Independent Review of Specialist Report

BLACK SPRINGS WIND FARM, NSW
Visual Impact Assessment

Prepared for the Department of Planning

Prepared by

Peter Haack

Registered Landscape Architect
AAILA, MEINZ, PLA

of

EDAW | AECOM

Level 7
460 Collins Street
Melbourne 3000,

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CONTENTS

1. PROFESSIONAL PROFILE – PETER HAACK

This Independent Review has been prepared by Peter Haack, Registered Landscape Architect, BLArch, Dip App Sci, AAILA, MEIANZ, MPLA

Peter Haack is the Principal Landscape Planner of EDAW and has extensive experience in the preparation of visual and landscape impact assessment studies on a range of major infrastructure projects throughout Australia, as well as presenting expert evidence to Planning Appeals, Hearings and Panels.

Projects of relevance are:

- Taralga Wind Farm Peer Review, NSW
- Bannister Wind Farm Development, NSW
- Starfish Hill Wind Farm Planning Study, SA
- Tungketta Hill Wind Farm Planning Study, SA
- Waterloo Wind Farm Planning Study, SA
- SA Planning Wind Farm Assessment Guidelines, SA
- Woolnorth Wind Farm Peer Review, TAS
- Portland Wind Energy Project, VIC
- Mildura Marina EES, VIC
- Portarlington Safe Harbour Baseline Assessment, VIC
- Webb Dock Development EES, VIC
- Nowingi Long Term Waste Facility EES, VIC
- Hazelwood Coalfield Westfield Expansion, VIC
- SNI Interconnector Powerline EES, SA, NSW and Vic
- Cape Jervis to Yankalilla Powerline Planning Study, SA
- Eastern Gas Pipeline EES, VIC and NSW
- Northern Tasmanian Gas Pipeline, Independent Reviewer, TAS
- Port Campbell Underground Gas Storage Facility, EES, VIC
- Minerva Gas Field Project, EES, VIC
- Gorgon Karratha LNG Project Planning Study, WA
- Scoresby Freeway and Integrated Transport Corridor, EES, VIC
- Stawell Big Hill Gold Mine, VIC
- Lake Cowal Gold Mine, NSW
- Carshalton Gold Mine SEES, VIC
- Wambo Coal Mine, Land and Environment Court Proceedings, NSW
- Wilpinjong Coal Mine EIS, NSW
- Maryvale Coalfield Expansion EES, VIC
- Wemen Mineral Sands EES, VIC

2. INDEPENDENT REVIEW OBJECTIVES

Peter Haack of EDAW was commissioned by the Department of Planning to undertake an independent review of the *Visual Impact Assessment for Black Springs Wind Farm*, (The Report), prepared by Harper Somers O'Sullivan, November 2006.

The purpose of the Visual Assessment Independent Review is to advise the Director-General regarding Wind Corporation Australia's proposed Black Springs Wind Farm including:

1. Consideration of visual impacts including consideration of the validity of photomontages used, the area's ability to accept/absorb the turbines from both a regional and local perspective, and potential mitigation measures; and
2. Consultation with neighbouring residents, Oberon Council and the Proponent regarding 1 and 2 above.

3. OBJECTIVE OF THE NATIONAL ASSESSMENT FRAMEWORK

The Wind Farms and Landscape Values National Assessment Framework (NAF) has been designed to:

- Integrate with typical siting, design and development processes followed by wind farm developers
- Take account of the need to integrate with other investigations and assessment, such as heritage, noise or environmental issues (assessment of impacts on landscape values is only one of a number of assessments undertaken by wind farm developers)
- Provide improved processes of engagement, communication and consultation with local and wider communities in relation to landscape values assessment

It should be noted that at the time of the preparation of The Report, the NAF was in the process of being prepared. However, a number of discussion papers had been released for comment that provided an indication of the key assessment considerations. It is one of these papers, *Stage 1 Final Report – Identifying Issues, March 2005*, with particular reference to *Appendix B: Wind Farms and Landscape Values: Final Issues*, that The Report has primarily based its assessment approach on. It has also referenced the Draft NSW Wind Energy Environmental Impact Assessment Guidelines (Department of Planning, 2002) as well as previous assessment reports for the Cullerin Range and Capital Wind Farms.

