

**VICTORIAN CIVIL AND ADMINISTRATIVE TRIBUNAL**

**PLANNING LIST**

**APPLICATION NOS. 2000/060214 & 2000/072469**

**CATCHWORDS**

*Planning List, South Gippsland Planning Scheme, Clause 22.01, Local Planning Policy 'Wind Turbine and Wind Farm Development', Visual Impact of 12 wind turbines, Impacts on migratory shore birds, Corner Inlet Ramsar Site, Noise Assessment and Measurement Standards for Wind Turbines, Shadow Flicker, Electromagnetic interference, Renewable energy.*

**APPLICANTS:**

**A.THACKERAY, S GARITO & OTHERS**

**RESPONDENTS:**

**SHIRE OF SOUTH GIPPSLAND &  
STANWELL CORPORATION LTD**

**SUBJECT LAND:**

**SILCOCKS HILL ROAD, SOUTH  
GIPPSLAND HIGHWAY AND BUCKLAND  
ROAD, TOORA**

**WHERE HELD:**

**LEONGATHA AND MELBOURNE**

**BEFORE:**

**ROGER J. YOUNG,  
PRESIDING MEMBER**

**JANE MONK, MEMBER**

**DATES OF HEARING:**

**20, 21, 22, 23, 24, 27, 28 and 29  
November 2000**

**DATE OF DECISION:**

**11 April 2001**

**ORDER**

The decision of the responsible authority is varied. A permit is granted and directed to be issued in relation to planning permit application No 002125 for land at Silcocks Hill Road, Toora comprising:

Volume 9101 Folio 416  
Volume 9358 Folio 913  
Volume 8109 Folio 680  
Volume 9746 Folio 799  
Volume 9620 Folio 380  
Volume 10503 Folio 690

Volume 2980 Folio 972  
Volume 3193 Folio 507  
Volume 8115 Folio 200  
Volume 9746 Folio 798  
Volume 9096 Folio 425  
Volume 9778 Folio 682

The permit will allow:

## **Development and use of the land, for the purpose of a wind farm in accordance with the endorsed plans**

The permit must contain the following conditions:

1. Before any development starts, plans must be submitted to and approved by the Responsible Authority. When approved, the plans will be endorsed and will then form part of the permit. The plans must be drawn to scale with dimensions and three copies must be provided. The plans must be generally in accordance with the plans filed in the Victorian Civil and Administrative Tribunal on 5 October 2000.
2. The windfarm and wind turbines must not exceed the following parameters:
  - (a) Twelve (12) turbines in total.
  - (b) Turbines to be mounted upon rounded steel towers no greater than seventy (70) metres in height, with a base diameter no greater than four (4) metres.
  - (c) The colour of all turbine towers must be predominantly off-white except for the lower twenty (20) metres of each tower which must be coloured to the satisfaction of the Responsible Authority.
  - (d) Rotor blades of no more than thirty-five (35) metres in length.
  - (e) Total installed capacity of no greater than twenty-two (22) megawatts.
  - (f) All electricity generated by the turbines is to be transferred to the Silcocks Hill Road substation by way of underground cabling.
3. Unless with the consent of the Responsible Authority, all areas affected by construction activities required for the windfarm, including access roads and lay down areas, must be revegetated and rehabilitated to their previous condition at the completion of construction operations to the satisfaction of the Responsible Authority.
4. Before any building or works commence in association with the windfarm, the following requirements must be met to the satisfaction of the Responsible Authority in consultation with Aboriginal Affairs Victoria:
  - (a) The permit holder is to fund a survey by a qualified archaeologist to locate, record and assess aboriginal sites, places and objects on all land likely to be affected by the development, including land which may be disturbed by associated works such as new access roads, buildings services and future erosion. The survey shall be undertaken in association with the relevant aboriginal communities identified by Aboriginal Affairs Victoria.

- (b) The permit holder is to undertake and fund any archaeological sampling or salvage excavations which may be recommended as a result of the above mentioned survey, subject to the endorsement of such recommendations by Aboriginal Affairs Victoria.
  - (c) Prior to the disturbance of any identified aboriginal site, place or object, the applicant is to seek and obtain written consent to disturb from the relevant local aboriginal community, as nominated for the purposes of Part IIA of the (Commonwealth) *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.
5. Before any building or works commence in association with the windfarm, the following information must be submitted to and approved by the Responsible Authority in consultation with Vic Roads.
- A Traffic Management Plan, addressing the following issues:
- (a) Construction and transport vehicle routes.
  - (b) The suitability of access roads for traffic needs.
  - (c) Existing and potential impacts upon traffic volumes on local roads.
  - (d) Vehicle access points to turbine sites from Silcocks Hill Road.
  - (e) The provision of vehicle access and adequate car parking areas, including bus facilities as appropriate, in association with the information centre and public viewing area.
  - (f) The provision of directional / tourist signs.
  - (g) The need to minimise the impact of traffic associated with the ongoing operation of the windfarm upon traffic volumes and flows on Silcocks Hill Road.
  - (h) The need for intersection upgrades to accommodate any additional traffic requirements.
  - (i) Re-powering and / or de-commissioning traffic requirements.
  - (j) The need to enter into an agreement with the Responsible Authority for the provision of an appropriately located windfarm viewing point on the South Gippsland Highway.
  - (k) The views of Vic Roads in relation to shadow flicker impacts upon the South Gippsland Highway.
6. Before the commissioning of any stage of the wind farm, the following information must be submitted to and approved by the Responsible Authority in consultation with the Department of Natural Resources and

## Environment:

- (a) Details of a monitoring program based on Appendices A and B to the report by Brett Lane of PPK Environment & Infrastructure Pty Ltd dated October 2000 that addresses bird and bat usage of the site as well as bird and bat mortality. The program must specify that the following data be recorded: the frequency and height of bird and bat movements across the site; seasonal changes in bird and bat movements; the species involved; and estimates of bird and bat strike rates.
7. The monitoring program referred to in Condition 6 must commence as early as possible before the commissioning of the wind farm and continue for a minimum of two (2) years from its commencement or such period as may be determined by the Responsible Authority in accordance with Condition 8(b).
8. At six monthly intervals until the end of the monitoring period referred to in Condition 7:
  - (a) the results of the monitoring program must be forwarded to the Responsible Authority and the Department of Natural Resources and Environment;
  - (b) the permit holder must review the results of the monitoring program and determine to the satisfaction of the Responsible Authority in consultation with the Department of Natural Resources and Environment whether any additional monitoring is required and the form the monitoring will take; and
  - (c) details on numbers and species of birds collected as part of the monitoring program must be forwarded to the Department of Natural Resources and Environment in the appropriate format for inclusion in the Atlas of Victorian Wildlife.
9. Where the monitoring program specified by Condition 6 - 8 identifies that the wind farm has a significant impact on bird and / or bat populations, the permit holder must immediately investigate the possible causes of this impact and implement measures to mitigate this impact. Such measures must be determined to the satisfaction of the Responsible Authority in consultation with the Department of Natural Resources and Environment and Birds Australia.
10. Prior to the commencement of any turbine operation the following information must be submitted to and approved by the Responsible Authority. Site plans, car parking plans, landscaping plans, floor plans and elevations of the information centre and public viewing area, including details of any associated signs.
11. The information centre and public viewing area must be constructed in accordance with the plans approved under condition no.10 above and must be open to the public at the commencement of the use of the windfarm.

12. The operation of the windfarm must comply with the New Zealand Standard: "Acoustics - The Assessment and Measurement of Sound from Wind Turbine Generators" (NZS 6808:1998) (the "New Zealand Standard").
13. Prior to the commissioning of any turbine, details of a noise complaint and evaluation process must be submitted to and approved by the Responsible Authority to address any breaches of the New Zealand Standard. This evaluation process should include, but not be limited to the following components:
  - (a) A noise complaint telephone hotline, enabling twenty four (24) hour contact with a designated response officer (not to be a recorded message).
  - (b) Details of validity requirements for noise complaint (ie: date, time, noise description, and weather conditions at receptor).
  - (c) Response protocol to valid noise complaints.
  - (d) Register of noise complaints, responses and rectification which may be inspected by the Responsible Authority.
14. A pre-construction noise monitoring program must be undertaken by the Permit Applicant to the satisfaction of the Responsible Authority as follows:
  - (a) A pre-construction monitoring program must be conducted before the start of construction of the Wind Farm for a period of 28 continuous days.
  - (b) Measurements must be taken in accordance with the New Zealand Standard and Condition 17.
  - (c) The results of the pre-construction monitoring program must be forwarded to the Responsible Authority prior to the start of the construction of the Wind Farm.
15. An initial post-construction noise monitoring program must be undertaken by the Permit Applicant to the satisfaction of the Responsible Authority as follows:
  - (a) Post-construction monitoring must commence two months from the commissioning of the first turbine and continue for a minimum of 12 months after the commissioning of the last turbine.
  - (b) Measurements must be taken in accordance with the New Zealand Standard and Condition 17.
  - (c) The results of the monitoring program of the preceding month must be forwarded to the Responsible Authority within 30 days of the end of

each month. The Responsible Authority must make the results available to members of the public upon request.

