Comments on residential Visual Impact assessment

On pages 27 and 28 of that imperfect document, the Crudine Ridge Assessment Report, the Department describes an in-depth process it has gone through to assess Visual Impact.

> "The Department undertook a further review and supplementary assessment of the potential visual impacts associated with residences located within 3 km of the wind turbines, as these have the potential to be the most significantly affected by the project. This review and supplementary assessment included both desktop reviews and site inspections by the Department and the independent visual expert."

The Department then goes on to describe in general terms a quantitative process for assessing VI.
Unfortunately, the details of this supplementary VI assessment were not included in the overall recommendation. The Department was asked to publish the full details of their methodology, but as usual, ignored the request.

Green Bean Design (GBD) was the "independent" visual expert used by the Department to assist with the Crudine Ridge Assessment.

Something similar was alluded to in the equally lacking Yass Valley Assessment.

We think we now know the answer to the missing details of the quantitative assessment. It is called the Refined Assessment Matrix (RAM) which GBD uses to confirm the Visual Impact of Sapphire wind farm (SWF) Modification 1. This methodology is totally different to that used by GBD in the original EIS for the subsequently approved SWF.

GBD advises on page 11 that:

> "The RAM is currently being developed by the NSW Department of Planning and Environment"

Let me guess: in conjunction with Green Bean Design.
Why the Department would use the "independent" GBD, the wind industry's goto landscape architect, with over 20 wind farm LVIAs to their credit is beyond me. Perhaps the Department wanted a pro-developer assessment matrix. Once again, GBD has delivered.

The RAM is described in the Appendix to the Sapphire Wind Farm - Modification Landscape and Visual Impact Assessment. The Matrix is made up of nine components. Briefly, as more descriptive detail is contained in the appendix of the LVIA for Mod 1, these components are:

- Distance
- Elevation
- Orientation
- Field of view
- Depth perception
- Visual cognition
- Sky lining
- Visual complexity and
- Cumulative

or, you could get the descriptive detail (but without the rating methodology) from Page 28 of the Department's Crudine Ridge Assessment. It is different.
If you think there is some doubling up in here, you are probably right. Apart from distance, the latter eight components relate to what you see. More on that later.

An earlier version apparently had only seven components. Remnants of that earlier version remain in the Mod 1 LVIA (eg table A4), so much so that you cannot rely on any of the individual residential assessments. Maybe the seven component version didn't give the right answers. Assuming that the last on the list (Cumulative – can you see another wind farm?) was added later, that certainly helped, as did the second last on the list, Complexity, judging by the majority of Low scores assigned.

All matrices used by wind farm landscape architects are designed to produce one answer; the Visual Impact of any wind farm will be Moderate or Medium.

Most of us are familiar with the meaning of Moderate and Medium. They mean average or middling. So someone reading an assessment of the Visual Impact of a wind farm seeing the description Moderate or Medium would assume "fair to middling" or "nothing to write home about". That is what developers, through their chosen Visual Impact expert consultant, in this case Green Bean Design, want you to think.
Any matrix you develop should, you would assume, have Moderate or Medium as the middle measurement. That implies 3 options eg Low, Moderate and High or 5, eg Negligible, Low, Moderate, High and Extreme. What does the Departmental RAM come up with?
Each of the nine matrix components is measured on a four point scale:
- Very Low
- Low
- Medium
- High

So three of the four options are designed to give a VI rating of ho-hum or less.
One description of this is pro-developer bias, accidental or deliberate.

The next feature you notice is that all nine matrix components are weighted equally (or biased equally if you prefer).
So the key indicator, Distance is as equally important as Visual Cognition, which relates to the portion of the wind turbine structure visible from the receiver location. (the equivalent component is Recognition in the Department's Crudine Ridge Assessment)

Then you see that the Visual Impact of Distance ranges from:
Very Low - Over 3 km
Low - between 2 and 3 km
Medium - between 1 and 2 km
High – Up to 1 km
To quote; "distance in this context is not necessarily about diminishing scale of effect" whatever that means. It is either in the matrix or not.
Assuming it is in, where in the literature are these distances justified for 200 metre high turbines?
Does this explain the Department's current penchant for 3 km?

The ratings for individual residences for Visual Cognition rarely get over 3 in this LVIA as it is always possible that some small portion of the tower is shielded from view. Apparently, views of the tower are more important than the impact of the swept area and in this case the significant increase brought on by the modification.

Note how the component "Cumulative" is conveniently included in this assessment. Most of the residences don't score at all. That's 4 points they can never get. Certainly helps in lowering the overall assessment for a residence. We assume that this component will be excluded when isolated wind farms are assessed, but we've learnt never to assume.