4. APPROACH TO THE INDEPENDENT REVIEW

The following approach was applied to the peer review process:

- Review of the requirements of the NAF.
- Review of The Study's response to the NAF.
- Meeting with representatives of the Department of Planning on the morning of the 26th November 2007 to clarify the requirements for the Independent Review process.
- Meeting with representatives of Allco Wind Energy on the morning of the 26th November 2007 to clarify the study process and project progress to date.
- Meeting with Shire of Oberon Councillors on the afternoon of the 26th November 2007 to clarify their concerns in relation to the project and the Environmental Assessment. (EA).
- Undertake a site visit to verify sensitive site locations as described in the Visual Impact Assessment Report and photomontages.
- Undertake a site visit on the morning of the 27th November 2007accompanied by representatives of Allco Wind Energy, to confirm sensitive site locations as described in the Visual Impact Assessment Report and photomontages and discuss EA report process and issues.
- Meeting with representatives of the Black Springs Community Landscape Guardians on the afternoon of the 27th November 2007 to clarify their concerns in relation to the project and the Environmental Assessment.
- Undertake a site visit accompanied by representatives of the Black Springs Community Landscape Guardians on the afternoon of the 27th November 2007, to confirm sensitive site locations as described in the Visual Impact Assessment Report and photomontages and discuss EA report process and issues.
- Meeting with representatives of Allco Wind Energy on the afternoon of the 6th December 2007 to review the technical approach to photomontage preparation and clarify issues relating to the number of sensitive viewpoints and the influences of logging of forest within the study viewshed.
- Preparation of the Draft Independent Review Report, comparing the developing methodology outlined in the *Stage 1 Final Report – Identifying Issues, March 2005* with the Visual Impact Assessment Report's response.
- Undertake comparison of photomontages prepared as part of the EA with those prepared on behalf of the Black Springs Community Landscape Guardians.
- Undertake a review of subdivisions and building envelopes approved by Council subsequent to the preparation of The Study, based on data supplied by Council, and determine the potential implications for The Study findings.
- Prepare a Zone of Visual Influence analysis to confirm the data contained in The Report.
- Finalisation of Peer Review Report.

5. REVIEW OF THE VISUAL IMPACT ASSESSMENT METHODOLOGY

In the following review, the components of the assessment have been reviewed and a comment provided on the adequacy of the assessment response.

5.1 APPENDIX B – VISUAL IMPACT ASSESSMENT

5.1.1 Section 2 – Methodology

A number if key steps in the assessment process are not summarised in this section, most significantly the assessment of viewer sensitivity.

5.1.2 Section 3 – Wind Farm Characteristics

This section is generally sound in its observations.

5.1.3 Section 4 – Scenic Quality

The definition of the landscape scenic quality in the context of the state is valid.

The landscape should be acknowledged as being significant at the local level, but at the state level it is typical of many areas in the region and would rate as of moderate quality.

The ability of the landscape to accommodate / absorb change is relatively high due to the patterning of vegetation and the regularly undulating landform that compartmentalises views in many instances.

The discussion of community perceptions to wind farm developments should be had in Section 7 – Visual Sensitivity, as it is of more relevance there.

TABLE 1: VISUAL QUALITY REFERENCE TABLE

The application of the Clouston and Brewer (1995) landscape assessment criteria appears sound.

5.1.4 Section 5 - Landscape Values

The results of the community consultation and the value that the community places on the landscape should be more fully described here. The recognition of the value placed by the local community on the natural and cultural landscape was the intended focus of the NAF.

The gradual change in land tenure in the area from large to small holdings has attracted owners seeking a “tree change” lifestyle. This would typically result in an increasing emphasis by residents on the leisure values of the landscape setting rather than

agricultural production values. This change should be acknowledged in the report and appropriately considered in conjunction with the assessment of viewer sensitivity.

5.1.5 Section 6 – Distance to Adjacent Residences

The stated distances from turbines to residences appear to be accurate.

FIGURE 3 – ZONE OF VISUAL INFLUENCE 10 KM RADIUS

The Zone of Visual Influence (ZVI) analysis does not state whether it has been generated based on blade or hub height. However, subsequent analysis undertaken by EDAW would suggest that blade tip height has been applied. (Refer Appendix B). This approach would produce the most extensive zone of influence which, when combined with vegetation not being taken into account in the ZVI (that would provide visual screening), effectively portrays Figure 3 as a worst case scenario.

FIGURE 4 – VISUAL CATCHMENT ASSESSMENT

The bar scale on this figure would not appear to be correct.

There is a discrepancy in the location and number of houses and some houses are not indicated consistently between figures in different reports. Houses in the subdivision to the west of turbines 1 and 2, currently separated from the site by a pine plantation, have not been shown. A number of these houses would potentially be visually exposed should the pine plantation be logged.

5.1.6 Section 7 – Visual Sensitivity

This section omits consideration of one of the most important factors in the determination of visual sensitivity, which is the expectation that a viewer has of a particular experience in a given setting. This is particularly important as the area transitions from production agriculture to more of a lifestyle focus. However, "Swatchfield" and "Kringas Kalgoorlie Hall" have been assessed as being of high sensitivity.