16. A follow-up noise monitoring program must be undertaken by the Permit Applicant to the satisfaction of the Responsible Authority as follows:
  - (a) Follow-up noise monitoring must take place every 6 months for a period of 7 continuous days; it must commence 6 months after the end of the initial noise monitoring period in Condition 15 and must take place for a minimum of 2 years.
  - (b) Measurements must be taken in accordance with the New Zealand Standard and Condition 17.
  - (c) The results of each 7 day monitoring period must be forwarded to the Responsible Authority within 30 days of the end of that period. The Responsible Authority must make the results available to members of the public upon request.
17. The monitoring programs specified in Conditions 14-16 must be undertaken by the Permit Applicant at the following locations:
  - (a) The existing dwellings located on Volume 9620 Folio 378 and Volume 9629 Folio 790.
  - (b) A site approximately 400 metres west of Turbine 6 as identified on Plan AI-P-816001-02.
  - (c) Any other sites as required by the Responsible Authority.
18. The permit holder must conduct a pre and post construction qualitative survey of TV & radio reception of representative residences, and also of electro magnetic signals from all radio base stations and microwave repeating stations, within a 10 kilometre radius of the windfarm site. If the qualitative survey establishes any detrimental increase in interference to reception and/or signals, the applicant shall implement mitigation measures that return affected reception and / or signals to pre-construction quality to the satisfaction of the Responsible Authority.
19. The substation located in association with the information centre and public viewing area must be screened from view from Silcocks Hill Road, through the use of indigenous vegetation. Landscaping must also be undertaken adjacent to Silcocks Hill Road on the eastern side of turbine 6, to reduce the visual impact of this turbine as seen from Silcocks Hill Road. All landscaping is to be carried out with locally sourced indigenous species, to the satisfaction of the Responsible Authority in consultation with the Department of Natural Resources and Environment.

20. The permit holder must implement mitigation measures to the satisfaction of the responsible authority to ensure that no dwelling experiences an unacceptable degree of shadow flicker. For the 12 months after the last turbine is commissioned shadow flicker experienced at any dwelling in the surrounding area must not exceed 30 hours per year as a result of the operation of the windfarm.
21. All tower access points and electrical equipment must be locked and made inaccessible to the general public. Public safety warning signs must be located on all towers, and all spare parts and other equipment and materials associated with the windfarm must be located in screened, locked storage areas that are inaccessible and not visible to the public, to the satisfaction of the Responsible Authority.
22. The use, development, re-powering and decommissioning of the windfarm must be conducted in compliance with the 'Summary of Operational Control Practices' as noted in Table 1 of the planning permit application except where requiring such compliance would be inconsistent with another condition of this permit. Particular attention must be given to the following control practices:
  - (a) Erosion, Dust and Sediment Control.
  - (b) Waste Management.
  - (c) Chemical, Flammables and Oils.
23. A copy of the Erosion, Dust and Sediment Control Plan must be forwarded to the Department of Natural Resources and Environment for comment prior to the commencement of any buildings or works associated with the windfarm.
24. Care must be taken to ensure that the construction of the windfarm and ancillary works, and its on-going use, does not cause erosion or degradation of the subject or surrounding land to the satisfaction of the Responsible Authority.
25. Special risk portable fire extinguishers must be provided and located in the various structures associated with the windfarm following construction and prior to commissioning. Advice must be sought from the CFA Manager for Community Safety-Gippsland Area prior to commissioning.
26. A familiarisation visit and explanation of emergency procedures for local volunteer fire brigades must be conducted prior to commissioning of the windfarm.
27. The applicant must satisfy regulatory requirements for grid connection, to the satisfaction of the Responsible Authority in consultation with TXU.

28. This permit does not include permission for any buildings or works associated with the re-powering of the windfarm. Such works will require further planning approval.
29. At project closure and / or decommissioning, the applicant must conduct the following operations to the satisfaction of the Responsible Authority;
  - (a) The removal of all non - operational or downed equipment.
  - (b) The removal and clean up of any residual spills.
  - (c) The clean up and restoration of all storage, construction and other areas associated with use, development and decommissioning of the windfarm.
  - (d) The restoration of all tower pads, access roads and any other area affected by project closure or decommissioning.
30. This permit will expire if the development is not started within two years and completed within four years of the date of this permit. The Responsible Authority may extend this period if a request is made in writing before the permit expires or within three months afterwards.

31. The Permit Applicant must work with local landowners to ameliorate rabbit populations in the vicinity of the wind turbines to the satisfaction of the Responsible Authority.

**ROGER J. YOUNG  
SENIOR MEMBER  
PLANNING LIST**

**JANE MONK  
MEMBER  
PLANNING LIST**

**APPEARANCES:**

Mr D O'Brien of Counsel instructed by Mallesons Stephen Jacques appeared for the Applicants for Review in application No 200/060214 and for the Respondent Objectors in application No 2000/06214. He called the following witnesses:

Mr Goddard, acoustics engineer

Mr Mora, economist

Mr Cousins, local objector

Mr Garito, local objector

Mr Clarke, local objector

Mr Rapinett, local objector

Ms Hurst, local objector

Mr Whelan, local objector

Ms Allot, local objector

Ms Lowa, local objector

Ms Grenfell, local objector

Ms Monks, local objector

Mr. P. Barber, Solicitor of Deacons Lawyers, appeared for the Respondent, Responsible Authority, South Gippsland Shire Council, on the first three hearing days. After this the Shire was represented by Mr. Mason, Town Planner.

Mr. J. Gobbo QC, with Mr. M. Townsend of Counsel, instructed by Arthur Robinson Hedderwicks, appeared for the Permit Applicant, Stanwell Corporation Limited. The Corporation called the following witnesses:

Mr Fearnside, accoustics engineer

Mr Razzell, landscape architect

Mr Hoehne, wind power engineer

Mr Lane, zoologist

Mr Turnbull, traffic engineer

Mr Whitney, town planner

Ms C. McMillan, Senior Land Use Planner, appeared for the Department of Natural Resources and Environment.

**REASONS FOR DECISION**

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## 1. INTRODUCTION

### Application

1.1 This hearing involved two applications for review: Application No 2000/060214 was lodged on 28 July 2000. It is an application by objectors, under S 82 of the Planning and Environment Act 1987 (P&E Act), to review a decision by South Gippsland Shire Council to grant a permit, Permit Application No 00125, to develop and use various parcels of land on a range of hills above Toora, centering on Silcocks Hill, for the purpose of a wind powered electricity generating facility. The commonly applied term for this land use is "wind farm". The facility would comprise 12 wind turbines each with a tower height of 67m and a maximum height (including rotor blades), of approximately 100m.

1.2 Application 2000/72469, was lodged on 8 September 2000. It is an application by the permit applicant, Stanwell Corporation, to review various conditions proposed by the responsible authority to be included on that permit. By the time of the hearing, and following discussions between the responsible authority, the permit applicant and the Department of Natural Resources and Environment, the only principle conditions still at issue were those regulating noise emission levels.

### 1.3 Preliminary Matters

\* At the commencement of the hearing Mr Gobbo tendered the plan certified as showing the Toora wind farm development, being Drawing No. A1-P816001-02.

\* Secondly, Mr Gobbo requested that the land covered by Volume 9754 Folio 268 be deleted from land affected by the development.

There being no objection the Tribunal amended the application for a permit by substituting this drawing and amending the description of the land pursuant to Clause 64 of Schedule 1 of the Victorian Civil and Administrative Tribunal Act.

## 2. LAND AND PROPOSAL

### Subject Land

- 2.1 Toora is a small rural township located adjacent to the South Gippsland Highway, between Foster to the west and Port Welshpool to the east. It sits on the coastal plain, some two to three kilometres above the high water line of Corner Inlet. A feature of the Toora sky line is the former Bonlac dairy factory, a large and not entirely gracious industrial structure. Immediately behind the township there is a small range of hills, centred around Silcocks Hill which has an elevation of 257m AHD. An Optus communications tower, with a height of 52.4m (not including its antenna), occupies the high point, above the township.
- 2.2 The Silcocks Hill range has been cleared of its original eucalypt forests and is now mostly open grazing land, with occasional Cyprus tree windrows and scattered farms and farm buildings. The land is undulating and in places steep with deep valleys. One such valley contains the Agnes River Falls which, immediately to the east of the range, fall quite spectacularly, by some 60m. The Falls picnic ground is, we were advised, well patronised by local people and tourists.
- 2.3 The hills behind Toora have a direct exposure to the south and west and are, as a consequence, subject to strong winds from across Corner Inlet and the low land bridge linking the mainland to Wilsons Promontory. The closest peak on the Promontory, Mt Singapore, is located approximately 16km to the south.
- 2.4 Inland from the Silcocks Hill range there are further ranges of hills, of gradually increasing height, which eventually form part of the Hoddle Range. Mt Best, with a height of approximately 420m, is some 6.5km to the north north west of Silcocks Hill.
- 2.5 Corner Inlet is an acknowledged international site for migrating shore birds. It is also a feeding, roosting and breeding area for many water birds and a breeding area for specialised coastal raptors including the white breasted sea eagle. As such Corner Inlet is an acknowledged RAMSAR site and is also

covered by international treaties for the protection of migratory birds under the JAMBA and CAMBA treaties with Japan and China respectively.

- 2.6 The Victorian Coastal Wind Atlas prepared by S. Deare of Energy and Environmental Consulting in June 1991 identifies the hills above Toora as having an average wind speed of 6.7 metres per second at 30 metres above a class 1 terrain. This correlates well with Stanwell's Wind Data near the top of Silcocks Hill which shows an average wind speed at 10 metres above ground level of 6.3 metres per second. The Stanwell Data establishes a long term average wind speed of 8.5 metres per second at 50 metres above ground level. This makes Toora one of the most efficient sites for wind generation on the coast of Victoria.

#### Proposal

- 2.7 It is proposed to locate nine of the twelve wind turbines in a generally north-south alignment along the western ridgeline of the Silcock Hill range and with a distance of approximately 2.7km between the most southerly and the most northerly turbine. The remaining three would be sited around the highest point of the hill, adjacent to the existing Optus tower, on the southern side of the range above the Highway. The minimum spacing between the turbines would be approximately 250m and each would be sited on plots of land to be leased from existing property owners. Their development would not prevent the remainder of these properties from continuing to be used for grazing.
- 2.8 The turbines would each comprise a tapering steel tower with a base diameter of 4m and a height of approximately 67m to the centre of the turbine hub. Three, 33m long rotor blades would extend from the hub, to give a maximum height from ground to rotor tip of 100m. The towers would be painted in an off-white colour and there was some discussion in the course of the hearing as to whether a band of a different colour, say pale green, would be appropriate around the base.

