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Yass Valley Wind Farm Visual Impact Assessment, Review of Adequacy

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Prepared For: The NSW Department of Planning and Infrastructure

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1.0 Executive Summary

- Richard Lamb and Associates (RLA) have been appointed by the Department of Planning and Infrastructure to review the adequacy and findings of the Landscape Visual Assessment (LVA) and supplementary LVA (sLVA) prepared by ERM Australia for Epuron (the proponent).
- RLA undertook desktop and field survey and review and analysed the methodologies, findings and the extent to which the LVA and sLVA satisfy the Director General's Requirements, 2009 (the DGRs).
- This report contains two summary tables at Appendix 1 (Tables 1 and 2), which summarise the response to the DGRs (Table 1) and an anaysis of the methodology against the NSW and NAF guidelines for assesment of wind farms (Table 2).
- The methodologies adopted in the LVA and sLVA are identical. The methodology does not include several aspects required under the draft NSW Planning Guidelines – Wind Farms, December 2011.
- The LVA methology instead is claimed to be supported by of the requirements of the Windfarms and Landscape Values: National Assesment Framework (NAF). However, it appears to be a simplification of the requirements.
- RLA consider that steps such as 1B.1 to 1B.5 in the NAF, step 3.1 and other steps in relation to the community involvement in the NAF laid out in its summary table (see Section 10.0 below) have not been adequately undertaken.
- Most key elements requested of the proponents in the DGRs have been addressed within the methodology and text of the LVA. However although data has been gathered and obligations generally fulfilled, some critical information has not been provided, interpreted of fully considered.
- The LVA methodology adopts a simplistic characterisation of the landscape of the entire wind farm area, which is conceptually divided into five kinds of Landscape Units (LUs), two of which have no wind farm proposed in them.
- There is no graphic representation of the location or extent of the LUs. As a result, it is not possible to determine how much of the area is characterised by each of the three relevant LUs or whether there are areas of special combinations of them.
- The analyis and description of the LUs does not lead to delineation of areas of differential landscape quality. Landscape quality, which is a parameter determined by the professional judgment of the authors of the LVA, is a part of the assessment of landscape sensitivity. It does not depend on community values.
- We consider that there are areas of higher scenic quality that have not been recognised, for example features exist visible from Illalong Road, Berramangra Road, Whitefields Road, Conroys Gap, parts of Burley Griffin Way and parts of the Hume Highway.
- There is no documentation of specific scenic items or vistas as required in the DGRs.
- Public participation in establishing landscape values may have established whether there are areas perceived to be of special character, scenery of vistas of value to the community.
- No meaningful connection has been made between visual characteristics of the landscape and the value that may be placed upon it by a viewer of the landscape. As

a result, no accurate conclusions can be drawn in relation to potential visual impacts when they are considered from the community's point of view.

- In our opinion any community values which may exist in respect of scenic or significant vistas such as those identified above have not been sought or assessed.
- As an alternative to establishing community values of individual LUs, the methodology attributes differential levels of sensitivity to each. The description of how values against each of the parameters of sensitivity are arrived at is confusing, repetitive and inconsistent.
- Each LU is given a sensitivity rating between low and high on a three point scale on the parameters of location of the viewer, rarity of the landscape and its scenic qualities. The values of rarity and scenic quality do not depend on input from community consultation.
- Community values which could determine the extent to which people value the appearance of the landscape have not been sought.
- In summary with regard to the parameter of sensitivity, the explanation is not clear, the application is sometimes contradictory and the question of whether the authors' professional judgements match community perceptions has not been satisfactorily addressed.
- The EA substitutes professional assessment of sensitivity in relation to a landscape character "which a viewer may value more highly". The professional judgement of the authors of the LVA is being claimed to represent the views of the wider community.
- It appears that community consultation has had little effect on either the method of assessment, review of the parameters of impact significance or the final layout of the proposal.
- The LVA does not investigate local community and stakeholder values but focusses on general perceptions about wind farms which is both limited, mostly qualitative in nature and relates mostly to other areas, environments and countries.
- Surveys of public perceptions utilised are of limited applicability to the project. No specific surveys were undertaken and there is little evidence of effective consultation on community values.
- It is agreed that the cumulative impact of the Conroys Gap wind farm when considered in relation to the proposal would be minor. However the cumulative impact of the proposed wind farm on the dynamic experience of moving about in the landscape of the Yass Vally and beyond has not been adequately addressed.
- Wider parameters based on distance or travel time have not been considered, nor have any potential impacts of the sequential exposure to views of up to 602 turbines (or 746 turbines inclusive of YVWF) spread over approximately 280 square km from Taralga in the north to Capital Hill in the south.
- The LVA has taken a static approach to cumulative impact assessment, rather than one which is responsive to the cognitive experience. In addition, no consultation appears to have been directed toward whether community values include either concern for or acceptance of the cumulative impacts.
- The visual impacts of shadow 'flicker', blade 'glint' and night lighting are discussed by other technical experts and are not summarised or commented on in the LVA. We note that night lighting is now stated as not required.

- The maximum Zone of Visual Influence (ZVI) adopted by the proponents is 8.5km. Photomontages in the sLVA that include turbines at distances of up to 10km show that turbines are clearly visible.
- A DGR key requirement is that a ZVI of no less than 10km is to be adopted. The smaller ZVI adopted is therefore not justified and the minimum 10km should have been adopted throughout, including the assessment of cumulative impact.
- Public domain views are reasonably well represented by photomontages in the sLVA.
- With the montages are summary tables of the assessment of impacts on each view. It is not clear in many cases how the final assessments arise from combining the rankings on the criteria of sensitivity, viewer numbers and distance.
- Photomontages were prepared in respect of Sequential View Points (SVPs). There is a description but no analysis of the visual impacts on SVPs to compare with fixed views.
- Some viewing location appear to be under-represented, eg, the Hume Highway, on which only four SVPs were assessed over a potential visual catchment on the road of 44km.
- Locations with turbines close to the road, such as north and south of Conroy's Gap and east and west of Bookham village are under-represented. We note that 10 turbines have been removed from the proposed development (88-91 and 93-99) which are those located closest to the Hume Highway at Bookham, but that others in close proximity to them (turbines 83-87) will remain.
- The photomontage images themselves are generally useful to show the horizontal extent of the landscape affected by the wind farm, but do not give a realistic impression of the relative scale of the turbines in the views. They are shown smaller than they would appear to a viewer's eye.
- Mitigation measures discussed are largely confined to proposing screening vegetation to control views from houses, if requested by the owners.
- No mitigation is proposed that involves removing turbines that are within the 'dominant' range of 2km or less, or of acquiring properties of residents affected by multiple turbines.
- Requests from the DPI for additional information based on submissions made on the EA and LVA regarding visual impacts have largely been addressed in the PPSR.
- RLA's review of submissions to the EA and LVA related to visual impacts is summarised in Part 7.0 below. We consider that the issue of the size and scale of the wind farm and cumulative impacts have not received an adequate response.
- Almost all submissions reviewed include comments in relation to poor quality or lack of public community consultation. The consultation plan has incorporated a limited number of opportunities in limited locations at which to garner community opinions and values in respect of the visual landscape.
- The nature of a fragmented and widely dispersed community may have contributed to the perception and most likely the reality, that community consultation in respect of the project has been poor.
- A lack of contact addresses until recently indicates that whilst attempts have been made by the proponent since 2008, they have failed to make contact with many local residents and therefore failed to effectively engage with them.

- Stated objectives and examples of consultation techniques used, appear to show that in general the process is biased towards disseminating information from the proponent to the public rather than gathering information from the community.
- Similar concerns are raised in both sets of public submissions in relation to views and loss of visual amenity and the potential impact on the community's way of life.
- There is no evidence within the EA, LVA and sLVA documentation which shows how community views and information gathered has been used to inform the project or has provided the basis for changes to the project.

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2.0 Purpose of the Report

RLA have been engaged by the Department of Planning and Infrastructure to review the adequacy and findings of the Landscape Visual Assessment 2009 (LVA) and supplementary LVA (2014) for the proposed Yass Valley Wind Farm (YVWF) prepared by Environmental Resources Management Australia (ERM) for Epuron.

The LVA was undertaken in support of an application lodged with the Department of Planning and Infrastructure (DPI) in 2009 in respect of 182 wind turbines (subsequently revised down to 144) to be located in the Yass Valley and was prepared in response to the Director General's Requirements (DGr's).

Subsequent to the exhibition of the original LVA;

- 22 Public submissions made in respect of the EA meant that Preferred Project Report (PPR) prepared included revisions and the overall number of turbines was reduced.
- From December 2012 to March 2013 the PPR and Preferred Project Submission Report (PPSR) were exhibited (Submission Report in relation to EA submissions).
- 17 Submissions including 8 from individuals, were received during the exhibition of the PPSR during 2013 and in response to this information the Revised PPSR was lodged with NSW DPI in July 2013.
- Further agency comments were provided to Epuron for their response (at various times).
- A Final PPSR was lodged with the Department of Planning in May 2014.

The Final PPSR prepared in May 2014 includes a supplementary report entitled Yass Valley Wind Farm Submissions Report- Landscape and Visual Impact Assessment (the sLVA), which we note follows the same methodology as that used in the original EA.

3.0 Documents Reviewed

During the course of our review we have perused the following documents;

- Landscape Visual Assessment, prepared by ERM 2009 (initial LVA)
- Environmental Assessment (parts relevant to visual assessment and community consultation) prepared by NGH 2009 (the EA)
- Supplementary LVA and Submissions Report, prepared by ERM 2014 (the sLVA)
- Final Preferred Project Submission Report 2014 , prepared by NGH 2014 (the PPSR)
- Director General's Requirements 2009 (the DGRs)
- Draft NSW Planning Guidelines – Wind Farms 2011
- Public Submissions to the EA and final PPSR
- Epuron Drawing 25/6/14 titled Cluster 4A and 4B Amended Turbines to be removed.

4.0 Review of Methodology and Director Generals Requirements

The Director Generals Requirement's outline steps in the assessment process which must be addressed. They specifically state what issues must be addressed in relation to potential visual impacts. In this regard we have assessed the LVA's methodology against the Director General's Requirements and have made comments about each issue and in particular whether or not the issue has been adequately addressed.

For ease of reference we have prepared a summary table (Table 1 in Appendix 1) which compares the DGR's with the content of the LVA and sLVA (contained within the PPSR).

