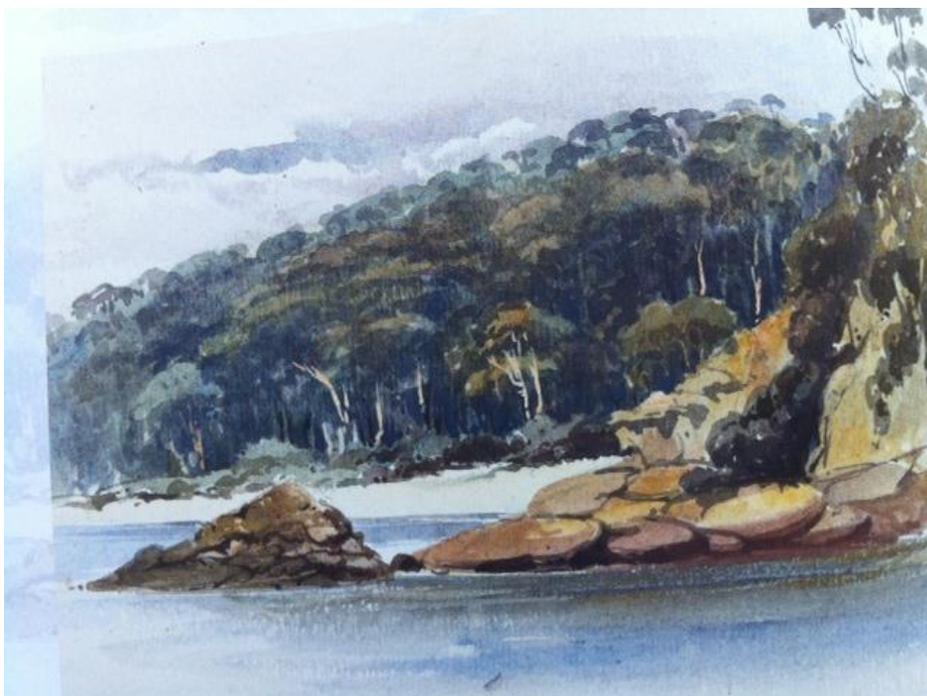
## PHOTOS FROM TWOFOLD BAY

The following sketches from “Visions Splendid” at the National Library by John Howard Goldfinch have been used as a historical reference for the visual assessment.

### Sketch 1



### Sketch 2



**Photo from Twofold Bay near Boyds Tower – Visibility HIGH**

The visibility from this location is high as the impediments on land such as vegetation and topography being removed. The visibility depends on the orientation of the boat.



**Photo from near Boydton- Visibility HIGH**

The visibility from this location is high as the impediments on land such as vegetation and topography being removed. The visibility depends on the orientation of the boat.



**Photo from the entrance to Twofold Bay- Visibility HIGH**

The visibility from this location is high as the impediments on land such as vegetation and topography being removed. The visibility depends on the orientation of the boat.



**Photo from the middle of the harbour- Visibility HIGH**

The visibility from this location is high as the impediments on land such as vegetation and topography being removed. The visibility depends on the orientation of the boat.



## APPENDIX B – CHRONOLOGY OF ASSESSMENT

Date	Action
<b>7/9/11</b>	Lodgement of development application with Council.
<b>21/9/11</b>	Referrals sent to staff internally and external agencies.
<b>29/9/11 – 28/10/11</b>	Notification and advertisement of development application in accordance with DCP 3.
<b>10/10/11- 15/10/12</b>	Additional information requested from referral agencies and staff. A copy of all correspondence forwarded onto the SRJRPP and the proponent.
<b>30/11/11</b>	Site visit with the SRJRPP including an inspection of the site and an assessment of the view impact from various locations around Eden and Twofold Bay.
<b>2/2/12</b>	A public briefing meeting was held by the SRJRPP to discuss the proposed development with the community.
<b>23/2/12</b>	A formal letter was sent to the applicant providing a review of the additional information required from assessment, submissions, referral agencies and the matters raised at the public meeting.
<b>7/3/12</b>	Submissions report lodged with Council.
<b>22/3/12</b>	Submissions report referred to external agencies and internal staff for comment.
<b>1/5/12</b>	A follow up email sent to referral agencies and internal staff for comment.
<b>24/5/12</b>	Response received from the Office of Environment and Heritage (OEH) reiterating their concerns and requesting further information about the development application concerning biodiversity and noise impacts.
<b>2/7/12</b>	Additional information provided by the proponent in response to the concerns raised by OEH.

<b>31/8/12</b>	Response received from OEH objecting to the proposed development.
<b>17/9/12</b>	Response received from the EPA raising concern about the noise impact, with specific reference to Edrom Lodge.
<b>19/9/12</b>	Internal referral sent to Environmental Services Section of Bega Valley Shire requesting advice about the biodiversity and noise requirements.
<b>8/10/12 – 12/10/12</b>	Response received from Council's Environmental Services Section advising that biodiversity information was adequate but additional information was required about the noise impact on Edrom Lodge.
<b>15/10/12</b>	Email sent to the proponent requesting additional advice about the noise impact on Edrom Lodge prior to the end of the week ending 19/10/12.
<b>1/11/12</b>	Advice received from Forests NSW advising that they would not support a private agreement and additional noise monitoring was required.

## APPENDIX C – SUMMARY OF SUBMISSIONS

In favour of the wind farm	
<ul style="list-style-type: none"> <li>• <i>Natural resources and energy efficiency</i></li> <li>• <i>Legislation</i></li> <li>• <i>Tourist attraction</i></li> <li>• <i>Employment</i></li> <li>• <i>Flora and fauna</i></li> <li>• <i>Site</i></li> </ul>	
Against the wind farm	
<ul style="list-style-type: none"> <li>• <i>Legislation</i></li> <li>• <i>Precedent</i></li> <li>• <i>Tourism</i></li> <li>• <i>Proximity to National Park</i></li> <li>• <i>Impact on Boyd's Tower</i></li> <li>• <i>Economy</i></li> <li>• <i>Employment and impact on Eden</i></li> <li>• <i>Image of the area</i></li> <li>• <i>Impact on surrounding land uses</i></li> <li>• <i>Visual amenity</i></li> <li>• <i>Impact on Twofold Bay</i></li> <li>• <i>Impact on Edrom Lodge</i></li> <li>• <i>Light and sun</i></li> <li>• <i>Noise pollution</i></li> <li>• <i>Health</i></li> <li>• <i>Impact on wildlife</i></li> <li>• <i>Bird Strike</i></li> <li>• <i>Property values</i></li> </ul>	