- 2.9 Each turbine would be capable of generating up to 1.72 Megawatts (MW) of power with a total output, provided the wind is blowing, of up to 22MW. According to the permit applicant this is sufficient to serve the domestic electricity needs of up to 9,000 households, which is approximately the number of households in the Shire of South Gippsland.
- 2.10 The blades rotate at speeds varying between 19 RPM and 22 RPM, when tip speed is approximately 270 kph. The turbines are designed to operate for a wind speed starting at 4 metres per second and are automatically shut down at wind speeds in excess of 20 metres per second. The optimum power output is achieved at a wind speed of 8 metres per second.
- 2.11 The nacelle at the hub transforms the voltage level from 690 volts to 22kV. The towers would be connected by underground cable to a substation, to be constructed to the rear of an existing dwelling located adjacent to turbine No 3, near to the Silcocks Hill Road and at the top of the ridge above Toora. This dwelling is to be converted to the wind farm, control building and would also act as a visitor information centre. The centre would make provision for car and bus parking. Three to five metre wide tracks would be constructed to each turbine in order provide access for construction vehicles and for ongoing maintenance.
- 2.12 At the substation the voltage would be transformed to 66kV and from there the power would be carried by overhead cable using, for the most part, the current 22kV power line between Silcocks Hill and the South Gippsland Highway. The line would then be joined to the existing 66kV grid at a new switching station to be constructed a short distance to the south of the Highway. There was no issue in respect of the substation to switching station component of the permit application.

### **3. THE APPLICANT OBJECTORS**

- 3.1 The applicant objectors with a property closest to any of the proposed wind turbines are Mr S. Garito and Ms A. Thackeray, it has an area of approximately 2 ha and is located on the west side of the Silcocks Hill Road,

approximately half way between proposed turbines 6 and 7. Their house is sited close to the road and is partly surrounded by mature cypress trees. Turbine 6 would be located approximately 480m to the south west of their dwelling and turbine 7 approximately 400 metres to their north west.

3.2 The Ditta's property, at the northern edge of the Silcocks Hill range, is the only applicant objector property within the recommended '*Windfarm Area*' (see para 4.2 below). Their house is approximately 600 metres from turbine 9. It too is screened by a cypress windrow.

3.3 The Hurst's farm house is located on the eastern side of Silcocks Hill Road, with views to the south and east towards Corner Inlet. Their dwelling is located approximately 730 metres from turbine 5 and 780 metres from turbine 7.

3.4 Mr. A. Clarke and the Whelan's live in excess of 1½km away from the proposed wind farm. Their properties are located to the east, on the lower section of the Agnes River Road.

3.5 Other objectors and witnesses who spoke against the scheme and who live more than 4 kilometres away include; Mr Cousins, on Slades Hill Road above Welshpool, Mrs Lowa and Mrs Grenfell, both of Hazel Park Road, in the hills beyond Agnes Falls to the north east and Mr. P Rapinett, further up the Agnes River

#### **4. PLANNING CONTROLS AND POLICY FRAMEWORK**

##### Previous Planning Scheme

4.1 In the late 1980's the former SEC, following extensive surveys of possible sites along the Victorian Coast, selected Silcocks Hill as its preferred site for what was then to be Victoria's first wind power facility. Two options were considered, one comprising approximately 55 turbines, the other 22 turbines, on either 25m or 40m high towers. Both schemes were designed to generate approximately 10 MW.

4.2 In the early 1990's Amendment L21 to the then South Gippsland Planning Scheme was prepared and exhibited. The amendment provided for the 'as of right' use and development of a land on Silcocks Hill –delineated as 'Windfarm Area' on a map accompanying the amendment - for the purpose of a wind farm of up to 10 MW. Various siting and design standards were prescribed with a permit being required to vary these. These standards included:

- No turbine within 300m of any dwelling
- Solid(not lattice) towers
- Night time noise not to exceed 43dBA or background plus 3dBA
- A wind development plan to be approved by the council prior to site works showing, among other things, no more than 50 turbines with an individual rating of no more than 700kW and a total farm output of no more than 10MW.

4.3 Eighteen submissions were received in relation to the amendment. Only five were strongly against and of these, one was later withdrawn. The submissions were referred to an independent panel constituted by Dr Terry Bellair, Environmental Scientist. In relation to visual effects, the panel noted that the area comprising the subject site and surrounds had been substantially modified by clearing. The panel conceded that the establishment of the wind farm would have '*a significant impact on the local landscape*' but concluded that whilst some people would consider the facility to be a '*blight on the landscape...on balance ...the windfarm (would) be considered by most conservation minded people (who tend to be most sensitive to landscape modification )to add an element of interest to the largely bare hills and represent a positive contribution to the environment through the harnessing of a renewable resource.*'. The amendment was approved on 24 December 1992.

#### Victoria Planning Provisions

4.4 The exhibited version of the Victoria Planning Provisions format South Gippsland Planning Scheme included the former “*Windfarm Area*” in a Special Use Zone. This, we were advised, was to facilitate the development of a wind farm in the already identified area. The Panel/Advisory Committee constituted to consider the amendment raised concerns, however, about the suitability of such a special purpose zone. The panel recommended that the Rural Zone apply with either an overlay control or local policy, to facilitate development of a wind farm. The Council pursued the latter option and introduced a local policy, at clause 22.01 of the scheme, entitled ‘*Wind Turbine and Wind Farm Development*’. As noted in particular by Mr Barber and Mr. Gobbo QC, so far, this is the only local policy in the new format, South Gippsland Planning Scheme.

#### Current Planning Scheme

- 4.5 The current South Gippsland Planning Scheme came into operation in December 1999. It takes the normal Victoria Planning Provisions format with State and local planning policies, zoning and overlay controls, general and particular provisions.
- 4.6 The properties over which it is proposed to construct the turbines is zoned Rural under the new scheme. It is also affected by the Environmental Significance Overlay – Schedule 5, Areas Susceptible to Erosion.
- 4.7 In the table of uses for the Rural Zone, a wind farm is an unspecified, section 2, use for which a permit is required pursuant to Clause 31.01-2 of the Scheme. Being Section 2 a permit is also required pursuant to Clause 35.01-3 to construct the buildings and works associated with the use.
- 4.8 On land affected by the Environmental Significance Overlay a permit is also required to construct a building or to carry out works, unless exempted by the schedule. Only the underground power lines are exempt in this instance.

4.9 Clause 65 of the scheme sets out the decision guidelines which a responsible authority and therefore this Tribunal on review, must consider, as appropriate, before deciding about an application for permit. Of relevance to this proposal are; the State and local planning policy framework, the matters set out at Section 60 of the P&E Act, the purpose of and other matters required to be considered under the zone, overlay or other control, the orderly planning of the area and the effect on the amenity of the area.

4.10 The Local Planning Policy Framework includes the Municipal Strategic Statement (MSS) at Clause 21 of the scheme. The MSS recognises that the Shire contains *'some of Victoria's most picturesque landscapes'* and that the environment is one of the Shire's most important features from *'a landscape and resource perspective'*. At Clause 21.09, dealing with economic development, an objective is;  
*'to provide for and promote economic development in the Shire, which is economically, environmentally and socially sustainable, including primary industry, manufacturing, commercial and tourism opportunities'*

4.11 Strategies to achieve this objective are stated to include:

- *'Encourage new economic and industrial activity in the Shire,*
- *Protect and promote the natural environment and the landscapes of the Shire for their tourist values.*
- *Encourage the utilisation of natural energy sources including the development of wind farms.'*

The clause goes on to suggest that, among other things, these strategies will be achieved by :

- *'Considering applications for wind turbines and wind farms with reference to Local Planning Policy 22.01 "Wind Turbine and Wind Farm Development"'*

As already noted, the local planning policy at Clause 22.01, dealing with wind farms, is the only local planning policy in the South Gippsland Planning Scheme. It is also, we were advised, the only local policy dealing with this

subject in any Victorian planning scheme. The stated objective of the policy is:

*'to establish South Gippsland as a leading provider of alternative energy within Victoria, whilst ensuring that the valuable environmental and aesthetic qualities of the Shire are protected.'*

The policy itself is that:

*'the development of wind turbines and wind farm activities is encouraged in the area to the north of Toora as shown on the Shire Framework Plan.'*

The policy goes on to list matters that should be taken into account when considering applications for turbines or wind farms. These include:

#### Landscape and visual environment

- \* *The need to protect the scenic quality and visual integrity of the landscape.*
- \* *The impact of the turbine or facility upon the existing visual characteristics of the landscape.*
- \* *The impact of the turbine or facility upon significant views, including visual corridors and sight lines.*

#### Land use

- \* *The existing use and possible development of the land and of surrounding areas.*
- \* *The protection of the land and of surrounding land for its recreational, residential, agricultural, commercial or other values.*
- \* *The likely impact of the turbine or facility upon surrounding areas in relation to noise, shadow flicker, electromagnetic interference and any other matter considered applicable by the responsible authority.*

#### Birds and other biological resources

- \* *The need to conduct independent pre-application biological risk evaluation.*
- \* *The potential disruption to existing physical and ecological relationships of flora and fauna species.*
- \* *The need for mitigation and/or avoidance measures, where applicable, to minimise the impact upon birds and other biological resources.*
- \* *The preservation and maintenance of the natural environment and natural systems.*
- \* *The preservation of existing native vegetation.*

- \* *The Shire's obligations under all State, Federal and International flora and fauna protection instruments.*
- \* *Alternative methods of constructing or carrying out development or works.*
- \* *The views of the relevant public agencies.*

#### Public health and safety

- \* *The need for safety setback distances from turbines and/or facilities and habitable dwellings, public roads and property lines.*
- \* *The potential for fire hazard.*
- \* *The need to reduce or prevent any significant increase in biological exposure to magnetic fields.*
- \* *The need to prevent unauthorised access to the site and/or wind turbines and their associated equipment during construction, operating and re-powering/de-commissioning stages.*

#### Noise

- \* *The need to establish an agreed acceptable noise level above ambient for dwellings surrounding a proposed turbine or facility.*
- \* *The need for on-going monitoring of noise levels associated with a turbine or facility.*
- \* *Appropriate mitigation and/or modification techniques as appropriate.*

#### Cultural and social impacts

- \* *The likely impact upon potentially sensitive resources such as local landmarks, sacred sites and areas, and other significant features of the landscape.*
- \* *The need to protect and conserve significant cultural sites, areas and resources.*
- \* *The need for mitigation and/or avoidance measures, or when applicable, alternative methods of constructing or carrying out development or works.*

#### Solid and hazardous wastes

- \* *The need to remove all obsolete plant and equipment from the site.*
- \* *The need to address avoidance, handling, disposal, and clean-up issues of all hazardous wastes throughout the life cycle of the turbine and/or facility.*
- \* *The requirements of the Environment Protection Authority Act and the Dangerous Goods Act.*

#### Environmental Effects Act 1978

- 4.12 Under the provisions of this Act the proponents of a land use or development proposal can be asked by the Minister for Planning to prepare an Environmental Effects Statement ("EES") which assesses the impact of that

development on the environment. In February 2000 the Minister for Planning was requested to advise whether an EES would be required to establish a wind farm at Toora. In his letter of 2 May 2000 the Minister responded stating that an EES was not required, subject to specialist studies being undertaken and being made available for public comment as part of the planning permit process. These studies were:

- Noise impact.
- Visual impact.
- Impacts on wildlife particularly birds.
- Electro-magnetic interference.
- Public acceptability.