The table shows that most key elements requested of the proponents by the DPI have been addressed within the methodology and parts of the LVA. However in our opinion although data has been gathered and obligations have generally been fulfilled, some information has not been included and the information that has been provided has not necessarily been interpreted or considered fully.

In order to assess the veracity of the LVA and make our comparison we have undertaken a desk top review of relevant documentation with a particular focus on the impact assessment structure and its attention to community values. This has included a review of the supplementary LVA (sLVA) in order to determine whether collectively, these reports follow industry standards of best practice assessment structures and in this regard we have looked closely at the methods, assumptions, logic and justification of findings.

Our comments in respect of methodology, assumptions made or deficiencies in the report can be applied to this supplementary LVA (sLVA).

The EA of which the LVA is a part, states that the Landscape Visual Assessment (LVA) Methodology is based on the Policy and Planning Guidelines for Development of wind energy facilities in Victoria (May 2003) and that this methodology is supported by Wind Farms and Landscape Values National Assessment Framework (the NAF guidelines).

The LVA methodology does not cite proof that any of the guidelines listed above have been consulted or followed except the NAF guidelines. We have reviewed the NAF guidelines as discussed below in Section 10.0 and find that there are a number of omissions and deficiencies in the LVA methodology in this regard. Further we find that the methodology does not include all relevant requirements of the draft NSW Planning Guidelines – Wind Farms, December 2011.

In addition we note that the DGRs at page 7, list 'Relevant Guidelines for Reference' in relation to wind farms which include; Wind Energy Facilities draft Environmental Impact Assessment Guidelines (Planning NSW 2002), Best Practice Guidelines for implementation of Wind Energy Projects in Australia (Auswind 2006) and Wind Farms and Landscape Values National Assessment Framework (Australian Council of National Trusts, June 2007).

Statements regarding the methodology used in the LVA do not include any specific reference to these guidelines other than the NAF.

5.0 Director General's Key Assessment Requirements in relation to Visual Impacts

In order to assess each requirement in more detail, RLA have separated the narrative form of the Key Assessment Requirements into the separate topics of which it is composed and the posed a series of questions and comments discussed below. The individual requirements as quoted are shown in italics below a heading such as immediately below.

DGR key requirement 1

Provide a comprehensive assessment of the landscape character and values and any specific scenic or significant vistas of the area potentially affected by the project.

Is there a Comprehensive Assessment of Landscape Character and Values?

Large areas of the YVWF share a similar geological region ranging from the Ordovician sedimentary landscapes west of Yass to the volcanically intruded sandstone, limestone and andesetic landforms below the Black Ridge and Marilba Ranges. More granitic based landforms characterised by wide open expansive valleys and rolling even rounded hills include distinctive granite rock outcrops along ridgelines, particularly in the western part of the area of the proposed wind farm in in the vicinity of the Coppabella Range.

Despite some geological similarities, central parts of the YVWF landscape demonstrate different visual characteristics, most likely caused by differential hardness of underlying strata and past erosional activities of the many creeks and their tributaries in the area. The presence of water courses and ancient patterns of erosion has created local areas of higher relief, topographic diversity and higher scenic quality.

The LVA divides the landscape into 'landscape units' based on the internal similarity of their characteristics in a conventional way. There are five LUs described. The three most relevant units and those where all turbines are proposed to be located are Landscape Unit types LU1 "Gently undulating and flat cleared land", LU2 "Steeply undulating cleared farmland" and LU3 "Forested hills". LU2 includes cleared hills used for agricultural practices and is the most common landscape unit type where turbines are proposed to be located.

The landscape character of the viewshed, "the area which may be potentially visually affected" was greater than the Zone of Visual Influence (ZVI), as is appropriate. The landscape within the viewshed had been assessed conventionally by the description of the characteristics of each LU. However, given the scale of the proposal and the variations that exist within it in terms of topography, catchments, vegetation and land use, this overall characterisation of the area affected by the wind farm is in our view simplistic and generalised across what is a vast area of landscape.

No explicit distinction is made in the assessment of landscape character of the LUs on the basis of established knowledge of landscape scenic quality. That knowledge would suggest that the three LUs in which the wind farm is proposed and in particular LUs 2 and 3 would be considered by the general population to be of the highest scenic quality in the locality.

As a result, it would be reasonable to expect that the outcome of analysis and description of the LUs would lead to the delineation of areas of differential scenic quality as the basis for analysis of the visual effects of the proposal on those values. As different LUs are seen in different contexts in relation to each other, there are locations in which views and vistas of differential scenic quality exist. For example, higher scenic quality vistas and specific views of topographic features, forested hills and combinations of these features exist visible from Illalong Road, Berramangra Road, Whitefields Road, Conroys Gap, Burley Griffin Way and parts of the Hume Highway.

The documentation in the LVA does not contain any graphic representation of the locations or general boundaries of the LUs, nor does it locate areas of greater or lesser scenic quality

based either on the presence of LUs or interactions between them in any graphic form. It therefore follows that there is no documentation of specific scenic items or vistas as is required by the DGRs.

It would also be reasonable to expect that as there are areas of differential visual character and quality, that this finding would be tested in relation to community perceptions and values; that is, whether people attribute values to these features of the landscape, or others. However, as will be seen below, community values do not appear to have had a significant influence on the assessment.

The assessment of scenic character and quality was in fact based primarily on professional judgement. Public participation had little or no effect on the determination of landscape values, as virtually no views of the community were sought in relation to either existing values of the landscape or values that the community might attribute to it which might differ from those of the authors of the LVA. Therefore no connection has been made between visual characteristics of the landscape and the value placed upon it by a viewer of the landscape. As a result of this failing, no accurate conclusions can be drawn in relation to potential visual impacts when they are considered from the community's point of view.

In summary on this point, specific or more scenic areas of the visual landscape have not been identified nor have any potential community values which may be attached to them been used to either confirm the authors' professional judgements or modify or possibly refute them.

Are specific scenic or significant vistas of the area identified?

No specific scenic or significant vistas of the area have been identified as required by the DGRs. Whilst large areas of the project area do appear to fall into one or other of the five LU character types, in our opinion there are areas where features of the most prominent of these LUs and combinations of them in either the same view or in sequential views along roads, which could be considered as more scenic, containing or be characterised by scenic vistas. These have not been identified.

Moving through the landscape we identified areas which display elements described as being of 'medium sensitivity' and are relatively scenic in accordance with descriptions at pages 25 - 26 of the methodology. These include the path of Jugiong Creek as it meanders in a semi-circle around the northern boundary of the Coppbella precinct before converging with the Illalong Creek in the Illalong Road area.

Illalong Creek meanders through a low lying valley landscape between the two turbine precincts, generally in a south-north alignment along the west side of Illalong Road. In our opinion views available when travelling north and south along Illalong Road are scenic and include appealing changes in topography, water views and vegetated slopes. The course of the river which is close to the road for much of its length is a significant visual feature along with vegetation along its banks. There are minimal signs of built structures and scattered residential properties some of which are visible from the road. The road broadly follows a similar alignment to the creek and links Burley Griffin Way directly to the Hume Highway and provides the most direct route between the towns to Bookham and Binalong.

Whilst 10 turbines (turbines 89, 90, 91, 93, 94, 95, 96, 97, 98 and 99) will be removed east of Bookham which will reduce potential visual impacts in this more scenic part of Illalong Road, 17 other turbines will remain further north, on the eastern side of Illalong Road. This part of the road is flanked by isolated hills and steep topography including Watchbox Hill and will remain affected by the placement of turbines on the highest and closest ridges including turbines 111,122, and 115.

This is an area where multiple turbines are proposed from 1.3 km to the east and approximately 3.3km to the west of this road in addition to a 330kV overhead power line which will traverse the valley and potentially a substation which will be located adjacent to the road near its southern end.

Jugiong Creek, south west of Binalong provides similar aesthetic characteristics to Illalong Creek but through a more steeply undulating landscape. The Creek has incised its path north and around the steeper hills and ridgelines which form the Coppabella Range. Views to the river are both clear and filtered from public viewing locations particularly along Berramangra Road. Although not dramatic, the topography is relatively scenic through this part of the river valley and rare within a context of the wide open weathered granite landscapes of this part of the western Yass Valley.

These individual areas may not be considered as significant vistas or of individually of high scenic quality but they do comprise elements which contribute to an overall higher scenic quality in the local environment. Such attributes are less prominent from the Hume Highway or Burley Griffin Way where the context includes the more common LU1 foreground characteristics. Evidence of areas of higher scenic quality is more apparent from local or Crown roads.

In our opinion any community values which may exist in respect of scenic or significant vistas such as those identified above have not been sought or assessed.

Assessment of Landscape Sensitivity

Assessment of Landscape Sensitivity is not explicitly within the DGR's however it has been defined in the LVA methodology as being important in relation to Landscape Units and in establishing landscape character. In this regard it is necessary to review the importance of the way sensitivity has been assessed in the LVA. This is also important in the light of the low level of public participation in the identification of landscape values.

As an alternative to establishing community values of the landscape on individual LUs, the methodology adopted by ERM attributes differential levels of sensitivity to each LU as a measure of its value. The description of how values against each of the parameters of sensitivity are arrived at is confusing, repetitive and inconsistent. As an illustration, at page 25 of the LVA, the report asserts that low sensitivity ratings are given to those landscape units which are common and do not exhibit features which the community value highly. However, the applicants do not know which units or specific locations the community values more or less highly as no consultation has included this kind of qualitative research.

Sensitivity has been defined in the methodology adopted by ERM as "the ability of a landscape to absorb visual change". The basis of that assessment of the ability to absorb change is a professional judgement. However, the explanation of the assessment of

sensitivity and implementation of the outcome of the assessment of sensitivity is also not clear.

Each LU has been assessed as having a sensitivity rating between low and high on a three point scale. To arrive at this rating, the following parameters are analysed: location of the viewer, rarity of a particular landscape and the scenic qualities of a particular landscape. The values against each parameter are assessed by the authors of the LVA and do not depend on input from community consultation.

The outcome of application of the parameters of sensitivity on each LU is shown on Table 5.1 of the LVA. Two of the LU categories are largely irrelevant to the assessment, as there is no wind farm proposed in either rural townships or recreation resorts. However it is notable that rural townships are rated as of only medium sensitivity, despite the principle at 0.9 of Page 26 which states that the sensitivity from residential properties is always assessed as high, as this is usually the most important location for individuals. Since rural townships also contain the highest density of residential properties it is not logical that they are rated as of only medium sensitivity.