The stated variance in community perceptions to wind farm projects is consistent with numerous studies.

5.1.7 Section 8 – Relative Viewing Height of the Location

There is no reference made to the potential for overlooking of the site from the proposed building envelope on the Gribble property.

5.1.8 Section 9 - Colour

The typical colour of wind turbines, that has been found to be the most visually compatible in a range of viewing conditions is actually a light grey, RAL Colour 7035. A white or off white colour would be too reflective when front lit.

5.1.9 Section 10 – Number of Potential Viewers

This section needs to be linked to proximity and level of sensitivity to fully convey the potential number of viewers affected by the proposal. The number of residences and residents, the most sensitive and static group of sensitive viewers has not been identified. The number within a range of distances, particularly up to 5km, is critical in understanding potential impacts.

The subdivision and building envelope approvals that have occurred subsequent to The Report being prepared have increased the number of sensitive residences by approximately:

Within 1 km – 3 approved building envelopes

Between 1 km and 2 km – 2 approved building envelopes

Between 2 km and 5 km – 8 approved building envelopes

The increase in the number of poetically sensitive viewing points increases the potential visual impact, particularly for those viewing points within a 2km radius.

5.1.10 Section 11- Duration of Exposure

The discussion within this section would appear sound. However, suggested mitigation measures such as foreground screening located in close proximity to sensitive viewing locations, has not been acknowledged as also resulting in loss of distant views – therefore being an impact in its own right.

5.1.11 Section 12 – Scale, Dominance and Size of Objects

The discussion within this section is generally sound.

The layout of the windfarm responds primarily to 2 of the closest viewpoints to the south of the study area. The linear arrangement of the main grouping north to south results in views from these southern viewpoints being of a consolidated group of turbines, rather than a wide array. In contrast, the HV powerline corridor is viewed from the perpendicular and stretches across the eastern viewshed of these 2 viewpoints.

5.1.12 Section 13 – Compatibility with the Landscape

The discussion within this section is generally sound. However, the current subdivision of the area into smaller holdings, with less focus on broadscale agriculture is leading to an increasing number of landowners seeking a lifestyle change. (Refer to previous comments).

The area is subject to active forestry operations which have a significant influence on the landscape of the setting. It should be noted that the roots of Visual Impact Assessment

(VIA) lie in methodologies developed in the 1970's by the US Forestry Service, particularly the Visual Management System (VMS) that was specifically developed to determine the potential impacts of logging operations and to determine how to harvest while protecting views from key locations.

The landscape of the region is subject to change through forestry operations, with viewlines progressively blocked by maturing plantations and then opened up, with scarred expanses of ground plane exposed following harvesting.

The existing setting has already been modified to some extent through the introduction of 55 metre tall high voltage powerlines and it could be argued that the additional development of vertical elements would be compatible. Alternately, the introduction of additional elements such as the wind turbines may contribute to cumulative visual impact.

5.1.13 Section 14 – Affects on Listed Heritage Items

The argument raised in relation to the sole listed heritage element within the study area is reasonable.

5.1.14 Section 15 - Shadow Flicker

The Report and Appendix A - Shadow Flicker Study appear to reach reasonable conclusions with regard to the existing residences. However, 3 approved building envelopes to the east of turbines 6, 7 and 9 would appear to be potentially impacted by shadow flicker.

5.1.15 Section 16 – Driver Distraction

The conclusions reached are sound.

5.1.16 Section 17 - Photo Montages

PLATE 6.13

A notation on plate 6.13 stating that the image has been taken with a digital SLR conflicts with the text on page 24 of report that states that the image has been taken with an SLR with film. The photosimulations in the report are noted as being a 50mm lens on Digital SLR. Is this really the case or is this 50mm lens on 35mm film format equivalent?

This is significant as the image capture ratio between a film SLR and digital SLR varies, resulting in differing fields of view and effective lens length. (One image will show objects smaller than the other). A SLR digital lens of 36mm focal length is equivalent to a 50mm lens on a 35mm format film SLR.

Page 24 states that the photomontages have been produced at a height of 20cm. I assume this is meant to be 200cm.

PLATE 6.1B – CLOSE UP VIEW OF THE WIND FARM FROM SWATCHFIELD ROAD
The size of the wind turbine in foreground looks small in comparison with adjacent tree. Assuming a tree of a maximum of 20m in height, the tower to hub height only looks like it is twice the height, ie 40 m, not the 80m it is supposed to be.