Also notice how no residence scores a 4 for Orientation. I'll defy anyone to measure the orientation of a wind farm to a single degree, because that is what is required for the "Direct" score. It is so easy to choose the option "Partial indirect" instead of "Direct". There's another point gone.
Remember, to get down to Medium, you only have to lose 1 point, on average, from each of the matrix components.
On the other hand, the wind farm will always be in your "Direct" line of sight, if you are looking directly at it.
The Department's definition of Orientation is (Crudine Ridge):

> Relates to the position of a person (at a residential dwelling) and the orientation of the residence toward visible wind turbines

GBD's version (Sapphire) is:

> Describes the position and attitude of receiver (dwelling) toward visible wind turbines

Who or what is looking at the turbines? The resident or the residence?

Overall there is great confusion which might be cleared up if knew in detail what the current RAM was.
The definitions for Elevation in table A.1 make some sense but are quite different to those in table A.5.
If we assume that the definitions in A.1 are valid, who says that an elevated wind farm has up to four times the impact (for that component) of one "at receiver level"? What about when the residence is above the turbine base (up to 75 metres around the Jupiter wind farm)? Do they get negative bonus points? They would be handy for lowering the VI rating

Let us consider the other extreme. Any balanced and logical process would occasionally produce a VI assessment in the Very Low range. Table A4 implies that something related to Very Low should happen 25% of the time. For a 9 component variant, a score of 1 to 9. The minimum score that can be attained under the Department's RAM assessment tool for each component is 1 (except for Cumulative). Therefore the minimum overall score is 8. Then for example, the chances of a wind farm having a Complexity of Very Low, when considered in concert with other components, eg Field of View or Orientation, is nil. Extending this logic the overall VI assessment can never be Very Low.
The RAM is designed to give a medium score, firstly by pushing the overall score downwards by component choice and bias and secondly by pushing upwards from the Very Low/Low quartiles by flawed design. This is precisely the result achieved by GBD for 12 of the 14 residences they chose to evaluate using the RAM. (you occasionally have to rate a VI overall as High, otherwise even a reasonable person would question your method)

Who in the Department approved this matrix? Surely the Department didn't pay good taxpayer's money for it.

Let us now consider GBD's VI matrix in the original EIS. Two of the components in that matrix were:
- Relative number of people and,
- Period of view

The evaluation for residences in most (all?) cases for these two components was:
- Very Low and,
- Varies – potential long term,

respectively.
Without these sham matrix components, the overall Moderate VI would have been impossible to achieve.
The new RAM doesn't seem to cater for those factors. Is this confirmation that the assessment matrix in the EIS was flawed and the resulting Visual Impact assessment equally flawed? Is it not time to revisit those individual assessments and evaluate the VI for this modification using these revisions as a base?

And on it goes.

In summary:
This Departmental tool, as published and used by GBD is biased and misleading and designed to minimise the Visual Impact of a wind farm on surrounding residences and therefore pro-developer.

Proposal:
I have reviewed a number of matrices put up by various Landscape Architects over the last 2 years. All attempt to add some complex quantitative methodology to VI assessment, to relay to the casual evaluator an aura of expertise one assumes.
Another major reason for the development of these complex matrices of course, is to enable Landscape Architects to justify large consulting fees. Earlier I alluded to the breakdown of the nine components into distance and visual.
I propose, very seriously, the Gardner Matrix. It has only 2 components:
- Can you see the damn things? and, if so
- How far away are they?

The latter will vary dependent on the height of the turbines and for 200 metre turbines, using a conservative extrapolation to the Sinclair-Thomas matrix would give:
Dominant impact due to large scale, movement, and number – 0 to 7 km
Major impact due to proximity, capable of dominating landscape – 7 to 12.5 km
Clearly visible with **moderate impact**; potentially intrusive – 12.5 to 18 km

This will give, as we all know but are reluctant to admit, a more realistic Visual Impact assessment which can then be modified should their be some existing vegetative screening shielding the wind farm from the **curtilage** of the residence.
This matrix is available gratis.

Some questions for the Department:

- Why did the Department deem it necessary to develop its own VI assessment matrix?

- In doing so, is it confirming that the matrix used in the original SWF EIS was deficient, and by extension most other matrices?

- Could the Department confirm or otherwise that Green Bean Design is or has been consulting with the Department on the creation of the Refined Assessment Matrix?

- Can the Department explain and justify why developers have access to Departmental tools before they are published and available to the affected communities?

- Will the Department immediately publish the Refined Assessment Matrix or if it is still in draft form put it out for review?

- If GBD has been paid for assistance in development of the Department owned RAM tool, under what contractual terms were they allowed to use it in the SWF Mod 1 EIS and also for subsequent use?

- Under what terms will other developers be allowed to use it?

- As many of the original VI Assessments in the EIS are underestimated, will the Department insist that all 34 non-associated residences be evaluated and the results published using the RAM tool?

Over the last few weeks, the Department has released some documents that can only be described as seriously deficient. eg the new CCC guidelines, the revised EARs, ostensibly for Jupiter but probably the model for future wind farm EARs and now the RAM.
In no case before publication did the Department solicit the opinion of those key stakeholders, the local communities. Surely that tells the Department something. Maybe not.

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