The sensitivity rating can be affected by the location of the viewer, the rarity of the particular landscape and the scenic qualities of the 'landscape unit'. None of these criteria have been assessed based on community values. For example, the assumptions about position of the viewer are generic, rarity has not been assessed on a regional or local basis or informed by community input and scenic qualities are professional judgments. It is possible that particular locations in the landscape are of special local significance unknown to the proponents, that common landscape and lower scenic quality areas are also highly valued, for reasons other than those of the proponents.

To illustrate the lack of clarity in describing the assessment of sensitivity, LU 2 is characterised by 'Steeply undulating cleared farmland" and is most commonly where turbines will be located. This unit includes elevated ridgelines which frequently comprise the most scenic areas of the local landscape. Despite the LVA stating that such areas can be highly valued, they have been allocated a sensitivity rating of 'medium' at all locations.

Medium sensitivity is described at page 26 of the EA as a landscape which is largely cleared of vegetation however

> *"the steeply folded hills create an appealing landscape. Some people value the appearance of cleared farmland with minimal signs of built form such as houses and sheds: for these viewers the presence of wind turbines may be perceived as a "high" visual impact due to the large scale structures in a rural landscape".*

Despite this principle, none of the areas that would be in LU2 have been given a sensitivity rating above medium. In addition, community values which could determine the extent to which people values the appearance of the landscape and whether impacts on it would be in the high category have not been sought.

Further at page 26 it is stated that;

> *"the hills are an obvious and dramatic feature when viewed from the surrounding flat farmland. Because they are a distinctive feature their landscape sensitivity is rated as medium to high, based on the degree to which they appear 'natural'*

The description of LU2 therefore alludes to the fact that parts of this unit can be considered to be of high sensitivity and therefore variable in its ability to 'absorb' large scale manmade structures. Despite this principle, LU2 is only ever considered as having medium sensitivity in the both the LVA and the sLVA. This simplistic approach excludes any local areas of more scenic landscape, for example those views which include the Jugiong and Illalong Creek valleys and areas surrounding Whitefields Road.

Sensitivity in relation to viewer location

The parameter for assessing visual impacts based on viewer location are also primarily based on expert assumptions as to viewer expectations for scenic quality. Underlying assumptions are that impacts are greater if experienced in locations such as national parks and natural areas or scenic areas and lower on moving views from rural highways. It does not initially appear to consider the level of visual exposure with regard to the numbers of people viewing the wind farm from specific locations, for example the high numbers of viewers on some roads and the Hume Highway.

However, viewer numbers are considered in other parts of the LVA (see Table 7.2, Summary Assessment of Publicly Accessible View Points and commentary associated with some of the photomontages). How this consideration is built into the overall assessment is not clear. For example In the case of Illalong Road, views 16A and 16B at page 61 of the LVA, the report assumes that the only road linking Binalong to Bookham will experience low user numbers, notes that turbines are 1.3km from the road to the east, and that the road traverses LU2 and LU3. The overall evaluation of visual impacts across the length of this road is rated as minor. This appears to contradict the LVA's own methodology in relation to sensitivity and does not afford a higher sensitivity rating to the foreground views including Jugiong Creek and the characteristics of LU 3 that could be considered to be appealing.

Though turbines are generally located in LU2 and LU1 they may be seen, as demonstrated in photomontages, in the context of LU3 (typically steep forested hills, eg. montage CPV4 or LU4 (high sensitivity areas including rural townships or public places, eg. montage SVP3 and 4). A summary table 7.2 at page 84 of the LVA states that 29 of the 34 public viewing locations assessed are either LU1 or LU2 and have an overall visual impact rating of either nil, minor or medium. The authors assert that this is because the majority of the surrounding landscape has been found to be of medium level of sensitivity and that viewers are further away and limited in number.

In summary with regard to the parameter of sensitivity, the explanation is not clear, the application is sometimes contradictory and the question of whether the authors' professional judgements match community perceptions has not been satisfactorily addressed.

DGR key requirement 2

describe community and stakeholder values of the local and regional visual amenity and quality and perceptions of the project based on surveys and consultation.

Have community and stakeholder values been established?

The EA does not appear to investigate community and stakeholder values in relation to the local and regional visual amenity but instead it substitutes a professional assessment of sensitivity (see above) in relation to a landscape character "which a viewer may value more highly". This is the only general reference to community values in respect of landscape amenity within YVWF. In essence, the professional judgement of the authors of the LVA is being claimed to represent the views of the wider community.

Further to this 'community values' in respect of the visual environment or other issues are not stated objectives of the YVWF Community Consultation Plan (EA, attachment 6) which are listed as follows;

- To ensure the community is fully informed
- To provide multiple opportunities for the community to receive information and provide feedback about the proposal
- To incorporate the feedback into the design of the windfarm where possible
- To open channels for the ongoing dialogue with the community
- To build positive, trust-based relationships with members of the local community.

We note that only one question on the community feedback form (EA ,Attachment 7) relates to views and visual concerns and results show (including issues raised in both sets of submissions) that these are significant issues for the local community.

The community feedback form includes the following question which relates to values;

> *What do you value most about the local area? Respondents can tick the following boxes in respect of; views, community/family ties, historic values, recreation opportunities, work opportunities and other.*

The Epuron Website (Yass Valley Wind Farm project tab, community consultation tab July 2014) clearly shows that consultation should be reciprocal as shown by the following points;

- To enable the community to express and for Epuron to understand any concerns regarding the potential impacts of the proposal;
- To enable Epuron to consider whether and how to incorporate any suggestions and feedback into the design of the proposal;
- To demonstrate how and where feedback has been incorporated and resulted in amendments to the proposal;

In summary on this point, it appears that community consultation has had little effect on either the method of assessment, review of the parameters of impact significance or the final layout of the proposal.

Have Community Perceptions been established based on surveys and consultation?

The LVA refers to a perception study undertaken in respect of other approved and existing wind farms in the general area of south east NSW which are located near small urban and rural areas. *The Wind Farm Impact Study – Southern Highlands* prepared in 2007 was undertaken in response to existing approved and proposed wind farms located near to

Gunning, Binalong, Crookwell etc. including existing operations such as Crookwell 1 and 2 and approved development at Walwa-Gunning, Cullerin Range and Conroys Gap.

The LVA concluded on the basis of this study that;

"the greatest majority of residents living near the proposed Yass Valley Wind farm are similar to those in other areas of Australia and overseas and that all these studies support the view that the local residents are overwhelmingly in favour of a wind farm in their locality".

This is a conclusion in respect of positive community perceptions about renewable energy in general that is not warranted. It cites the study above and findings of several other studies including two prepared by ERM at Lal Lal and Ararat, both in Victoria. We note that three other wind farm perception studies cited (Coastal Headlands and Nirranda, both in Victoria) were prepared by independent consultants also for sites in Victoria, which are not necessarily similar communities or environments to Yass and the Southern Tablelands.

On further review of these supporting documents it can be seen that the Coastal Headlands and Nirranda study relate to proposed wind farms located in areas of high scenic quality (on headlands and adjacent to scenic coastal headlands). Results show that respondents are less supportive or accepting of wind farms in these landscape contexts (68% to 71%) notwithstanding being provided with information in respect of renewable energy, greenhouse gas emissions and climate change issues.

However we note that parts of the EA prepared by NGH Environmental (of which the LVA is a part) acknowledges the difficulty and importance of gaining accurate information in respect of community opinion and values in respect of the aesthetic perceptions of the landscape and issues associated with getting this process wrong.

In particular section 8.6 of the EA discusses the research of Warren *et al* (2005) which found that aesthetic perceptions (whether positive or negative) are the strongest single influence on individuals attitudes towards wind farms and that proximity to wind farms is not a reliable indicator of perception in the long term.

He states further that although a consistent picture of a community's attitude to wind farms is emerging (in Europe) that this does not discount the real issues associated with community impacts, those being landscape aesthetics and the speed, scale and unco-ordinated nature of wind farm developments.

The LVA cites Warren *et al* (2005), which in turn references the work of Birnie et al,1999 and Kahn,2003 in relation to public attitudes being critically influenced by the nature of the planning and development process, the more open and participatory, the greater level of public support.

The LVA does not investigate local community and stakeholder values but focusses on general perceptions about wind farms which is both limited, mostly qualitative in nature and relates mostly to other areas, environments and countries.

Information which relates to international studies about visual perception is not directly relevant as a basis for comparison as information gained is not necessarily undertaken in areas which are similar enough to this visual context to be able to make conclusive assumptions about people's perceptions. In our opinion many factors may influence people's perception of the visual environment, including the way in which they live, their occupations and their use of the land and interaction with it.

Other factors may also influence people's perception such as population density and settlement pattern. In an area of high density and high demand for energy, people may be accustomed and de-sensitised to living in settlements or urban areas in close or closer proximity to major infrastructure. People living in relatively remote small rural settlements located away from concentrations of major infrastructure may interact and perceive the visual environment differently. In other words sustained views or repetitive dynamic views of nearby wind farms or large areas of infrastructure may be typical and normal for many communities in parts of Europe but are not necessarily typical for rural communities.

In addition we note that one public submission made in response to the EA and PPR refer to a CSIRO research publication that does not support the general theory that there is widespread and predictable support "Exploring community acceptance of rural wind farms in Australia: a snapshot" by Nina Hall, Peta Ashworth and Hylton Shaw, CSIRO Science into Society Group states that:

"the media analysis of 49 articles from 19 newspapers in the second half of 2010 found more reasons for wind farm opposition were reported than reasons for support. The most cited reasons for rejecting wind farms were landscape change and visual amenity impacts etc".

Our conclusion with regard to the DGR key assessment requirement in regard to community and stakeholder values and quality and perception of the project is that the surveys utilised are of limited applicability to the project, that no specific surveys were undertaken and that there is little evidence of effective consultation on these issues.

DGR key requirement 3

Assess the cumulative visual impacts of existing and approved wind farms.

Have cumulative visual impacts been adequately assessed?

Section 10 of the EA assesses cumulative visual impacts from the perspective of static and dynamic viewers (generally residents and road users respectively) in the vicinity. The report states that there are no cumulative impacts caused by the YVWF because it is not visible from towns or regional centres in conjunction with any other existing or proposed wind farm except for the approved development at Conroy's Gap which is visible to dynamic users from main road corridors.

