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J Perry and others Applicant  
Hepburn Shire Council Responsible Authority  
Sustainability Victoria Referral Authority  
Hepburn Renewal Energy Association Inc. Respondent  
Victorian Civil and Administrative Tribunal

18 June 2007, 19 June 2007, 20 June 2007 and 21 June  
2007, 27 July 2007.  
Melbourne

Margaret Baird , Senior Member Ian Potts , Member

Section 82 of the Planning & Environment Act 1987 -  
Hepburn Planning Scheme - Farming Zone - Environ-  
mental Significance Overlay Schedule 1 - Two Wind Tur-  
bines - Community Wind Park - Proximity to Dwellings -  
Aboriginal Heritage - Visual Impact - Road Safety - Noise  
Impacts - Fauna Impacts

For Applicant (1)Mr C Wild on behalf of all Applicants.  
Mr Wild's submission was assisted by Dr G Bossinger,  
Ms E Elsworth, Ms J Perry, Mr W Barron, Mrs G Barron,  
Ms M Frost, Ms A Brown, Mr L Hughes, Mr P Duggan  
and Ms M Palmer. Statements by Mr L Ryan, Mr A Coker  
and Ms M Frost were read by Mr Wild.

For Responsible Authority Mr G Rundell, The Planning  
Group.

For Referral Authority Mr J Edgoose, Manager Renew-  
able Energy Deployment, Sustainability Victoria.

For Respondent Mr M Townsend of counsel. Evidence

was called from: • Mr C Delaire, acoustic engineer (noise assessment). • Mr G Palmer, environmental scientist (fauna assessment). • Mr J Cleary, planner (landscape and visual assessment). • Mr C Kaskadanis, heritage consultant (heritage assessment).

### Summary

This case involves a proposal by the Hepburn Renewable Energy Association to develop Australia's first community owned wind farm at Leonards Hill, around 10 kilometres south of Daylesford. The wind farm will comprise two turbines.

As far as we are aware, the Tribunal has not considered a proposal for a new wind farm since 2002 when the Minister for Planning became the responsible authority for considering wind energy facilities with a capacity greater than 30 megawatts. As there may be additional proceedings for smaller facilities before the Tribunal, we have sought to summarise some principles emerging from our consideration of the Scheme's requirements as well as Panel and Tribunal decisions, as relevant to the scope of the proceeding before us. That includes matters to be taken into account and weighting of residential amenity impacts having regard to the purpose of the Farming Zone and policy directions in the Scheme relating to wind energy facilities - particularly visual and acoustic impacts.

Margaret Baird , Senior Member Ian Potts , Member

What is this review about?

1 Leonards Hill is:

- a volcanic rise, at the foothills of the Great Dividing Range, surrounded by rural living and farming properties;
- a cleared hill adjoined by partly vegetated lots situated between large sections of the Wombat Forest;
- a picturesque rural-based setting;
- an area through which tourists to the Daylesford mineral spa district and others pass.

2 A proposal by the Hepburn Renewable Energy As-

sociation to develop Australia's first community owned wind farm at Leonards Hill is supported by the Hepburn Shire Council that determined to grant a permit for the facility. Parts of the community also support the Association's proposal. However, residents and property owners around Leonards Hill, where the wind farm comprising two turbines would be erected, strongly oppose the development. Ms Perry has sought review of the Council's decision on behalf of a large number of objectors. The Tribunal's task is to decide whether a permit should be granted for the proposal.

Where is the review site?

3 Leonards Hill is around 10 kilometres south of Daylesford. The review site is located on the south side of Leonards Hill and the east side of the Ballan-Daylesford Road. When approached from the south, the land rises northward. The cone of Leonards Hill forms a prominent crest within this rising landform. The Hill's crest is skewed toward the north with steeper slopes grading down to the north (toward the South Bullarto Road). To the west (facing the Ballan-Daylesford Road) and south are shallower grades.

4 The review site is cleared and used for grazing and some crops (potato). A 22 kilovolt powerline runs through the property. A 25 year lease for the site has been secured by the Association.

5 Material accompanying the permit application records 17 dwellings within one kilometre of the proposed turbines. Two dwellings are in the same ownership as the review site and are among the closest to those proposed turbines.<sup>(2)</sup>

6 During the proceeding, it was established that one dwelling was omitted from the assessments (Ms Perry's dwelling) - that being close to dwellings #8 and #9 accessed from the Leonards Hill - Barkstead Road.

7 In summary, the 16 closest dwellings not within the same ownership as the review site would be between 519 metres and 895 metres from the closest respective turbine. <sup>(3)</sup> Of these, two would be less than 600 metres from the closest turbine, four would be between 600 and 700 metres from the closest turbine and four would be between 700 and 800 metres from the closest turbine.

Many of the residences are on small lots with dwellings surrounded by vegetation/wind-breaks. Those with the most open vistas to Leonards Hill include dwellings #10, #11, #13 and #19, with dwellings #11, #13, #16 and #18 located around the northern side at the base of the Hill.

8 The Ballan-Daylesford Road contains significant roadside vegetation with open vistas to the Hill most evident at the intersection of the Ballan-Daylesford Road with Leonards Hill - South Bullarto Road plus another road leading to the old Leonards Hill school (dwelling #12).

What is proposed?

9 Approval is sought to construct two, 2 megawatt, wind turbines. Each tower would be 68 metres high, 4-5 metres in diameter (tapering to the top) with a blade length of 41 metres. Each turbine would be mounted in a way that enables it to pivot so as to face the wind no matter which wind direction occurs. Blades rotate clockwise (when face on) at between 10-20 rotations per minute. Modelling assessment is based on the use of Repower MM82 2MW turbines.

10 The base of the turbines would be located at 729.9 metres and 735 metres AHD (4) contrasting with the Hill's high point of 741 metres AHD. The indicative plan shows the turbines to be 225 metres apart in an east-west alignment on the southern shoulder of the Hill. The permit application recommends low-key colours for the turbines (very pale grey-blue above 10 metres and pale grey-green below 10 metres) plus the blades and nacelle (very pale grey-blue). (5)

11 Associated works include underground cabling, connection to the grid via the 22kv powerline, a 50 metre high wind monitor mast, (6) site office, access tracks, parking, and maintenance hard-stand areas. No public viewing areas or floodlighting are proposed. A grid connection control booth (around 4 m<sup>3</sup>) is required. Transformers would be to the side of each turbine or built into the turbine.

12 The turbines are projected to produce up to 14,000 megawatt hours of energy each year with the potential to service around 2,000 - 2,500 homes.

13 The wind farm would be owned and operated by

the Hepburn Wind Co-operative Ltd, a community owned co-operative. Profits are proposed to be returned to Co-op members with allocations intended to be made to community programs. (7)

14 The project has a 25 year life. Future Energy Pty Ltd has assisted the Association to date and would project manage construction (estimated to take around two months). On-site staffing is not required other than for six-monthly maintenance. The permit application was accompanied by a planning report and a number of other reports. (8) No Environmental Management Plan has been prepared.

Why is a planning permit required?

15 A permit is required to use and develop the site for a wind energy facility pursuant to the Farming Zone of the Hepburn Planning Scheme. (9) A permit is also required for buildings and works pursuant to an Environmental Significance Overlay Schedule 1 that applies to the protection of the proclaimed water catchment. (10) The Ballan-Daylesford Road is in a Road 1 Zone wherein a permit is required to create or alter access to the road. (11) Several properties (included in all assessments) are within the Moorabool Shire in an area zoned Environmental Rural with an Environmental Significance Overlay relating to water catchment protection.

What is the basis of the Tribunal's decision?

16 Many of the arguments raised by the parties in this proceeding are those often associated with wind farm proposals, no matter what their size. That reflects the deep concern such proposals hold for some local communities. In these types of proceedings, debates focus on issues such as:

- whether projected greenhouse and wind energy benefits would be achieved;
- whether the visual impact would be acceptable for existing residents and tourists to the area;
- whether noise emissions from the turbines would be acceptable in terms of resident amenity;
- whether the turbines would be too close to existing

dwellings and roads with respect to shadow flicker, blade glint and safety;

- whether the mortality and injury risks to existing fauna, avifauna and bats are acceptable;
- whether the turbines would affect spring water and water supplies;
- whether the presence of the turbines would impact on traffic and aviation safety.

17 Unfortunately, in raising these types of concerns, this proposal has caused deep community divisions, as has also occurred in other places when wind farms are proposed. No matter what decision is reached by us, there will be an impact - either for those who have invested considerable time and effort to advance and support this innovative community-based project, or for those property owners and residents in the Leonards Hill community who consider the wind farm to be inappropriate for their area.

18 In setting out our assessment of the issues below, we do not recite all of the material tendered as the comprehensive documentation presented by all parties over the hearing is held on the Tribunal's file. We have considered all submissions and evidence assisted by our inspection.<sup>(12)</sup> We have also taken into account submissions on revised permit conditions we prepared and upon which we invited submissions by 7 July 2007.

19 Our assessment must be undertaken in the context of the directions of the Hepburn Planning Scheme and the specific evaluation criteria for wind farms. They direct us to look upon wind energy facilities in a broader and positive way in terms of the contribution to be made to local, state and national renewable energy goals when we consider matters such as visual impact. They also set noise standards.

20 As far as we are aware, the Tribunal has not considered a proposal for a new wind farm since 2002 when the Minister for Planning became the responsible authority for considering wind energy facilities with a capacity greater than 30 megawatts.<sup>(13)</sup> Rather, the Tribunal's recent consideration of wind farms has involved proposals for other development when a wind farm has been pro-

posed or completed.<sup>(14)</sup> As there may be additional proceedings for smaller facilities before the Tribunal we have sought to summarise some important principles emerging from our consideration of the Scheme's requirements as well as Panel<sup>(15)</sup> and Tribunal decisions, as relevant to the scope of the proceeding before us.

21 In summary, we find approval of the proposal would change Leonards Hill given the visible addition of two turbines in some public views and, to varying degrees, from surrounding private properties. The noise of the proposed turbines would comply with the prescribed standards albeit that does not mean there would be no noise impact upon some existing residents around Leonards Hill. The potential visual and noise impacts of the proposal are mitigated to varying degrees by the topography, orientation of dwellings, existing vegetation and the potential for more tree planting along some of the site's boundaries. Many other arguments against the permit application canvassed by the Applicant are not found, on our scrutiny, to be ones that are fairly or properly based and/or justify refusal of the permit application. We also find that any micro-siting of turbines, which appears common practice, should not bring them any closer to existing dwellings in order to ensure a balanced outcome.

Will the proposal positively contribute to sustainability outcomes?

22 Mr Wild submitted the proposal would not achieve its claimed greenhouse benefits and insufficient data had been used to derive the estimate of benefits. Dr Bossinger elaborated, questioning the applied capacity factor <sup>(16)</sup> and the extent to which this factor can be applied given local wind conditions (as stated in the Marshall Day report). Dr Bossinger stated that the data suggests a 10 fold over-estimation of actual greenhouse abatement benefits. In support of these submissions, reference was made to a recent newspaper article relating to the Wonthaggi wind farm that contends the efficiencies upon which that project was approved are not being achieved. <sup>(17)</sup> Mr Wild also submitted that Leonards Hill residents do not believe that wind energy would produce sufficient greenhouse gas benefits to justify the negative visual, environmental and amenity impacts of the turbines.

23 The views of Sustainability Victoria<sup>(18)</sup> about the contribution of the proposal to reducing greenhouse gas

emissions are required to be considered by the decision guidelines of Clause 52.32. Mr Edgoose explained the Authority's role and the process by which it calculates the potential greenhouse gas abatement. The Policy Guidelines refer to a 35% capacity factor as being typical for a wind energy facility. SV calculates projected greenhouse gas abatement based upon information supplied by the proponent, including the expected energy production provided by the Association. The abatement calculated by SV is 13,500 - 15,100 tonnes per annum. He also noted that SV had agreed to a grant of \$975,000 toward the capital cost of the project. Mr Edgoose referred to SV's support for the proposal including financial returns to local investors via the Co-operative, environmental benefits including greenhouse gas abatement and social benefits provided by the Co-operative's community trust.