<ul style="list-style-type: none"> <li>• <i>Cost and efficiency</i></li> <li>• <i>Other Examples</i></li> <li>• <i>Consultation</i></li> <li>• <i>Future use of Twofold Bay</i></li> <li>• <i>Impact on port facilities</i></li> <li>• <i>Alternatives available</i></li> <li>• <i>Workplace practices</i></li> <li>• <i>OHS issues for SEFE workers</i></li> <li>• <i>Location of the wind farm</i></li> </ul>	
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## **SUMMARY OF THE ISSUES RAISED IN FAVOUR OF THE WIND FARM**

### **Natural Resources & Energy Efficiency**

- Uses a natural energy resource that should be harnessed.
- A renewable energy project that reduces carbon dioxide by 250,000 tonnes per year.
- Reduces the dependence on finite fossil fuels & contributes to meeting a growing electricity demand with 32,000 MWh of renewable energy generation pa (equivalent to the average electricity consumption of 4,200 homes).
- Will contribute to Australia's legislated target to obtain 20% electricity supply from renewable energy sources by 2020.
- It would indicate a further practical, forward looking commitment to the future by the BVSC and the concept of 50:50 by 20:20.
- While 10% of homes in the Bega Valley have solar panels, these systems are a relatively inefficient form of energy generation. The cost of power generation via wind technology is much lower per dollar invested & has the potential to make a significant contribution to the CEFE target.
- As this facility will be at the end of the power distribution network, transmission losses should be less for power consumed in the Eden area, than if the power continued to be supplied from more distant hydro or coal fired power stations

### **Legislation**

- Complies with the South Australian Environmental Protection Authority guidelines and the World Health Organisation guidelines regarding the appropriate noise regulations for the site.

### **Tourist Attraction**

- Is likely to become a tourist attraction in its own right, bringing people to the Eden area.

- On recent trip across Australia I noted several large wind farms which were certainly not unattractive. In fact many people were commenting on their elegance as well as their practicality.
- I am confident that the wind farm at the SEFE site can become part of a Renewable Energy hub at Eden, which incorporates Bio Energy, Wind Wave and perhaps solar and can create a valuable eco-tourist asset.

### **Employment**

- Will create approximately 52 job years and will operate between 20-30 years, bringing economic benefits to the area
- Will create new jobs for our community in the construction & maintenance, with spin off benefits to local business including building supplies, earthworks, hospitality and many more.

### **Flora & Fauna**

- Minimises impact on habitat loss of native flora & fauna

### **Site**

- Places wind turbines on an existing industrial site
- The site has the electrical infrastructure to cope with the energy load. Roads & good access are existing and the wharf for loading and unloading.
- It should not affect property values in the township of Eden, being located on an industrial site, on the opposite side of Twofold Bay.

## **SUMMARY OF THE ISSUES RAISED AGAINST THE WIND FARM**

### **Legislation**

- Contrary to the objectives of the Lower South Coast Regional Environmental Plan 2 to maintain the visual quality of the coastal environment. Other representatives may address issues associated with wildlife impact, town viewscape, amenity and noise.
- I believe that this proposed development is not only unsuited to the site but also contravenes Council's Building and Height restrictions for coastal development and delivers a poor return to both local residents and visitors to our area.
- As a resident I have to comply with the height restrictions on buildings in the Shire. Does the height of the wind turbines have to comply with those same guidelines or do they expect special dispensation?
- The Victorian Government is implementing a new policy on location of wind farms near the coastline, townships and residents. Perhaps the Shire should be noting the reasons for such policies.
- The development would magnify and intensify existing levels of industrial use of the subject land and would perpetuate industrial use, contrary to planning objectives.

### **Precedent**

- The approval will set a precedent and any coastal private land between Eden and Bermagui will be fair game for more wind farms – so much so our 'Coastal Wilderness' and the only existing local industry ever likely to survive the next 50 years.

- The same economic argument regarding protection of coastal landscape values could be applied to other shire coastal areas. The precedent set by the wind farm development could have quite serious implications.

## **Tourism**

- Areas such as Ubirr Rock at Kakadu, Mt Kosciuszko and the Great Ocean Road and the Great Barrier Reef are protection from these developments through National Parks and special legislation in the case of the Great Ocean Road.
- Twofold Bay is one of only a handful of “must see” natural landscapes presently being showcased by Australian Tourism. The Bay along with the surrounding Ben Boyd National Park is much sought after by Tourists eager to escape overdevelopment, pollution and human made ugliness.
- The region is increasingly presented in the international and national tourism marketplace as part of Australia’s Coastal Wilderness. The brand backing this placement relates to the increasingly very rare commodity of undeveloped forested coast line as an attraction to a national and world market whose own coast lines have been heavily impacted by developments.
- The residents of the Eden environs walk a very fine line between tourism of our wilderness coast and development of these areas and as Council is the arbitrator in these matters, I strongly urge Council to reject the proposal by Epuron Pty Ltd for this development.
- Sound carries across water and therefore tourism in Twofold Bay (fishing carters and Cat Balou) and at Edrom Lodge would be affected.
- Caravan parks around the bay and Seahorse Inn will be affected.
- From the Port Of Eden, Marine Rescue and Rotary Park the turbines would be ‘in your face’. I often speak to tourists at Rotary lookout and they comment that the woodchip mill is an eyesore and spoils the ambiance of the bay. The mill pales into insignificance against the proposed wind farm.
- Cruise ship industry – these tourists are leaving Europe to experience this natural, relatively unspoilt part of the world. However when entering Twofold Bay they will see ugly wind vanes, they would certainly have seen enough of these in Europe already.
- Imagine the joys of fishing within a short distance of wind towers at the chip mill.
- Impact on cruise ships.

## **Proximity to National Park**

- Ben Boyd National Park is a state priority area for nature tourism product development by the NPWS.
- The site is unsuitable due to its proximity to Ben Boyd National Park and its fauna.

## **Impact on Boyd’s Tower**

- The seven turbines would be in clear view looking into the bay from Boyd’s Tower another historical landmark.
- The development would not be respectful of the unique Twofold Bay Heritage and nationally significant features like Boyd’s Tower.