4.13 Although the Minister does not have the power under the Environment Effects Act to direct the Tribunal as to its assessment of a proposal, his common sense recommendations in relation to what matters should be considered carry specific weight in directing our attention to significant matters we should consider. It is relevant also that, for the most part, these echo the matters set out in the local planning policy and were raised as concerns by the local objectors.

#### Commonwealth Environmental Legislation

4.14 The Commonwealth legislation does not impose any statutory obligations on the Tribunal in its consideration of the proposal.

#### International Treaty Obligations

4.15 These treaties have been acknowledged throughout the State and local planning policy framework and are relevant to our consideration of this application.

4.16 At Clause 13 of the State Policy Framework – “Statement of Principal for the Environment” refers to the various international and national agreements for ecologically sustainable development, including the Inter-Governmental

Agreement on the Environment, the National Greenhouse Response Strategy and the National Strategy for the Conservation of Australia's Biological Diversity. The Strategies are stated to provide a '*broad framework*' for the development of strategies at the State level to encourage sustainable land use and development.

At Clause 15.09, dealing with the environment, the State Policy for the conservation of native flora and fauna is set out. The stated objective is; '*to assist the protection and conservation of biodiversity, including native vegetation retention and provision of habitats for native plants and animals...*'

- 4.17 Implementation of this objective will be achieved, the policy suggests, by planning and responsible authorities ensuring that any changes in land use or development do not affect the habitat values of wetlands and wetland wild life habitats designated under the Ramsar Convention, or utilised by species designated under the JAMBAR or CAMBAR agreements.

#### The Victorian Coastal Strategy

- 4.18 At Clause 15.08 of the State Planning Policy Framework the objective for Coastal Areas is '*to assist the protection and maintenance of significant environmental features and sustainable use of natural coastal resources*'. The policy states, among other things, that planning authorities '*must*' have regard to the Victorian Coastal Strategy
- 4.19 The witness statements of both Mr Davies and Mr Razzell set out at some length the relevant provisions of the Coastal Strategy and supporting documents such as the "*Landscape setting types for the Victorian Coast - May 1998*".
- 4.20 The Strategy aims, among other things, to give direction for future use of the coast and marine environment, including private land adjacent to and within the critical viewshed of the foreshore. The Strategy has as an objective, the improvement of design outcomes for buildings and structures in foreshore and

coastal areas. For development to be 'appropriate' it should satisfy a number of criteria including:

- *'not have serious and permanent negative impacts on the environment or the natural processes, either on or off the site;*
- *be sensitively designed so that it visually complements the surrounding coastal landscape;*
- *meet a demonstrated need*
- *serve its intended primary function*
- *result in measurable enhancement of the existing coastal environment;*
- *generate a net public benefit to the community both in the short and long term; and*
- *maintain or enhance public enjoyment of the coast. '*

4.21 The documents '*Siting and Design Guidelines for Structures on the Victorian Coast - May 1998*' and '*Landscape Setting Types for the Victorian Coast - May 1998*', are published by the Victorian Coastal Council as supplementary documents of the Coastal Strategy. The former is aimed at '*raising awareness about more sensitive design*', rather than being a manual for development. The latter is directed towards providing a '*better understanding of the landscape character of the coast by identifying significant features and characteristics of various sections of the coast*'

4.22 The description of the landscape setting of Corner Inlet – from Waratah Bay to Port Welshpool - reads:

*'This land forms the gateway to Wilsons Promontory and is generally flat in nature with an estuarine system featuring mangroves and intertidal mud flats. At key locations, historic and picturesque settlements, such as Port Franklin and Port Welshpool, occur. Given the flat topography, future development will need careful siting to avoid visual intrusion into this tranquil setting.'*

*The low coastal plain of the Corner Inlet setting type provides a critical horizontal foundation to the ascending landforms of Wilsons Promontory. Wilsons Promontory viewed as it mainly is from the Fish Creek/ Foster area appears all the more dramatic, given the flat watery nature of corner Inlet in the foreground'*

- 4.23 The hills behind Toora are not included in this landscape description. Nevertheless it would have to be acknowledge, as was suggested by Mr Davies in his evidence, that these hills form a part of the viewshed of the Inlet.

## **5. ISSUES**

### Introduction

- 5.1 There have been relatively few planning permit applications for wind farms within Victoria and this application raises complex and important planning issues.
- 5.2 Of the major issues the most immediately apparent is visual intrusion and the effect such large structures would have on the landscape and visual amenity of the hills above Toora. It was common ground that the proposed wind turbines are very large structures. Generally speaking the structures are to be located approximately 200 metres above sea level and can therefore be said to be approximately half of the height of the hills upon which they will be located.
- 5.3 The other major concerns that became apparent in this application were noise and bird strike.
- 5.4 There were a number of other concerns raised to which the Tribunal also needs to turn its attention but these were not pressed as much as the issues raised above. These remaining issues were:
- (a) Shadow flicker from the turbines passing across the sun and causing visual disturbance to observers, including nearby residents and drivers.
  - (b) Impacts from construction and decommissioning.

- (c) Electro-magnetic interference due to large structures adjacent to the existing communications facilities.

5.5 What must be emphasised at the start of the Tribunal's analysis and what must be borne in mind for any subsequent application for a wind farm is that although this decision does have some general application in relation to planning considerations for wind farms, each proposal must be considered on its merits. In particular, individual analysis must be made of the planning policy framework that applies in relation to the particular location as well as how each proposal fits into the topography, landscape and environment of the site in question. This is important for subsequent readers outside of the immediate parties to remember.

#### Peripheral issues

##### Introduction

- 5.6 The applicant/objectors also raised a number of peripheral issues that either covered various of the major issues or would have entirely disposed of the wind farm proposal, if their submissions were upheld.
- 5.7 Firstly, two major concerns voiced throughout the objectors' case were that:
- (a) the setback distances between the wind turbines and occupied dwellings were too small; and
  - (b) the responsible authority, whether at the behest of the permit applicant or not, was intending to restrict future development – such as new dwellings and tree planting - within 800 metres of any turbine. This, it was submitted, could sterilise adjoining land for future development.
- 5.8 Secondly, the objectors raised overall objections to the wind farm proposal on the basis that:
- (a) wind farms were uneconomic and should not be allowed to proceed;
  - and

- (b) the wind farm proposal was fatally flawed because, unlike those persons who would be 'hosting' one or more turbines on their land, those who were nearby and similarly impacted upon in a visual and acoustic sense were not to be 'compensated' in monetary terms.

#### Buffers or Setbacks

- 5.9 Dealing firstly with the setback between wind turbines and any occupied dwellings; the subject application adopts a minimum setback of 300 metres from any participating land owner's dwelling and 400 metres from any non participating land owner's dwelling. From the material presented to the Tribunal, the European minimum setbacks appear to be generally around 300 metres, with 1,000 feet (305 metres) being the normal minimum in the USA. Provided relevant impacts, such as visual and acoustic interference are found to be acceptable within these distances, we see no justification for adopting a different setback or buffer. Indeed we acknowledge that the proposed development applies a more generous setback regime than is applied internationally.
- 5.10 On the subject of the wind farm posing a potential restriction on future land use in the vicinity of turbines, the applicant/objectors were alarmed by a point made in the responsible authority's planning officer's analysis of the wind farm proposal that it may be necessary in the future for the responsible authority to adopt restrictions on the siting of houses or other land uses such as tree planting. Mr Garito and Ms Thackeray had written to the local newspaper on 8 November 2000 claiming that the responsible authority intended to restrict new development for a distance of approximately 800 metres from the wind turbines. The Tribunal does not consider this likely as the permit applicant has, through its Counsel, Mr Gobbo QC, given an undertaking that Stanwell has not, does not and will not under the circumstances as they currently exist, request the responsible authority to restrict land uses in the vicinity of the wind turbines. He specifically reserved the permit applicant's right to object to any future application for a change of land use within the general area of the wind farm but this reservation is understandable.

5.11 Mr Barber pointed out that in relation to future buffers the responsible authority officer's analysis of the need for a future buffer had never been carried forward to a recommendation in the officer's report. Further, Mr Barber said that the responsible authority had no intention of restricting land uses in the vicinity of the wind turbines, although each case would have to be assessed on its merits and obviously someone couldn't built a house under a wind turbine.

#### Wind farms Uneconomic

5.12 The permit objectors called an economist specialising in energy matters, Mr Moran, to give evidence. He stated that in his opinion wind farms were uneconomic and should not be subsidised. He dismissed the green house effect. He said that Victoria had an infinite amount of brown coal, which on further reflection he took to be sufficient brown coal at current levels of usage for 1,000 years.

