

Crookwell 2 Modification 2

I have suffered through a number of wind farm LVIA's written by Green Bean Design (GBD), both for initial DAs and for Modifications.

The output from this consultancy across several wind farm projects can be summarized as follows:

- the overall Visual Impact of any wind farm is modest.
- whatever the dimensions of a turbine or wind farm, the overall Visual Impact remains modest.
- modifications have little additional Visual Impact to that already determined (and with this modification there is an implied reduction in Visual Impact).
- any Visual Impacts will be minimized by the ever present topographic and vegetative screening.
- Cumulative Visual Impact is negligible and for modifications less so.
- the landscape is already compromised and capable of absorbing a wind farm.
- an occasional uninvolved residence will be reluctantly rated as having a High Visual Impact.
- in the end, Visual Impact rests on judgement of a city based landscape architect. The affected community is rarely consulted.

The Bango, Crookwell 2 and Crookwell 3 wind farms being on exhibition concurrently, with (L)VIA's all being authored by the GBD Principal, Mr Andrew Homewood (as well as the recently exhibited Rye Park amended LVIA and the Crudine Ridge/Sapphire contributions) gives the Department the opportunity to examine whether any notice should be taken of (L)VIA's emanating from GBD.

On occasions the Department has shown justifiable wariness as evidenced by the commissioning of peer reviews of GBD submissions or formal requests for extra studies.

The lead consultant for this modification, Mecone, by their own definition an urban planner, with seemingly little experience in wind farm VIA's, must shoulder some of the blame for the deficiencies of this VIA.

So does the Department, who has the experience but not the endeavour, given its lack of action over the last several years.

This modification:

Experience causes me to question every statement Mr Homewood makes. For instance, I wasn't far in when I read:

"This VIA also determined that no non-associated residential dwellings surrounding the C2WF Mod-2 wind turbines would experience shadow flicker." ¹

This is at variance with the findings of DNV-GL, who actually determined the Shadow Flicker, for residence 60. ² Mr Homewood might have meant that no non-associated residence would suffer a shadow flicker impact above the recommended limits, but he didn't say that.

Minor, but very time consuming.

As expected, this modification, like all others I have read from GBD, will propose a low additional visual impact and a low additional cumulative impact (or should I say a low potential for additional significant impact, which I think means even lower, but he is not sure)

"As proposed amendments to the approved C2WF Mod-1 are considered to result in low level visual effects, and introduce elements which are neither prominent or out of character with the approved C2WF Mod-1, the potential for the proposed Mod-2 wind turbines to result in any additional significant cumulative visual effects is considered to be low." ³

The final conclusion ⁴ is even more insipid with Mr Homewood implying that the reduction in turbine numbers overrides any visual impact of the turbine size increase.

¹ Page 7, Mod 2 Visual Impact Assessment

² Page 20, Shadow Flicker and Blade Glint Assessment DNV-GL

³ Page 7, Mod 2 Visual Impact Assessment

⁴ Page 76, Crookwell 2 Wind Farm MOD 2 EIS - Appendix 6 Visual Impact Assessment Part 3

(this is the same Mr Homewood who, in his LVIA for the Sapphire wind farm Modification 1 as a footnote in the Appendix wrote:

“Observations and measurements for individual residential dwellings must also take into account the potential visual effect of single or small numbers of wind turbines within a proposed wind farm development. Single or small numbers of wind turbines may give rise to moderate and high visual impacts under certain circumstances.”)

Those “certain circumstances” obviously don’t apply here.

Mr Homewood tries to minimize the modification with diagrams showing how negligible the additional angle and height is at 2 kms. To put this into perspective, the additional angle or height, translated onto the page you are reading, equates to approximately two lines of print at reading distance (and you can only read one line at a time). Not so insignificant now, is it?

If you are barreling down the freeway and keeping a safe distance from the car in front of you, then the additional height is equivalent to the height of that car. Mr Homewood wants you to believe you won’t notice it.

At whatever distance, the 160 metre turbine still looks 25% taller than the currently approved 128 metre turbine, on top of the 83% increase in swept area.⁵

The turbine comparison diagram that Mr Homewood publishes (figure 4, page 21) clearly puts paid to his contention that the additional changes in turbine configuration make little difference to Visual Impact.

