Chapter 9 – Visual Impact measurement

Where Cloustons try to minimize the number of properties visually impacted and further, minimize that impact for each property.

We have some sympathy for Mr Clouston. There are so many properties visually impacted by this proposal, spread over such a wide area. Many of those highly impacted properties were available to be viewed by Mr Clouston from the residence or its curtilage but I can understand that he never got round to it. Unfortunately, a desktop study or a view from a country road sometimes gets it wrong and consultants have to constantly hope, as we are told many times, that the view of the turbines will be interrupted by topography (existing screening within the curtilage should be excluded from potential mitigation factors). .

We also don't have time to check every property or residence or whether a substantial building is a shed or a weekender or indeed a residence. We don't even have time to check whether properties have residential rights across the whole Zone of Visual Influence.
The Jupiter SEARs, even in their watered down form, still require Epyc's consultants to expend a little effort. For example:

> "provide a comprehensive assessment of the visual impacts of all components of the project (including turbines, transmission lines, sub-stations, and any other ancillary infrastructure) on landscape values, scenic vistas, rural townships, non-associated residences (including approved but not yet developed dwellings or subdivisions with residential rights),…"

Have they provided a comprehensive assessment on all non-associated residences? Of course not. Not even close.
Regarding properties in subdivisions with residential rights, there are two such properties (lots 9 and 25) on the Barnet subdivision alone. Both **adjoin** the Jupiter Project Area (PA). Neither has been acknowledged or assessed. Also, there is another one on the Doughboy Downs subdivision (lot 3) on Dog Rock Close and another two on the Roseview subdivision (lot 11 approximately 1.1 kms from turbine 79 and lot 8, high up the slope)

I could enlist the aid of colleagues on the North, South and East of the PA to add to the list. I'd be surprised if I couldn't come up with 20 or 30 or 50, but that is not my job. The SEARs place that responsibility on the developer and the Department is there to enforce the SEARs or reject the proposal. How did it get this far?

Moving on.
We all know that an Industrial Wind Farm has a visual impact on residences and their curtilage, ranging from negligible to extreme. Visual impact studies are not limited to wind farms. All? NSW State Significant Developments require one. Landscape architects have made a fortune from them long before the first wind farm application was submitted.

Clouston Associates is a prominent landscape architect. An examination of their website gives an indication of the projects in which they have been involved, mainly urban.

They have been involved in NSW Major Projects, for example, the Moorebank Intermodal Terminal and the Deadman's Creek bridge.
They are obviously respected by the Department as they were commissioned to do a peer review of the Collector EA, with respect to visual impacts, which had pitted the industry's favourite, Green Bean Design for the developer, against Richard Lamb Associates, who were commissioned by the local residents in rebuttal.
Only recently has Clouston Associates succumbed to the lure of the wind farm developer's dollars, with their acceptance of briefs for the Jupiter and Biala wind farms. Over the many years they have been in business, they have developed an expertise in the evaluation of visual impacts, resulting in a detailed and clear Visual Impact Rating Table (VIRT). Their VIRT is used to evaluate visual impacts of varied industrial projects and is applicable to wind farms, as you would expect.
Their decision matrix focuses on five aspects of visual impact:
- Distance (from the turbines)
- Quantum of view (one turbine or a panorama)
- Duration (do I constantly see the turbines)
- Magnitude of change (what does the wind farm do to the view)
- Receptor sensitivity (how significant is my current view to me)

For each of their five key aspects, Clouston Associates describes various scenarios and assigns an impact rating (**L**ow, **M**edium or **H**igh) to each.

The trouble is, Cloustons keep changing the measurement basis, even between the Biala and Jupiter wind farms EISs, only months apart.
View cone becomes view frame, neither of which is defined in the LVIA.
There is now a time gap between "5 minutes" and a "significant portion of the day" in the Period of View (Duration) Factor.
One of the five aspects is "distance". Why does a 185 metre turbine at Biala attract a Low rating at 8 kms and a 173 metre Jupiter turbine attract a Moderate rating at the same distance?. What Mr Clouston tries to claim as quantitative factors only become so after he has considered his qualitative assessment, which the Jupiter LVIA confirms is questionable in a rural wind farm scenario.
(Mr Homewood from GBD in his "independent" review of the Clouston's LVIA for the Biala wind farm nicely puts the experience of the Jupiter LVIA author in perspective:

> "GBD considers that this results in a relatively high degree of confidence in the comparison of results; however, as the process is based on professional judgement there is an expectation that some degree of variance may occur where interpretation of site specific issues, including the influence of existing screening and the magnitude of visual effects may be subject to an individual's level of visual impact assessment experience and exposure to the assessment of wind farm developments.")