24 Other assumptions have been applied to calculate the expected greenhouse gas abatements benefits, in line with the guidance provided in the Policy Guidelines. The absence of computer modelling, a matter given significant attention by Mr Wild, is not crucial. The Policy Guidelines clearly state an estimated capacity factor can be used when modelling is not available to predict the actual output of the wind energy facility.[\(19\)](#)

25 Having said that, the absence of detailed modelling gives rise to questions as to the prospect of the expected benefits being achieved; we have no data to suggest that the projected benefits are over-stated, accurate or under-stated. Further, no scientific data seems to be available about the operation of other wind farms to enable us to draw a sound and informed conclusion as to whether projected benefits and outputs are likely to be achieved.

26 The same point has emerged in other wind farm cases wherein independent panels have suggested more reporting would be helpful to address questions and anxiety as to the contribution wind farms are making to greenhouse gas abatement.[\(20\)](#) We concur with that recommendation.

27 Despite the quantum of benefits being able to be queried, and even though the proposal in this case is small, we consider the probabilities weigh in favour of greenhouse gas abatement benefits being achieved. In that respect, the proposal is acceptable in terms of the provisions of Clauses 15.14 and 52.32 that require consideration of the benefits to the broader community of renew-

able energy generation as well as the contribution of the proposal to reducing greenhouse gas emissions.

Is the proposal acceptable in terms of the purposes of the Farming Zone?

28 This question was not one pursued in any detail at the hearing in terms of the function of the Zone and whether the proposal would be acceptable in that context, other than Mr Wild's contention that the use is industrial in nature and should not be encouraged in rural areas.

29 Zoning is, however, an important question in terms of a balanced assessment of the merits of the permit application. The review site is within a Farming Zone. Grazing and cropping occur in the area however the number of dwellings on small lots gives a sense of the locality serving a rural living purpose. The submissions by many of those property owners further emphasises that point and that in turn influences their perspective as to what is acceptable in terms of new land uses and development.

30 The rationale for the application of the Farming Zone to this area is not open to us to review. It is possible that the Zone (and its predecessor, the Rural Zone) have been applied to acknowledge the existing farming enterprises and prevent further rural residential development outside designated rural living zones.

31 There is no suggestion in any of the material provided to us that the settlement of Leonards Hill is sought to be earmarked for rural residential purposes or as a formal township as an application of the Township Zone would have suggested. Instead, the strategic planning framework from the Scheme recognises the high quality agricultural land that one can also appreciate on inspection. Farming and uses suitable for such a Zone are the priority. Thus, the land use context for Leonards Hill focuses on the Farming Zone and outcomes sought for that Zone.

32 The Tribunal often comments upon tensions between farming and rural living pursuits.[\(21\)](#) Small, rural-residential style lots in farming areas create the potential for conflict between neighbours who are seeking a rural retreat for lifestyle purposes and farming and other uses that must or can be placed in a farming/rural setting.

33 The case before us has not raised issues about a loss of farming land. Instead it is focussed on the compatibility of two wind turbines with dwellings on small lots in the Farming Zone where uses such as wind farms are preferred over rural-lifestyle dwellings. In the Farming Zone, there are tight restrictions limiting new residential development, reflected in the following Zone purpose "To ensure that non-agricultural uses, particularly dwellings, do not adversely affect the use of land for agriculture." The proposal here is not for agriculture but another land use suited, in principle, to a Farming Zone and expressly encouraged by state planning policy. Indeed, the Farming Zone and the Rural Conservation Zone are the only Zones where a wind energy facility is a nominated Section 2 use. In all other instances it is an innominate use. We do not regard the turbines as industrial in nature or expressly discouraged by the Farming Zone and applicable policies.

34 Some properties south of Leonards Hill, in the Moorabool Shire, are in an Environmental Rural Zone. The ERZ is in the suite of rural-based zones with a strong emphasis on the protection of identified environmental values. The ERZ is not a rural living zone and, like the Rural/Farming Zones, discourages dwellings not directly related to the environmental rural use of land. We view the land-use tension between rural-living style dwellings and wind farms adjacent to the ERZ in the same manner as those within the Farming Zone.

Would the proposal have unreasonable visual impacts?

What principles are relevant to an analysis of visual impact?

35 The perception of landscape quality and visual impact can be highly subjective in terms of the public and private realms.

36 The Scheme and the Policy and Planning Guidelines for Development of Wind Energy Facilities<sup>(22)</sup> give weight to impacts on landscape values and significant views. There is no prescribed test in relation to visual impacts on private dwellings. In summary:

- Clause 52.32 requires all dwellings within a 500 metres radius of a site to be identified. The decision guidelines refer to an assessment on significant views, including visual corridors and sightlines. No

mention is made of visual impacts upon nearby dwellings.

- The Policy Guidelines:

- require a site analysis in relation to the surrounding area.

- do not set a minimum distance between turbines and dwellings.

- prescribe an evaluation test for impacts upon the landscape, including the magnitude of change and sensitivity of that landscape, but contain no evaluation criteria for visual impacts upon the amenity dwellings or rural living-type properties.

- require a decision about visual impact to be weighted having regard to policy in support of renewable energy development.

- call for the consideration of measures as appropriate to minimise impacts on views from dwellings.

37 Our consideration of the impact of the proposal on significant views, including visual corridors and sightlines, must have regard to:

- the existing landscape values and features, including the extent to which the landscape is altered and influenced by human interventions;

- over-arching goals in the Planning Scheme to ensure appropriate landscape/visual amenity outcomes, including protection of rural landscape character and visual amenity, and in particular, protection of features of natural scenic beauty and significant views;<sup>(23)</sup>

- the level of protection and values identified by the Scheme provisions and that is informed by the Overlays (or lack of Overlays) that apply;

- the extent or proportion of view that would

be affected and the importance and value of that view in the context of other aspects of amenity;

- the fact that wind energy facilities must be located where the wind resource is available so, inevitably, there will usually be some visual impact as also occurs with broadcast towers and mobile phone towers.

38 Putting aside atmospheric conditions and materials/colours for the turbines, the extent to which wind turbines would be visible in the public and private realms is influenced by the following factors:

- the distance between the viewing point and the wind turbines;

- physical elements such as the topography and/or tree cover that, where positioned between the viewing point and a turbine, provide a masking effect;

- the ability to enhance landscaping on the review site or abutting properties through additional plantings.

39 Visual impact will also be influenced by whether the viewer is stationary (such as in a dwelling) or moving (such as in a motor vehicle).

40 We have indicated above that the visual impacts of new development upon dwellings in the Farming Zone and the Environmental Rural Zone are not given any special weight in the purpose or decision guidelines of either Zone or in the Policy Guidelines. Even though environmental qualities are a consideration, potential visual impacts upon existing residents are not weighted with the same significance as noise, blade glint, shadow flicker and electromagnetic interference that must be assessed against specified standards or Policy Guidelines. The Guidelines acknowledge there will usually be some landscape impact.<sup>(24)</sup> That fact is significant in our assessment and determination.

41 We have not taken this to mean that visual impacts from abutting and more distant private dwellings should be entirely disregarded because:

- the notion of compatibility between land uses is significant in assessing the merits of a permit application and a fundamental purpose of planning controls;

- the landscape setting, to be assessed as required by the applicable controls and Policy Guidelines, is part of the amenity of the existing properties around Leonards Hill;

- the landscape setting is enjoyed by rural-living style lots as well as farms, whether as a residence or as a workplace (in terms of farming or using properties for creative or productive pursuits).

42 In considering what is an acceptable impact on existing dwellings, we have noted the comments in the Portland Wind Energy Project Panel report:<sup>(25)</sup>

"Private dwellings [...] should retain outlooks that are not dominated by wind farm plant. That is not to say that a wind farm cannot affect outlooks from dwellings or public places. Clearly, it may unavoidably be the case that outlooks from say 3 out of 5 habitable rooms in a dwelling or over 180 degrees of horizon from a garden may be substantially affected by development, (although this does not mean that steps to mitigate such impacts should not be explored).

However, it should not be acceptable in principle to dominate all available outlooks from all habitable rooms and 360 degrees of horizon from a garden, especially if a significant contributor to this effect is plant located at short range (such as switchyards or transformers)."

43 The Bald Hills Panel also used a number of tests in its assessment of visual impacts in terms of private dwellings:<sup>(26)</sup>

- Will the turbines be unduly vertically dominant by way of close proximity?

- Will the turbines be unduly horizontally dominant by way of extent across the horizon?



- What is the setting of the observation point as against the turbines?

- Do or can elements such as built form or vegetation constrain horizontal views or absorb vertical dominance of turbines?

44 These questions and findings underline three important principles in an assessment of impacts on dwellings (and, we think, the public realm as referred to above):

- visibility does not equate to an unreasonable visual impact.

- visual impact can be horizontal or vertical in its dimensions.

- visual impact can be mitigated by landscaping and landform.

What would be the visual impact from the public realm?

45 The Policy Guidelines require a landscape assessment to form a judgment as to the level of significance of the Leonards Hill landscape and the impact of the proposal on that landscape. In terms of the public realm, we have considered visual impacts from locations such as roads and public spaces (eg. outside a community building). We have been assisted by Mr Cleary's evidence. We have also placed weight on the values identified by Mr Wild and residents and had regard to our on-site observations and assessment.

46 Leonards Hill is substantially cleared and viewed within a context of vegetation along roadsides, to varying degrees from private and public land (eg. Wombat Forest). The Hill is only seen intermittently from the Ballan-Daylesford Road given the density of roadside vegetation. This is shown in Mr Cleary's assessment.(27) Public views of the Hill are from the road, at intersections, or outside buildings such as the hall and fire station. Distant views of the Hill are from other high points, including Daylesford township.

47 Local residents understandably place a very high level of significance upon the setting of Leonards Hill and

the topographic feature itself.

48 Mr Wild alluded to the lack of a Significant Landscape Overlay over Leonards Hill as a failing but also referred to the Council's recognition of the Hill's high landscape and fauna values through a 2003 study. He also cited a Tribunal proceeding in relation to Mt Franklin(28) where he said the Tribunal found the Shire should offer greater protection to its volcanic hills.

49 Mt Franklin was described by the Tribunal in Telstra Corporation(29) as having volcanic origins that have "provided its visual prominence, its special sense of enclosure within the crater and its lookout qualities". Mt Franklin is protected by several Overlays that have recognised its particular values including heritage. It is also listed in the Victorian Aboriginal Sites Register. The Tribunal found against the siting of a mobile telephone tower for reasons primarily relating to the site's cultural significance:(30)

"the net benefit for the community lies less in providing additional depth and breadth of mobile phone coverage than in protecting the cultural significance of Mount Franklin and not prejudicing or detracting from opportunities for future interpretation measures that may improve the community's understanding of a significant period in Australia history and it's [sic] implications for Australia's indigenous peoples."

50 Leonards Hill is a high point of volcanic origins and an attractive place. It is higher than some other hills in the area. However, we have not been persuaded to elevate the Hill's significance to a level that equates to, for example, Mt Franklin or other features protected by a Significant Landscape Overlay in the Hepburn Planning Scheme. Further, similar aboriginal cultural values cannot be attributed to Leonards Hill compared with Mt Franklin and possibly other recognised features in Hepburn and surrounding Shires. We do not, therefore, consider the Mt Franklin case lends any great support to the Applicant's position on this point.

51 Thus, we have not been persuaded to afford the landscape setting the same level of significance the Applicants seek to ascribe to it.