Now imagine a complete vista of these vastly larger industrial structures in your landscape whose swept area ranges in elevation from 890 metres to 1108 metres, all moving in an overlapped and unsynchronised way.

Those of us who have stood 2 kms away from real turbines know how daunting they are.

Mr Homewood proceeds to justify his preconceptions by assessing single or groups of residences in the following tabular format. (with groupings, Mr Homewood “expects” the visual impact to be the same. No Mr Homewood, you have to justify that sameness, otherwise don’t group residences.)

Table 6 – Visual Effects Matrix (Refer Figure 1 for residential receiver locations)

Receiver location/s	Category of receiver location	Approximate distance to approved and/or amended wind turbine	Approved C2WF Mod-1 Visual Effect	Description and Magnitude of C2WF Mod-2 amended visual effect	Proposed C2WF Mod-2 Visual Effect
Residential dwellings within 3 km of approved Crookwell 2 Wind Farm Mod-1 and proposed Mod-2 wind turbine					
R1	Non associated residential dwelling	1.9 km	Low	<p>Description:</p> <p>The observable scale of change would be limited by distance between the dwelling and closest approved C2WF Mod-1 wind turbine. Views toward the approved C2WF Mod-1 would be altered by the removal of two wind turbines (F6 and F8) within the cluster closest to the dwelling, and in addition by the removal of wind turbines within distant views east of the Crookwell-Goulburn Road. There would be very limited change in the composition or contrast between the approved Mod-1 and proposed Mod-2 development and the surrounding landscape. Planting surrounding the dwelling would also screen views toward both approved Mod-1 and proposed Mod-2 wind turbines.</p> <p>Magnitude:</p> <p>Low – resulting in no change to the approved C2WF Mod-1</p>	Low - resulting in no change to the approved C2WF Mod-1 visual effect

⁵ It must be remembered that the Crookwell 2 wind farm when initially approved had turbines 107 metres tall to blade tip, with 39 metre blades. (178% increase in swept area overall – minor VI increase?)

We would love to research the “approved C2WF Mod-1 Visual Effect” (column 4) but the Department of Planning at time of writing refuses to publish either the Mod-1 or the initial LVIA, even though they are referenced as key documents in the current conditions of consent.

As the EIS does not seem to have a listing of residence GPS coordinates and this VIA certainly doesn't, it is hard to confirm Mr Homewood's expert opinion in column 5. Having eventually found aerial photographs of the first residence R1 and its curtilage, I would ask Mr Homewood:

- to justify the original Visual Impacts of all residences in the table, even if he wasn't the original assessor, otherwise, silence denotes concurrence. It is not clear whether Mr Homewood, in column 6 is assessing the overall VI subsequent to this modification or just the delta impact of Modification 2. The summary at the end of the table would indicate the former.
- whether a 25% increase in height and an 83% increase in swept area (not mentioned in column 5 above) would have any additional visual impact for residence R1.
- whether the Visual Impact from areas typically within the curtilage of a rural residence; in this case the front gate, the large shed and the shearing shed justify the rating of LOW.
- As his colleague from DNV-GL measures shadow flicker from an area up to 50 metres around the residence, does the current VI rating for all residences still apply if he follows that practice?

Using the above tabular methodology, Mr Homewood reviewed the Visual Impact (visual effect as he prefers) from 92 residences and their curtilage within 5 km of a Crookwell 2 turbine.

He opined that 92 out of 92 would experience no change to their Visual Impact as a result of the revised turbine structure (25% taller and an 83% increase in swept area).

We expected that.

He opined that none of these 92 residences after this modification would suffer a HIGH Visual Impact.

We expected that.

(begrudgingly Mr Homewood told us that in his judgement, 4 of the 92 would suffer a Moderate to High Visual Impact)

Smell test, pass, doesn't.

Cumulative Visual Impact

The Department said:

“The assessment must also consider the cumulative impacts of the proposed modification with nearby operating, approved or proposed wind farms”⁶

This is only one of two “musts” in the departmental document. All the rest are “shoulds”

GBD replies as noted above:

“As proposed amendments to the approved C2WF Mod-1 are considered to result in low level visual effects, and introduce elements which are neither prominent or out of character with the approved C2WF Mod-1, the potential for the proposed Mod-2 wind turbines to result in any additional significant cumulative visual effects is considered to be low.”