In the Clouston Associates peer review for the Collector wind farm they made the following statement about the visual impact on Collector village:.

> "This lack of consideration of the visual impacts upon the village is considered a shortcoming of the LVIA for the following reasons:
> • The village is located in close proximity to the proposed turbines and wind farm (3.5 km).

• The project site is located upon a dominant ridgeline which creates a prominent backdrop to Collector and which is highly visible from the village."

Given that a wind farm is "highly visible" at 3.5 km, how do you justify a rating of High at 2km maximum and by definition Moderate at 3.5km without arguing that a highly visible wind farm does not produce High Visual Impacts.
The Department must insist that Cloustons share the research that supports these ratings for Distance:
0 – 2 kms - High
2 – 10 kms - Medium
10 – 15 km - Low
Over 15 - Negligible
In anticipation of community input, Cloustons has specifically commented on the unsuitability of the Sinclair-Thomas Matrix re distance impact. Whilst many of their peers would argue, perhaps they would like to comment on Sullivan, Robert G., et. al., 2012. *Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes*. Argonne National Laboratory and the U.S. Department of the Interior, Bureau of Land Management. USA

Why, in criticising the validity of Sinclair-Thomas, did the author not offer something supportive of their case in return, especially in a chapter headed "Previous Distance Studies". They offered nothing.

Also, how do the above distance zones align with:[1]

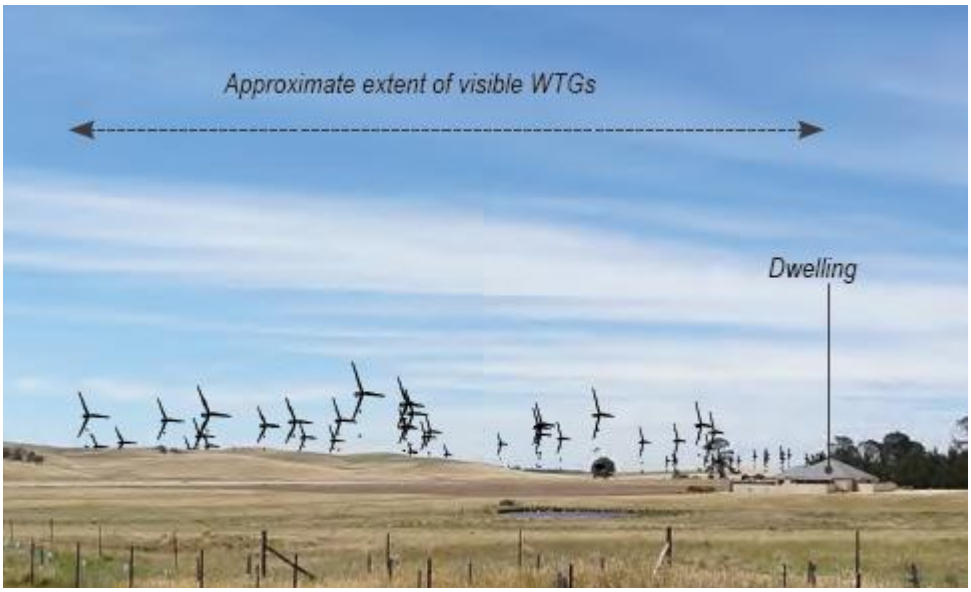
| Distance | Perception | Likely visual impact |
|---|---|---|
| 0-3kms | Highly prominent to prominent feature within the landscape | WTG likely to dominate the field of view and appear large scale. Movement of the blades clearly visible. Potential for moderate to high visibility depending on view location, vegetation, built form etc. |
| 3-6kms | Prominent | Visually prominent - the turbines may appear large scale and an obvious element in the landscape. Blade movement is clearly discernible. Wind turbines clearly visible in the landscape but tending to become less dominant with increasing distance. |
| 6-10kms | Prominent in clear visibility - seen as part of a wider landscape | Noticeable - the turbines are visible but do not necessarily dominate the view frame. Blade movement is visible but the turbines appear less noticeable within the field of view as distance increases. |
| 10-20kms | A small element in the landscape | Wind turbines noticeable but tending to become less distinct with increasing distance. Blade movement may be visible but becomes less discernible with increasing distance. |
| 20-30kms | A minor element in the landscape | Element within distant landscape - turbines are indistinct and form minor elements within a broader landscape. Movement of blades is generally indiscernible. |

*Table 4.1 - Effect of distance on turbine visibility*

**Private Viewpoint Assessment**.

The first private receptor evaluated is J157 (Viewpoint 10, LVIA P 80).