52 We add in relation to the Scheme's controls and policies:

- the Heritage Overlays associated with development around the Leonards Hill settlement, such as for the former school, hall and railway reserve, [\(31\)](#) cannot be extrapolated to apply to the Hill itself.
- the Structure Plan for the Muskvale - Leonards Hill corridor does not emphasise any particular landscape features such as Leonards Hill. [\(32\)](#)
- Clause 21.09 gives weight to identified landscape values when assessing development applications, including hilltops.
- a DDO2 applying in Moorabool Shire focusing on design detailing [\(33\)](#) is relevant in the context of what may occur on land within that Shire to the south of the review site but cannot be extrapolated to apply to the review site. [Even so, encouraging non-reflective cladding and materials is not unreasonable or problematic in this proceeding].

53 Mr Cleary's analysis identifies seven key locations where the turbines would be seen. Six are to the north/north-west (at varying distances including Sailors Falls) and one is to the south. Visibility here is a function primarily of the extent of roadside vegetation and Leonards Hill itself as well as the alignment of the Ballan - Daylesford Road. Where the turbines would be seen from the road, intersections, and public buildings/spaces to the north-west near to the Hill, Leonards Hill and/or existing vegetation would appear in the foreground and one turbine would be larger than the other. In some views, such as at the intersection to the north-west of the site, the view is already affected by powerlines and infrastructure - the outlook is not pristine. For motorists, views would be confined and of short duration.

54 Individuals may assign different weighting to elements in viewlines and landscapes. We find views to the proposed turbines from the public realm would be reasonably limited. The impact is not unacceptable, offensive or disrespectful to the setting, or overly dominant. Nor do we think the turbines would detract from the tourist experience.

55 With increased distance, such as from Daylesford, we are unable to accept submissions that the mere visibility of two turbines close to the crest of Leonards Hill, some 10 kilometres away, amounts to an unacceptable visual impact, having regard to the principles we have identified previously.

What would be the visual impact from the private realm?

56 We next consider visual impacts from the private realm, being dwellings and external spaces, which is possibly a more sensitive issue for many of those opposing the proposal than impacts on the public realm. Importantly, that assessment is within the planning context we have set out previously.

57 We have been assisted by Mr Cleary's analysis including 3D modelling and 3D working images mindful of the qualifications about that material set out in the evidence. We do not intend examining Mr Wild's criticisms of the montages - we have inspected views from the 23 dwellings shown in the Cleary assessment [\(34\)](#) plus the omitted dwellings to form our own conclusions.

58 On the basis of our inspection, we do not concur fully with Mr Cleary's assessment summarised on Map 4 as to the "Area Potentially Visually Affected". For example, in relation to views from dwellings #2 and #3, we conclude that views from these dwellings would be more affected than suggested by that Map.

59 We have noted montages prepared by Mr Wild that, in some images, include re-positioning of the turbines based on the possible micro-siting.

60 In our assessment, we have considered:

- the outlook from the dwellings, outdoor recreational areas and/or key work areas where we have asked ourselves whether views would be dominated by turbines in horizontal and/or vertical dimensions.
- whether existing vegetation can provide screening given that the wind farm would have an expected life of about 25 years.

- whether new plantings could be undertaken so as to be effective over a 25 year project life.

- the flexibility sought by the Respondent in relation to "micro-siting" that could cause turbines to be shifted, but still be no closer than 500 metres from an existing dwelling.[\(35\)](#)

61 Mr Cleary's analysis is underlined by the premise that landscape values are a vital component of people's enjoyment of the area and are a strong influence on people's sense of well-being and quality of life. We accept Dwelling (36) Tribunal Assessment

that premise. Further, the landscape analysis acknowledges that, within an area of around one kilometre from the proposed turbines, the turbines would be a major viewing element, in terms of their structure and movement, unless landform or vegetation provides an intervening screen.

62 Our assessment of the visual impact of the turbines on the closest dwellings (being dwellings not in the same ownership as the review site) is summarised in the table below.

#1	Dwelling oriented to enjoy views to the south rather than north toward the review site. 776 metres from closest turbine. Separated from the turbines by extensive vegetation. Views only of upper part of turbines/blades likely.
#2 and #3	650 - 700 metres from the closest turbine. Landform would not mask turbines. Both homes have rear open space with limited on site plantings. #3 has cypress trees that would not mask the turbines when viewed from the north side of the rear verandah. Turbines would be seen in side views above a dense existing tree canopy with alternative expansive views to the south for both properties.
#4 and #5	Views to the turbines with foreground and roadside vegetation masking the lower part of turbines. Dwelling #4 is elevated increasing views eastwards. 520 - 650 metres from the closest turbine.
#8, #9 and Perry	Close to 800 metres - one kilometre from closest turbine. Extensive screening around dwelling #9 and Perry residence would limit views, although some views would be possible. #8

has limited vegetation but dwelling is oriented northwards whereas turbines are east of the dwelling. Scope for planting on #8 to mask views.

- #10 Potato producer. Little vegetation around house would enable side views and views from paddocks. Lower part of turbines screened by landform. 850+ metres from closest turbine.
- #11 Situated at the base of the Hill at around 750 metres from the closest turbine. Landform would provide some screening as would plantings around house. Views gained from vegetable patch/chicken pen. Views of turbines entering the property from the Ballan Road, with turbine/s seen above and behind the dwelling. Scope to increase planting on site boundary to provide foreground cover.
- #12 Former school with extensive cypress plantings. Turbines may be seen from cottage to the west of the school building at close to one kilometre away.
- #13 Views from dwelling and surrounds masked by Hill and existing vegetation. Views possible to turbine/blades from back paddock that rises up the north Hill slope. Scope for boundary screen planting on review site to mask views to the turbine/movement.
- #14 and #17 Views from dwellings and surrounds to turbines partly masked by Hill and screening around dwellings. Closest turbines 770 - 900 metres but structures/blade movement would be able to be seen.

- #16 Located on South Bullarto Road nestled into the northern Hill flank. Substantial cypress row behind the dwelling would screen views to the turbines assisted by steep Hill grade. Scope for boundary screen planting to fill small gaps in visual screen and to provide long term protection should cypress be removed.
- #18 Extensive works on-site with new dwelling nestled into the north/north-east slope of the Hill and oriented to the north/north-east. Turbines would be to the south/south-west at around 590 metres to the closest point with the lower portion masked by the landform and, in time, eucalypt plantings along the property's western boundary. Scope to increase planting on site boundary to provide additional screening from rear/southern paddocks.
- #19 and #20 Visibility from these dwellings abutting the Ballan Road affected by roadside plantings but turbines would be seen at around one kilometre from the closest turbine. #19 has enclosed front verandah and side kitchen(?) windows from which turbines would be seen. #20 has open aspect from rear yard that similarly would be exposed to turbine views.
- #21, 22, 23 Over 1.5 kilometres from the closest turbine. Views to the plus one turbines constrained by existing roadside vegetation and, in unidentified the case of Peppercorn Cottage, trees surrounding that house dwelling/property. Distant views would be gained from rear paddocks but dwellings and their rear open space protected by

existing vegetation. Views not prominent or dominant from these properties.

#24 Over 1.5km from the closest turbine with vegetation surrounding much of the dwelling. View to the Hill confined to a cleared corridor to the south that may enable long distance views to the turbine(s). Limited direct impact.

- 63 In summary, from many of the closest dwellings:
- all of one turbine and part of another turbine might be concealed;
  - the lower portion of the turbine(s) would be masked to varying degrees by Leonards Hill and/or vegetation limiting views to the upper portion of the turbine and moving blades;
  - the primary orientation of living areas dwelling and primary external open spaces is away from Leonards Hill meaning the turbines would be in peripheral and/or side or rear views;
  - views from paddocks and outside workspaces to the turbines would be at a distance with expansive unaffected views remaining.

64 The form of Leonards Hill, at some 50 metres high, and nearby plantings are significant in ameliorating the visibility of the lower part of the turbines.

65 Thus, for all but the most affected properties, we find the proposal to be acceptable in terms of visual impact without mitigating works. That is not to say that we oppose any owner taking up the Respondent's offer to provide vegetation on their properties to provide supplementary screening to allay concerns.

66 The most affected properties are on the east side of the Ballan - Daylesford Road - being dwelling nos. #2, #3, #11 and #18.

67 The turbines would sit above the properties associated with dwellings #11 and #18. The landform of Le-

onards Hill would mask the lower portions of the towers. The turbine position means that boundary planting on the review site could be very effective in providing a visual screen in both cases as the vegetation grows. That is because these dwellings sit much lower in the landform than the nearest boundaries of the review site. The same potential benefit of boundary planting on-site would be the case for dwellings #13 and #16 that in turn may ameliorate some impacts upon dwellings #14 and #17.

68 For dwellings #2 and #3, boundary planting on the review site would be unlikely to offer any real benefit. Instead, planting near to the dwellings would be required to reduce the visibility of the turbines, should that be acceptable to the property owners.

69 Dwellings #19 and #20 are more distant from the turbines but would be exposed to views. They would benefit from planting on their boundaries should that be acceptable to the owners. There may be some (possibly marginal) benefit from planting on the review site's boundaries as well.

70 Although dwellings #4 and #5 are very close to the nearest turbine, they benefit from existing dense roadside planting. Having said that, both dwellings are oriented to the east so that the turbines would be in view from part of their properties. Additional planting abutting the roadside, within the site, would benefit #5 in terms of masking views whereas such planting is unlikely to benefit dwelling #4.

71 The concept of micro-siting has been adopted in other wind farm cases giving some flexibility to adjust the position of turbines. From a geo-technical perspective, we see no benefit in such flexibility unlike coastal situations

with (for example) less stable limestone foundations where in-built flexibility is a pragmatic response to the site conditions. In a setting such as Leonards Hill which has dwellings within a very close range to the proposed turbines, we are not persuaded to accept any micro-siting that would bring a turbine closer to an existing dwelling. Rather, giving flexibility to re-position the turbines eastward by, say, 100 metres would have the benefit of reducing the visual impact on dwellings #4, #5 and #11 by virtue of distance and more intervening topography and/or vegetation, without adding detriment to other dwellings such as #1, #2, #3, #16 and #18.

72 For the above reasons, we find the proposal would not produce an unacceptable visual impact for many of the private dwellings most proximate to the review site. Screen planting on the review site could assist to reduce the visual impact for dwellings to the north-west and north and additional planting abutting the roadside (within the property line) would assist dwelling #5. We also accept the offer made by the Respondent to plant on private properties should owners desire to avail themselves of such an offer.

73 We also examined views from several properties in Liversidge Road, further northwards wherein there would be views to the turbines over two kilometers away over a tree canopy line. We do not consider this equates to an unacceptable visual impact albeit the turbines would be seen.

Is the proposal acceptable in terms of noise emissions?

How is an assessment of noise impacts approached?

74 Noise is possibly the major issue arising from the close location of wind turbines to a number of dwellings.

75 Noise is a matter given weight in the Policy Guidelines, decision guidelines of Clause 52.32, and Clause 15.05 of state policy. Noise measures are complex and often not readily understood. The Policy Guidelines acknowledge emissions can arise from the mechanical noise produced by wind turbine generators, the movement of rotor blades through the air and construction noise. Sound emissions increase with wind speed. The extent to which the sound may be audible will depend on background noise levels, influenced by elements such as wind

movement through trees and wind direction. Landform can have a masking effect. Tonal qualities may influence the perception and experience of noise. There is no mandatory separation distance between dwellings and turbines in the Policy Guidelines or any applicable document.