The DPI and RLA agree that this is an accurate conclusion to draw if the immediate site context is considered. However this raises questions in relation to the parameters of the extent of the visual context which should be considered. Cumulative impact may be potentially increased if considered from a wider perspective. For example, the Conroy's Gap wind farm has no significant cumulative impact on the proposal. However, the proposal has a high cumulative impact in relation to the approved Conroy's Gap wind farm, being vastly larger.

Wider parameters based on distance or travel time have not been considered, nor have any potential impacts of the sequential exposure to views of up to 602 turbines (or 746 turbines inclusive of YVWF) spread over approximately 280 square km from Taralga in the north to Capital Hill in the south.

Cumulative impacts of the YVWF were considered in the context of other wind farms in the wider environment of south western NSW and the Southern Table lands which were either already operational, under construction, approved or proposed construction. At the time of writing the EA this included nine wind farms located at; Crookwell, Cullerin, Conroys Gap, Capital WF at Bungendore, Woodlawn near Tarago, Taralga, Gunning and Gullen Range etc Five projects include less than 32 turbines, 3 projects include 63 or less turbines and the largest project includes 84 proposed turbines at Gullen Range near Gunning, all significantly less than the total number proposed in the YVWF project.

A table showing the particulars of each wind farm is shown at page 124 Table 10.1. This equates to a total of 350 turbines spread over an area of approximately 160 square km. We note that at the time of writing the PPSR the number of proposed and approved wind farms has increased to 12 and we note that the Southern Tablelands Wind farm perception study was undertaken in 2007 well before the recent proliferation of wind farms across the Southern Tablelands region.

The second largest number of turbines approved is for 46 Turbines at Crookwell 2 (which will adjoin an existing operation of 8). Except for Crookwell, Gullen and Gunning which are also located close together (with a combined total of 116 turbines), Woodlawn and Capital (with a combined total of 88) the wind farms are individually located and in isolation from one another which may serve to lessen the cumulative visual impact.

We are not aware of the heights of the turbines involved in these projects but understand that there are a variety of standard heights for the manufacture of turbines, typically between 100m to the top of the swept area and 150m. Lower heights of some earlier turbines would decrease the size of the ZVIs and the area over which cumulative impacts could occur.

Conroys Gap Farm is located adjacent to the south eastern part of the proposed Marilba precinct of the YVWF. The EA states that 15 turbines are approved as part of this project notwithstanding the fact that 18 turbines are shown to exist in maps included in the EA. All of these turbines will be seen in conjunction with the YVWF in some views. RLA agree that the Conroy's Gap wind farm will not be distinguishable from YVWF but will appear to take its total number from 144 to 162 turbines.

YVWF comprises 144 turbines at maximum height 150m located over an approximate linear distance of 26km when measured from west to east from the western most turbine located at the Coppabella site to the eastern most turbine located at the Marilba site. Using the estimated viewshed distance of 17km in the LVA, this brings the potential extent of visibility to approximately 60km (or 17km either side of the 26km) or approximately 1 hour of driving time at 100km/hr when using the Hume Highway. During this period of time most ridgelines and in parts of the intervening foreground, landscapes will display turbines within 3 to 5km.

Two major transport routes run generally north and south of the proposed YVWF. Burley Griffin Way is located east, north and north west of the YVWF and passes within 1.5km at its closest point to the Marilba site, whilst Hume Highway passes through the Marilba site from the east towards the west. Notwithstanding the removal of 10 Turbines in this vicinity as shown on Epuron drawing Cluster 4A and 4B Amended Turbines 25 June 2014, at its closest point Hume Highway will pass turbines located approximately 750m to the north of its course and then heads west along the entire length of the Coppabella site approximately

between 2km and 8km from the closest turbines. Views to the entire YVWF along its 26km length will be available to varying degrees from locations along both roads.

There may be a brief hiatus to views once a viewer has moved east past Conroys Gap before the first turbines in the next concentration of wind farms comes into view. Any potential cumulative impacts in relation to 1 to 2 hours duration of exposure to wind farms in the wider regional context has not been considered. It is also possible that resident's whose every-day movements are confined to local areas around Binalong, Goondah and Bookham for example, along the Hume highway or Illalong Road, may be exposed to views of turbines at close range during every journey they make.

In our opinion the two precincts of Coppabella and Marilba being located approximately 5.5km apart and separated by a low lying valley either side of Illalong Road and Jugiong Creek could be considered as two visually (and physically) separate developments. In fact many of the photo montages located along road corridors and from residences throughout the EA are orientated in such a way that they tend to show only on one of the two precincts. This supports the notion that in parts of the precincts, the other precinct cannot be seen until the viewer moves west or east along either the Hume Highway or Burley Griffin Way to experience views of the other precinct.

We suggest that due to the visual and physical separation of the precincts, their potential visual impacts could be considered as cumulative and sequential when viewed by dynamic viewers, exposed to views of the turbines approaching along either of the two major transport corridors. The cumulative visual impacts and sequential visual impacts over the entire length of wind farm from both of these roads has not been addressed.

The report notes that the closer and potentially more affected towns of Bookham, Binalong and Bowning are only able to see parts of one wind farm at any one time so that there will be no cumulative impacts in respect of any views from these general locations. Photomontages within the EA show specific views orientated to areas where turbines will be located.

The potential cumulative impact of the Coppabella and Marilba precincts has not been considered in respect of the local rural townships. We note that a number of photomontages show that both precincts can be seen in the same view. Residential location C74 west of Binalong shows that turbines from both precincts can be seen in the same view. VP10 from Garrys Road at Binaolng shows that turbines from both precincts are visible in the same view including turbine 85 (Marilba) and most of the turbines proposed within the Coppabella precinct. SVP11 at Binalong from approximately 8.5km north of the YVWF also demonstrates that turbines located in the Coppabella and Marilba precincts will be visible in the same view.

Our conclusion is that while it is agreed that the cumulative impact of the Conroys Gap wind farm when considered in relation to the proposal would be minor, that the cumulative impact of the proposed wind farm on the dynamic experience of moving about in the landscape of the Yass Vally has not been adequately addressed. The LVA has taken a fundamentally static approach to cumulative impact assessment, rather than one which is responsive to the cognitive experience. In addition, no consultation appears to have been directed toward whether community values include either concern for or acceptance of the cumulative impacts.

DGR key requirement 4

Assess the impact of shadow 'flicker', blade 'glint' and night lighting from the wind farm.

Have other visual effects been documented?

The LVA and PPSR do not include any explanation of the flicker or glint effects of moving turbines. These effects are discussed by others in the original EA prepared by NGH Environmental.

Responses to EA submissions states that no night lighting will be required.

DGR key requirement 5

Identify the zone of visual influence (no less than 10km) and assess the visual impact of all project components of this landscape.

Have the visual impacts across the required area been addressed fully?

The LVA established an initial view shed or area within which visual impacts may occur based on the parameters of human vision. We note that a viewshed of at least 17.5km from the YVWF precincts was initially considered. This was further divided into zones of visual impact based on the distance of an observer from the nearest turbine. This information was overlaid with data using a Geographical Information System (GIS) software to produce maps which show zones of 'Seen Area' based on the distance away from turbines. The zones are referred to as 'Zones of Visual Influence' (ZVI) and show variously coloured areas from which, parts or all of a proposed wind turbine may be seen.

For example Zone B Map of visual influence shows that there are many areas from which a viewer can potentially see the entire swept path of the turbine. A light and mid blue colour has been used to define areas from which between 51 and 150 turbines may be visible. In this example in relation to Zone B, the highest concentration of such areas is south west of Bookham, located on the south side of the Hume Highway with views directly north to the Coppabella Range. Views are referred to as 'potential' given that there may be intervening structures or vegetation which may provide partial screening of the turbines.

According to the Zone of Visual Influence (ZVI) maps (Zones A, B, C and D) included in the LVA, the approved development would have a ZVI which includes the town of Binalong and Bookham to a lesser extent, where from both general locations parts of many proposed turbines are potentially visible. This also applies to dynamic views in the vicinity of Burley Griffin Way and the Hume Highway. RLA note that theses ZVI maps included turbines which have since been removed from the project.

Images shown in the LVA such as SVP 1 and 2 (sequential view points) from south west of the Coppabella Range as seen from the Hume Highway show that between 35-70 turbines are visible along the top of ridgelines from approximately 8.5km away at an approximate location 44km west of Yass. Each sequential view selected along the highway, east and closer to Yass confirms that there will be intermittent clear views from this road corridor and areas within the public domain at Bookham (SVP 3 and 4) to potentially 70 turbines and east

of Bookham from CPV4, which are between 3 and 5 kilometres of the Highway. RLA acknowledge that 10 turbines and those closest to this vicinity have been removed from the proposed development which will impact favourably in terms of the composition of the view from SVP3 and SVP4. Notwithstanding this, other turbines, for example 83 -87, will remain in this vicinity and will be visible from parts of Bookham.

The LVA also makes an assumption that all topography on which turbines are to be located is between 500 and 675m (at Page 27 of the LVA). However we note that the highest ridgelines located in both parts of the proposed wind farm and on which turbines are proposed reach 710m in Black Ridge Range and 730m at Bushrangers Hill in the Coppabella area. If the assumption above has been made in preparing the ZVI maps, then the area of influence shown is smaller than in reality.

Whilst the LVA acknowledges that the zone of visual influence extends well beyond the 17km, it chooses to investigate views and prepare montages for locations only within 8.5km. The LVA states at page 34:

> *"the majority of viewpoints lie within the 8.5km viewshed zone that, at its outer edge is where the turbines become visually insignificant because they are small elements which are difficult to discern"*

This statement conflicts with the evidence in the LVA and sLVA itself, in which there are photomontages, where turbines are represented that are more than 8.5km away from the viewing place, but are clearly visible (eg. photomontages of sites SVP1 and SVP5). Given the fact that the photomontages do not give an accurate representation of the visual size of the turbines in any event, for reasons explained below, we conclude that the 8.5km cut off adopted for the ZVI is not sufficient.

Zones of Visual Influence however show an arbitrary assesment of visual effects in relation to distance between a viewer an any individual turbine. A viewer can identify, recognise and respond to the turbines based on minimal visual information provided that there is sufficient visual information available for recognition to occur. Recognition can occur over distances of up to 30km in good light and contrast conditions.