5.13 We do not believe that this Tribunal is the appropriate forum to decide about the existence or otherwise of the green house effect. Furthermore, even if wind farms are uneconomic when compared to coal fired power plants, we find that we are enjoined by both State and local policy to have regard to the promotion of renewable energy resources. We accept that unless new forms of energy generation are promoted and obtain some economy of scale there is very little likelihood of their ever becoming directly competitive with coal fired power stations.

#### Landowner Compensation

5.14 It was suggested also that the wind farm proposal should be dismissed because the proposed benefits did not allow compensation to nearby land owners who would suffer detriment as a result of the proposal. According to the objectors' Counsel, Mr O'Brien, this submission is based on the objective for planning, at section 4(1)(a) of the P&E Act, which requires "Fair use and development of land". Mr O'Brien submitted that this objective requires all land owners detrimentally affected by the wind farm proposal to be granted a share of the consideration that Stanwell is willing to pay to participating land

owners, those who have agreed to have wind turbines located on their properties.

5.15 This submission requires that an indeterminate class of land owners, who the objectors say suffer a detriment on the basis of loss of value, should participate in the benefits of the proposal. The benefits of the proposal were identified as the consideration Stanwell was willing to pay to the participating land owners.

5.16 Mr O'Brien was requested to produce authority substantiating this principle of compensation for detriment, if it had been upheld by other judicial bodies. However he could find no such authority.

5.17 It is the Tribunal's opinion that there is no principle of planning law in Victoria which would suggest that people, who can establish that they have suffered a detriment under a planning proposal, are entitled to a share of any consideration being paid to other land owners. In the Planning and Environment Act the only section dealing with compensation is Part 5, relating to "Compensation to Land Owners where Land is Zoned for a Public Purpose". This requires a planning authority to make monetary compensation for perceived planning or amenity detriment arising out of the planning restriction of the land for public purposes. This right of compensation does not in any way whatsoever relate to the submission by Mr O'Brien. His submission is bad in law.

## 6. VISUAL IMPACT

### Introduction

6.1 All parties accept, as does the Tribunal, that at approximately 100 metres in height, the wind turbines proposed under this application for permit are very large structures indeed. The hills upon which they will be situated rise to approximately 200 metres above the coastal plain. It would be difficult to suggest therefore that the turbines would not bring about a significant change to the visual appearance of the hills behind Toora.

- 6.2 In relation to visual intrusion, it was agreed between the parties and the Tribunal accepts, that in assessing visual impact the question to be decided is whether the degree of visual intrusion posed by the wind turbines can be sustained without the landscape values of Silcocks Hill and surrounding places being unacceptably prejudiced. This was the question asked in the Cape Bridgewater analysis (*Hislop and Others v Glenelg Shire Council and Energy Equity Corporation* 1997/88762 – unreported) and because of the very high scenic quality of the landscape character at Cape Bridgewater, the question was answered in the negative.
- 6.3 Here at Toora the landscape quality is not as outstanding as at Cape Bridgewater. However, this notwithstanding, a careful assessment of the visual intrusion of the turbines must still be made. First impressions, given the size of the wind turbines in relation to the hills upon which they are situated, will lead one to believe that they could be substantially detrimental to the visual landscape. However, upon reflection it may also be possible that they could be beneficial and strengthen the landscape, providing focus to the grassed and rounded hills behind Toora. Whilst clearly of a substantial size, we accept that considerable effort has gone into the design of these structures in order that they impart an uncluttered and perhaps somewhat ‘space age’ appearance, consistent with their new technology function.
- 6.4 The Tribunal agrees with Mr Razzell, who appeared for the permit applicant and who is a landscape architect, that visual intrusion is a very subjective area of assessment. That it is necessary, therefore, to try to make any assessment as objective as possible and the Tribunal has attempted to do this by considering:
- (a) What is the standard of the Toora landscape vis a’ vis other coastal landscapes and what is the landscape standard of the locality surrounding the wind farm site;
  - (b) What is the effect on visual amenity (this is directly related to distance and screening from the wind turbines):
    - (i) for the closest properties of non participating owners;

- (ii) for the medium distance – from nearby ranges, from the coastal plain and from objectors' properties that are further away; and,
- (iii) for long distance views – Barries Beach and Wilsons Promontory

### Landscape Analysis

- 6.5 The standard of the landscape above Toora is not one that could be described as exhibiting outstanding scenic qualities. It is a very modified landscape and the former Bonlac factory and communications tower introduce foreground disturbances to its remaining naturalistic values. It is certainly not so wild, pristine or unique as to merit special recognition, as was the case for example with Cape Bridgewater.
- 6.6 Whilst forming a part of the wider viewshed of Corner Inlet, we find also that the special values of the Inlet, as identified for example in the Landscape Setting Types report, relate more to the flatter coastal and estuarine lands surrounding the Inlet and to the dramatic views across the Inlet towards Wilsons Promontory, rather than to the inland views
- 6.7 The landscape quality of the uplands farm land, within which the turbines would be sited, is also highly modified. It is certainly attractive, due primarily to its undulating, rural character, but not more so than for many typically rural areas. Its scenic values are also enhanced at a number of places by the opportunity for longer range vistas – in particular across Corner Inlet and towards Wilsons Promontory. We have been unable to find however that these are so significant in their own right as to warrant special protection. We accept also that in perhaps the most significant long range views across the inlet, as one descends Silcocks Hill, the majority of the turbines would be to the rear of an observer.
- 6.8 By comparison, in the Cape Bridgewater case the Cape had been identified by numerous authorities and relevant organisations, for example the National Trust and the former Town and Country Planning Board, as being of outstanding natural beauty. It was also proposed that the Cape be included

in an Environmental Rural Zone with a Significant Landscape Overlay.

These give far higher recognition to scenic values than the Rural Zone and the Environmental Significance Overlay covering the subject land. Finally, and very importantly in our view, the Cape had not been identified under any local planning policy as being the preferred location for wind farming

6.9 It is against this finding of the locality not being of such outstanding natural beauty as to warrant special protection, that we must assess the visual impact of the proposed turbines. In making our assessment we agree with the responsible authority and the permit applicant that significant weight must be given to the local planning policy which has identified this locality for wind farm development.

6.10 This is not to suggest that the question of visual impact can be ignored. The local policy is clear about the need to take into account the particular visual impacts of such a proposal. As already noted, the policy draws attention to:

- *'The need to protect the scenic quality and visual integrity of the landscape.'*
- *The impact of the turbine or facility upon the visual characteristics of the landscape.*
- *The impact of the turbine or facility upon significant views, including visual corridors and sight lines.'*

6.11 Mr Razzell's viewshed analysis at Section 4 of his witness statement attempts to determine the degree to which the turbines would be visible from surrounding properties, including individual dwellings and roads. His modelling takes account of topography and existing vegetation and determines how many and how much of the turbines would be visible from different locations within the vicinity of the wind farm and from within and across the surrounding valleys.

6.12 In the case of the Garito and Thackeray dwelling, up to eight of the twelve turbines would be visible if existing vegetation was ignored. Of these, a maximum of five (turbines 7,8,9,10 and 12) would be visible from the one place.

The latter are all on the ridgeline to the north west of the dwelling. When existing vegetation is factored in –which includes a substantial row of Cypress trees that surrounds part of their residence - all eight are in some way screened from the dwelling itself. It was Mr O'Brien's submission, and our inspection confirmed the fact, that some of these trees have reached the end of their useful life and are being replaced by indigenous plantings which are still in their infancy.

6.13 The outlook from the Garito and Thackeray dwelling is an attractive one of rolling hills and isolated groups of trees. Our inspection confirmed however that the existing Cypress row would provide a significant visual screen and we are confident that the replacement plantings will play a similar role. There are obvious benefits in continuing to maintain and/or to replant wind rows of this nature, the local wind regime being what it is. We find it appropriate therefore to accept their continued existence.

6.14 For some years, up until the advent of the new planning scheme, the land adjoining the Garito and Thackeray property could have been developed as a wind farm, without a permit. Whilst a permit is now required the fact that the local planning policy framework encourages wind farming upon the hills over which their property obtains its views, cannot be ignored. This being the case we have been unable to find that the advent of up to five partly screened turbines at between 400m and 1.5km from this dwelling and with a further three on the other horizon, would be so visually intrusive as to warrant the refusal of this permit.

6.15 The Hurst's farm is located at the eastern end of a spur that extends parallel to the east-west ridgeline of Silcocks Hill and at right angles to the main north-south ridgeline along which the Silcocks Hill Road extends. There are views in all directions from this spur. Mr Razzell's modelling confirms that all but one of the proposed turbines would be visible or partly visible from this location, even with existing vegetation factored in.

- 6.16 Compared to the Garito and Thackeray dwelling, the Hurst dwelling enjoys less screening by significant trees. By contrast however, the primary views from the Hurst dwelling are generally away from the main groups of turbines. Our inspection confirmed that their dwelling is oriented to maximise the longer distance views to the south east, towards Welshpool and the Inlet. The group comprising turbines 4,5 and 11, to be sited on Silcocks Hill proper, adjacent to the existing Optus communications tower, could be described as being within the periphery but not centre field of this view. At distances of between 740m and 1.2km these three turbines would be the closest to the Hurst's dwelling.
- 6.17 We are satisfied that the turbines will be sufficiently removed and dispersed to not constitute an unreasonable imposition on views from the Hurst's dwelling, and in particular on their primary long distance view to the south east. These turbines will certainly bring about a change to the scenery by introducing a group of somewhat 'other worldly' structures along the hilltops surrounding the Hursts. We find however that given their clean lines and having regard also to the distances involved, that there should be no sense of clutter or visual intrusion. It will become a landscape consistent with a location identified for wind farming, but without being visually oppressive due to their presence.
- 6.18 The Ditta's dwelling is located further from the majority of the turbines than the previous two properties. The closest (turbine 9) is approximately 650m away with all others at 1km and more. The Ditta's dwelling is also well screened by substantial Cypress windrows on both its southern and western sides, in the direction of the turbines. Mr Razzell's modelling suggests that with vegetation factored in, most of the turbines will be partly or substantially screened from the dwelling. We were not able to inspect the Ditta's property but having regard to the aerial photographs, our inspection of areas nearby and the fact that the Ditta's are clearly less affected than the Hursts or the Garito/Thackeray household, we are persuaded to accept Mr Razzell's modelling. Having regard to our findings in relation to the other two properties we see no reason to reach any different conclusion about the

impacts for the Dittas, other than to observe that theirs will be a lesser impact due to the greater distances and screening.