76 "Evaluation" in the Policy Guidelines states "A wind energy facility should comply with the noise levels recommended for dwellings in the New Zealand Standard NZ6808:1998 Acoustics - The Assessment and Measurement of Sound from Wind Turbine Generators".<sup>(37)</sup> The NZS6808 guideline requires wind farm noise at a dwelling to not exceed natural background noise plus 5dBA(L<sub>A95</sub>) or 40dBA (L<sub>A95</sub>) whichever is the greater.<sup>(38)</sup> We note several important points about this:

- The noise criteria are not designed to achieve inaudibility. Turbine noise may be audible on adjacent properties even if the proposal complies with the applicable standard.
- The criteria relate to dwellings and not the whole of a nearby property. The criteria are set on the basis that indoor noise levels at night are such as to protect against sleep disturbance. They allow for a 10dBA reduction of noise from outdoors to indoors - with windows open. The aim is an internal noise level of 30-35dBA.
- Panels/EES reviews have observed that the standard is based on the assumption that the wind always blows towards the affected dwellings,<sup>(39)</sup> which will not be the case with the two turbines here.
- Some individuals may have particular sensitivity to noise, as expressed in statements to the Tribunal, but that is not a basis to vary from the standards set by NZS6808.
- The model is expected to predict higher than actual noise levels where topography (land rise or structure between receiver and wind farm) or ground effects (heavy foliage) are important.<sup>(40)</sup>

77 It is relevant to appreciate the planning context for our consideration of noise impacts in a designated rural area. Mr Wild referred to the peaceful setting of Leonards Hill and we accept this is how the area is perceived by

many living locally, although it is not a pristine setting with aircraft, road traffic noise and farming activity evident as referred to in submissions.

78 An area's tranquillity is not something the Planning Scheme seeks to protect per se. Rather, the Scheme applies standards against which noise impacts in rural areas are assessed. The Tribunal and Panels have consistently concluded that although many people wish to maintain a peaceful setting, tranquillity is not the test upon which reasonable expectations in a Farming Zone or Rural Zone is based in terms of a Scheme assessment. The use of land for purposes such as farming can be noisy and the Scheme seeks to protect legitimate activities in rural areas from unreasonable amenity expectations of residential neighbours. [\(41\)](#)

79 The distances from dwellings involved in this case potentially give rise to some concern. Many wind farm proposals involve few dwellings within one kilometre with the express aim of ensuring noise and visual impacts are minimised. An important point here is the siting of the proposed turbines relative to the position and steeper northern slopes of Leonards Hill.

Would noise impacts from the wind farm comply with NZS6808?

80 The Respondent relied on evidence of Mr Delaire that the predicated noise levels from the turbines would comply with NZS6808 at all residential properties. Mr Delaire's relies on the turbine model Repower MM82-2MW and takes into account the noise generated by both turbines. We do not intend reciting the details of his analysis. Based on that analysis, the highest predicted noise levels would be 42dBA, but well under the noise limit when applying the greater figure of natural background plus 5dBA( $L_{A95}$ ) that would impose a limit of around 52-53dBA( $L_{A95}$ ). For all but dwellings #5, #16 and #18, the predicted noise level would be 40dBA or less (and thereby compliant with the lower NZS6808 figure should it be applied) and, for those three dwellings, the predicted levels are 41 or 42dBA.

81 Dr Bossinger criticised Mr Delaire's analysis, questioning matters such as:

- whether the assessment accords with NZ-

S6808;

- a failure to conduct background tests at all residential receivers;
- the veracity of the regression analysis;
- the veracity of roughness factor used in the analysis;
- lack of allowance for site features such as topography, temperature inversions and sheltered locations.

82 Dr Bossinger fairly agreed that the matters raised by him may not significantly change the results of the analysis. We also note responses to the Applicant's concerns given by Mr Delaire in evidence at the hearing.

83 Having carefully reviewed the material, we are satisfied that the outcome of Mr Delaire's analysis, even with some variation or some margin for error, shows the noise impacts upon assessed dwellings comply with NZS6808. It may be of concern that the analysis does not include dwellings #8, #9, #12 and the Perry residence, however we do not expect the NZS6808 guideline values would be exceeded given the results for other dwellings.

84 We understand the impact of turbines noise may be most noticeable at wind speeds of 5-8 metres/second. The evidence indicates the turbine noise would not be greater than background noise for any dwelling at 6-8 metres/second. Below 5 metres/second, the turbine generated sound power levels fall quite significantly when contrasted with wind speeds at 6+ metres/second.

85 We had some concern about the potential for noise from the turbines to exceed background levels at lower wind speeds (eg. 3 - 6 metres/second<sup>(42)</sup>). That is, to be audible above background noise and the frequency of events at which that would occur. Primarily, we were concerned as to the possible "nuisance" level impact upon amenity. However, given the lower sound power level for the modelled turbine units (Repower MM82 2MW) at these wind speed levels, we are satisfied that the limits of NZS6808 should still be achieved.

86 In considering the conclusions of the acoustic ana-



lysis, we are satisfied that not all affected dwellings were required to be tested for background noise. It is reasonable to use noise levels as representative of other locations as allowed by the Standard based on expert advice. We also accept the analysis of background noise undertaken by Mr Delaire.

87 We acknowledge that topography will affect noise levels as the model assumes a flat plane. Intervening topography would have a masking effect on noise and may lower background noise (eg. if a dwelling is on the leeward side of a hill). The most-affected dwelling, #5, would be 519 metres from the closest turbine and would not benefit from a significant masking effect of the landform, but noise levels would still be at 40-42dBA and within the NZS6808 guideline.

88 Despite accepting that compliance with NZS6808 would be achieved by the proposal based on the turbine positions set out in the acoustic evidence, and noting an absence of some wind data from the existing wind monitor, we find there should be further noise assessment by a commissioning report upon commencement of the operation of one or both turbines.

89 That assessment should test noise levels at all dwellings to ensure compliance with NZS6808. This would also assist to address any specific issues arising from climatic conditions that could call up, if required, a 5dbA penalty provisions that is contained in NZS6808.

#### The van de Berg effect and infrasound

90 Climatic conditions may impact upon the pattern of noise emissions and it was in this respect that Mr Wild referred to the work of Fritz van den Berg. As has been noted in other wind farm reviews,<sup>(43)</sup> little work has been done to demonstrate whether the van den Berg effect is specific to Rhede (Germany) where it was observed or is found in other locations with the same severity.

91 Whilst the adverse impact of such an effect on sensitive receptors could be significant, it has not been demonstrated as being likely to be experienced on and around the project site. There is also a question of frequency of such an effect and whether it is appropriate to vary standards if it is an infrequent or rare occurrence.

92 Infrasound (low frequency noise below the audible frequency range) was also mentioned by the Applicant. This is not a matter upon which we have any substantive information. We note the South Australian wind farm guidelines <sup>(44)</sup> state:

"Infrasound was a characteristic of some early wind turbine models that has been attributed to early designs in which turbine blades were downwind of the main tower - the turbulence generated around the tower was cut through by the blades, generating this effect.

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

93 Like the Bald Hills panel, we intend adopting a cautious approach on noise issues by requiring:

- compliance testing/commissioning report (including the dwellings omitted from the evidence); and
- a condition that any micro-siting not move a turbine closer to any existing dwelling when compared with the positions proposed in the permit application (based on the distances used in the Marshall Day analysis).

Is the proposal acceptable in terms of impacts on fauna, avifauna and in particular threatened and migratory birds?

94 Mr Wild submitted the potential impact of the wind turbines on birds and bats had not been adequately assessed. He referred to concerns such as:

- lack of bird and bat studies;
- omission of consideration of Swift Parrots, Brown Goshawks, Grey Trillers, Hooded Robins, Powerful Owls, Wedge-tailed Eagles, Barking Owls, Greater Glider, Ibis,

Cockatoos and other species;

- inadequate attention to bats at times of the year when they are active;
- proximity to the Wombat State Forest and wildlife corridors increasing the likelihood of birds and bats using the site for food;
- inadequate consideration of collision risk having regard to frequently occurring foggy conditions;
- lighting on turbines (eg. for aviation) could attract insects and thus collision risks for bats;
- impacts upon raptors scavenging for carcasses in the vicinity of the turbines;
- lack of consideration of mitigation measures.

95 Some bird mortality may arise as a consequence of this proposal. The Responsible Authority and the permit applicant have acknowledged this risk. The Policy Guidelines focus on impacts on protected species under the Environment Protection and Biodiversity Conservation Act (1999) or the Flora and Fauna Guarantee Act (1988). The Policy Guidelines require appropriate surveys where species listed under these Acts are considered reasonably likely to be present on the subject site. The aim is to minimise any risk and be satisfied that an unacceptable risk is not expected for protected species.

96 We also have considered the provisions of Clause 21 of the Scheme as relevant and a purpose of Clause 35.07 to "protect and enhance natural resources and the biodiversity of the area". A decision guideline in that Clause is "The impact of the use or development on the ... fauna on the site and its surrounds".

97 The Respondent has relied on fauna assessments by Mr G Palmer. Investigations undertaken by Mr Palmer rely on the Atlas of Victorian Wildlife, the EBPC Act database of Significant Locations, and field work as set out in his evidence. The EBPC database identified a number of endangered and migratory species that may potentially be in the area having regard to habitat preferences, movement patterns and current distribution. That evidence refers to only a very small number of protected species at

potential risk from the proposed wind farm. Mr Palmer concluded that large concentrations of species that may be prone to adverse impacts from turbines at the review site are unlikely at any one time, or that the proposal would have a significant impact on any single species.

98 The Department of Sustainability and Environment reviewed a fauna study for the proponent. Its comments to Future Energy included:[\(45\)](#)

- the report should acknowledge that Powerful Owls feed on rabbits and hunt on farmland adjacent to forests;
- there is a high probability of the area being frequented by bats and other species due to the proximity of the forest (inspection by a DSE office refers to observations of a wedge-tailed eagle and another - unnamed - raptor);
- it is probable that there would be some impact on birds and bats from the wind farm.

99 DSE did not raise any other concerns in relation to the fauna study or conclusions from the study. It sought a bird and bat monitoring program for a minimum period of two years, and an environmental management plan, should the wind farm proceed.[\(46\)](#) The Respondent has not opposed monitoring and mitigation plans.

#### Impacts on Wedge-tailed eagles

100 There are multiple confirmed sightings of wedge-tailed eagles at the review site including around the top of Leonards Hill. The wedge-tailed eagle is neither a threatened nor a vulnerable species under the EBPC or FFG Acts.

101 Potential impacts on wedge-tailed eagles have been discussed in other wind farm cases in Victoria and interstate.[\(47\)](#) In the case of Yaloak, the Panel determined a threat to an unusually large local community of wedge-tailed eagles in the region containing the wind farm site - that community being significant for the wedge-tailed eagle at a state level. For reasons set out in its report, the Panel was not persuaded that the risk to the species was within acceptable limits.

102 The Panel was concerned that modelling predicted that the wedge-tailed eagle may suffer an unpre-

cedented number of collisions with wind generators because of the unusually high use of the Yaloak wind farm site by the eagles. It was also concerned that the predicted mortality rate may cause a detectable local population impact and a potential for unknown flow-on consequences for regional eagle populations. The Panel suggested an alternative design for the wind farm to reduce the likely mortality rate.

103 We have not been similarly persuaded of an unacceptable risk to wedge-tailed eagles in the current proceeding. We accept the presence of eagles, evidenced in videos and photographs shown at the hearing, but there is no evidence to conclude that the area is strategically significant in terms of the population size or some other feature of a wedge-tailed eagle community at this locality.

104 Suggestions in Mr Palmer's evidence to mitigate risk to wedge-tailed eagles (and other raptors) included removal of stock carcasses, a rabbit control program, and control of other vermin. We think these are practical ideas that can be part of a mitigation program to minimise bird strike, particularly the raptors. They are likely to be workable given the modest size of the proposed wind farm and its land area - contrasting with the large site in the Yaloak case where the Panel raised doubts about the practicality of similar suggestions.