This is because most cognitive processing of the visual environment proceeds via subconscious recognition and categorisation of new instances of visual experience and fitting this with existing knowledge structures. The process depends on minimal visual information, called the default characteristics.

The default characteristics recall a mental image of the complete object. A turbine, part of the rotor and nacelle of which is all that is visible behind a knoll, is a complete turbine as a cognitive image. The cognitive image comes with all its meanings and inferences. As a result of the simple default characteristics of a wind turbine, individual turbines and groups are recognisable from greater distances than the 8.5km adopted in the LVA and the sLVA, as is also demonstrated in the photomontages included in them. As a result, the distances at which impacts are thought to decrease are under estimated.

We note that the DGR key requirement is that a ZVI of no less than 10km is to be adopted. In our opinion this is a minimum, rather than a maximum and should have been adopted throughout the LVA, for the reasons above.

DGR key requirement 6

Include photomontages of the project taken from potentially affected neighbouring residences (including approved and not yet approved developments or subdivisions with residential rights) settlements and significant public viewpoints.

Public Domain View Point Analysis and Photomontages

Thirty four indicative accessible public view points are identified and recorded in the LVA including only 1 each from public viewing locations at or near the closest and potentially most affected towns and areas recorded as having 'high sensitivity' (eg. VP14 from Bookham and VP 29 from Binalong). These are represented by panoramic photographs. An analytical table is provided with each, summarising the visual impacts assessment. The criteria for assessment are Sensitivity, Viewer Numbers and Distance to nearest turbine. Sensitivity has already been determined for each LU, viewer numbers are assumed and distance to nearest turbine is quantitative.

There does not appear to be a description of the scale of overall visual impacts used. All ratings are nil, minor or medium in impact on public domain view points. It is not clear how the overall level of visual impacts is derived from the combination or interaction of the three criteria.

For example, for viewpoint 7, Figure 7.13 at Page 49 of the LVA, the landscape sensitivity is ranked Medium, the viewer numbers High and the distance (1.2km) rated as High in impact, yet the overall visual impacts is ranked as Medium, which is lower than the average for the three rankings. For viewpoint 34, Figure 7.48 at Page 83 of the LVA, the landscape sensitivity is ranked Medium, the viewer numbers High and the effect of distance (7.7km) rated Moderate to Low. The overall impact is rated as minor. For viewpoint 26, Figure 7.40 at Page 75 of the LVA, the landscape sensitivity is Low, viewer numbers are High and impact of distance is rated High. Yet the overall visual impacts is rated Minor.

To summarise on this issue, it is difficult to determine how the overall visual impacts ratings have been determined, as they appear in some cases not to logically arise from the combination of the three ratings. In addition we note that the sensitivity criterion that is pre-determined for the LU already includes a ranking for viewer sensitivity according to location both of the viewer and of the turbines (see the discussion of sensitivity above). In general, it appears that the rankings of overall impact tend to be lower than would appear to logically follow from combining the rankings on the criteria.

Photomontages have been prepared in respect of Sequential View Points (SVP) and Residential view points (RP) in the LVA. There is a description but no analysis of the overall visual impacts on SVPs like that undertaken for individual view points, in the LVA. Of the indicative view points shown, a limited number have been prepared in respect of the closest townships. We note that one photomontage has been prepared and provided from Bookham (SVP 3) and 1 from the larger township of Binalong (SVP11). In addition one photograph represents a view from Goondah (VP 18) but is not a photomontage and therefore without turbines present in the view no analysis can made of potential visual impacts. We note that two montages in respect of residences in Goondah have been prepared and that turbines are clearly visible from this general vicinity.

We comment that views shown in the sLVA including photomontages SVP3 and SVP4 still include a number of turbines (turbine No 89, 90, 91, 93, 94, 95, 96, 97, 98 and 99) located north but close to Hume Highway which have subsequently been removed from the proposed development.

The public viewing locations shown in SVP montages appear to be quite selective. From the Hume Highway over a total length of approximately 44km (from the western most turbine to the town of Yass) 4 sequential viewpoints have been selected. In each view turbines are located between approximately 2.5 and 8.8 km away notwithstanding there are locations along the Hume Highway where turbines are closer to the road to within distances of 1 to 2km and potentially are far more individually visible. In particular turbines are located close to the road immediately in the vicinity of Conroys Gap. Whilst the view from Bookham is taken from a side road and features intervening vegetation, there is no view shown directly north or south of Conroy's Gap to show the closest turbines at this location, which are within approximately 1km on both sides of the road.

Examples exist in the set of montages where it appears that the heights of turbines are not consistently represented at the same apparent scale relative to the viewing distance. For example, Photomontage SVP 2-2 shows that the closest turbine (41) is located 5.5km away compared to SVP7a where turbine 143 is located at 5.2km. However turbines in both images are markedly different in size despite having an almost identical field of view and being at similar distances from the camera. Similarly when turbines shown in photomontage SVP7a (at 5.2km) are compared to the turbines in photomontage CPV1a (at 5.3km) turbines are obviously different in size. In this example the field of view is stated to be the same at approximately 60 degrees, however there is an obvious discrepancy in the apparent size of turbines.

While it is conceded that photomontages including panoramic views are a useful tool to give a general impression of the extent to which the proposal is visible in the horizontal view field, they also have the effect of decreasing the apparent scale and in particular the perceived height of the individual turbines. Viewers concerned about visual impacts of turbines on their personal views or properties are more likely to be interested in the apparent relative scale of individual or small groups of turbines to familiar parts of their local environment than being presented a panoramic view in which the turbines appear distant.

In that context, photomontages that represent turbines approximately as they would look to the eye compared to the camera, rather than a theoretical horizontal field of view of 60 degrees as used by ERM, are more realistic and useful. Using a full frame camera of 35mm format, this equates to a focal length for individual images of approximately 70mm, or a horizontal angle of approximately 30 degrees. This is about half the horizontal field shown as a minimum in the photomontages. Such views do not encompass the whole horizontal field that is visible from one location, but would give a more realistic impression of the part of the view that is often of most concern to viewers.

We note that no photomontages have been prepared with horizontal field of view less than 60 degrees. This is because ERM rely on a theoretical horizontal view field of 60 degrees which his claimed to represent the "central field of vision" for humans (see Annex B to the LVA). In reality, the part of the view which is in colour and 3 dimensions (where central vision of both eyes overlap) is much narrower than 60 degrees. A single frame photograph with a 60 degree horizontal angle of view taken with a full frame camera would require a focal length

of approximately 28mm. This is a wide angle lens and the distortions caused by such lenses, including the effect of decreasing the apparent size and height of items in the view are well understood.

In most cases, the wide panoramas are accompanied by two larger scale images, each with a 60 degree horizontal angle of view, possibly to attempt to provide a better understanding of the relative scale of the individual turbines or groups. However, the criticism above of the 60 degree field of view in our opinion still remains.

In summary with regard to photomontages of public domain viewing places, we consider that the images themselves are generally useful to show the horizontal extent of the landscape affected by the wind farm, but do not give a realistic impression of the relative scale of the turbines in the views. They are shown smaller than they would appear to a viewer's eye.

Residential View Point Montages

A number of photomontage views from private residences are included in the EA and the PPSR. Views generally are orientated towards the closest turbine to provide a representative and conservative (worst case) view, but in some cases did not encompass the total number of turbines that could be visible. This appears to have been rectified in part with the preparation of additional montages included in PPSR from those locations which have multiple views to multiple turbines.

In respect of Crisp Galleries (Gap Range residence M8) an expansion of tourist facilities is proposed to be sited on an elevated hill top location. We note that the DGRs states that montages should be prepared for not yet approved developments or subdivisions with residential rights. The Crisp Galleries proposal is in that category. Montages have been prepared for this area at the site of a proposed but not yet approved tourism village designed to be a significant regional tourist attraction. Montages (RVP7Ca and b) prepared in the sLVA show that up to 39 turbines as close as approximately 2.5km will be clearly visible from this location when looking to the west and south west. The overall visual impact of the turbines in this view are evaluated as low, given that their impact could be mitigated by village design and screen planting.

It seems unreasonable to us that the responsibility for mitigation of the impacts on the Crisp Galleries should be borne by the owners, requiring them to re-design their village so it does not provide views of the seven closest turbines. Consideration should be given instead to removing the seven turbines so they do not dominate the views from this location. In addition, it is unrealistic in the context of promoting a rural view experience, to expect people to stay inside or look in a more favourable direction which is not affected by close views of turbines.

There is no further information in the report which explains how the photomontage RVP7Ca and b (and others) has informed or helped shape the final PPSR, nor how submissions from affected landowners have influenced the final turbine layout.

Two photomontages represent views from Goondah residences identified as dwellings M20 and M24. The montages in respect of M20 shows the closest group of turbines including No 100 as being approximately 1.9km to the south. Turbine No 100 is the northern-most turbine

in a group of turbines located in a north-south alignment and is the same group of turbines which have been the subject of objections from the Crisp Galleries.

Seven turbines are located along this local ridgeline west of Crisp galleries including Nos. 100 to 106. Turbine 106 is located at the southern end of this group of turbines and on the northern side of the Hume Highway. This is where the road corridor passes between hills known as The Gap. The Black Hills ridgeline continues south of the Hume Highway and includes another 4 turbines Nos 136, 131, 133, and 134 all located within 1.5km of uninvolved residence G14.

As a result of the close proximity to residences M20 and M24, both located in Goondah and within 2km of turbines and the potential visual impact on the views from future tourist facilities at Crisp Galleries, in our opinion this group of turbines should be removed.

Montages in respect of residence M42 west of Goondah show that turbines 110, 112,114 and 116 are located within 2km. We note that the same group of turbines also potentially affect another uninvolved residence identified as C89 (west of M42). It appears that this residence may be accessed via the northern part of Illalong Road and is identified on a map titled Preferred Project Submissions Report - Proposed Layout, dated 12/05/14. However, it cannot be located on other maps or plans, for example Yass Valley Wind Farm Zone of Visual Influence Map Zone C dated 1/5/14. This dwelling is not included in the Table 7.1 at page 50 of the Preferred Project and Submission Report which is a summary table of visual impacts from residential viewpoints and similarly references to it are not included within the sVLA. If a residence does exist in this location it will be located less than 2km away from turbines 111, 122, 114 and 116.