## **Economy**

- We should not jeopardise Eden's tourism potential by approving a wind farm with unsubstantiated economic benefits for the people of Eden and our local region.
- With tourism the mainstay of the Shire's economic activity there is a strongly compelling argument to very carefully avoid actions that will damage or degrade the Brand.
- Any short term economic gain associated with the construction of the wind farm may be strongly eclipsed by the economic gain in preserving the tourism brand.
- Lower economic activity.
- Eden is suffering economically and needs tourists who are happy to stay for prolonged visits, to relax and enjoy the ocean vistas.
- Eden has had many setbacks over recent years and this would be the worst, when we need to carefully plan and think about the future of the town scenery and jobs.
- Profits will go offshore, as do logging profits.
- I feel the economic losses would be too much for Eden to bare, as I feel visitors would keep driving straight through Eden.

## **Employment and impact on Eden**

- They will be of no benefit to Eden.
- The wind farm will provide no work for the people of Eden and it would be very short sighted to build this wind farm.
- What will we gain from this?
- Minimal if any benefit from the windfarm to Eden itself – How many jobs created?
- Will residents benefit from power generated in either reduced power bills or access to the wind power when there is a major failure? No!
- General morale in Eden would also be in decline as once again the residents are being trampled on.
- As these wind generators are not going to benefit the people of Eden in anyway, why would it make sense to build them in Twofold Bay!
- Eden is suffering enough economically, don't allow the construction of the wind farm to put the final nail in the coffin. It took years to have the BP and Mobil oil drums removed.
- It will divide the community.
- The applicant states on its website that wind farms it has developed have been sold to investors. Therefore, it can be assumed that it is not interested in the long term viability of the area and is basing its involvement on short term commercial grounds without any reference to the long term future of Eden.
- Let's not forget that generating power is not SEFE's core business, just something to try & convince a certain sector that they are a green caring company.
- The development would be detrimental to the local economy, which is in a parlous state, without providing any meaningful recompense for that detriment.

## **Image of the area**

- The area is marketed as Australia's coastal wilderness where tall forests, lakes and beaches meet. Twofold Bay is relatively free of industrial intrusion thanks to the natural screening of much of the SEFE site. The construction of these 145 metre high, constantly moving, groaning monsters, will be counterproductive to this new growing tourism market.
- Eden is the centre point of Australia's Coastal Wilderness which extends from Montague Island to Lakes Entrance.

## **Impact on surrounding land uses**

- The proposed towers would be very close to Boyds Tower, Fisheries Beach, Edrom House and Davidson Whaling Station and impact on the tourism plans for the "Light to Light Walk", Greencape and Fisheries Beach.
- Boyds Tower like such iconic sites, draw upon its setting. Boyds Tower would be "lost" in a forest of structures 7 times its height when viewed from the sea, land based visitors would struggle to find romance in a site where the environment is dominated by the sight and distinctive industrial sound of wind turbines.

## **Visual amenity**

- Visitors who flock to the lookout at Rotary Park must not be allowed to be split into those that are not offended and those that are shocked and appalled.
- Wind farms have the potential to be a significant industrial intrusion in an otherwise minimally disturbed landscape, particularly as viewed from the adjacent national parks and from offshore.
- Destruction of the visual environment and they will be a terrible eyesore.
- These huge towers destroy the beautiful scenery along the ocean and dramatically reduce the value of housing in the area.
- View loss from Boydtown, South Boydtown, Torargo Point and Mutries Reef
- Not only do we have to put up with the existing, disgusting blot on what should be a world-standard landscape but it now appears that SEFE, Epuron Pty Ltd and BVSC want to add to the mess.
- It is outrageous to most residents, and particularly visitors and tourists that the chipmill eyesore was ever allowed to be constructed in such an obvious location.
- Locals, tourists/visitors are already shocked by the SEFE sight (and site). Visiting the viewing platform directly opposite the chipmill and just sit and listen to all the adverse comments made by visitors who are appalled that such a beautiful area could be so deliberately spoiled.
- These unsightly monstrosities will spoil the pristine beauty of one of the most beautiful harbours in the world.
- It would cause irreparable visual pollution to our beautiful Twofold Bay and the impact on Eden would be devastating for residents and visitors to the area.
- To build a Wind Farm on the SEFE site would cause irreparable visual pollution to our beautiful Twofold Bay and the impact on Eden would be devastating for residents and visitors to the area.

- The visual impact on Eden and the region if the wind farm is constructed will be for a minimum of 30 years and we will leave this legacy to future generations.
- The photomontages are visually incorrect due to the angle and lenses used to take the photos. This is a total misrepresentation of how the wind farm will affect us.
- It would be equivalent to placing several 45 storey buildings on the south head of Twofold Bay.
- The turbines would be finished in the standard off-white colour and would be illuminated at night by chip mill lighting.
- The people of Eden were overjoyed when the storage tanks on the Mobil & BP sites were removed, but a wind farm would create a new industrial eye sore.
- The reason cruise ships come here is because of the visual impact of Twofold Bay and its heritage. They do not come to be reminded of wind farms that dominate their own environment.
- Many houses were designed to maximise views across Twofold Bay and those views would be dramatically altered by high moving wind turbines.

### **Impact on Twofold Bay**

- We have spent a lot of time admiring most of Twofold Bay (apart from the grotesquely misplaced chip mill).
- Eden has no attribute greater than the harbour. It is totally unimaginable that the Bega Valley Shire Council would even consider such desecration of the harbour foreshore.
- Could you imagine 7 windmills on the shores of Sydney Harbour.
- Twofold Bay Yacht Club hosts a regatta annually and also hosts national championship regattas for different classes of sailing vessels. The construction of the wind farm may cause a decline in events held on the current pristine Twofold Bay.
- Wind farms have been banned from locating near significant landscapes and tourist icons in Victoria. Eg prohibited near The Great Ocean Road. Twofold Bay is just as important to NSW as The Great Ocean Road is to Victoria.