Also as noted above, the Department has declined to publish the documents that include the original cumulative visual impact.

Then GBD advises:

“A detailed assessment of cumulative visual effects has been undertaken for the proposed Crookwell 3 Wind Farm project and considers the potential for cumulative visual effects in association with the C2WF proposed Mod-2”⁷

A “must have” from the Department for this modification is missing.

Why not repeat it in this LVIA rather than send us all off on cumulative orienteering?

⁶ Mike Young, June 1, 2015. Crookwell 2 Wind Farm MOD 2 EIS - Appendix 5 - Department requirements for EIS

⁷ P52, Crookwell 2 Wind Farm MOD 2 EIS - Appendix 6 Visual Impact Assessment Part 1

Off I trudge.

From the Crookwell 3 Amended LVIA I find.

“The Amended C3WF is considered to result in a range of low level visual effects, and introduce elements which are neither prominent or out of character with the original C3WF, the potential for the Amended C3WF wind turbines to result in any additional significant cumulative visual effects is considered to be low.”⁸

and:

“As the Amended C3WF wind turbines are considered to result in low level visual effects, and introduce elements which are not prominent or out of character with the original C3WF LVIA 2012, the potential for the amended wind turbines to result in any additional significant cumulative visual effect is considered to be low.

A consideration of potential cumulative visual effects has been included in the Crookwell 3 Wind Farm LVIA 2012. The LVIA concluded that *‘overall the Crookwell 3 wind farm is not considered to significantly increase the magnitude of visual impact for the majority of residential view locations within the Crookwell 3 wind farm 10km viewshed. The potential for the occurrence of ‘direct’ and ‘indirect’ cumulative visual impact is mitigated to a degree by the screening or partial filtering of views toward approved and existing wind farms’.*

‘Potential ‘sequential’ views will occur along various sections of local roads, including the Goulburn Crookwell Road whilst travelling in north and southbound directions. Sequential views from local roads would be mitigated to some extent by undulating landform and tree cover alongside road corridors’.

A detailed assessment of cumulative visual effects has been undertaken for the proposed Crookwell 3 Wind Farm project and is presented in the LVIA Supplementary Report. The cumulative visual assessment considers the potential for cumulative visual effects on residential dwellings located within 2 km of the C3WF project.

The overall assessment of Negligible to Low visual effect that is associated with the Amended C3WF is unlikely to increase the level of cumulative visual effect determined in the Crookwell 3 LVIA or the LVIA Supplementary Report.”⁹

As requested, we next trudge off to the Crookwell 3 Wind Farm LVIA 2012 part 4 to read:

“Overall the Crookwell 3 wind farm is not considered to significantly increase the magnitude of visual impact for the majority of residential view locations within the Crookwell 3 wind farm 10km viewshed. The potential for the occurrence of ‘direct’ and ‘indirect’ cumulative visual impact is mitigated to a degree by the screening or partial filtering of views toward approved and existing wind farms.”

In summary after all that:

Cumulative VI is no big deal.

We expected that.

The 2012 Assessment does provide a glimmer of hope. Apparently not convinced of the above and other areas of the GBD offering, the Department commissioned O’Hanlon Design Pty Ltd to perform a peer review.¹⁰

From the peer review on the topic of cumulative Visual Impact:

“No justified methodology is provided to support the following Response to Submission statements.

- 1) *“there is unlikely to be a significant increase in visual impact arising from cumulative impacts”.*
- 2) *“overall, the Crookwell 3 Wind Farm is not considered to significantly increase the magnitude of visual impact for the majority of residential view locations within the Crookwell 3 wind farm 10km viewshed.”*

⁸ Page 7, Crookwell 3 Wind Farm Amendment -Visual Impact Assessment v3 Final 7 June 2016

⁹ Page 34, Crookwell 3 Wind Farm Amendment -Visual Impact Assessment v3 Final 7 June 2016