In our opinion due to the close proximity of this group of turbines to at least two uninvolved residents (M42 and C89) and for reasons in respect of higher scenic quality in the north eastern area of Illalong Road, turbines 110, 112,114 and 116 and 111, 122, and 115 should be considered for removal.

No montages are shown in respect of a group of houses located close to the Hume Highway west of Bookham including C 75, CO6, CO8, C60 and C 41, which are shown on ZVI map C. They appear to be uninvolved residences located between 2 and 3 km away from turbines 75, 76 and 77.

A view from a nearby property C41 (R8 in the EA) shows turbines at Carrols Ridge (south and now removed from the proposal) but states that turbines located closer within 2.7km are screened by topography and not visible. In our opinion views from this residence and others listed above (C75 to C60) appear likely to have partial views to between 35-70 turbines from the hub height or above when looking to the north west, as indicated by the yellow colour shown on ZVI map C.

However we also have the following general comments in respect of the accuracy of the montages;

The horizontal field of view in most cases appears to be as stated on the montage bearing scales, however in some cases two or more photos appear to have been electronically “stitched together” which causes multiple central focal points to be present in the final image which in turn creates a quasi-curved perspective. This causes the views in the image to appear to be curved around the viewer so that they may for example be able to see a road

which shows as a curve, but is actually straight, in the composite image. In this regard the horizontal field of view is oversized compared to the vertical field of view, which has in any event been cropped. The field of view is stated at Page 3 of 1.2 in the LVA as being between 60 degrees (see above for the explanation for this convention). However on some photomontages it is up to 80 degrees in close views and up to 255 in panoramic views.

There is no explanation as to why the field of view is more than 60 degrees and the variations make direct comparisons between views and simulation of relative distances difficult and open to misinterpretation. In respect of residential view points, no montages have been prepared which represent the views of turbines from interior or built exterior living spaces.

DGR key requirement 7

Provide a clear description of proposed visual amenity mitigation and management measures.

Are mitigation techniques described and proposed?

Landscape mitigation is proposed for residential properties within 5km of a turbine, upon request. Proposed mitigation includes the installation of hedgerows or shelter belt style planting and fencing. The LVA suggests that residences located north of the wind farm will benefit most from mitigation where views to the south from their properties can be effectively screened with no loss of solar access.

We note that some of the most affected residential properties (as determined on the ZVI maps (A, B, C and D) are located south of the Hume Highway in close proximity to the Coppabella Precinct.

This includes uninvolved properties C 75, C O6, CO 8, C 60 and C 41 which in most cases appear to be orientated to the north towards the highway and turbines. The sLVA includes two montages from this general vicinity showing locations within 2km of turbines at residential locations 14 and 16. We comment that such mitigation techniques other than in regard to static views from residences are likely to be ineffective given the scale, number and extent of turbines in this vicinity and in the context of a rural setting where residences are orientated to take in rural views.

No mitigation is proposed that involves removing turbines, despite the concession that turbines within 2km of a viewer will be dominant. There are turbines within 2km of roads in various locations.

6.0 Review of supplementary LVA (sVLA) 2014.

As previously discussed in this report RLA have reviewed the methodology of the original LVA and note that it is the same methodology used in the sLVA. Please refer to the Table 1 below for ease of reference in relation to inclusions in the sLVA compared to the DGR's.

Supplementary landscape visual assessment information is included in YVWF Preferred Project and Submission Report (PPSR) prepared by ERM. The DPI requested that additional

information regarding landscape and visual impact concerns be prepared, based on submissions made in response to the exhibition of the original EA and LVA.

Additional information requested is summarised below. Where we have commented information is either missing or inadequate;

- An updated visual impact assessment with additional photomontages of the revised turbine layout from the north, east, south including from uninvolved residential properties within 2km of a turbine and updated sequential view points (SVP's) 05,06, 07, 08, 09 and 11.

RLA Comment

SVP 09 has not been prepared.

- A table to include all receivers within 8.5km which lists the distance to the nearest turbine, number of turbines visible (tips and hubs) and assessment of the visual impacts.

RLA comment

This has not been provided. Table 5.3 page 26 in the sLVA lists all receivers within 3km of turbines. In addition Table 7.2 at page 96 includes the location of 18 residences and their distance from the nearest turbine. Six montages have been provided, one from each of the six uninvolved receivers located within 2km, which complies with the requirements of the draft NSW Planning Guidelines wind farm checklist.

- A map which identifies and distinguishes all involved from uninvolved residences within 8.5km.
- The additional montages and maps must include the location and turbines of the approved Conroy's Gap wind farm.
- Seen Area analysis maps should include identification titles.
- The LVA should be updated to include an assessment of the revised transmission line route.

RLA Comment

The above requirements have been met.

7.0 Review of submissions

RLA have reviewed two sets of public submissions provided to us by the DPI in order to determine the validity of both objections and statements in support of the wind farm. Furthermore we have tried to determine the adequacy and equity of the treatment of any concerns raised by the proponent.

Submissions regarding the original EA are summarised in the supplementary LVA entitled YVWF Submissions Report Landscape and Visual Assessment prepared by ERM April 2014. These are listed in Table 1.1 at page 1 of the report. A summary of key issues of public submissions made in respect of the Preferred Project Report are summarised in Table 3-1 at page 7 of the Final PPR (May 2014)

Public submissions and concerns regarding visual impacts in respect of both the EA (2009) and the PPSR (2013) are both included in the Final PPSR. RLA have reviewed the public

submissions insofar as they relate to visual impacts or values associated with the visual landscape.

RLA have summarised and paraphrased the following key issues from EA submissions in 2009 which are relevant to the visual landscape;

A) The YVWF will cause impact on the view of the scenic hills in this region
B) Zoned rural land, subject of an industrial scale development causing the aesthetic beauty of the area to be lost
C) The quality of life will be severely impacted by the visual impacts
D) Sweeping panoramas will be littered with turbines…the visual impact will be high and disturbing
E) Lack of and inadequate community consultation and timing of consultation initiatives.
F) Lack of time to respond to the EA 30 days in December prior to Christmas
G) Visual impacts of night lighting and flickering effects during the day
H) Visual impacts affecting tourism potential
I) Flawed analysis of the cumulative analysis and unprecedented size and scope of the project
J) People choose to live in the country for a various reasons…including the lack of surrounding infrastructure where we live
K) Social Impact division within the community. Neighbours affected visually but receive no compensation
L) Increasing concern amongst the general public about the proliferation of wind farms
M) An axiom of town and landscape planning is that the skyline has a major role to play in generating the overall feel and character of the situation

Comment in relation to LVA submissions

Table 1.1 of the EA (and reproduced in the sLVA) includes a summary of public submissions which broadly relate to the issues we have identified, however in our opinion some issues identified above were not recorded accurately in the submission report including;

- Specific views (to scenic hills)
- potential cumulative visual impacts of the two precincts of the YVWF given its unprecedented size
- high visual impacts across panoramic views
- impacts on the quality of life of the local community
- potential changes in this area to the character and feel of the situation (location) and lack of effective community consultation in respect of landscape values.

In our opinion key issues which were identified and recorded by ERM resulting from submissions have not received an adequate response including;

- The size and scale of the wind farm
- Cumulative impacts as a result of the size and scale of the wind farm

RLA note that almost all submissions reviewed include comments in relation to poor quality or lack of public community consultation. The Draft NSW Planning Guidelines – Wind Farms (Dec 2011) includes community consultation requirements in order to ensure that effective engagement in included in the development process. Section 2.1(b) suggests that early in

the process, during site selection and the preliminary design phase that neighbours located within 2km of a proposed turbine, should be consulted in respect of specific issues including landscape and visual amenity. We find that even as late as 2013 and after the establishment of the Community Consultation Committee (CCC) that this fundamental and early engagement has not necessarily occurred or included all community members. The fact that some community members have not been contacted is documented in CCC meeting minutes in April and May of 2013, four years after the initial EA was submitted.

We find further evidence of this in the EA itself with reference a community consultation open house held in Binalong from 2pm to 7pm on the 10th December 2009 where attendance exceeded registration numbers and approximately 55 members of the community attended, the majority of whom resided in either Binalong or Bookham (at page 97 EA).

Despite the number of residents from these towns present at this meeting Epuron had still failed to address local community involvement and consultation as evidenced in Community Consultation Committee Meeting minutes 2 April 2013 and 3 (May 2013). The minutes can be viewed on Epuron's website under the YVWF tab.

Landowners within 5km of a turbine were contacted by Epuron via a community update newsletter but for various reasons including the fact that "Harden Shire does not yet have its rural addresses bedded into an address system" Epuron had at this time still not been able to contact everyone within this location. (April 2013)

In reference to the towns of Binalong and Bookham, there were no plans to hold a community meeting, because at this stage in the project's development the focus was on addressing any particular concerns of immediate neighbours rather than those of the broader community. (May 2013)

In our opinion the fact that turbines located in both precincts of YVWF are within approximately 4km either side of Bookham would warrant the township and the values of its community as being of special significance to obtaining and providing important feedback in informing the project. Despite turbines 89-91 and 93—99 being removed from the proposed development, others just west of this group remain within approximately 4km of the township.

Our final comment in relation to community consultation relates to Appendix D of the NSW Planning Guidelines Wind Farms where at point 4 is a requirement for;

> *A description of the higher level of consultation undertaken with neighbours that own houses within 2km of a proposed wind turbine*

We cannot find any specific information which indicates that a higher level of consultation has occurred either generally or in relation to the visual impacts.

It is possible that the community consultation plan has failed to address the complexities of a fragmented rural community in that residents are spread over a wide physical and visual catchment area, across different LGA's in isolation and in 3 main townships. The consultation plan has incorporated a limited number of opportunities in limited locations at which to garner community opinions and values in respect of the visual landscape. The starting point was a public meeting held midweek between 2pm and 7pm in 2008 in one township (Binalong), which would create obvious difficulties in attendance, but notwithstanding this 55 local residents attended. A clear demand for involvement at this time and in this location was demonstrated, which does not appear to have been replicated elsewhere.

Comment on PPR Submissions

We note that 7 of 8 submissions made in respect of the PPSR relate to visual impacts, making this issue the most prevalent concern out of the 12 key issues raised.