PLATE 6.2 – VIEW OF THE WINDFARM FROM CAMPBELLS RIVER ROAD
Same comments as for 6.1b

PLATE 6.13: PHOTOMONTAGE LOCATION MAP
The photo location notation for Plates 6.1a and 6.1b is positioned too far to the north.

Subsequent discussions with Allco Wind Energy, who were responsible for producing the photomontages in The Report, revealed that the photomontages in The Report were incorrectly prepared, using a lens ratio that produced smaller appearing wind turbines in the context of the setting.

5.1.17 Section 18 - National Parks

The findings of the report in relation to the impacts on National Parks would appear to be sound given the topography and vegetation pattern of the region.

5.1.18 Section 19 - Recommendations

The mitigation measure of an offer to provide screen planting to viewpoints that have open and panoramic views must be acknowledged as resulting in a reduction in visual amenity in itself. This would not be the case where there has been an attempt by the landowner to protect the house / home yard through the establishment of dense screen planting or where the owner requests it.

5.1.19 Section 20 - Conclusion

The Report states that a high visual impact does not necessary result in a reduction in scenic quality. I disagree and would argue that it does generally equate to a reduction in scenic quality.

The wind turbines may not be particularly dominant in views from the main residential area of Black Springs, as stated in The Report, but they will be prominent in the views from a number of rural residences to the south and west of the site.

The visual impact assessment of the wind farm should only consider the proposal at hand or the cumulative impact of any other known proposals. It does not need to consider the impact of alternative energy sources as suggested. It is unreasonable to conclude that the visual impact of a wind farm at Black Springs would be lower than that of a coal fired power station.

Mitigation measures such as foreground screen planting are only feasible where requested, or accepted by the affected party. Given the potential for screen planting to block more distant and panoramic views, it should not be considered a catch all solution.

The report is incorrect when it asserts that the preponderance of environmental benefits must also be included within the visual assessment. This is incorrect, as this is the role of the overall Environment Assessment – to weigh up all factors, both positive and negative. The visual assessment should concern itself with addressing qualitative and quantitative issues relating to how the wind farm will appear within the setting and how it will be perceived.

5.2 APPENDIX B – VISUAL IMPACT ASSESSMENT ADDITONAL PHOTOMONTAGES

Additional photomontages were prepared by Energreen Wind. Photomontages from the same viewpoints were prepared by R.A. Wallis Constructions on behalf of the Black Springs Landscape Guardians. An overlay comparison undertaken by EDAW indicates that the scale of the wind turbines in both sets of photomontages is comparable. There is a slight difference in location of wind turbines within the images but overall, this does not significantly alter the degree of prominence. (Refer to Appendix B)

5.3 SUMMARY

5.3.1 Structure of Report and Methodology

Although the findings of the report, based on the status at the time of preparation, are generally sound, the methodology is somewhat disjointed. It contains a high degree of duplication between many of the report sections and key factors such as distance, viewer sensitivity and the number of viewers are in separate chapters are not drawn together into in the one table or section to allow for ease of understanding.

5.3.2 Photomontages

A review of the photomontage process was undertaken with Allco Wind Energy. The process and software utilised was found to be sound. Inaccuracies seemed to have occurred through the confusion between the respective format ratios of digital and non digital SLR Cameras.

5.3.3 Possible Approval Conditions

The current plantation forests have a significant bearing on views of the proposed development, particularly from residences to the west. Future harvesting of the entire block will open up views of the proposed development and it is recommended that a possible condition be imposed that requires the proponent to liaise with forest

management to coordinate logging so that visual buffering is retained until replanted forest reaches a height to provide visual amelioration

5.3.4 Recommendations

Overall, the findings of the report are generally sound. The number of sensitive receptors is relatively low and the landscape is able to accommodate change effectively due to the topographic form and scattered vegetation.

There has been a change in landuse with the increase in lifestyle focussed land owners which has changed the visual sensitivity of the area due to a change in resident perceptions and expectations of the landscape experience.

The approval of new subdivisions and building envelopes subsequent to the preparation of The Report increases the number of sensitive receptors (residents). Further work is required to confirm the location of new subdivisions and building envelopes as well as Councils strategic growth plans for the township.

The impact of shadow flicker on the approved building envelopes, particularly the closest 3 to the east of turbines 6, 7 and 9, also requires additional assessment.

APPENDIX A – APPROVED SUBDIVISIONS AND BUILDING ENVELOPES

APPENDIX B – ADDITIONAL MATERIAL

B 1 - ZONES OF VISUAL INFLUENCE / SUBDIVISION APPROVALS

B 2 - COMPARISION OF PHOTOMONTAGES