### **Impact on Edrom Lodge**

- Edrom is located approximately 500m from the site of the proposed wind farm.
- Visual impact
  - Due to the height of the wind turbines (equivalent to 45 storey building), all 7 of them would be visible from various parts of the property, which is listed as a heritage place in the National Trust Register, the Register of the National Estate and in Council's Planning Instruments. We note that the SEE and the Landscape and Visual Impact Assessment are quite incorrect in asserting that the visual impact on our property would be "low".
  - Many people come here specifically for the tranquillity of Edrom Lodge and its magnificent setting. A high proportion of these guests come every year. We estimate that, if the wind farm were built next door, we would lose 40% to 50% of this type of guest due to visual effect alone.

- The point is that a very large number of people, literally hundreds of them over a substantial period, would suffer loss of visual amenity if the wind farm were to proceed.
- Noise Impact
  - At present, we can hear chipmill operations during north-easterly winds. We are pretty much sheltered from those winds by a ridge...This would not apply to wind turbines, however, because of their very great height above all relevant topographical features. Significantly, the acoustic assessment attached to the SEE fails to recognise this in assessing existing background (chipmill) noise against anticipated levels of wind turbine noise which would be received at our property.
  - The noise assessment also fails to address the unusual character of wind turbine noise. There is abundant evidence from those affected by wind farm noise that it is not mere loudness of the sound, but its rhythmic pulsing, that upsets them. The peculiar effect of wind turbine noise on human sensitivity cannot be quantified by simple decibel measurement.
  - The noise assessment is flawed and is really quite inadequate, particularly given the very serious nature of the problem.
  - The wind farm would create a situation of high level industrial noise being introduced into an environment that would otherwise be enjoying very peaceful conditions.
  - Wind turbine noise would be very annoying during the day because of its distinctive repetitive, pulsating nature and it would be highly disturbing to our guests at night. The developer has that turbines could operate in low noise mode, when necessary, at night. We are not convinced that this would make much difference and would be impossible to enforce.
- Shadow Flicker
  - Because the sun would rise behind the wind turbines, we estimate that rotating shadows would be cast over a substantial part of our property and particularly over the important front lawns and beach areas until mid-morning in fine weather.
  - Some guest may not be unduly troubled by shadow flicker but, because of the large mix of patrons, we apprehend that a fair number of them may feel quite disturbed, even nauseated, by it.
- Bird Strike
  - There are Sea Eagle nests close by and the birds are quite comfortable with us. We are aware that, for some reason, raptors are frequently killed by wind turbine blades. A fairly high risk is acknowledged but the author plays this down by asserting that Sea Eagles are not nationally threatened species. We consider that assertion to be somewhat arrogant.
  - The Sea Eagles that visit us are old friends and clearly territorial and a wind farm next door would pose a real threat to the highly-regarded local Sea Eagle population.
- We believe that Edrom Lodge has a significant place in the fabric of Twofold Bay and that it contributes much to tourism and the economy of Eden. It is a valued local icon which should not be diminished by proximity to a highly discordant wind farm, particularly a small one with little potential to make any real contribution to the community in terms of renewable energy.

- Edrom lodge will be surrounded by the repetitious sound of the turning blades and have the turbines towering above it. This will kill of one of Eden's historical landmarks as people will no longer be able to spend time holidaying at this idyllic place.

### **Light and sun**

- Light flicker at low sun angles can lead to adverse medical effects.
- A major concern is shadow flicker. From my house the sun would appear to rise from behind the wind turbines and giant moving shadows would be cast over my property, causing stress.
- Blade glint will be a problem. The sun would be reflected off wet moving blades in the mornings and when the turbines are lit up by chip mill lighting. The sea mist and local atmospheric conditions cause heavy moisture condensation on all metallic and similar hard surfaces from sunset to mid morning at all times of the year.

### **Noise pollution**

- Noise pollution shown to produce physical and psychological medical problems.
- The visual and noise pollution and the effects they will have on bird life have been totally disregarded.
- The noise from turbines will have a big effect on tourists who stay at Edrom Lodge and the nearby caravan parks thus affecting the income to Eden during the holiday periods.
- Twofold Bay is a lovely bay and the visual impact of a wind farm the Shire has got to be off there heads even to be considering this for Eden.
- The ongoing research of health effects and subsonic noise damage caused by wind turbines.
- The mill site is just over 2 miles from Eden & during southerly winds I can hear loaders operating & the general noises associated with a chip mill. I am prepared to put up with this but don't want the constant noise 24/7 of a wind farm.
- The noise pollution would be terrible, water amplifies noise and it would be terrible to hear it on a permanent basis.
- Councillors should go to Toora in South Gippsland to hear the noise wind farms make. They have destroyed the town. The land values and constant throb has caused nervous complaints. People have sold properties and left the area.
- Kiah River Estuary would act like a giant funnel directing turbine noise directly up to our property.
- The Statement of Environmental Effects does not adequately deal with noise impacts.
- The impact of non-audible noise/ low frequency noise.

### **Health**

- I have read other reports on the effects of wind farms on (noise, wildlife and humans) and have my concerns on what I have read.
- There are still unanswered health issues. Low frequency waves that generally affect people about 4kms from turbines.
- If this development goes ahead and the noise/visual impact affects my life I will be taking legal action against BVSC.

- The turbines would stir up dust and fine woodchip material on the chip mill site.
- Impact of “Wind Turbine Syndrome”.

### **Impact on wildlife**

- Vibration and noise threat to people, whales, birds and all other wildlife – is there to be a study? Will anyone care or take notice of the outcome?
- The towers will be lit at night which will attract insects and the birds and bats that feed on them. Blade strikes are inevitable.
- Would there be detrimental effects on whales, on their migration up and down the coast, especially at times when they are seeking sanctuary in Twofold Bay with their calves? Would this noise cause whale strandings? Will it affect shark and dolphin populations?
- I do not have faith in studies done by Epuron as they were all done in amazingly quick time, not taking in seasonal changes and local weather conditions.
- The turbine noise may have a detrimental effect on the quantity of fish, dolphins and whales coming in to Twofold Bay.

### **Bird strike**

- Valuable species of birds (eg Sea Eagles) using coastal waters will be affected.
- These turbines pose a grave danger to the Sea Eagles and Osprey that cruise the skies along the coast looking for fish. They would be totally unaware of the danger from the rotating blades of the turbines.
- One report stated “For several threatened species, Hooded Plover, Orange Bellied Parrot, Pied Oystercatcher and Little Tern, the consequence of any collision would be high”.
- There are times in the year that the air space high above the chip mill filled with migratory birds such as swallows feeding on the insects that the woodchips attract and produce.