[1] LVIA. Page 47



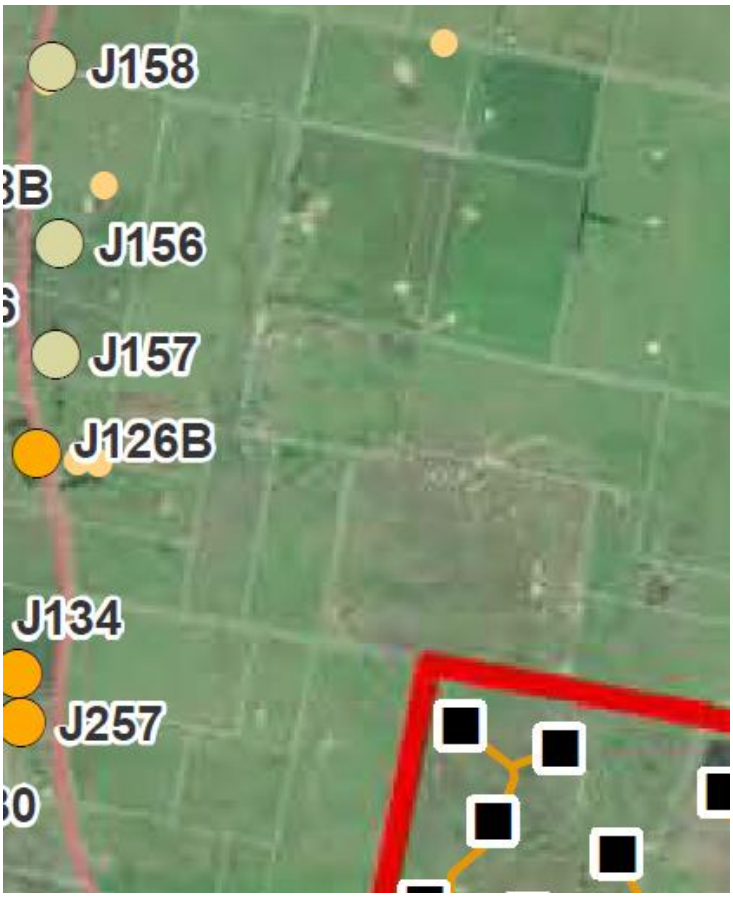

J157 was judged by Cloustons from this position on the road to have a visual impact of Moderate/High and after the application of the magical vegetative mitigation was deemed to have a visual impact rating of Moderate/Low. Cloustons advise that this was a "worst case scenario".

**The assessment of this residence alone should disqualify Cloustons as a believable evaluator of wind farm Visual Impact**.

The photograph, if taken from the residence, would show the turbines closer and more prominent. Cloustons list the distance to the nearest turbine (from the viewpoint?) as 2.4 km. ERM advises that the residence is 2104 metres from the nearest turbine,[2]even closer from the curtilage, even closer after micrositing. The line of screening trees was there before the recently built residence. Note, there has been no attempt to plant additional screening to block out the view that the Jupiter wind farm will destroy. Also a view from the clearly defined curtilage of this property would most likely see most of the turbines in the rest of the northern precinct (Jupiter Central as we call it)

This is also a clear example of how misleading these "representative" viewpoints can be. This viewpoint covers properties J158, J156, J157, and J126B. J158 is the furthest away from a turbine. J126B is the closest. The viewpoint is between residences J156 and J157. (Viewpoint GPS coordinates would appear to be missing from the EIS). The associated and misleading wireframe WF 10, LVIA Page 207, was taken from J158, as indicated. With J158 being the furthest residence from turbines in this representative group, how can you justify that this wireframe is representative.

[2] Main Report. Page 4.9




So, if we had taken the closest residence (under 2km) of this representative group, then DISTANCE would have been HIGH in the matrix even under Cloustons flawed matrix distance factor.