6.19 Our inspection of the country surrounding Silcocks Hill took us to such places as Agnes Falls, 3km north east and Mt Best, 6.5km north north west of Silcocks Hill. We also visited the properties of the Whelans, on the lower section of the Agnes River Road (3.0km) and Mr Clarke at the base of the eastern end of Silcocks Hill (2.5km). Mr. Cousin's property, near Slade Hill, 6.5km to the east, and locations on the mudflats of the Inlet and at Barries Beach were also visited.

6.20 At Agnes Falls there is a most impressive waterfall which is a well-known local beauty spot. Mr Razzell's composite visual maps confirm that views of some of the turbines will be possible from the Falls Reserve. Our inspection revealed however that these opportunities would not coincide with views of the falls. Rather they would be from places along the access pathway. We are satisfied therefore that there will be no unreasonable interference with the scenic qualities of Agnes Falls.

6.21 On the range comprising Mt Best there is the opportunity to view across the rolling farmland of Silcocks Hill and thence to Corner Inlet and the Prom beyond. It is an attractive panorama but not particularly dramatic. The hills of the Prom above the Inlet are the most scenic element of the vista but the distance to these hills rules out any sense of drama. We think the fact that there is no formal viewing place on Mount Best, confirms this absence of the spectacular.

6.22 The photomontages prepared by both Mr. Cousins and Mr Razzell were useful in providing a generalised impression of the likely change in the vista due to the advent of a windfarm. We accept that both sets of montages include errors but these are not sufficient in our view to rule out either or both as useful aids to our understanding of the likely impacts. Both sets of montages confirm, in our opinion, that at these distances the proposed turbines will simply appear as a small array of somewhat unnatural, needle

shaped objects. Objects which, if one was to support the renewable energy aspect of windfarming might engender a positive response.

6.23 For those for whom the 'manufactured' will always come out second best against nature - even a highly modified nature as is the case here - these structures could, we acknowledge, engender a negative response. In this regard we accept that the apprehension expressed by Mr Cousins and the other persons who gave evidence on this issue is genuinely held. We are of the view however, given the planning scheme's clear identification of this locality as a place for wind farming, that we must find in favour the proposal and that the resultant visual impact, due to its relatively small-scale intrusion into the wider landscape, is an acceptable outcome.

6.24 Our findings in relation to the impacts from Mr Cousins' property are little different to those in respect of Mount Best and the hills thereabouts. The distances involved are about the same and so the relative scale of the array of turbines must also be similar. At the Cousins' property the turbines will also lie outside of the primary views enjoyed from the dwelling. These views are to the south towards the Inlet whereas the proposed windfarm is more to the west. Indeed we had to go to some lengths in the course of our inspection of the Cousins' property to find a place where the array would be especially visible.

6.25 Likewise we were a little hard pressed to find a place where the Whelans would be able to see the turbines. Their property is closer than the Cousins but like them their primary views are to the south rather than west towards the proposed turbines. We are satisfied that the windfarm would have no unreasonable impact on their visual amenity.

6.26 It was also acknowledged in the course of our inspection that at Mr Clarke's property, which is at the base of Silcocks Hill and is well screened by vegetation, there would little likelihood of the turbines being visible, let alone able to make a significant visual impact. Accordingly we confirm that we find no negative impact from this quarter.

6.27 From places where the Toora Hills are visible in the foreground and with the Inlet to the rear of the viewer, the absence of the Inlet will mean that the hills are of only moderate landscape value. They are, we suggest, fairly typical of most low hills that have been substantially cleared for grazing and the township, where visible, simply adds to the level of natural disturbance.

6.28 The photo montages prepared by Mr Razzell confirm that the turbines will change the visual appearance of the hills but not we think in a manner that will substantially detract from their already modified character. Indeed we accept that they may add an interesting element as a group of somewhat other worldly structures marching across the ridgeline. It will be an outcome entirely consistent with the presence of a wind farm, as encouraged by the local planning policy.

6.29 Finally then there are the more long distance views that have the Inlet in the foreground and the Toora Hills behind. These include views from the Inlet itself and from places along its other shorelines such as at Barries Beach, Duck Point and within Wilsons Promontory National Park.

6.30 Our strong finding on the visual impact from all of these locations is that the wind farm would not detract unacceptably from their very important scenic values because Silcocks Hill is not a major contributor to those scenic values. In addition, as one reaches locations within the Prom, the distances are so great that the visibility of the turbines will become almost inconsequential. We also suggest, although we have not made any detailed calculations in this regard, that from these further away places the ranges to the north of Silcocks Hill may also come into view. Being higher, these ranges, which include Beech Hill at 573m and Mount Fatigue at 582m, will form a backdrop preventing the turbines from being starkly silhouetted against the sky.

### Conclusion

- 6.31 The subject land is within 2 kilometres of Corner Inlet. The proposed wind turbines will be clearly visible from most of the coast along Corner Inlet and from the Inlet itself. The Victorian Coastal Strategy is to some extent relevant but it must be remembered that the proposal is not directly affecting the that part of the coastal viewshed that has been singled out for special attention.
- 6.32 The wind turbines will change the landscape above Toora. However, given the substantially altered and not unique character of Silcocks Hill and surrounding places, we find that the visual impact will not be substantially detrimental to its landscape qualities. It will simply be consistent with what must be expected from a facility of this sort, but one which has been sited such that no overpowering or excessive visual impact will result. This has been achieved not only by careful design of the structures themselves but can be attributed also to their relatively small number and their uncluttered placement. In this regard the proposed development represents a very different outcome to that which would have resulted at Cape Bridgewater had the thirty three turbines proposed under that application been approved.
- 6.33 As Victoria's experience with wind farms is limited, it is hard to assess the landscape impact and effect on visual amenity until the wind farm is actually built. However, on balance we consider that the wind farm will add a positive element to the landscape interest of the Toora Hills and in this we agree with Mr Razzell. What is now a medium foreground of rounded grassed hills of no particular beauty, will become focussed and enlarged by the presence of a limited number of turbines marching across its ridges and summits.
- 6.34 We consider also that on the balance of probabilities the wind farm is likely to become a significant tourist attraction in the South Gippsland area.

## 7. NOISE

### Introduction

- 7.1 Noise is a concern to the Tribunal. The Tribunal accepts that residents need to have a reasonable noise environment at their dwellings. Noise is a

recognised problem when siting wind turbines in any proximity to residential properties.

### Expert Evidence

- 7.2 The applicant called Mr P Fearnside, managing director of Marshall Day Acoustics Pty Ltd, to give evidence. Mr Fearnside was commenting upon another report prepared for the applicant by Pacific Air and Environment Pty Ltd. Mr Fearnside carried out his own modelling using the background noise levels measured by Pacific Air and set out in their report. Although this was criticised by Counsel for the respondent/objectors, the Tribunal accepts the background noise levels as measured and assessed by Pacific Air and set out in Table 1 of Mr Fearnside's report.
- 7.3 The respondent objectors called Mr N. Goddard, acoustic engineer of Watson Moss Growcott Acoustics Pty Ltd. Mr Goddard had not visited the site. He was commissioned to comment on Mr Fearnside's report. Mr Goddard concentrated his comments on the modelling method and results in Mr Fearnside's reports. He took the total power sound levels set out in Table 4 of Mr Fearnside's report and calculated the total 'A' weighted noise power levels for each mode of operation, either power optimised or noise optimised. He calculated a 1 dBA difference between the modes. Therefore, Mr Goddard submitted he could not understand how in the modelling results the differences between the modes in Tables 5 and 6 of Mr Fearnside reports showed differences up to 3dBA at the same location and for the same wind speed. Under cross examination, Mr Goddard responded that his analysis could be more precise but he would need the third octave results for the specific wind turbine to be used. These noise levels were not provided in any of the applicant's expert reports on noise.
- 7.4 Mr Fearnside criticised Mr Goddard's approach, submitting it was not good acoustic engineering to "A" weight power levels until you have calculated the power level at the site of interest. Mr Goddard had said in cross examination that to do this you needed third octave power readings. Mr Fearnside's

report only contained total power levels. He informed the Tribunal, however, that he did have third octave power levels from the manufacturer of the wind turbines. These were not put in his report, even though it was the third octave power levels that he had used for his calculations. The Tribunal considers this severely disadvantaged Mr Goddard in his preparations and analysis.

7.5 The Tribunal reminds the parties that as a matter of proper preparation of expert reports, the original data used in calculations is the data that should be placed in the report not some derivative of it. The Tribunal considers that a lot of the difficulty in understanding the evidence of Messrs. Goddard and Fearnside would not have been apparent if Mr Fearnside had put the third octave power readings directly into his report, thereby allowing access to them for Mr Goddard. We consider the failure by Mr Fearnside to include the third octave readings in his report is a breach, albeit minor, of Practice Note VCAT 2 – Expert Evidence para 3.1(6) and (7) which requires reference in the report to the facts upon which the report proceeds (6) and reference to those documents or other materials the expert has been instructed to consider and the literature or other material used in making his report (7). Mr Fearnside should ensure in all future reports that all sources of basic data are included where possible or expressly referred to or identified as to their source.

7.6 Mr Fearnside submitted that this shortcoming of Mr Goddard's analysis of his modelling meant that Mr Goddard had not allowed for variations in noise levels due to different degrees of air absorption for the different sound frequencies. This was not clearly or quantitatively explained by Mr Fearnside but the Tribunal accepts that there would be some variation caused by differences in air absorption. This is Mr Fearnside's explanation of the 3dBA difference between Tables 5 and 6 of his report, the drop in the sound level from power optimised to noise optimised mode of operation of the turbines.