#### Impacts on other raptors

105 Mr Palmer's evidence refers to other birds of prey such as the Brown Goshawk. DSE's comments highlight the potential for Powerful Owls to prey for rabbits. Again there is no evidence of a community at risk or presence of such species at a frequency that gives rise to a high risk level. If we accept that these and possibly other raptors use the review site from time to time, it is appropriate to implement mitigation strategies to attempt to reduce risks of bird strike. As noted, a mitigation/ management plan would be appropriate in the circumstances.

#### Impacts on other avifauna

106 Most of the other species identified in evidence and submissions are common to Victoria, such as ibis and cockatoos.

107 We accept that Leonards Hill and its environs are

home to many species including some that are protected under the FFG and EBPC Acts as has also been acknowledged by the Respondent. The Hill's location between sections of forest possibly enhances its potential in that respect. However, we do not have sufficient evidence to persuade us that the sightings of some threatened and protected species, such as the Powerful Owl, various types of cockatoos, or Swift Parrot, referred to by residents equates to a significant community for those species.

108 Nor do such sightings in the area elevate the significance of the review site in some respect (such as being on a main migratory route).

109 That is not to disregard the prospect of members of these species at times being in the area rather we conclude that impact on such species would be low particularly given only two turbines are proposed.

#### Impacts on bats

110 Mr Wild was critical of the timing and extent of a bat survey having regard to the time of year when anabat detectors were on-site.

111 While Mr Palmer accepted that bat activity would be lower in cooler months, he also gave evidence that bat activity and abundance is likely to be less in the open farmland than in areas supporting more vegetation. [\(48\)](#)

112 However, having regard to DSE's comments that bat activity is likely, we are not persuaded to fully accept Mr Palmer's evidence on this point. Rather, we consider further information is required in relation to bats and mitigation strategies for bat species. That can, however, be undertaken by a permit condition. The Respondent opposes further field work but we are not persuaded to accept that position in relation to bats.

#### Other potential fauna impacts

113 We do not consider there to be a strong prospect of impacts on ground-dwelling fauna given the land is cleared save for a few stands of trees. No submissions were pressed on this point at the hearing by the Applicants or arose during Mr Palmer's evidence.

Is the proposal acceptable in terms of impacts on flora?

114 Mr Wild was critical of the lack of a flora study and submitted that the proposal would prevent re-establishment of habitat on the review site.

115 We do not accept these submissions. No planning permit is sought for the removal of native vegetation in this permit application. Thus net gain provisions do not take effect and there would be no loss of significant habitat or habitat relied upon by protected fauna species. A flora survey on-site would achieve little, as confirmed by correspondence from DSE to Future Energy dated 2 June 2006.<sup>(49)</sup> The plantings we will direct to occur on the review site would produce a positive outcome in terms of increased vegetation on the mainly cleared site. There are very good opportunities for planting along site boundaries as discussed above and that boundary planting would enhance vegetation on the site. Boundary planting may also potentially facilitate the movement of birds and avifauna between parts of the Wombat Forest and other vegetated corridors, around the site rather than across the site, hence away from the proposed turbines.

Would there be impacts on Aboriginal and European cultural heritage?

116 The Applicant contended the Council has failed to properly consider Aboriginal and European heritage issues particularly information given to it about Aboriginal artefacts found on the review site. Mr Wild was critical of the heritage assessments undertaken on behalf of the Respondent and proposed permit conditions that he described as being too loose.

117 We accept the Applicant's submissions that cultural heritage values are important to protect, as recognised through the policies and provisions of the Hepburn Planning Scheme. It is relevant to recognise, however, that the site is not listed on relevant registers<sup>(50)</sup> or within the Scheme. There are no citations that refer to relevant cultural heritage values that would be affected by the proposal. The Wurundjeri people have been informed of the project, have participated in subsurface testing, and have not objected to the permit application.

118 We do not accept Mr Wild's contentions that Aboriginal heritage values have been disregarded and or will

be destroyed. Nor do we accept his submissions that the assessment undertaken was inadequate or flawed. We are satisfied on the evidence of Mr Kaskadanis that appropriate steps have been taken to assess the likelihood of evidence of Aboriginal and historical European occupation of the land. That included sub-surface testing undertaken in accordance with relevant legislation involving a representative of the Wurundjeri people. The conclusions of the investigations were that although it is possible that significant Aboriginal archaeological material is in the area, the likelihood is low. We accept that evidence.

119 Mr Wild stated human remains are buried in the vicinity. He also displayed a number of items said to be sourced from the review site. Of those items, Mr Kaskadanis identified two as Aboriginal artefacts. Confirmation of those artefacts does not change our conclusion given the precise location(s) for the discovery of the artefacts is unconfirmed.<sup>(51)</sup> The agricultural use of the land and results of survey work indicate the prospect of archaeological material is low. That does not mean, however, that protocols relating to excavation should not be enacted in the usual way. Permit conditions can ensure that any discovery of archaeological material during works will be protected by existing Commonwealth and State legislation such as the Archaeological and Aboriginal Relics Preservation Act 1972. Excavation work for the project is to be carried out with the attendance of a qualified archaeologist and a representative from the Aboriginal community.

120 We also remind any person of their legal obligation to inform the Victoria Police of any known human remains and additional obligations under the Archaeological and Aboriginal Relics Preservation Act 1972 and other legislation to declare Aboriginal artefacts.

Would there be other potential impacts upon nearby dwellings?

Shadow flicker

121 Shadow flicker is caused by shadow cast by rotating wind generator blades in bright/sunny conditions.

122 Flicker frequency derives from the rate of rotation and the number of blades. The time at which it will occur will be related to the latitude of the sun and position

of the turbine relative to a receiving point. The evaluation criterion set by the Policy Guidelines is that shadow flicker experienced by any dwelling "must not exceed 30 hours per year as a result of the operation of the wind energy facility". We recognise that the Policy Guidelines only deal with shadow flicker at dwellings although impacts would be experienced on other parts of a property.

123 Mr Wild submitted that the shadow flicker calculations are invalid if the turbines move with micro-siting. He also criticised the omission of the Perry house and degree of impact on dwelling #5 through a gap in roadside vegetation.

124 The Garrad Hassan(52) analysis shows shadow flicker would be experienced by dwellings to the west of the review site, notably dwellings #8 and #9 as well as #5. The Perry residence may also be affected if there was no surrounding vegetation. Dwelling #4 is also close to the modelled area of shadow flicker. Of those dwellings, #5 would experience the greatest impact but, taking into account cloud cover and vegetation, the Guideline's standard of 30 hours should not be exceeded.

#### Electronic magnetic interference

125 Mr Wild suggested such interference is "distinctly possible" and the Council's conditions do not properly deal with such potential. The Policy Guidelines adopt the following evaluation criterion - "The siting of wind turbines in the 'line of sight' between transmitters and receivers should be avoided". A report by Garrad Hassan(53) indicated that there are no point to point transmission paths across the review site. We also note the six options for rectification cited in that assessment.

126 This matter can be addressed by a condition requiring a pre-construction survey and post-construction survey on request by a neighbour, also obliging the permit holder to mitigate demonstrated detrimental impacts. The Respondent does not oppose such a condition in principle.

#### Lighting of turbines

127 Mr Wild raised concerns that lighting of the facility, particularly the turbines, would impact upon amenity, be an invasive nuisance and possibly increase avifauna strikes due to insectivore species hunting insects at-

tracted by the lights. We drew from Mr Wild's submission that the concerns are in respect of floodlighting although there was also some reference to lighting for aviation hazard warning purposes.

128 The latter normally involves a red light of low illumination atop of the highest structure. We deal with this aspect of the Applicant's case below. We also accept the Respondent's position that no floodlighting or other form of highlighting of the turbine towers are proposed. Permit conditions can ensure that it is the case.

Would the proposal adversely impact upon road safety?

129 The Applicant referred to the bend along the Ballan-Daylesford Road and expressed their concerns that the turbines would be distracting to drivers, including via shadow flicker and blade shine. We understand this concern but are not persuaded that any distraction, to the extent it might occur, should cause the permit application to fail. In reaching that conclusion, we give weight to our experience of driving along the nearby roads and the extent to which roadside vegetation creates shadow flicker and would mask views to the turbines. Moreover, we give weight to the fact that VicRoads has reviewed the proposal and offered no objection.

Would there be safety impacts for aircraft?

130 The Applicant raised concerns that the turbines may create an aircraft hazard given private helicopter and aircraft operating in the area.

131 We agree with the concerns insofar as it is the Tribunal's experience that this area can be used by aircraft in poor weather conditions. The Civil Aviation Safety Authority does not require aviation hazard lighting for turbines or other structures of the height proposed in this case (ie. less than 110 metres). However, we note that if such hazard lighting were to occur it would likely take the form of a red light on the turbine nacelle. A small light on each of the nacelles would be far less problematic than floodlighting. We will leave this matter to the discretion of CASA. A tall structure report can be required by a permit condition although such a report is required by Commonwealth legislation.

Would there be any other unreasonable impacts?

132 Lastly, a range of other matters were raised in submissions by the Applicant upon which we summarise our findings below.

#### Wider social impacts

133 Reference was made to the extent to which the proposal has divided and torn the Leonards Hill and wider community. Some referred to their inability to remain in the area should the proposal proceed.

134 Section 60(1)(b) of the Planning and Environment Act 1987 provides that before deciding on an application the Responsible Authority (and therefore this Tribunal on review) "if the circumstances appear to so require, may consider any significant social and economic effects of the use or development for which the application is made". We have considered the concerns raised by the Applicants in the context of that section and do not consider the proposal must fail for this reason. Some of the angst may derive from a fear of the unknown and we hope in time that some rebuilding of relationships may occur.

#### Health impacts

135 We note concerns raised by the Applicants in terms of impacts upon those with, for example, epilepsy, stress and insomnia. There is no evidence of health impacts that persuades us that rejection of the permit application is warranted given the proposal's compliance with the applicable standards. We do not accept submissions that human rights are being infringed.

#### Hydrology and spring water

136 Concerns were raised by the Applicant that the proposal may interrupt spring water flows (a water supply relied upon by a number of residents) and groundwater resources (referred to variously as underground water-courses). Mr Wild submitted that chemicals may be used to coat underground cables and potentially contaminate the water supply such as through rust. Similar concerns were expressed in respect of possible leaching from concrete pads. Further, reference was made to blasting for foundations, causing vibration and other unknown impacts. Mr Wild criticised the lack of a hydrological as-

essment.

137 Mineral springs are significant to the region as recognised through the Planning Scheme, but there is no reason to conclude that the proposal would jeopardise the quantity or quality of that important resource. No blasting is required in the construction process, as confirmed by Mr Townsend at the hearing.

138 The form of foundations and underground cabling are well known and not recognised as sources of groundwater contamination at other places.

139 We find the concerns raised by the Applicant are largely speculative and without evidentiary support of any kind. We find no reason to require a hydrological assessment or to conclude that ground/spring water would be adversely affected by the proposal.

#### Geotechnical impacts

140 Mr Wild expressed concern about a desktop geotechnical assessment that he contended was inadequate to address soil stability concerns.

141 The assessment(54) is a short report that the anticipated soil and sub-soil conditions should not create any particular difficulties. We consider the suggestion in the assessment of subgrade improvement is acceptable. We find there to be no issues arising at this planning stage, mindful that detailed geotechnical investigations would be undertaken in a design phase.

#### Proximity to a gas pipeline

142 Residents questioned the proximity of a gas pipeline to the turbines. An easement for a gas pipeline is shown on the title. It appears to be well to the east of the sites for the proposed turbines. This is a matter that can be confirmed through a permit condition to ensure that any works associated with the proposed turbines do not negatively impact the pipeline.

#### Decommissioning processes and other responsibilities

143 Ms Elsworth raised a number of issues relating to

the legal entity responsible for the proposal, landlord and lessee responsibilities, public liability, rent and other matters. She was critical of the lack of transparency in contractual obligations between the prospective landlord and operator. Ms Elsworth also suggested various Section 173 agreements should be required to recognise leases, make good obligations imposed on a tenant, and to provide for reporting requirements plus other obligations. A lack of information such as a prospectus for potential investors was a further criticism raised by Ms Elsworth.