### **Property values**

- At Wolfe Island (Ontario, Canada) property values fell by 30% to 35% after the installation of less than 15 turbines (values measured by sales)
- Real estate values must be affected.
- Real estate prices would suffer as they have where other wind farms have been constructed. Does that mean that Council intends to significantly lower Council rates to reflect the lowered housing prices?

### **Cost and efficiency**

- Turbines can produce excess power when not required and no or little power in high demand times (thus base generation is still required, clean coal, hydro).
- Turbines are expensive to build and maintain: the large, mature farm at Livermore, USA experiences 10% to 20% of turbines out-of-service at any one time; cost per kwh is excessive.
- Wind farms cannot provide base load power. Any reliable power grid requires base load power & this can currently only come from nuclear, hydro or coal power. Renewable energy can only act as a top up to the base load requirement.

- The wind farm would be too small to produce sufficient renewable energy to offset its overall public detriment. The proposal demonstrably fails the Net Community Benefit test.

### **Other examples**

- Public outcry in other nations: In Canada, public outcry against wind farms near populated areas has terminated the development of new facilities and there is a growing movement to have existing ones dismantled and replaced by small-scale hydro and solar systems.

### **Consultation**

- There has been very little information given to the Eden residents regarding the impact on the community.
- All Eden and surrounding residents should have been included in the decision making. Twofold Bay boat mooring owners also should and could have been notified.
- Only a handful of Eden residents (Kiah region) within a 2km radius of the proposed Wind Farm site were sent information.
- The BVSC website is very difficult to navigate and the proposal was hidden within it.
- One small discussion at Eden's log cabin and a couple of small notices in the paper is not good enough and is not fair "community consultation".
- We live 3.6 direct klms of the chip mill site but have not been approached by the applicant about our views on their application.
- It is amazing that every time someone wants to impact on the amenity of Eden and the lookout area the residents are not directly consulted or considered.
- Their community consultation was in Eden for just one afternoon on which day there was a massive storm, the power was out for hours and the turn up was very minimal.
- The consultation at the work site – South East Fibre Exports consisted of ½ hour being a quick presentation and about 10 minutes of questions.
- The Companies (Epuron's) had feedback form on which you could ask them to contact you back. To date I have not heard back from them, answering any of my concerns.
- The Companies website is very outdated and no new information can be sourced from this.

### **Future use of Twofold Bay**

- Eden has come up many times as a future port. There are very little sites around the bay for future use as the port is developed and the chipmill site is one of them.
- I would also mention the planned expansion of the naval facilities on the southern shore of Twofold Bay in the future could be compromised.

### **Impact on port facilities**

- Impact on radiowaves.
- Twofold Bay is a strategic location.
- Communication systems for defence, commercial and private vessels.
- Impact on port facilities.

## **Alternatives**

- If they provide anything for locals, put them where they can't be seen.
- Put it in the hills and transfer the power to the mill. There is, from what we understand, no other benefit to anyone.
- As to the so called project benefits to Eden, rental received for the Wind Farm will go off shore (Epuron), electricity prices will not decrease and once constructed will create only one full time position for a Epuron employee to maintain the Wind Farm.
- Erect the wind farm in the pine plantations in the Bombala region the area has high wind exposure and when pine is harvested, it takes 30 years for the land to recover. This is in line with the 30 year life of the turbines.

## **Workplace practices**

- Questionable Occupational Health and Safety practices.

## **OHS Issues for SEFE Workers**

- Physical danger should there be a bird strike or a malfunction in the turbine causing it to explode or the blades to disintegrate showering debris over the worksite.
- Workers have been told they will have to wear ear protection at all times when at work. They might not hear trucks reversing how are workers to communicate with each other safely, what about workers comfort.
- Blade flicker can trigger epilepsy. Negotiating vehicles safely on site would be hindered. Also the particulates stirred up from the turning blades poses significant irreversible lung problems.
- There has never been a wind farm built in the world in and around a worksite before so why use workers as guinea pigs?
- In all the promotional information and photographs I have not seen people working 12hr shifts, day & night underneath them, how would it be good for the health of the workers near to these machines.
- Have there been any long term studies done to the effects of wind farms operating on and fully operational industrial site and alongside a commercial/defence wharf and tourist facilities?

## **Location of the wind farm**

- We do not object to a wind farm – just where it is proposed to go.
- Would Merimbula, Pambula, Tura, Bermagui or anywhere near one of the towns in the Shire like a wind farm constructed in their face, on their beautiful headlands?

## APPENDIX D – REFERRAL RESPONSES

### EXTERNAL REFERRALS

Agency	Original Comment	Further Comment
<b>Air Services Australia</b>	No comment provided.	
<b>Civil Aviation Safety Authority (CASA)</b>	<p><b><i>Conditions recommended</i></b></p> <p>Owners of structures which could be hazardous to aviation have a duty of care to aviators.</p> <p>It is recommended that the proponent take this into consideration when assessing their duty of care in deciding whether or not the wind farm should be obstacle lit or otherwise marked as it remains the responsibility of the operator of a wind farm to act diligently to assess and treat hazards and risks.</p>	<p>The submissions report and advice received that the four matters have been addressed.</p> <p>No further concerns have been raised with the proposed wind farm development.</p>
<b>Department of Defence</b>	<p><b><i>Conditions recommended</i></b></p> <p>Defence requests that you report the location of all turbines and wind monitoring masts to RAAF Aeronautical Information Services (RAAF AIS). This can be done online form located on the RAAF AIS website @ <a href="http://www.raafais.gov.au/obstr_form.htm">http://www.raafais.gov.au/obstr_form.htm</a> once the design is finalised (prior to construction) and again when construction is complete.</p>	<p>The submissions report was forwarded with no further comment made.</p>
<b>Department of Primary Industries</b>	<b><i>Conditions recommended (Standard)</i></b>	