7.7 Mr Goddard said that in his estimation the modelling showed that the applicable Victorian noise limits would be exceeded by 2dBA for one of the analysed wind speeds, 6 metres per second, at one property, Garito and

Thackeray, when the turbines were operating in the power optimised mode: see Table 5. When the wind turbines were operating in the noise optimised mode: see Table 6 of the Fearnside report, the noise level at the Garito and Thackeray property at a wind speed of 6m/s equalled the Victorian night limit for sound of 40dBA.

- 7.8 Mr Goddard submitted that this was too close to the limit, especially where there has been no allowance for tonality or impulsiveness. Further, acoustic modelling only had a predictive accuracy or tolerance of  $\pm 2$  dBA. The Tribunal considers Mr Goddard's criticism misses the point to some extent. Firstly, in relation to tonality, it is a pity he was not provided with the third octave readings but Mr Fearnside used them in his analysis and his report does not mention any tonality.
- 7.9 Secondly, the Tribunal considers that the resolution of what impact does the predictive accuracy of the model have on the acceptance of the modelling results puts the noise issue in perspective. The worst case identified by the model was for the Garito and Thackeray's dwelling at night when the wind speed was 6 m/s and the turbines were in the power optimised mode, the predicted sound level was 42 dBA, which is 2 dBA above the night limit under N3/09 of 40 dBA. Applying the tolerance of  $\pm 2$  dBA the noise level will vary between 40 dBA which is on the limit to 44 dBA which is clearly in excess. As long as the size of the tolerance does not make the results meaningless eg a tolerance of  $\pm 15$  dBA the modelling is valid. The tolerance provides the confidence interval as to the accuracy of the modelling. The pragmatic consideration is that once the wind farm is operating it is subject to conditions placing clear limits on the maximum noise to be generated. If the limits are shown to be exceeded, the applicants must modify the operation of the turbines to ensure the noise limits are not exceeded. The main purpose of the modelling is to give confidence that appropriate noise limits can be met.
- 7.10 If Mr Goddard's concerns about a lack of a fall back position in the operational noise levels, to cope with an unexpected tonality or similar are realised, the permit applicant would have to modify the wind turbines operation to meet the

applicable noise standard. Most noise standards require that when a tonality is established it has a penalty of +5dBA added to the measured sound level to ensure the adverse subjective response of hearer is catered for: see New Zealand Standard NZS 6808-1998, paragraph 4.4.3.

7.11 Further, the Tribunal gains confidence that the modelling results are more likely to be an overprediction rather than an underestimate as all experts agree the model is conservative. When predicting the noise level at a point away from the wind turbine, the model assumes the wind is blowing from the turbine to the point of interest, this is because noise transmits better downwind than upwind. When the model is calculating the total noise at a site due to all of the turbines, it is consequently assuming that the wind is blowing towards the point of interest from every turbine. This obviously is incorrect and as the wind can come from one direction only the actual noise due to the wind turbines must be less than the model predicts. Mr Goddard in cross examination considered that if an allowance was made for the wind blowing away from the measured site, there would be an up to 3dBA drop in the noise levels from those predicted by the model.

7.12 Finally, the noise standards require that when measuring the background noise level the effects of local vegetation must be ignored. This is a further conservative factor. It is particularly significant at the Garito and Thackeray property, the residence with the highest predicted noise exposure to the turbines. The house on this property is surrounded by large cypress trees, which would not have been taken into account in the modelling. Provided these trees remain the noise level above ambient background levels experienced at the Garito and Thackeray property should be less than predicted by Mr Fearnside's modelling. Of course, Mr Garito and Ms Thackary are quite entitled to remove the trees and have the windfarm operators ensure the applicable noise limits are met. We have already observed however that given the local wind regime, windrows such as those at this residence appear likely to be maintained. This brings us to the last question for this issue, what is the applicable noise limit?

### Applicable noise standard

- 7.13 The permit applicant seeks to have a noise standard adopted for the operational control of the wind turbines that is different from that recommended by the responsible authority and the respondent objectors. Indeed the question of which noise standard should apply is the only remaining issue in the review of conditions.
- 7.14 The permit applicant seeks the adoption of the New Zealand Standard NZS 6808-1998: "Acoustics – The Assessment and Measurement of Sound from Wind Turbine Generators" This is a standard developed specifically for wind turbines.
- 7.15 The responsible authority wishes to adopt the Victorian rural guidelines, No. 3/89: "Interim Guidelines for the Control of Noise from Country Victoria". The guidelines adopt and slightly amend the State Environmental Protection Policy on noise, SEPP N1. SEPP N1 is only applicable to urban environments.
- 7.16 The permit applicant maintains that in terms of absolute noise limits the standards between SEPP N1 and N3/89 and the New Zealand standard were almost the same except that the New Zealand standard allows approximately 1 dBA louder. Given the accepted tolerance in the predicted sound levels from the model and the conservative nature of the model this degree of variation does not appear to change the significance of the models assessment. Nor should a 1dBA increase cause a significantly and disturbing difference in the amenity of the hearers.
- 7.17 The big advantage claimed by the permit applicant is that the New Zealand Standard bases its noise measurement on L95 rather than Leq. L95 means the measured sound pressure level which is exceeded over 95% of the time interval considered. Leq is the value of the "A" weighted sound pressure level of a continuous steady sound that has the same acoustic energy over a given time as the actual varying "A" weighted sound pressure level when determined over the same time interval. According to Mr Fearnside, measurements based on Leq must be made by hand at the site and take

approximately half an hour per measurement. Whereas, measurements based on L95 can be made automatically. Therefore, according to Mr Fearnside, noise monitoring is adequate, continuous and cheaper using the New Zealand standard.

7.18 The Tribunal considers it more appropriate to use a standard specific to a use, as opposed to a general standard which is a guideline under review at this time. Further the New Zealand standard is designed to cater for the control of a dynamic system taking account of the varying wind speeds. It has a well thought out and clearly set down system of compliance testing after installation. It also clearly enunciates the effect on the allowable limits where special audible characteristics such as tones, impulses or modulation are apparent. The Tribunal consider the New Zealand standard is the more appropriate acoustic standard for use in the operational control of windfarms and will allow its use for this purpose.

7.19 The Tribunal will adopt the permit applicant's recommended conditions for the operational control of noise, with the following amendments. Firstly, monitoring will commence two months after the commissioning of the first turbine and it must be continuous until 12 months after the commissioning of the last turbine. We consider this extension of time is appropriate given the understandable concerns of the nearby residents and the fact that the cost of testing under the New Zealand standard is far cheaper than under the Victorian guidelines. Secondly, the permit applicant must make its noise monitoring results available to the public upon request. Such transparency will do a great deal to promote the wind turbine industry in Victoria. Both of these amendments will result in greater local knowledge of the windfarm's operations.

## **8. BIRD STRIKE**

8.1 As enjoined by the Planning Scheme at Clause 15.09, the Tribunal is acutely aware of Australia's international treaty obligations in relation to migratory shore birds under the RAMCAR convention and the CAMBAR and JAMBAR

agreements with China and Japan. We also recognise the significance of Corner Inlet as a habitat for water birds and other specialised coastal birds.

- 8.2 Corner Inlet is a very important site for migratory shore birds, sea birds and coastal raptors including the white breasted sea eagle: McMillan.
- 8.3 Concern has been raised by the applicant/objectors about the potential for bird strike at the wind farm. The responsible authority and the permit applicant have acknowledged this risk. A comprehensive report was commissioned from Mr B. Lane, which included detailed recommendations in relation to future action. As is obvious, a real understanding of the bird strike potential of these particular wind turbines cannot be assessed until they are installed. Mr Lane's report was noted to be preliminary - not all seasons and conditions having been monitored in the period prior to the hearing. He conceded also that there was some risk of bird strike but that it was likely to be very low, and, that in any case mitigation measures could be taken to reduce the risk. The Department of Natural Resources and Environment ("DNRE") were of a similar opinion.
- 8.4 Mr Lane suggested that mitigation measures might include turning off specific wind turbines during set times of the day in certain seasons and/or during certain specific weather patterns at certain times. This he anticipated would deal with soaring raptors during warm afternoons in the summer period and the possibility of strikes on migratory shore birds leaving on their migration in late summer/early autumn. He also supported Mr Clarke's suggestion for rabbit reduction measures to be undertaken within the vicinity of the turbines.
- 8.5 The applicant objectors produced a number of reports from the Internet that show unacceptable levels of bird strike. These however appear to be limited to two sites being Altamont in California and Terifa in Spain. We note that elsewhere, particularly in the Netherlands, reports have confirmed that the risk of bird strike is low, especially when compared with road kills in a similar area. The American National Wind Coordinating Committee Handbook "Permitting of Wind Energy Facilities" page 37 indicate that the use of solid towers as

opposed to lattice towers and larger and fewer turbines at greater spacing are positive factors for reducing bird strike. The current proposal clearly adopts this approach.

8.6 The applicant/objector's case was that as Mr Lane could not be seen to have reached a definitive conclusion as to bird strike, in particular in relation to migratory shore birds covered by the international agreements, then the Tribunal should under the precautionary principle defer granting a permit until Mr Lane could be sure that the bird strike could be maintained at an acceptable level. Mr Lane's response was that he couldn't be sure until he had actual data on the wind farm's operation and in this the Tribunal concurs.

8.7 The applicant/objector's response to Mr Lane's request for actual data was that it would be more appropriate to install a single wind turbine as a test for not only bird strike but for the measurement of other impacts such as noise. If it became apparent that bird strike and noise were satisfactory for single turbine then permits for other wind turbines could be applied for incrementally. At first glance this has some appeal. It was Mr Gobbo QC's strong submission however that such a one by one approach was not worth contemplating as his clients would simply abandon their proposal.