144 We are not persuaded that the details of a lease between a permit holder and landlord have any relevance to our decision or are appropriate conditions for a planning permit. In the context of this case, contractual and liability issues are between the parties involved and not planning considerations. Similarly, matters relating to a prospectus are well outside the scope of this proceeding and the matters we are required to consider under the Scheme and the provisions of the Planning and Environment Act 1987.

#### Moorabool Shire Council involvement

145 Ms Elsworth and a number of other parties referred to the absence of the Moorabool Shire Council in the current proceedings.

146 At the hearing, Mr Wild mentioned several times that the Council's planning manager might attend the hearing to supplement the Applicant's submissions but that did not occur. We did not explore whether that was in a personal capacity or as a representative of the Council.

147 It is evident, however, that the Moorabool Shire is aware of the permit application. For reasons that we have not investigated, the Council has not elected to become a party to this proceeding. We do not accept Ms Elsworth's submission that the Moorabool Shire's absence from the proceedings denies natural justice to those property owners whose land is within that Shire. We also did not accede to Ms Elsworth's request that the hearing be adjourned until the Shire could be present.

#### Impacts on cattle

148 Mr Ryan felt that blade flicker would affect his cattle. We appreciate apprehensions about adverse affects

on animal behaviour and production. However, there is no evidence to support this contention and we find nothing in panel reports indicating problems emerging in other locations.[\(55\)](#)

#### Potential for lightning strikes

149 Mrs M Frost raised a concern that the area is prone to lightning strikes. We have no further information in relation to this submission but it may be linked to Mrs Perry's submission about difficulties accessing the turbines if they caught on fire. Mrs Perry cited a situation of a turbine catching alight in South Australia. We note these issues but again find no reason to refuse a permit application on these grounds. In so doing, we give weight to the lack of objection by the Country Fire Authority to the proposal.[\(56\)](#)

#### Tourist visits

150 Even though the wind turbines might generate some interest, there is no proposal for viewing platforms or information/display boards. We do not consider any specific measures are required to address tourist interest at this time. If the wind farm was to become a tourist destination, necessary arrangements for parking and any related facilities would be addressed through the Council and/or VicRoads.

#### Consent from Aboriginal communities

151 Mr Wild submitted consent was not obtained from local Aboriginal communities in relation to the proposal. In response, Mr Kaskadanis' evidence set out the involvement by the Wurundjeri people in the sub-surface testing. A letter was tendered indicating the support of the Wurundjeri Tribe Land & Compensation Cultural Heritage Council Inc. to this effect. We note the Council requested a representative(s) of the Wurundjeri Council participate in testing, which we were advised occurred.

152 Mr Kaskadanis also explained that the Dja Dja Wrung people were notified of the application. The Dja Dja Wrung are native title claimants. Mr Kaskadanis' evidence was that consent was not obliged from the Dja Dja Wrung people, evidence with which we agree based on our understanding of the Native Title Act 1993.[\(57\)](#)

153 We are satisfied that the necessary statutory obligations have been met based on Mr Kaskadanis's evidence. It is appropriate, however, to ensure that all statutory obligations have been satisfied in terms of any formal consents. That can be dealt with by permit conditions, similar to those applied in other wind farm permits, having regard to the legislation that applies to this permit application.

#### Insufficient consultation

154 We were advised that the Leonards Hill community felt there had been insufficient consultation with them and their views had not been heard. In response, Mr Townsend referred to steps undertaken by the Association to consult with the community. Mr Cleary also gave evidence in this regard.

155 We appreciate that those involved with this Application have not received the answer they sought in relation to the permit application. That does not mean that their concerns were not heard or taken into account. We have fully considered all submissions in reaching our decision in this proceeding.

#### Impacts on property values

156 The potential for the proposal to devalue surrounding properties was contended by the Applicant. It is a well established planning principle that depreciation of land values as a result of a proposed development is not a relevant ground by which to refuse a proposal. That is, property value is not, in itself, a planning consideration. But amenity is relevant. If values are affected by adverse amenity impacts, then it is the amenity questions that must be considered, not their ramifications in terms of property values. We have addressed potential amenity impacts previously in these reasons.

#### How has the Tribunal approached conditions?

157 The Council's decision to grant a permit proposed 12 permit conditions. It was apparent to us on reading them that some of conditions were based on other permits issued for wind farms. It also became apparent to us during the course of the hearing that if a decision was eventually made for a permit to be granted, the conditions sought by the Council would not be adequate.

158 We elected to provide the parties with a draft set of conditions, modelled on other wind farm permits, with the aim of some consistency with similar developments including permit holder responsibilities. We invited written responses to the "without prejudice" conditions.

159 Since reviewing all of the material presented to us, we have decided to grant a permit. Thus, we have considered all comments on conditions filed by the Council, Mr Wild/Ms Elsworth and Mr Townsend/Mr Shapero. Our final conditions are appended to these reasons, having been modified from the draft. The following require our explanation:

- We accept some comments that the proposal before us is for a small wind farm and therefore some draft conditions may be too onerous.

- Micro-siting. We are not persuaded that this should necessarily always be a routine provision, but we are satisfied that micro-siting would be acceptable in this case if turbines come no closer to any existing dwelling. We do not accept flexibility to move turbines up to 100 metres closer to houses (but no less than 500 metres) in the specific circumstances of this case. That reflects our findings in relation to visual and acoustic issues where we have been mindful that an ability to position turbines closer to dwellings could increase visibility and noise emissions. Moreover, all assessments have been undertaken based on turbine locations identified in the Marshall Day Acoustics report dated 10 October 2006. Our condition gives flexibility to re-site the turbines away from dwellings and that is generally eastwards but the location must be confirmed through amending plans. We have not accepted suggestions by the Applicant that a minimum of 800 metres be adopted as a distance from any dwellings.

- Turbine selection. All assessments have been undertaken on the basis of the Repower MM82 2MW turbine. Our suggestion that any alternative model sought to be used should have the same or a lower power sound pressure level output was said by the proponent to be unnecessary and unworkable. We accept this submission insofar as we will require use of Repower MM82 2MW or another model that is to be satisfaction of the Responsible Authority. It would be open to the Council to seek further information about any alternative model including con-



firmation that noise emissions can comply with NZS6808. A required noise commissioning report is also relevant to our conclusion on this point. We have not accepted suggestions by the Applicant that double glazing be provided to existing dwellings.

- Further assessments/plans. We have included conditions relevant to our findings, notably further survey works for bats, but have not been persuaded to include a series of additional assessments suggested by the Applicant, such as a baseline environmental audit, assessment of spring water quality and electrical generation, or a hazardous substances and hydrocarbon plan.

- Environmental Management Plan. This was not provided for in the Council's conditions. It was sought by DSE and is intended to be undertaken by the Respondent. We will require such a plan.

- Landscaping. We will provide for planting on the review site to provide visual screening particularly for dwellings #2, 3, 11, 12 and 19 - we think this can be effective despite the time required for trees to mature. Fast-growing natives can be used. We will also accept the Respondent's suggestion to plant on private properties should owners so request. We have not accepted the Applicant's proposal that screen planting designed by a landscape architect be made available for properties within 1.5km of the review site for reasons that will be apparent from the conclusion of our assessment. We have not accepted the Respondent's proposed "voluntary" landscape mitigation works as we require planting to be undertaken on the review site.

- Section 173 agreement. We have not considered it necessary to require such an agreement relating to lease arrangements, decommissioning and related matters suggested by the Applicant. Nor do we consider compensation conditions are a matter for a permit.

- Decommissioning. We do not accept Mr Wild's submissions that the facility should be forced to be decommissioned if projected electrical generation targets are not achieved. We also disagree that the facility must be decommissioned if significant avifauna mortality occurs in the form of one bird or bat listed as rare, threatened or endangered or two fatalities of any other species occur over a period of two years.

- Construction. We do not accept conditions relating to construction proposed by the Applicant, such as a limitation on hours and restrictions on the nature of any chemical use on the land. Such matters are to be managed through a construction management plan at which time any time or other restrictions can be agreed with the Council.

- Community Reference Group. We have not included this condition requested by the Applicant. The composition of such a group as proposed by the Applicant is too narrow and its proposed role in terms of secondary consents is inappropriate and unlawful. However, we would support ongoing consultation and liaison between the local community and proponent outside the permit process.

- Community Fund. We will not oblige the Respondent to contribute to a community fund as sought by the Applicant - that is for it to decide.

- Composition of Co-Operative. We will not include conditions relating to the composition of the Co-Op requested by the Applicant, such as that it must be owned by 51% or more of residents of the Hepburn Shire. Our decision in this case has been mindful of the community-based project but that has not been over-riding in our determination.

## Conclusion

160 Clause 52.32 has as its purpose to facilitate the establishment and expansion of wind energy facilities, in appropriate locations, with minimal impact on the amenity of the area. The concept of minimal impact must be considered in the context of the scale of a particular proposal, the physical setting within which turbines are proposed, and the directions of the Scheme that decisions about impact must be weighted having regard to policy in support of renewable energy development.

161 For the above reasons that we have set out at length, we are satisfied that the proposal represents an acceptable outcome in terms of the policies and decision guidelines of the Hepburn Planning Scheme. The proposal will bring change to Leonards Hill but the extent to which the proposed turbines would be noisy or visually intrusive

satisfies the tests and objectives specified in the Hepburn Planning Scheme. Other objections brought by the Applicant do not warrant rejection of the permit application.

162 We will affirm the Council's decision to direct that a permit be issued for the proposal, but will replace the conditions contained in the Notice of Decision with those appended to these reasons.

#### Appendix 1

##### Conditions for Permit 2006/9231

##### Amended plans

1 Before the use and/or development starts three copies of revised plans drawn to scale and dimensioned, 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 generally in accordance with plans submitted with the permit application but modified to show to the satisfaction of the Responsible Authority:

(a) At a scale of 1:100 or 1:200:

(i) The exact location of the wind turbines (including dimensions from adjoining property boundaries). No turbine shall be closer to the closest wall of any existing residence based on the measurements contained in the report prepared by Marshall Day Acoustics dated 10 October 2006, Table 1 at page 5.

(ii) If the turbines are re-positioned from the locations identified in the report prepared by Marshall Day Acoustics dated 10 October 2006 Table 1 at page 5:

1. a report must be submitted setting out the results of sub-surface testing by a qualified archaeologist that assesses the cultural heritage and archaeological sensitivity of the revised location of the turbines.

2. a revised shadow flicker

assessment must be submitted.

(iii) The location, layout and dimensions of all buildings and works, including (but not limited to) the grid connection monitoring and control booth, site office, hard stand areas, footing pads, all roads, tracks, underground cabling, car parking areas, construction lay-down areas and landscaping areas (including landscaping required by this permit).

(iv) The detailed design of the wind generators (inclusive of nacelles, blades and foundations) including dimensions and elevations.

(v) A detailed schedule of materials, colours and finishes of the wind generators (inclusive of nacelles, blades and foundations) based on the description set out in the planning report accompanying the permit application including at page 26 of 68 "Reflectivity and Colour" unless an alternative is to the satisfaction of the Responsible Authority;

(vi) A detailed schedule of materials, colours and finishes for all other structures, such as the grid connection booth and site office;

(vii) The location of services such as powerlines and gas pipeline;

(b) Details of any signage proposed to be displayed as part of the wind energy facility, which must be limited to:

(i) one site identification sign not exceeding 2 metres by 2 metres, at the entrance to the site;

(ii) a logo or company identification for the wind energy facility operator or wind generator manufacturer displayed on the wind turbines;

(iii) necessary signs relating to site safety issues.