<p><b>Eden Local Aboriginal Land Council (ELALC)</b></p>	<ul style="list-style-type: none"> <li>• <b>Aesthetic values:</b> This development would dramatically decrease the aesthetic values of the Aboriginal owned land at Fisheries Beach (Bilgalera). The area for the proposed construction is in close proximity to a near pristine location enjoyed by locals and visitors.</li> <li>• <b>Noise Pollution:</b> Due to the close proximity to the Aboriginal Owned land there will be an unacceptable increase of noise. The artificial noise generated will be unwelcomed across the international and national landscape. Residents and locals living in the near vicinity of these installations oppose the construction due to the noise created. The Eden LALC, being one of the main non-public landowners in the area will be adversely affected by this noise pollution. The Aboriginal owned land is frequented on a consistent and regular basis by local Aboriginal and non-Aboriginal community members and by a high level of visitors on a seasonal basis.</li> <li>• <b>Environmental Degradation:</b> The placement of the proposed development will have a negative impact on the flora and fauna. There is notable evidence that wind farms contribute to the mortality rates of birds and within the proposed location the EPBC Act List of Threatened Species indicate that the location for the proposed development contains potential habitat for threatened bird species.</li> <li>• <b>Negative Impacts on Eden LALC Enterprise Development:</b> The Eden LALC has had development planned for its land at Fisheries Beach (Bilgalera) for some time and has invested a substantial amount of money into the improved environmental and economic values of this land. This Parcel of land is an</li> </ul>	<p>The submissions report was forwarded with no further comment made.</p>
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	<p>essential part of its cultural tourism and education program. An important part of this is the natural environment and serene atmosphere but this will be greatly reduced if this development is allowed to move forward. The Eden LALC has been impacted previously by other developments in the Bay and on surrounding lands. It would seem that the interests of the Aboriginal community in relation to developing sustainable Enterprise Development are not being taken into account.</p> <p><b>Objection</b></p> <p><b>On aesthetic grounds, noise pollution, environmental degradation and potential negative impact on Eden LALC enterprise.</b></p>	
EPA		<p><i>As discussed with the proponent, the EPA recommends that additional noise monitoring or alternatively develop a 'private negotiated agreement' with the owners of Edrom Lodge.</i></p> <p><i>Additional Monitoring – The proponent could undertake additional noise monitoring to establish a reliable and robust relationship between background noise and hub height wind speed which may deliver a higher noise assessment criteria. The EPA considers that further assessment should focus on the night time acoustics environment when industrial activities are limited and unlikely to affect the monitoring results.</i></p> <p><i>Private Negotiated Agreement – May be reached between a proponent and the owners of non-associated sensitive receiver to accept a higher level of noise impact from a proposal. A privately negotiated agreement would result in Edrom Lodge being considered as an 'associated receiver location'. Noise impacts at 'privately negotiated agreement' locations should be managed, or agreements administered through development</i></p>

		<i>consent rather than regulated through the environmental protection licence. However, if additional monitoring supports a higher criteria which the wind farm is expected to comply with, the EPA may consider licensing the proposal.</i>
<b>Forests NSW</b>	<p><b>Additional information</b></p> <p>Concerns have been raised about night noise, shadow flicker and night lighting from this proposed development impacting on Edrom Lodge.</p> <p>I request that the developer be required to enter into an agreement with Forests NSW to manage these issues before the development is approved.</p>	<p><i>As discussed Forests NSW position is that we do not want to enter into a direct agreement with Epuron regarding noise levels and that we request that noise issues be dealt with as part of the overall approval process for the wind farm.</i></p> <p><i>Forests NSW supports that there should be rigorous investigation of potential noise impacts on Edrom Lodge and that additional independent analysis of the noise impact be undertaken.</i></p>
<b>National Parks and Wildlife Services (NPWS)</b>	No comment provided.	
<b>NSW Maritime</b>	<p><b>Additional information</b></p> <p>The feasibility assessment must consider the turning circle from the wharf onto the jetty and the load limits of the facility. AQIS (Australian Quarantine Inspection Service) should be included in the feasibility assessment.</p>	The management of the port has now been transferred to the Sydney Ports Corporation (SPC). Provided that SPC is consulted with respect to the proposal and the submissions report, Roads and Maritime has no further comment.
<b>NSW Office of Environment and Heritage (OEH)</b>	<p><b>Additional information</b></p> <p>More info has been requested about threatened species, particularly bird and bat species. More information and survey for threatened species is required before the risk to these species can be quantified. The submission has not acknowledged, nor adequately addressed the unique complexities regarding the position of the wind turbines within this landscape.</p> <p>OEH consider that the risk to threatened species such as Swift Parrots and Hooded Plovers is unacceptable and impacts from turbine operation may result in irrevocable</p>	<p><b>Objection</b></p> <p><i>The Threatened Species Conservation Amendment Act 2002 revised the factors of assessment to focus on local rather than regional impacts. When assessing 7 part tests, OEH always consider local impacts and apply the assessment guidelines made under Section 94A of the Threatened Species assessment guidelines and the assessment of significance 2007 (the guidelines). From consideration of these guidelines and the assessment provided, OEH consider that insufficient assessment work has</i></p>

	<p>damage both regionally and on a state level.</p> <p>The Swift Parrot has not been included in the blade strike risk assessment. Further information is needed about the impact on this species.</p> <p>Further information is required about the potential impact on Pied Oystercatchers and Hooded Plovers.</p> <p>OEH consider further monitoring of the movement pattern of these species is required to adequately assess the impact of this development.</p> <p>OEH has repeated their concerns in the original submission about the placement of turbines 1, 2, 3 and 4. Turbine 4 is near hollow bearing trees and turbines 1-3 may impact on the movement of cockatoos between foraging habitat.</p> <p>The impact on the bat population as a result of blade strike or barotraumas has not been adequately addressed.</p> <p><b>Given the significant amount of work that is required to address the potential for impact to the bird and bat species on site. OEH recommend that this assessment needs to progress to the preparation of a Species Impact Statement.</b></p> <p><b>Conditions recommended</b></p> <p>Regarding the Aboriginal Cultural Heritage impact.</p>	<p><b><i>been undertaken to allow a decision maker to be confident of a conclusion of non-significant effect on bird and bat species. The guidelines state (page 12) "Application of the precautionary principle requires that a lack of scientific certainty about the potential impacts of an action does not in itself justify a decision that the action is not likely to have a significant impact. If information is not available to conclusively determine that there will not be a significant impact on a threatened species, population or ecological community, or its habitat, then it should be assumed that a significant impact is likely and a species impact statement prepared." OEH therefore consider that there is insufficient information to support a conclusion of non-significant effect and therefore do not support the development of this wind farm as is currently proposed for this location.</i></b></p>
<p><b>NSW Office of Environment and Heritage (Heritage Branch)</b></p>	<p><b><i>Additional information</i></b></p> <p>The impact of noise emissions and visual impact on the heritage and landscape values of these sites needs to be assessed prior to any approval.</p> <p>OEH consider that the potential impacts of</p>	<p><b><i>Conditions recommended</i></b></p> <p>Mitigation measures in different stages of the development (design and construction).</p>