RLA list the following key points within these submission as follows;

- Widespread cumulative impacts
- Loss of visual amenity and views to the 'beautiful' Coppabella Hills
- Locally high visual impacts for 200 dwellings within the vicinity
- Poor community consultation
- No communication in respect of approved residential developments
- Significant community disquiet regarding visual impacts.

RLA visited 4 uninvolved residential addresses of objectors to the proposal on July 15th and 16th 2014. These included visiting properties of Peter Crisp of Gap Range at Crisp Galleries (M8), Dr Mary Ann Robinson at 135 Illalong Road (C67), Sarah Grogan of 985 Burley Griffin Way (M42) and Tim Hufton (son of Mal and Louise Hufton, owners) at Narangi, Garrett Road (C39) in Harden.

We have noted that 10 turbines (89-91 and 93—99 as shown on Epuron Drawing Cluster 4A and 4B Amended Turbines to be removed dated 25/6/14.) have been removed from the proposed development but remained shown in photomontages available to affected residents. These turbines were proposed to be located east and approximately 3.5 km from property C67, along a prominent local ridgeline. The removal of this cluster will significantly reduce visual impacts on views in this direction from this property.

In each case photomontages have been prepared from locations outside of the dwellings but not from internal or external living areas. The location, bearings and fields of view of each montage appears to be general accurate. However we note to encompass the full potential view that photographs have been 'stitched together' to make a wide ranging photomontage which causes the perspective and scale of the images to be distorted. It is therefore difficult for resident's to gain an accurate sense of what they will potentially see of the turbines once constructed, in particular the relative size of the turbines to their familiar landscape.

8.0 Submission Summary

A response to submissions by the proponent is included in Table 8-1 of the sLVA. In our opinion the responses appear to be a generalised and repetitious including quotes from the original EA and methodology. The responses do not appear to acknowledge any importance or values attributable to the community concerns raised or suggest that any of the issues require further consideration or action on the part of the proponent.

Community issues raised throughout the preparation of the both reports (2008 to 2014) shows that visual impacts and loss of visual amenity affecting quality of life remain important issues within the local the community.

Requirements of the NSW Planning Guidelines Wind Farms state that a description of how the identified issues including the community's issues have been addressed and how they have informed the proposal as presented should be in the assessment report.

There is no evidence to suggest that community consultation and concerns in relation to landscape values, visual impacts and cumulative impacts in respect of the size and scale of YVWF has informed the project design process. Changes over the 4 year preferred project design phase have resulted only in a net result of 8 turbines being removed and the repositioning or 'micrositing' of seven others to avoid blade overhang above crown roads.

9.0 RLA Field assessment and review of visual exposure

RLA's field assessment was undertaken over two days' and was limited by heavy rain, however we can confirm that the general extent of the view shed and seen area analysis appears to be accurate.

Views to the turbines located in both or either precinct will be seen from public viewing locations (towns, major and crown roads) and many residential properties. Parts of the YVWF will be visible from many kilometres before and beyond its 26km linear extent of the proposed development for transient viewers.

LU 2 is characterised by 'Steeply undulating cleared farmland" and is the most common type of landscape unit where turbines will be located. This unit includes elevated ridgelines which comprise the most scenic areas of the local landscape and has been allocated a sensitivity rating of 'medium', despite the EA methodology stating that it can be considered in various contexts as having 'high sensitivity'.

Table 7.2 of the EA states that the overall visual impacts of the proposed development are considered to be nil, minor or medium in respect of public viewing places. We consider that some views were inadequate to clearly demonstrate the potential cumulative visual impacts of the scale and size of what is effectively two precincts of the proposed development.

We noted that a total of 30 uninvolved residences exist within 3km of turbines (page 26 sLVA) and that montages have prepared from 6 of these locations initially and a further 10 subsequently as directed by DoPI.

Table 9.3 of the EA considers that the overall visual impacts of the proposed development from residential locations are considered to be negligible, low or medium. All houses located within 2.7km have an overall visual impact rating of negligible or low. These assessments assume that mitigation of direct views from houses is all that is necessary to address visual impacts.

We note that comparison tables shown in the sLVA show that overall visual impacts have been revised down on the basis of increased distances to turbines which have resulted from changes to the project. Analysis of the layout appears to indicate that changes have had little effect on the visual exposure of the project.

Based on our field review we acknowledge that additional montages representing private views have better represented views and potential visual impacts of the YVWF at those locations.

10.0 Adherence to Relevant Guidelines and Industry Standards

As discussed earlier in the report the LVA methodology does not follow all requirements for assessment as set out in the DGR's. In fact the LVA does not appear to follow all of the NAF guidelines which it claims support its own methodology either.

In reviewing the NAF guidelines we find that there are specific steps are outlined in section 1B.1 to 1B.5 as part of a "Full Landscape Assessment" within the guidelines which have not been addressed.

In our opinion the LVA contains the following omissions and inadequacies in regard to the NAF guidelines;

- 1B.2 Landscape Character Analysis
- 1B.3 Natural and Cultural values analysis
- 1B.4 Involve communities and stakeholders in identifying landscape values
- 1B.5 Document values and analyse significance.

Step 3 of the NAF guidelines is to "Assess the impacts of the wind farm on landscape values". The purpose of this step is to ensure "in a rigorous and transparent manner, the likely impacts of the proposed wind farm on the identified landscape values".

In our opinion step 3.1 below has not been undertaken adequately;

- 3.1 Seek community input to potential impacts.

Further to this all steps from 1-4 described in the summary table that accompanies the NAF guidelines in relation to consultation appear not to have been undertaken. These are listed below;

- Involve community stakeholders in identifying landscape values (direct community involvement essential)
- View points selected for visual modelling of the wind farm should relate to an understanding of community values of the landscape (direct community involvement recommended)
- Seek community input to describe impacts (direct community involvement essential)
- Involve communities in negotiating and reviewing measures to avoid, minimise or mitigate landscape impacts. (direct community involvement essential)

The LVA methodology does not appear to follow any other guidelines or claim to follow any best practice standards and note further that it has not followed the draft NSW Planning Guidelines –Wind Farms December 2011. For ease of reference we have tabulated a comparison of the LVA methodology and the NSW guidelines. Table 2 is included in Appendix 1.

11.0 Conclusions and Recommendations

We consider that most of the key elements required of the proponents in the DGRs have been addressed within the methodology and the text and supporting graphics of the LVA and sLVA.

We have concerns about the generalised approach taken to identification of landscape character, the absence of mapping or delineation of the general areas occupied by different Landscape Units (LUs) and lack of recognition of areas of distinctive scenic character and of higher scenic quality than exists in the general landscape.

We concede that there are different ways in which landscape assessments can be carried out and that there is no industry standard approach to that aspect of methodologies. We therefore consider that this deficiency is not so substantial as to render the entire LVA inadequate. We note however that the critical question of whether the community values parts or all of the landscape proposed to contain the wind farm cannot be answered at this time.

While data has been gathered and obligations generally fulfilled, critical input required by the NSW Planning Guidelines – Windfarms, or alternatively the NAF Guidelines is missing. Throughout the analysis carried out above, the most consistent deficiency is with public participation and the establishment of community landscape values.

We noted throughout that the professional judgments of the authors of the LVA have been substituted for public perceptions of landscape values. It was the proponents who determined the sensitivity of the LUs, the likely perceptions of viewers, the likely number of viewers and the significance of the viewing places from with the wind farm would be perceived. All of these parameters require public participation to either verify the proponent's assumptions or to challenge or possibly refute them.

No specific surveys have been undertaken, despite the very large scale of the proposed wind farm, not only in regard to its physical extent but also its potential for cumulative impact in the context of existing and approved wind farms in the region, the number of which has significantly increased while the proposal has evolved.

With regard to assessment of cumulative impact, we consider that the LVAs have taken a static and simplistic approach, which focusses on the comparison between the existing, small, approved Conroys Gap wind farm and the proposal. The dynamic experience of moving about the region, in which the number of wind farms has significantly increased while the proposal has been evolving, has been ignored.

We do not consider that the level of public participation in establishing landscape values is adequate to determine whether the overall project and its existing design is acceptable. Generalisations are made on the basis of surveys carried out in other regions, states or countries. These are inadequate to establish, confirm or refute the opinions held by the authors of the LVA and sLVA and do not satisfy the DGRs.

We therefore make the following recommendations:

1. The proposal proponent should be required to undertake:

a. concerted, cohesive and effective community consultation in each of the closest townships, open community consultation meetings to the public and clarify the current application, including establishing unequivocal and confirmed contact details of all potentially affected residents.
b. Carry out a professionally designed and executed survey of a representative sample of local and regional residents, preferably by interview.
c. Submit the survey questionnaire, including any supporting information that is to be provided to respondents, for independent peer review by an appropriately qualified firm or individual approved by The Department of Planning and Infrastructure.
d. Submit the peer review to the DP&I for its approval before undertaking the survey.
e. Design the questionnaire to specifically canvass views about perceptions and landscape values of the community, whether in general or in regard to specific parts of the landscape.
f. Include questions relevant to perceptions of cumulative impacts, with information about the existing and proposed proliferation of wind farms in the wider landscape.

2. Require the proponent to make increased reasonable attempts to visit or telephone each uninvolved residence within 5km of either precinct for the purposes of seeking community values, based on the survey instrument described in 1 above. Evidence of such attempts should be logged and provided to the DP&I.
3. Where possible increase the density and decrease the spacing between turbines in areas with satisfactory wind energy and tenure which are found to be in areas perceived as possessing landscape values by the community.
4. Remove the turbines closest to areas which are valued by the community.
5. Remove the seven turbines in the immediate visual catchment of Gap Range at Crisp Galleries (M8), the property at Conroy's Gap.
6. Provide advice or materials and design for landscape work around critical viewing places and near affected residences, subject to acceptance by residents.
7. Proponents are to provide expertise, materials and initial maintenance for rows, clumps and other arrangements of trees near rural residences and house paddocks to assist in screening of views to specific turbines or groups of turbines where these are thought to be offensive by landowners.
8. Subject to there being an approval, conditions of deferred commencement should include appropriate colours for turbines. A mid-grey or blue grey colour of moderate lightness and saturation is appropriate.
9. The removal of 10 turbines east of Illalong Road (89-91 and 93—99) from the proposed development has previously been confirmed. This reduces the level of visual effects and potential visual impacts when viewed from residence C67 which in our opinion is a satisfactory outcome.
10. The removal of turbines is recommended in the Marilba Range precinct in the following specific areas and for the following reasons;
    - Turbines 110,111,112,114, 115, 116 and 122 should be removed north-east along the Illalong Road area due to the proximity to residences M42 and C89 and to protect an area of higher scenic quality.