#### Use and layout not altered

2 The use and development as shown on the endorsed plans must not be altered or modified in any way without the written consent of the Responsible Authority.

#### Wind energy facility specifications

3 The wind energy facility must be constructed in accordance with the following specifications to the satisfaction of the Responsible Authority:

(a) A total of not more than two (2) wind generators in the locations shown on the endorsed plans.

(b) Each wind generator must have an overall height of not more than 110 metres.

(c) The rotor on each wind generator must comprise no more than three (3) blades.

(d) The turbines must be Repower MM82 2MW or another model that is to the satisfaction of the Responsible Authority.

(e) The wind generators must not be artificially illuminated at night except for any safety lighting to warn low flying aircraft.

(f) No external lighting of infrastructure associated with the wind energy facility, other than low level security lighting where appropriate, may be installed or operated.

(g) All new electricity cabling associated with the collector network within the wind energy facility generator cluster must be placed under the ground.

(h) Any transformer associated with each wind generator must be located beside each tower and be pad mounted, or be enclosed within the tower structure.

(i) The access track(s) within the site must

be sited to minimise impacts on existing native trees on the site, and be constructed to the minimum standard practicable in order to ensure minimum impacts on the site, including impacts on overland flows.

#### On-site landscape and visual screening plan

4 Before the use or any development starts, a Landscaping and Visual Screening Plan must be submitted to the satisfaction of the Responsible Authority. When approved, the plan will be endorsed by the Responsible Authority. The Landscaping and Visual Screening Plan must include:

(a) Visual screening of hard stand areas and the grid control booth from the Ballan - Daylesford Road.

(b) Planting along the site's perimeter to provide visual screening to dwellings #2, #3, #11, #12 and #19 (dwelling numbers from Map 5 - Neighbouring Residences in the Proposed Hepburn Community Wind Park Landscape and Visual Assessment Study by J Cleary 2006 at page 41).

(c) Details of species proposed to be used for landscaping including details of the height and size of species at maturity.

(d) Details of fencing to protect new vegetation from stock impacts.

(e) A maintenance program.

(f) A timetable for the implementation of landscaping and visual screening works that includes planting being completed prior to any turbine being commissioned.

The use and development must be carried out in accordance with the endorsed Landscaping and Visual Screening Plan to the satisfaction of the Responsible Authority.

#### Off-site landscape and visual screening plan

5 Before the development starts, a program of land-

scape mitigation works is to be made available to relevant landowners. As part of that program an Off-site Landscape Plan must be prepared and submitted to the satisfaction of the Responsible Authority. When approved, the plan will be endorsed by the Responsible Authority. The Off-site Landscaping Plan may be submitted in stages to the satisfaction of the Responsible Authority (so that not all stages are completed before the development starts) and must include (but may not be limited to) the following:

(a) A provision for landowners within a one kilometre radius of any wind turbine to have the opportunity to accept the offer to provide visual screen planting at any time up until six (6) months after the commissioning of the last wind generator;

(b) The process by which landowners within a one kilometre radius of any wind turbine will be informed of this offer and the process by which it can be accepted;

(c) Details of planting or other treatments that will be used to reduce the visual impact of the wind turbines at the dwellings of participating landowners;

(d) Details of species proposed to be used for the landscaping including details of height and size of species at maturity;

(e) A timetable for the implementation of the plan;

(f) A maintenance program.

The use and development must be carried out in accordance with the endorsed Off-site Landscape Plan to the satisfaction of the Responsible Authority.

#### Traffic management

6 Before the development starts, a Traffic Management Plan must be prepared to the satisfaction of the Responsible Authority and VicRoads. When approved, the plan will be endorsed by the Responsible Authority. The plan must include (but is not limited to):

(a) Designation of vehicle access point(s).

(b) Details on whether the access location point to the proposed development meets the safe intersection sight distance requirements specified in Austroads Guide to Traffic Engineering Practice Part 5 - Intersections at Grade and, if not, details of any mitigating works required to meet the sight distance requirements.

(c) Details of any roadside pruning, vegetation removal and vegetation restoration.

(d) The designation of appropriate construction and transport vehicle routes to the wind energy facility.

(e) A traffic management plan for the Ballan-Daylesford Road during construction of the development including temporary speed signage and times of operation in accordance with VicRoads Roadworks Signing Code of Practice.

(f) Details of any works required along the Ballan-Daylesford Road during construction.

(g) The requirements for Over Dimensional Load permits and escorting of long or large loads along roads in the area.

(h) A timetable for implementation of any preconstruction works identified to be undertaken.

The use and development must be carried out in accordance with the endorsed Traffic Management Plan to the satisfaction of the Responsible Authority and VicRoads and the cost of any works including maintenance is to be at the permit holders expense.

#### Environmental management

7 Before the development starts, an Environmental Management Plan must be prepared to the satisfaction of the Responsible Authority. When approved, the plan will be endorsed by the Responsible Authority. The Environ-

mental Management Plan must include (but is not limited to):

(a) A construction and work site management plan. This plan must include:

(i) Procedures for access, noise and pollution management.

(ii) The identification of all potential contaminants, hazardous chemicals, liquids and similar materials to be stored on site.

(iii) The identification of all construction and operational processes that could potentially lead to water contamination.

(iv) The identification of appropriate storage, construction and operational and spill control methods to control any identified contamination risks including any arising from the identification processes in Conditions 7(a)(ii) and (iii).

(v) Criteria for the siting of any temporary concrete batching plant associated and procedures for its removal and reinstatement of the site once its use finishes. The establishment and operation of any temporary concrete batching plant must be in accordance with the Environment Protection Authority's Environmental Guidelines for the Concrete Batching Industry, Publication No. 628.

(vi) The identification of waste re-use recycling and disposal procedures.

(vii) Procedures for the storage of any fuels, lubricants or waste oil to be stored in banded areas and procedures for managing any spills.

(viii) The removal of works buildings and staging area on completion of construction of the project and for the return of the site to its former condition.

(b) A wildfire prevention and response plan.

(c) A sediment and erosion management plan. This plan must include:

(i) Procedures to ensure that silt from batters, cut-off drains, table drains and road works is retained on the work site during and after the construction stage of the project. All land disturbances must be confined to a minimum practical working area and to the vicinity of the identified work areas. Soil to be removed must be stockpiled and separate soil horizons must be retained in separate stockpiles and not mixed. Stockpiles must be located away from drainage lines.

(ii) All track construction and maintenance equipment, earth moving equipment and associated machinery, must be made free of soil, seed and plant material before being taken to the works site and again before being removed from the works site on completion of the development.

(iii) All road-making and maintenance material such as rock, gravel and sand required for the project must come from an area free of weeds.

(iv) The installation of geotextile silt fences (with sedimentation basins where appropriate) on all drainage lines from the site which are likely to receive run-off from disturbed areas.

(v) Procedures to contain any contaminated or turbid run-off during and after construction of the wind energy facility.

(vi) Procedures to suppress dust arising from construction-related activities. Appropriate measures may include water sprays of roads and stockpiles, stabilising surfaces, temporary screening and/or wind fences, modifying construction activities during periods of heightened winds and revegetating exposed areas as soon as practicable.

(vii) Procedures to ensure that steep batters are treated in accordance with Environmental Protection Authority recommendations detailed in the "Construction Techniques for Sediment Pollution Control" No 275, May 1991.

(viii) Procedures for waste water and discharge management to prevent adverse off-site impacts.

The use and development must be carried out in accordance with the endorsed Environmental Management Plan to the satisfaction of the Responsible Authority.

#### Bird, avifauna and bat management

8 Prior to the development commencing, a bird and bat management plan must be prepared to the satisfaction of the Responsible Authority. When approved, the plan will be endorsed by the Responsible Authority. The bird and bat management plan must include (but is not limited to):

(a) A pre-construction monitoring program to monitor the presence and behaviour of bats on the site. The monitoring program is to be carried out by an independent fauna consultant. The program must specify that the following data be recorded and include provision for reporting of the data to the satisfaction of the Responsible Authority:

(i) The frequency and height of bat movements across the site;

(ii) Seasonal changes in bat movements;

(iii) The species involved and whether the species is identified as significant or threatened under the Environment Protection and Biodiversity Conservation Act (1999) or the Flora and Fauna Guarantee Act (1988); and

(b) A strategy for managing and mitigating bird and bat strike arising from the wind energy facil-

ity operation. The strategy must include:

(i) The areas required to be inspected.

(ii) The frequency of monitoring and inspections.

(iii) Scavenger management, for example, regular removal of carcasses likely to attract raptors to areas near generators and other measures to routinely control bird feed and prey.

(iv) Recording and reporting requirements to the Responsible Authority.

(c) A procedure for addressing any significant impacts on bird and bat populations under the Environment Protection and Biodiversity Conservation Act (1999) or the Flora and Fauna Guarantee Act (1988) caused by the wind energy facility operation. This procedure must provide that the operator of the wind energy facility immediately investigates the possible causes of any significant impacts on bird and bat populations, and thereafter must design and implement measures to mitigate those impacts in consultation with the Responsible Authority.

The use and development must be carried out in accordance with the endorsed bird and bat management plan to the satisfaction of the Responsible Authority.

#### Heritage protection and management

9 Prior to the development commencing, a management plan addressing heritage protection must be prepared to the satisfaction of the Responsible Authority. When approved, the plan will be endorsed by the Responsible Authority. The heritage protection management plan must include (but is not limited to):

(a) A qualified archaeologist must be on-site during initial excavation works to identify any archaeological artefacts, and initiate measures for interim protection and reporting of any such objects or sites.

(b) Protocols for the control of construction activities, including the activities by contractors, that have been identified to have potential effects on sites of cultural significance.

(c) Protocols for ongoing consultation with the relevant Aboriginal communities throughout the project, especially those relating to relating to the detailed on-surface and sub-surface archaeological investigations, including maintaining confidentiality (where considered appropriate) of the locations of Aboriginal archaeological sites.

(d) Prior to disturbing any identified archaeological site, place or object, procedures for seeking and obtaining written consent of any identified Aboriginal local aboriginal community, as nominated for the purposes of Part 11A of the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth).

(e) Procedures providing appropriate workshops and training courses with contractors to protect all known sites of Aboriginal cultural heritage value.

(f) Protocols for protecting and reporting the discovery of any human remains in accordance with the requirements of the Victoria Police, the State Coroners Office and Aboriginal Affairs Victoria.

The use and development must be carried out in accordance with the endorsed Heritage Protection Management Plan to the satisfaction of the Responsible Authority.

#### Commissioning report and noise management

10 The operation of the wind energy facility must comply with the New Zealand Standard "Acoustics - The Assessment and Measurement of Sound from Wind Turbine Generators" (NZ 6806:1998) (the "New Zealand Standard"), in relation to any dwelling existing at the date of approval of this permit, to the satisfaction of the Responsible Authority.

11 Within two months of the commencement of operation of any turbine(s), an independent post-construction

noise monitoring program must be undertaken by the proponent to the satisfaction of the Responsible Authority in accordance with the New Zealand Standard. The program must monitor noise levels at any dwelling within a one kilometre radius of any wind turbine that is not in the same ownership as the subject land.

A report summarising the results of the program, and the data collected, must be forwarded to the Responsible Authority within 30 days of the end of the monitoring period. The results must be written in plain English and formatted for reading by lay people.

Recommendations to address any non-compliance with NZS6808 must be included in the report and, on agreement by the Responsible Authority, measures to address non-compliance must be immediately implemented to the satisfaction of the Responsible Authority.

12 Before the use commences, details of a noise complaint and evaluation process must be submitted to and approved by the Responsible Authority. This evaluation process should include, but not be limited to the following components:

(a) Details of validity requirements for noise complaints (that is, date, time, noise description and weather conditions at the receptor).

(b) Response protocol to valid noise complaints.

(c) A register of complaints, responses and rectifications which may be inspected by the Responsible Authority.