	the proposal both in terms of the potential for fire ignition due to turbine operation and the possibility of turbines impeding access by fire fighting should be addressed prior to any approval being given.	
<b>Roads and Traffic Authority (RMS)</b>	<b>Conditions recommended (Standard)</b>	
<b>Southern Rivers Catchment Management Authority (CMA)</b>	There is no requirement for consent under the Native Vegetation Management Act 2003.	
<b>Sydney Ports Corporation</b>	<p><b>Additional information</b></p> <p>Sydney Ports request the noise impact on AMSS staff be identified and that AMSS and Sydney Ports be consulted with respect to the outcomes.</p> <p>Potential health impact from flicker vertigo, photosensitive epilepsy and electromagnetic fields and radiation on AMSS be identified and discussed with AMSS and Sydney Ports.</p> <p>Turbine EDN01 should not be approved until it has been confirmed that there are no adverse impacts on AMSS staff.</p>	The submissions report was forwarded and discussed with no further comment made.

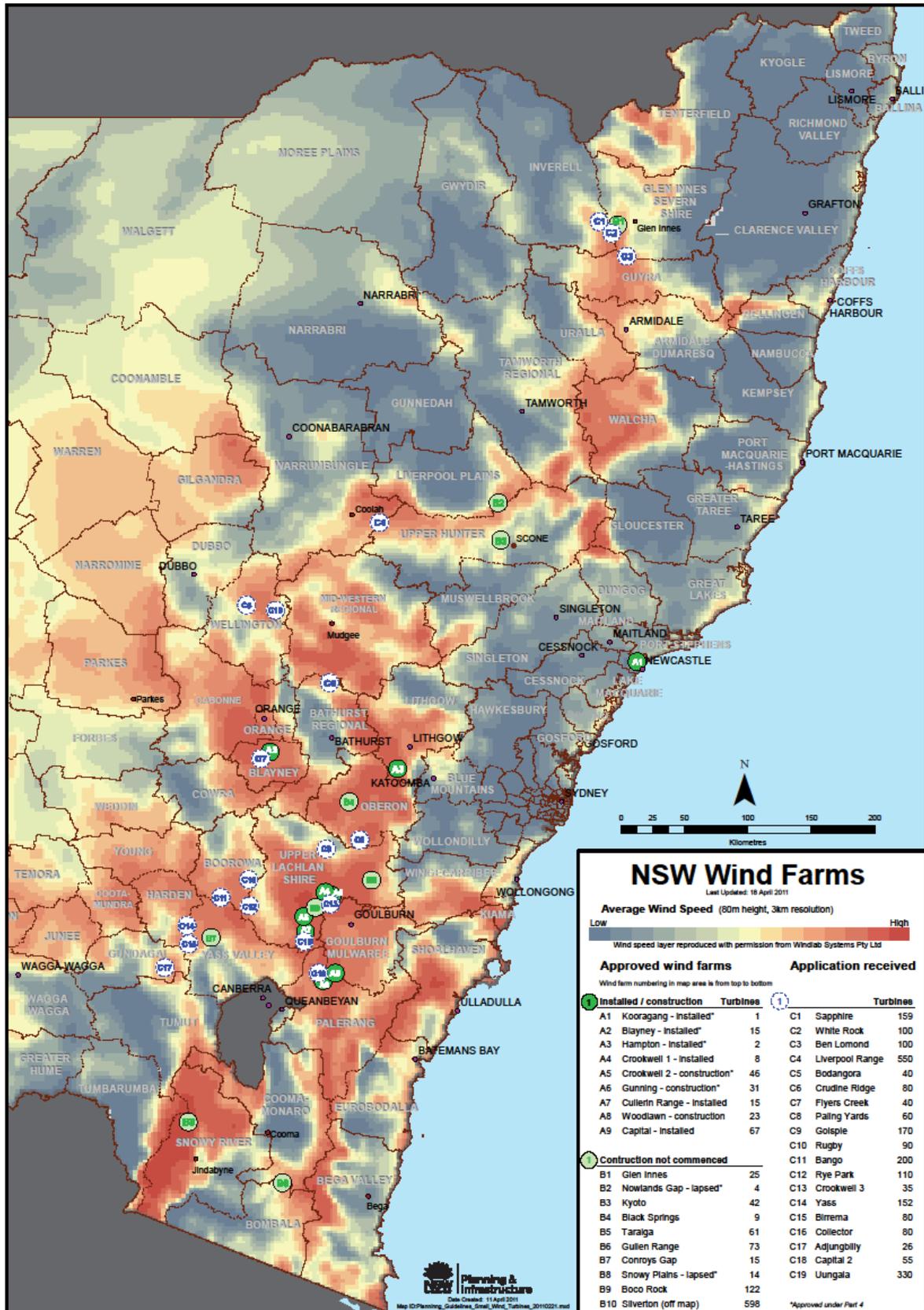
## INTERNAL REFERRALS

Section	Original Comment	Further Comment
<b>Community Services</b>	Concerns were raised about the social and visual impact of wind farms.	
<b>Engineering</b>	No conditions.	
<b>Environmental Services</b>	Concerns have been raised about noise assessment and compliance with the guidelines. Mention is also made about the threatened species requirements.	<p><b>Noise</b></p> <p><b><i>That further noise monitoring be undertaken and additional information provided about progress with the negotiated agreement with Edrom Lodge.</i></b></p> <p><b>Biodiversity</b></p> <p>Based on our review of the</p>