- Turbines 131, 133, 134, 136 and 100, 101,102,103, 104, 105 and 106 should be removed from the Conroy's Gap and Black Ridge Hills area due to the close proximity to existing residences G14, M20 and M24 and proposed residential and tourist expansions at Crisp Galleries and also in relation to the scenic value of Conroy's Gap and potential cumulative impacts on users of the Hume Highway.

Dr Richard Lamb

Richard Lamb & Associates

Appendix 1

Table 1

Comparison of Director General Requirements and LVA Methodology

Item	Director General's Requirements	Landscape Visual Assessment (LVA) Methodology	Preferred Project Submission Report (PPSR) Methodology	RLA Comment
1	Provide a comprehensive assessment of the landscape character and values and any specific scenic or significant vistas of the area potentially affected by the project.	Section 5 page 20. Basic assessment of Landscape Character with regard to landscape units (LUs).	Section 3.2. Basic assessment of Landscape Character with regard to landscape units (LUs). Same methodology as the LVA. No community values, specific scenic or significant vistas are identified	Yes, basic assessment of Landscape Character as represented in landscape units (LU's). LU's are not mapped to indicate their location or extent. No assessment of community values is associated with the assessment of landscape character. No assessment of individual scenic or significant vistas is made. No assessment of variations in landscape character, specific scenic areas or significant vistas is made for the entire viewshed area.
2	Describe community and stakeholder values of the local and regional visual amenity and quality and perceptions of the project based on surveys and consultation.	No community or stakeholder values are described.	No community or stakeholder values are described.	No community or stakeholder values are described. Consultation has been limited. Views not sought from the local community within 8.5km ZVI or wider view shed of 17km.
2		No values described in respect of local or regional visual amenity.	No values described in respect of local or regional visual amenity.	No regional community values and opinions in relation to the visual amenity sought.

Item	Director General's Requirements	Landscape Visual Assessment (LVA) Methodology	Preferred Project Submission Report (PPSR) Methodology	RLA Comment
2		No current local community perception and levels of support information. Perceptions are based on a Wind Farm Impact Study –Southern Tablelands 2007.	No current local community perception and levels of support information. No community perception and levels of support are based on studies undertaken for this project. Local perceptions are represented through submissions and include concerns about the cumulative impacts, visual impacts and loss of amenity and impact on quality of life.	Community perception of the project and levels of support are based on dated studies prepared prior to the recent proliferation of proposed, approved or operational wind farms in the vicinity. Statistics from international perception studies are used to form general conclusions. In our opinion these are of limited relevance in the absence of community and stakeholder feedback.
2		No specific survey information relating to community landscape values is used	No survey information relating to community landscape values	There is no evidence to suggest that changes were made to the project based on public perceptions or survey results received in public submissions.
3	Assess the cumulative visual impacts of existing and approved wind farms.	Yes cumulative visual impacts are reviewed and discussed in Section 10.	Yes cumulative visual impacts are reviewed and discussed in Section 7.	The cumulative visual impacts are considered in respect of the adjacent Conroy's Gap wind farm. Other wind farms in the wider environment are discussed but discounted as not contributing to cumulative visual impacts. The number of wind farms in the Southern Tablelands has increased by 88% since submission of the original EA and LVA.

Item	Director General's Requirements	Landscape Visual Assessment (LVA) Methodology	Preferred Project Submission Report (PPSR) Methodology	RLA Comment
				The scale of the project spread across two precincts and LGAs creates potential for cumulative impacts to occur for local townships, roads and residences.
4	Assess the impact of shadow 'flicker, blade 'glint'	No, Information not provided in respect of the glint or flicker phenomenon	No, Information not provided in respect of the glint or flicker phenomenon	We note that shadow flicker has been addressed in section 8.10 Health and Safety of the EA
4	Night lighting from the wind farm.	Yes, CASA required night lighting is included at page 129 Section 11	No, not required	No comment
5	Identify the zone of visual influence (no less than 10km) and assessment the visual impact of all project components of this landscape	No The zone of visual influence (ZVI) identified is 8.5km. It is discussed at page 17 in section 4	No The zone of visual influence (ZVI) identified is 8.5km. The ZVI is reviewed in sections 3 and 4 of the PPSR	Impacts were considered from within an initial view shed of approximately 17km ZVIs were determined that included only areas 8.5km from the nearest turbine. Both LVA reports discount visual impacts beyond 8.5km based on the "distance effect" despite ZVI maps and photomontages indicating that parts of many turbines will be visible beyond this distance.
6	Include photo-montages of the project taken from potentially affected neighbouring residences (including approved and not yet approved developments or subdivisions with residential rights)	Yes Section 1.2 describes the method for the preparation of photo montages	Yes Section 5 describes the method for the preparation of photo montages.	Seen Area Analysis and ZVI were used as the basis for the selection of viewpoints. RLA comment that the perspective of some montages appears to be distorted. Turbines are shown smaller than they would

Item	Director General's Requirements	Landscape Visual Assessment (LVA) Methodology	Preferred Project Submission Report (PPSR) Methodology	RLA Comment
	settlements and significant public viewpoints			appear to the viewer's eye
6			The PPSR includes additional photomontages from residential locations and the public domain	Photomontages include neighbouring residences and one proposed subdivision. We are not aware of any subdivisions in relation to townships which may be approved or yet to be approved which may require representation.
7	Provide a clear description of proposed visual amenity mitigation and management measures.	Yes Section 9.10 addresses mitigation measures for residential properties.	No Mitigation measures are not included in this document.	EA mitigation techniques include suggested fencing and hedge rows around perimeter areas of the individual residences within 5km of a turbine, if requested. This technique is likely to be ineffective other than on specific views from residences, given the size and scale of the YVWF overall.
Relevant Guidelines for reference	Best Practice Guidelines for the implementation of wind energy projects in Australia (Auswind 2006)	No	No	There is no reference to this document being used as a guideline.
Relevant Guidelines for reference	Wind Farms and Landscape Values: National Assessment Framework and Australian Council of National Trusts, June 2007	No	No	We note that the methodology followed in the LVA is claimed to be supported by "Wind Farms and Landscape Values: National Assessment Framework" It appears to reflect a simplification of the NAF guidelines with some parts missing

Appendix 1
Table 2

Comparison of Draft NSW Wind Farm Guidelines compared to LVA and PPSR
(Issues relevant to visual amenity and landscape values)

Item or Section	Draft NSW Wind Farm Guideline 2011	YVWF LVA or PPSR	RLA Comment
1.3 Key Matters (a) proximity of turbines	Photomontages showing specifically how turbines will appear from each non host residence within 2km	Yes, partially completed within PPSR	Photomontages are prepared at locations outside residences, in fields or driveways etc. No montages show views from internal or external living areas.
1.3 (b) Community Consultation	Formation of a community consultation committee early in the process.	No	Formed in Feb 2013 (Exhibition of EA in 2009 and exhibition of PPSR in Dec 2012)
1.3 (c) Visual Amenity	Visibility of the proposed development	Yes	Visual amenity has been addressed only in terms of landscape visual character units (LU's).
	Locations and distances of potential views	Yes	Visual amenity includes consideration of the aesthetic value of the landscape for the community.
	Landscape values and their significance	No No community values sought in relation to Landscape Values and their significance	No community values have been sought regarding landscape values or significance.
	Sensitivity of the landscape to change.	Yes Sensitivity of landscape units to change is included in the LVA.	Sensitivity appears to be based on expert opinion rather than community values. No weighting is applied to the factors considered and no description about how sensitivity affects the overall visual impact rating.
1.3 (c) i	Description of Assessment Methodology for assessing impacts at neighbours houses within 2km	Yes in LVA	The methodology does not refer to or follow Draft NSW Wind Farm Guidelines 2011 or various of the NAF best practice guidelines

Item or Section	Draft NSW Wind Farm Guideline 2011	YVWF LVA or PPSR	RLA Comment
1.3 (c) ii	Description of all relevant project components	Yes in LVA	
1.3 (c) iii	Description of landscape key features	Yes, partially in LVA, no mapping of landscape features.	No, landscape features are not identified individually.
1.3 (c) iv	Description of visibility of the development	Yes, in LVA	
1.3 (c) v	Photomontages from; Residences within 2km	Yes, In PPSR	
1.3 (c) v	Settlements	Yes, in PPSR	Photomontages prepared from the townships are limited.
1.3 (c) v	Roads and significant public view points, Lookout points and walkways	Yes, in PPSR	No significant viewpoints have been identified. Views from local roads are selective. Worst case scenarios are not always presented.
1.3 (c) vi	Identification of Zone of Influence to 10km.	No. ZVI extends to 8.5km.	ZVI's which exist (as shown on ZVI maps beyond 8.5km) were discounted. Turbines are clearly visible in sLVA in photomontages from beyond this distance
1.3 (c) vii	A description of the significance of the landscape values and character in a local and regional context.	No	No description of the significance of landscape values and character is included in either LVA or PPSR. Visual landscape units are not linked to landscape values or character in a regional context.
1.3 (c) viii	A description of community and stakeholder values of the local and regional visual amenity and quality and perceptions of the project based on surveys and consultation.	No	No description of community or stakeholder values in respect of local or regional visual amenity and quality, is included. No assessment of perception of the project

Item or Section	Draft NSW Wind Farm Guideline 2011	YVWF LVA or PPSR	RLA Comment
			within the local community is presented. Perceptions discussed relate to previous and overseas studies. Consultation in relation to landscape values is limited and ineffective
2.1(a) Documentation of effective community engagement	Describe how identified community issues have been addressed and how they informed the proposal as presented	No	No discussion about the community's concerns in relation to visual amenity and values is included in either report. There is no evidence to suggest that concerns raised in submissions have been addressed or used to inform subsequent changes to the project. Visual impacts have been raised as a concern by the public in an initial public meeting (community feedback form) and in each set of submissions. Some content of submissions recorded in the LVA and PPSR appear to be similar. This suggests that they have not been adequately addressed during the project design process.
2.1 (c)	Establish a Community Consultation Committee (CCC) to discuss community concerns and resolution of complaints.	Yes, a CCC has been established	There is no evidence that complaints have been resolved.