(d) Provision for review of the complaint and evaluation process, including review of the process 12 months after commencement of the operation of the wind energy facility.

The use and development must be carried out in accordance with the endorsed process to the satisfaction of the Responsible Authority.

Blade shadow flicker

13 The operator of the wind energy facility must ensure that no existing dwelling will experience over 30 hours blade shadow flicker per annum or undue blade glint to the satisfaction of the Responsible Authority.

#### Electromagnetic interference

14 Prior to the commencement of the development, a pre-construction qualitative survey of television and radio reception must be offered in writing to the owners and occupiers of all dwellings within a one kilometre radius of the approved turbines.

15 A pre-construction survey of television and radio reception must be undertaken at any premises where the offer for such a survey has been accepted, to the satisfaction of the Responsible Authority.

16 If any written complaint is received by the operator or the Responsible Authority as to interference with television or radio reception at residences within a one kilometre radius of the approved turbines who accepted a pre-construction survey, and a request is made for a post-construction survey to be undertaken, the operator of the wind energy facility must undertake a post-construction qualitative survey within three months of a request to do so. If the qualitative survey establishes any detrimental increase in interference to reception, measures must be taken to mitigate the interference to return the affected reception to pre-construction quality at the cost of the wind energy facility operator and to the satisfaction of the Responsible Authority.

#### Decommissioning

17 The wind energy facility operator must, within one month, notify the Responsible Authority in writing as soon as all wind energy facility generators have permanently ceased to generate electricity. Within 12 months of that date, the wind energy facility operator must undertake the following to the satisfaction of the Responsible Authority:

- (a) remove all non-operational or downed equipment, structures and buildings;
- (b) remove and clean up any residual spills;

(c) clean up and restore all storage, construction and other areas associated with the use, development and decommissioning of the wind energy facility;

(d) restore all access roads and any other area affected by the project closure or decommissioning, if not otherwise useful to the on-going management of the land;

(e) submit a post-decommissioning traffic management plan to the Responsible Authority and, when approved by the Responsible Authority, implement that plan; and

(f) submit a post-decommissioning revegetation management plan to the Responsible Authority and, when approved by the Responsible Authority, implement that plan.

#### Aviation

18 Following the endorsement of plans under Condition 1 of this Permit, and prior to the erection of any turbine, the operator must meet any requirements of the Civil Aviation Safety Authority including in relation to the reporting of tall structures under the requirements of the Civil Aviation Regulations 1988.

#### Permit expiry

19 This permit will expire if one of the following circumstances applies:

- (a) The development and use is/are not started within four (4) years of the date of this permit.
- (b) The development is not completed within two (2) years of the date of the commencement of the works.

The Responsible Authority may extend the periods referred to if a request is made in writing before the permit expires or within three months afterwards.



In permit application no. 2006/9231, the decision of the Responsible Authority is varied. A permit is granted and is directed to be issued. The permit relates to the land at No. 2040 Ballan-Daylesford Road, Leonards Hill. The permit will allow the use and development of a wind energy facility including two turbines and associated buildings and works in accordance with the endorsed plans. The permit is subject to the conditions contained in Appendix 1 to these reasons.

FN(1) We joined Ms Emma Elsworth as a party to the joint application for review without objection by any party.

FN(2) Map 5 in the Landscape and Visual Assessment Study by J Cleary. This cites houses #1-18 but omits a number 15. Dwellings #6 and 7 are in the same ownership as the review site and are 509 metres and 525 metres from the closest turbine based on Table 1 of the Marshall Day Acoustic report dated 10 October 2006 at page 5. Another dwelling has also been omitted from a group of four that exist on the west side of the Ballan-Daylesford Road more than 1.5km from the closest turbine. We also observed on our visit an older timber (farm?) dwelling north of dwelling #3 that appears to have been omitted from all material and not mentioned in submissions. It may not be occupied. It has extensive vegetation surrounding it. It would be more than 600 metres from the closest turbine. House #18 is undergoing extensive works.

FN(3) Based on Table 1 of the Marshall Day Acoustic report dated 10 October 2006 at page 5.

FN(4) Australian Height Datum.

FN(5) Landscape and Visual Assessment Study by J Cleary.

FN(6) This has been located on site since August 2006.

FN(7) As stated in the material accompanying the planning permit application - planning report at page 42 of 68.

FN(8) For example, acoustic, fauna, archaeological and geotechnical assessments.

FN(9) The Tribunal has considered the provisions of Clause 35.07 in addition to Clauses 11, 12, 14, 15.01,

15.05, 15.09, 15.14, 17.02, 18.02, 19.03, 21 (Municipal Strategic Statement), and Clause 65 (general decision guidelines). Clause 21.03-3 includes a Structure Plan for Muskvale Leonards Hill. State and national greenhouse strategies, and legislation relating to flora and fauna protection, are among other material considered by the Tribunal. Clause 52.32 applies to wind energy facilities with decision guidelines requiring consideration of:• The views of the Sustainable Energy Association of Victoria about the contribution of the proposal to reducing greenhouse gas emissions. The views of the Sustainable Energy Association of Victoria about the contribution of the proposal to reducing greenhouse gas emissions.• The effect of the proposal on the surrounding area in terms of noise, blade glint, shadow flicker and electromagnetic interference. The effect of the proposal on the surrounding area in terms of noise, blade glint, shadow flicker and electromagnetic interference.• The impact of the development on significant views, including visual corridors and sightlines. The impact of the development on significant views, including visual corridors and sightlines.• The impact of the facility on the natural environment and natural systems. The impact of the facility on the natural environment and natural systems.• The views of the Civil Aviation Safety Authority if within a 30 kilometre radius of an airfield. The views of the Civil Aviation Safety Authority if within a 30 kilometre radius of an airfield.• The Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, 2003. The Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, 2003.

FN(10) We have considered the provisions of Clause 42.01 and Schedule 1.

FN(11) VicRoads has offered no objection to the proposal subject to conditions being included on any permit to issue.

FN(12) Our inspection occurred on 22 June 2007. It included the review site, many of the dwellings and properties within one kilometre of the proposed turbine locations, and the wider area.

FN(13) Amendment VC16 to all planning schemes.

FN(14) [Macarthur Wind Farm Pty Ltd v Moyne SC \[2006\] VCAT 1423](#), [Start v Pyrenees SC \[2006\] VCAT](#)

[2599, P1677/2005](#) Naroghid Wind Farm Pty Ltd v Corangamite SC.

FN(15) For example, reports dealing with wind farms proposed at Bald Hills (2006), Macarthur (2006), Yaloak (2005) and Wonthaggi (2003) by independent panels and advisory committees.

FN(16) Capacity factor is defined by Sustainability Victoria as the ratio of annual energy generation to the maximum possible generation of the plant operated at full power every hour of the year.

FN(17) The Star, Tuesday 15 May 2007, page 37.

FN(18) We refer to this organisation as "SV".

FN(19) Page 29 of the Policy Guidelines.

FN(20) For example, permit application PL-SP/05/0283 Macarthur wind farm, report of the Panel, May 2006 at page 59. That panel also recommended public reporting of the actual capacity factor, although that was not included in the issued permit.

FN(21) A recent example is [McGill v Bass Coast Shire Council \[2007\] VCAT 1028](#) that cites several other cases.

FN(22) We refer to these as the "Policy Guidelines".

FN(23) These themes are found in the Hepburn Planning Scheme and similarly in the Moorabool Planning Scheme. The Farming Zone includes two decision guidelines on these themes:• The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.• The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance. [Tribunal emphasis added]The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance. [Tribunal emphasis added]

FN(24) Policy Guidelines at page 24 Evaluation of Visual Amenity.

FN(25) PWEF Panel report, Volume 2: Policy consideration

FN(26) Ball Hills panel at page 220

FN(27) Landscape & Visual Assessment Study, 2006, Map 4, page 35..

FN(28) [Telstra Corporation v Hepburn SC \(Red Dot\) \[2005\] VCAT 1099](#).

FN(29) [Telstra Corporation v Hepburn SC \(Red Dot\) \[2005\] VCAT 1099](#) at paragraph 35.

FN(30) [Telstra Corporation v Hepburn SC \(Red Dot\) \[2005\] VCAT 1099](#) at paragraph 50.

FN(31) Schedule 2 - Visual Amenity and Building Design.

FN(32) Clause 21.03 of the Hepburn Planning Scheme.

FN(33) It has design objectives to:• To enhance visual amenity in rural, township and vegetated areas of the Moorabool Shire.To enhance visual amenity in rural, township and vegetated areas of the Moorabool Shire.• To encourage the use of external cladding, such as non-reflective materials for building construction.To encourage the use of external cladding, such as non-reflective materials for building construction.• To discourage the use of materials, such as reflective cladding for building construction, which could have a detrimental effect on amenity.To discourage the use of materials, such as reflective cladding for building construction, which could have a detrimental effect on amenity.

FN(34) Map 5 - Neighbouring Residences, Landscape & Visual Assessment Study, 2006, at page 41.

FN(35) A condition included on the Notice of Decision by the Council and accepted by the Respondent.

FN(36) There is no #15 on the plan. Our assessment in-

cludes Perry residence but omits #6 and #7 as they are in the same ownership as the review site. We have also referred to another unidentified house with #21, 22 & 23. A further (possibly) vacant cottage is near to dwelling #1 but surrounded by plantings. Distances to turbines sourced from Cleary study with turbines in location shown on the plans.

FN(37) This standard is also referenced as NZ-S6808:1998. There is no Australian Standard (a draft was published in 2004).

FN(38) NZS6806 at paragraph 4.4.2.

FN(39) Bald Hills EES report at pages 192 - 193.

FN(40) Extract from Wind Farms Environmental Noise Guidelines, 2003, SA EPA, at page 10 commenting on NZS6808.

FN(41) Recent examples of commentary on this matter can be found in [Nightingale v Latrobe SC \[2006\] VCAT 384](#) and [Viste v Cardinia SC \[2006\] VCAT 340](#) although the factual circumstances in both instances differ from the current proceeding. In addition, refer to the comments on the Panel in relation to the Bald Hills wind farm at pages 202 - 203.

FN(42) We were advised by the Respondent that the turbines would not be operational at wind speeds of less than 3 metres/second.

FN(43) Refer to cited evidence Bald Hills panel report at pages 196 - 197 and Bald Hills panel conclusions at pages 205 - 208.

FN(44) Wind Farms Environmental Noise Guidelines, 2003, SA EPA, at page 13.

FN(45) Letter to Mr D Shapero from Mr G Hull, Manager Coasts and Land Use Planning, South West, dated 19 June 2006. That may relate to an earlier draft of the June 2006 Fauna Assessment Report.

FN(46) It does not appear that all of DSEs requested conditions from 19 June 2006 letter were included in its letter to the Shire commenting on the proposal - a letter

dated 22 December 2006.

FN(47) For example, Yaloak Wind Farm Panel, March 2005, at pages 116 - 117, and proposed Cullerin Range Wind Farm in NSW (west of Goulburn).

FN(48) Leonards Hill Wind Farm - Fauna Assessment, Addendum, June 2007 at page 4 of 9.

FN(49) The letter from Mr Hull to Mr D Shapero indicates that little or no native vegetation exists on the land. The letter refers to an inspection of the site by DSE.

FN(50) Such as the National Estate or Victorian Heritage Register.

FN(51) Reference was made to some relics being dug up on the hill by Ms Barron's father but no indication that the location was close to the site for the turbines.

FN(52) Dated 12 October 2006.

FN(53) Also dated 12 October 2006.

FN(54) Report by Hardrock Geotechnical Pty Ltd dated 27/10/06.

FN(55) Refer comments in Macarthur wind farm panel report at page 138.

FN(56) Letter to the Council dated 8/12/06.

FN(57) The situation may be different if the land was designated as "crown land" or the native title claim was at a different stage.

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