8.8 The Tribunal's conclusion is that from the studies to date and the conclusions of Mr Lane and the DNRE, the risk of unacceptable bird mortality is low. The Tribunal acknowledges however that little real information is available as to the interaction of birds and wind turbines in Australia. To this end the Tribunal considers investigations of bird behaviour at the wind farm site should continue prior to construction of the wind farm.

8.9 Further, the studies should be continued and data be recovered throughout the first two years of operation following completion of the wind farm.

8.10 The responsible authority in consultation with DNRE should call for an immediate implementation of corrective measures if it finds the rate of bird mortality to be unacceptable, and should keep ordering such corrective

measures until the level of bird mortality is found by the responsible authority to be acceptable. The Tribunal acknowledges that this may pose some limitation on the permit applicant's freedom of operation but we think it justified in order to ensure that Australia's treaty obligations are met and that the risk to rare and or endangered native avifauna remains low.

## 9. SECONDARY ISSUES

### 9.1 Introduction

There are a number of issues raised by the parties in relation to the windfarm that were not given the same hearing time but nevertheless have the potential to cause a significant loss of amenity if not properly considered and provision made for their control by way of permit conditions.

#### Shadow flicker

- 9.2 Shadow flicker occurs when the sun is low on the horizon, near morning and evening, and the blades pass between the sun and an observer, or somebody in the path of the blades shadow, so that a flickering is experienced. In the windfarm literature it was described as similar to driving a car down a tree lined country road, when the sun is low and a flickering is experienced that can cause irritation and visual impairment.
- 9.3 The permit applicant considers that only a limited number of residences and areas will be subject to shadow flicker: see Hoehne report, Section 6.1. To ensure that shadow flicker does not cause an unacceptable loss of amenity the permit applicant recommends it should not exceed 30 hours per year at any dwelling: suggested condition 20. This limit was formulated and is used by the Ministry for Environment of Schleswig-Holstein, a state in northern Germany.
- 9.4 There is little information available as to what is an acceptable level of shadow flicker. The Tribunal considers that given this paucity the responsible authority should be given some control over the total number of yearly hours that shadow flicker is permissible at a residence. Therefore,

suggested condition 20 will be amended to give the responsible authority more control.

#### Construction and Decommissioning

- 9.5 This is a very large project with the bulk of the funds going to purchase and erection of the wind turbines. The on-site roadworks, cabling and powerlines are a minor portion of the cost. The construction of the windfarm will not involve the large amount of earth works. The turbines will be brought to the site in prefabricated sections and assembled.
- 9.6 The Tribunal does not envisage any construction problems. There is an overlay in the planning scheme over the subject land and the surrounding area in relation to protection from erosion. Provided the control practices set out in permit applicant's suggested condition 22 are met erosion will not be a problem.
- 9.7 Mr Rapinett submitted that the large number of semi-trailers coming to the site will disturb residents of the elderly people's home at the corner of the South Gippsland Highway and Silcocks Hill Road. He suggested that construction traffic should use Creamery Valley Road. This would involve the construction traffic using over three times the length of rural road. The Tribunal does not consider that the amount of construction traffic will be large, not equivalent to large earthworks, and that it is likely it would be spaced a significant intervals of time, it would not be constant. The construction is anticipated to take approximately 5 months. The most intense period of construction traffic will be during the footing and road construction period which according to the typical construction programme in the Hoehne report at Figure 8, will take approximately 6 weeks. After that period construction traffic would be intermittent. The Tribunal does not consider that it was established that the construction traffic would cause unacceptable disturbance to the residents of the elderly people's home and if any disturbance is suffered it will be for a short period. We see no reason, therefore to require a condition that construction traffic must use Creamery Valley Road.

- 9.8 Other than the construction traffic, the Tribunal does not consider the traffic generated by the operation of the windfarm will cause any significant increase in the traffic using Silcocks Hills Road. This is unless the windfarm becomes a significant tourist destination but this can be dealt with in the Traffic Management Plan required under suggested condition.
- 9.9 The construction and decommissioning of the windfarm is dealt with at condition 22.

#### Electromagnetic Interference

- 9.10 As described in the Hoehne report: Section 6.3, there are two sources of electromagnetic fields generated by the turbines. Firstly, from the electromagnetic fields generated by the turbines themselves. Secondly, from the deflection and reflection of transmitted electromagnetic signals, eg television, radio, etc.
- 9.11 The permit applicant submits that if any television or radio reception is adversely affected it can be rectified by correcting the alignment of any existing antennas or by the installation of high quality antennas.
- 9.12 The alleviation of any electromagnetic interference with television and radio reception is dealt with in the permit applicants' suggested condition 18 and the Tribunal accepts this is a satisfactory control measure to ensure there is no significant interference with these signals.

#### 10. **CONCLUSION**

- 10.1 On balance the Tribunal considers that the wind farm will contribute positively to the environment of South Gippsland. This facility, comprising twelve, 67 metre high turbines with 33 metre long rotors is capable of providing a renewal energy supply equivalent to the domestic electricity needs of the whole of the South Gippsland Shire. This is a significant benefit or outcome in terms of the State and Local Planning Policy Framework.

- 10.2 As with any industry that exploits a natural resource, wind power stations can be sited only where the resource, namely wind, is economically available. Close connection to the electrical grid is also a requirement, making locations miles from nowhere where few can see them or be impacted upon, an unlikely option. The land above Toora is one of the windiest locations on the Victorian coast and the main electricity grid extends adjacent to the South Gippsland Highway. Accordingly, the subject land is ideally situated for this renewable energy industry.
- 10.3 Since the early 1990's the South Gippsland Planning Scheme, in recognition of this coincidence of wind and grid connection, has identified the subject land as a place where wind farming should be encouraged. The new format planning scheme now includes a local policy to this effect which is the only such local planning policy in Victoria. The planning scheme also recognises that the Shire has other equally important natural resources, notably its coastal landscapes and the internationally significant habitat for water birds and specialised coastal birds, at Corner Inlet. The local planning policy encouraging wind farming recognises the value of these other resources and seeks to ensure that these values are not unacceptably prejudiced.
- 10.4 This proceeding raised the very relevant questions of visual impact and impacts on the habitat values of Corner Inlet. The issue of noise disturbance was also high of the agenda of concerns raised. Other matters such as shadow flicker and the sterilisation of adjoining farm land for future development have also been considered by us.
- 10.5 Our principle finding in relation to visual impact has been that because of the limited number, clean lines and relatively wide spacing of the wind turbines, the visual integrity of the landscape above Toora will not be unacceptably prejudiced. In reaching this finding we have had regard to the fact that the landscape is already highly modified and could not be regarded as being of "outstanding" natural beauty – as was the case, for example, in the Cape Bridgewater application. We have also found that this facility would in no

way prejudice the far more important scenic values of Corner Inlet or Wilson's Promontory.

10.6 We have attempted to take into account the detailed siting of objector's dwellings, the potential for screening from topography and existing vegetation and the particular orientation of these dwellings in relation to primary views. In doing so we have found throughout that the resultant visual impact would not be cluttered or otherwise overwhelming. It will be merely consistent with the existence of a carefully designed and laid out wind farm – a use specifically encouraged by the planning scheme. We acknowledge that for some these large and somewhat “other worldly” structures may always read as a discordant element in a rural setting. If this opinion was to be adopted however, it would effectively prevent this renewable energy industry from developing anywhere that has a typically rural landscape character and we do not believe that this is a finding that we can or should make.

10.7 The habitat values of Corner Inlet would be unacceptably compromised if these turbines were found to cause significant levels of bird or bat mortality. Such a outcome would be inconsistent with Australia's international treaty obligations. Whilst bird and bat strike has been associated with wind turbines, we are aware that with the abandonment of lattice towers (roosting) and the move to larger but fewer turbines, with greater distances between the towers, the risk has reduced. There are also mitigation measures which can be implemented, such as turning off specific turbines at set times, in certain seasons or during particular weather patterns.

10.8 Our conclusion based on the studies and survey data obtained to date and the conclusions of Mr Brett Lane and the DNRE, is that the risk of unacceptable levels of bird mortality is low. We have nevertheless found it appropriate to require, as conditions of permit, the ongoing monitoring of bird and bat numbers, movement patterns and strike rates and to provide for mitigation measures to be implemented where necessary, to the satisfaction

of the Council and the Department. Stanwell will be required to abide by these conditions.

10.9 Stanwell will also be required to abide by detailed conditions in relation to noise emission levels. We were persuaded by the expert evidence called by Stanwell that turbine noise emissions – which are mostly attributable to the broad band sound of wind passing over the rotor blades, rather than mechanical noise – are unlikely to exceed recommended standards at even the closest dwellings.

10.10 We have found in favour of a New Zealand standard for sound level assessment and measurement because it is not only specifically directed towards wind turbine sound but is also more cost effective to apply and therefore, as a result, to monitor. The Victorian guidelines which we have also considered, and which appear likely to require a slightly lower night time noise limit, present difficulties. One of these is that wind noise must be factored into the assessment of such facilities whereas the usual approach is to measure sound in the absence of wind.

10.11 The modelling of likely sound levels conducted by Mr Fearnside demonstrated that compliance with both the New Zealand and indeed for the most part the Victorian guidelines is likely to be achieved. Given also the inherently conservative attributes of the model we are reasonably satisfied also that these limits can be comfortably achieved. The conditions we have imposed will require detailed noise monitoring by Stanwell so that persons, if disturbed, will not have to take it upon themselves to test for compliance. We think this is only fair in the circumstances. We are satisfied also that there are a number of measures which can be taken to ensure compliance, without undue detriment to the operation of this facility.

10.12 The proposed permit conditions are extensive and detailed. For the most part Stanwell has agreed to these conditions, which we think address all of the relevant matters for consideration under the planning scheme and in

particular under the local planning policy for wind farms. In all of these circumstances we consider it appropriate to direct the issue of a permit.

**ROGER J. YOUNG  
SENIOR MEMBER  
PLANNING LIST**

**JANE MONK  
MEMBER  
PLANNING LIST**