¹⁰ Visual Amenity Review August 28, 2013. Major Projects Register – Crookwell 3

and,

“It is my opinion that for many residences Crookwell 3 creates a sense of enclosure of the residence in a ‘pastoral wind farm’ landscape, as the wind farm infrastructure becomes the dominant element of the surrounding landscape. In my opinion, when considered against the parameters set in the independently prepared SSR¹¹, the extent and dominance of wind farm infrastructure in the visual catchment is likely to result in an undesirable change of landscape character around many residences. It is my opinion that this would be an unacceptable cumulative impact on a large number of residences.

and,

Assess worst case as well as representative impacts for all key issues and in relation to cumulative impacts for both Crookwell 1 and Crookwell 2
(My bolding)

I endorse Mr O’Hanlon’s emphasis on “worst case” for key issues, especially photomontages and assessments of screening.

and,

“I consider that community input into the setting of values, as required by the DGR’s and NAF¹², is a significant issue particularly in relation to cumulative impact assessment.”

and,

“For residential locations the LVIA is silent on potential cumulative impacts. My simplistic assessment indicates that a number of residences are currently affected by wind turbines that are visible to an extent in excess of 90 deg of the total visual catchment (360deg). The location of the Crookwell 3 turbines would in several cases increase the percentage of the visual catchment affected by turbines to in excess of 200deg and in many cases in excess of the 80% of horizon line view.”

and,

“The cumulative impact of wind farms on individual residences is partly portrayed in the photomontages however the limited visual field of the photomontage does not inform the reader of the potential sense of enclosure nor provide a justifiable assessment of the overall cumulative impact.”

and,

“In addition to comments in section 3.2 above the LVIA has taken some of these factors into account however the potential for visual clutter and the cumulative impacts due to greater dispersion of larger turbines and proximity to several other wind farms with different size and clustering of turbines, have not been assessed with a justified methodology. In addition the impact of the greater turbine height is not assessed in a justified methodology.”

and,

“The LVIA does not provide a justified methodology for assessing cumulative visual impact based on community perceptions and therefore the conclusions reached in the LVIA may not be correct as they are subjectively based solely on a professional opinion of the landscape values.”

and,

“(3) Cumulative impact.

The cumulative impact assessment in the LVIA is to be amended to;
provide a justified methodology and assessment of the cumulative impacts of Crookwell 3 combined with Crookwell 1, 2 and Gullen Range including both approved and proposed elements, clearly identify any likely changes to the landscape character of the region resulting from the combination of the regional projects and identify the regional community perceptions of

¹¹ Review of Crookwell 2 Wind Farm EIS Summary (working document) Scenic Spectrums Pty Ltd: January 2005

¹² Wind Farms and Landscape Values - (National Assessment Framework)

the resultant cumulative impacts based on surveys and consultation, and include assessments of the cumulative impact of the regional projects on public viewing locations, heritage items and individual residences, particularly residences within 2 km of any proposed Crookwell 3 wind turbine.”

GBD in the Bango wind farm LVIA, currently on exhibition notes:

“This LVIA methodology adopted by GBD has been applied to a number of similar LVIA for large scale infrastructure projects prepared by GBD, which have been assessed and approved by the New South Wales Department of Planning under Part 3A of the EP&A Act, and peer reviewed by independent landscape architectural experts.”¹³

implying that GBD’s LVIA’s have successfully endured the peer review process. This one, amongst others, doesn’t.

Another damning peer review of GBD output, and the above is just for the Cumulative Visual Impacts.

Did GBD take any notice of it when writing the Crookwell 3 amended LVIA?

Did the Department take note of the points raised by Mr O’Hanlon in a document they commissioned and more importantly did they recognize that the key deficiencies highlighted remain in the current LVIA?

Mr O’Hanlon starts off his peer review of cumulative visual impact by highlighting some statements that are not supported by a justified methodology. Nothing has changed. Mr Homewood, like many others in the climate and renewables industry relies on argumentum ad verecundiam.

The Department and its predecessors, by approving all wind farms proposed in this LGA and surrounds, has totally ruined the area and destroyed individuals and communities. This modification cannot make it worse, so in that sense, Mr Homewood is correct.

¹³ Page 17. Bango Wind Farm EIS Appendix 08 Landscape & Visual Assessment Part 1