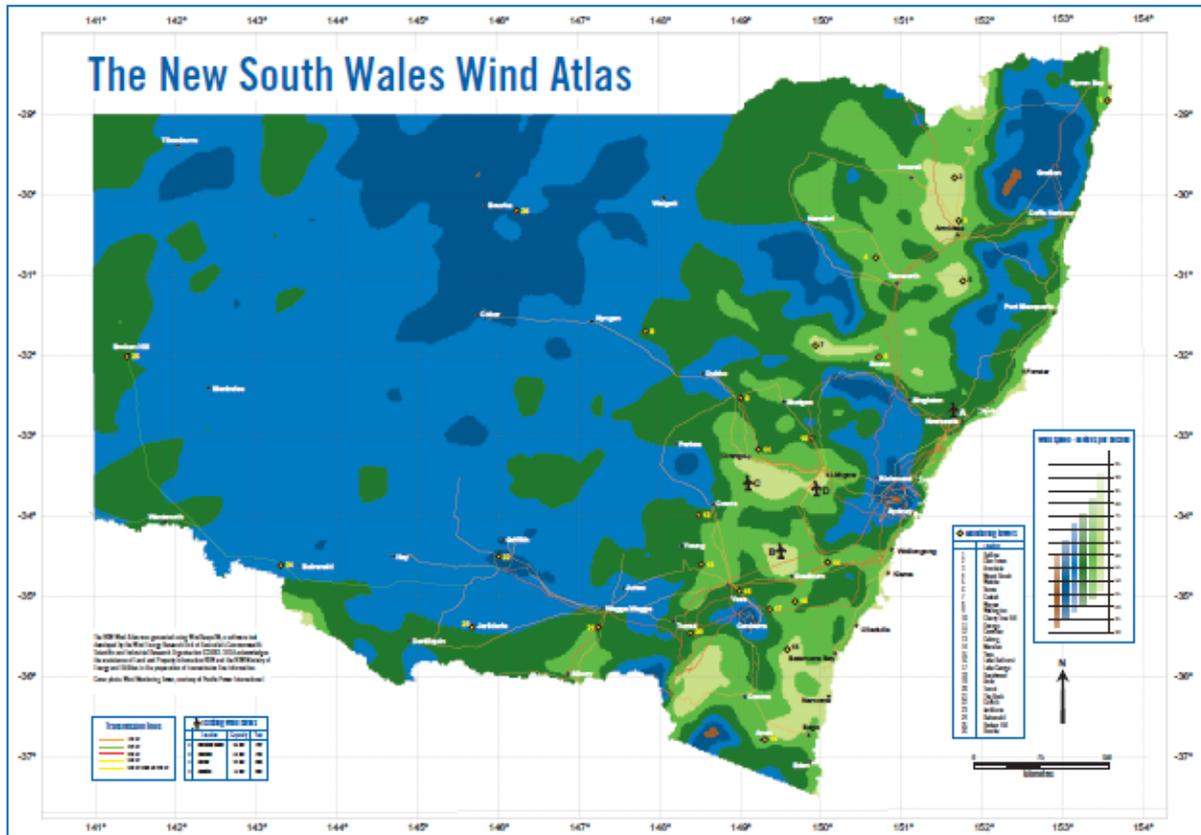
		<p>Biodiversity Assessment (BA), Submissions Report and consideration of correspondence from OEH, we advise that;</p> <ul style="list-style-type: none"> <li>• That the BA has been produced based on an appropriate level of research, survey and expert consultation effort.</li> <li>• That all species likely to be impacted by the proposal have been adequately identified and assessed to the level of impact of the proposal on the species;</li> <li>• That the Risk Assessment methodology used in the BA was an appropriate and effective way of considering what is in essence the “hypothetical risk” posed by the operation of the turbines on both local and migratory species;</li> <li>• With regard OEH’s request for Species Impacts Statements to be prepared – it is unlikely that any amount of scientific survey on migratory or local species use of the Munganno Point headland will enhance decision makers ability to make a definitive judgement on the impact of the turbines on Threatened Species.</li> <li>• We would support NGH’s suggestions of further baseline monitoring of Bird and Bat airspace utilisation surveys prior to construction.</li> <li>• The implementation of the suggested mitigation actions (as listed in the BA) be a condition of consent.</li> <li>• Given the proximity of the site to the known sea eagle</li> </ul>
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		<p>nesting site and habitat, proximity to cliffed environment (favoured by sea eagles for the updraft) and likelihood of sea eagles to be soaring at the heights of the turbine blade sweep; it is likely that this species may have the highest likelihood of direct impact from the operating turbines. Specific further research as to the utilisation of the headland by sea eagles and the development of specific mitigation actions targeting that species be included as a condition of consent.</p> <ul style="list-style-type: none"> <li>• The reality is that the impact of the proposed development on local and migratory threatened species in particular the issues of blade strike and barotrauma, will not be known until the turbines are operating.</li> <li>• However this uncertainty should not preclude the development proceeding as the potential occurrence of any impacts is low and the consequence of these impacts on local Threatened Species is no greater than the range of contemporary impacts (habitat loss, inappropriate recreational use of beaches, etc).</li> </ul>
<b>Environmental Health</b>	No conditions.	

# APPENDIX E – LOCATION OF WIND FARMS NSW



## APPENDIX F – WIND SPEED MAPPING



Wind Resource Assessment in Australia – A Planners guide - CSIRO

## APPENDIX G – EPURON PROJECTS

Name	Type	Status	Size	Ownership
ACT Solar	Solar PV	Development Commenced	Various >100kW	100%
TKLN Solar (Lake Nash)	Solar PV	Under Construction	266kW solar, 45kW wind	100%
TKLN Solar (Ti Tree)	Solar PV	Under Construction	324kW solar	100%
TKLN Solar (Kalkarindji)	Solar PV	Under Construction	402kW solar	100%
Uterne Solar	Solar PV	Operational	1 Megawatt	100%
Birrema Wind Farm	Wind	Development Commenced	60 - 80 turbines	100%
Conroy's Gap Wind Farm	Wind	Planning Approved - Pre Construction	15 turbines, 30 Megawatts	100%
Deepwater Wind Farm	Wind	Feasibility	10 turbines	100%
Eden Wind Farm	Wind	Planning Assessment	7 turbines	100%
Liverpool Range Wind Farm	Wind	Development Commenced	Up to 550 turbines	100%
Port Kembla Wind Farm	Wind	Feasibility	8 turbines	100%
Rye Park Wind Farm	Wind	Development Commenced	Up to 130 turbines	100%
White Rock Wind Farm	Wind	Planning Approved	119 turbines	100%
Yass Valley Wind Farm	Wind	Planning Assessment	152 turbines	100%