For an overall assessment of the Visual Impact from this private viewpoint, Cloustons combines the individual factors.

| RECEPTOR IDENTIFICATION | RECEPTOR SENSITIVITY | MAGNITUDE | | | | |
|---|---|---|---|---|---|---|
| | | DISTANCE | QUANTUM OF VIEW | PERIOD OF VIEW | MAGNITUDE OF CHANGE | SUMMARY OF RATINGS |
| 10 | H | M | H | M | H | M |

| Overall Visual Impact Rating | MODERATE/HIGH* |
|---|---|

(Others will comment on the totally flawed nature of this matrix and its individual components. For me to do so would be repetitive)

If "Distance" is HIGH at 3 km at least, as it should be, then this factor changes for this viewpoint. As Clouston's "Period of View" definition for Moderate is 1 to 5 minutes, this factor must be HIGH as well for all Private Viewpoints (and most public ones as well)

Those of us who are familiar with this discrete area know the visual impact on at least some of the 4 residences can only be classed as HIGH and vegetative mitigation is not a viable option.
In commenting about J157 regarding vegetative mitigation, Cloustons said:

> "Planting would need to be in close proximity to the eastern façade of the dwelling and to a height of 10m+. Screening would diminish the panoramic nature of the existing view but likely screen views of visible WTGs"

I have trees planted nearly 20 years ago that will take another 20 years to get to 10m, let alone 10m+ (whatever that means)
**J157 is another mandatory stopoff for PAC members prior to their public meeting**.

In cases other than the blatantly obvious, eg Roseview, it stands to reason that if you combine residences into a representative viewpoint, then the result will average out the individual assessments. High or Extreme impacts will be lowered and Low or Negligible impacts will be raised. This latter outcome doesn't matter as the only objective is to lower the High and Extreme impacts.

This LVIA is, and can only be, all about minimizing the Visual Impacts on hundreds of residences and properties with residential rights in the ZVI. The rest is wadding.

**Visual Impacts on non associated residences**.

Cloustons gives a table at the end of the LVIA Part 1 (Appendix A) whereby all (and only) 140 residences within 3 kms of a turbine are assessed. Let us look at how the four residences in Private Viewpoint 10 fared. Remember, through the magic of averaging, this viewpoint was assessed as Moderate/High.
In the individual assessment, two of the residences were assessed as Moderate/High and the other two downgraded to Moderate. If you can downgrade two, why wouldn't you upgrade the other two to High, as they should be, and arrive back at the viewpoint average?

**So, you combine 4 residences so you can lower the Visual Impact, then you separate them so you can lower the Visual Impact again**.
I expect this from wind farm developers, but not from the Department. Why do you let them get away with this nonsense? And you wonder why this community has broadened its critical focus from the Jupiter developer to include the Department. As if, for starters, watered down SEARs and pro-developer Guidelines weren't enough.

Having spent years developing a matrix methodology for assessing Visual Impact on residences, what method does Cloustons adopt for the properties in the Jupiter ZVI?

> "Appendix A provides a detailed assessment of the expected unmitigated and mitigated visual impacts on all dwellings within 3km of a WTG. Initially, a desktop assessment on these dwellings was undertaken. A site visit was then undertaken to establish a validated impact rating on each dwelling rated as receiving a Moderate/High to High desktop unmitigated visual impact.
> Where access to a dwelling was unavailable, an assessment was taken from the closest publicly accessible location with views to that dwelling. If visual accessibility was not available or the desktop assessment could not estimate the expected visual impact (eg. where screening vegetation height was unknown), a worst case scenario rating has been given. It should be noted, therefore, that this detailed assessment is conservative and some visual impact ratings may in reality be less than recorded due to local topography and the presence of screening vegetation."

**In other words, they guessed**.

The heading of the relevant column in the table in Appendix A states:
"Expected Visual Impact Rating" which Cloustons expands to:
"The predicted visual impact rating for the dwelling" (emphasis added)

**This community, and the Department, surely, needs something more concrete than the expectations and predictions of someone paid by a developer**.

Remember, Cloustons are currently assessing the Visual Impacts from only their second Australian wind farm and have no experience assessing the visual impacts on residences less than 2kms from a turbine for an Australian wind farm, of which there are 63. (Biala had no non-associated residences within 2km of a turbine).

Comments on individual residences

I have detailed above the errors associated with J157. Cloustons uses the same ratings and comments for J156. Therefore, all the same errors are repeated.

Why did the Department allow Cloustons to limit their assessment to residences less than 3km of a WTG? This is clearly contrary to the revised SEARs.
Why did the Department allow Cloustons to ignore all properties with residential rights in clear contravention to the revised SEARs?

This assessment may be "conservative" by Cloustons standards but that is not realistic.

We are not told how many HIGH and MODERATE/HIGH assessments Cloustons started off with, but for the 59 that remain, 39 were evaluated from the road or the desktop. Didn't try too hard to get accurate assessments did they? Maybe they didn't want to. Why did the Department let them get away with it.

Whilst not necessarily the responsibility of the author of the LVIA, is the Department confident that the required consultation has taken place with the owners of the properties within 3 km of a turbine as per the revised SEARs. Remember, there are 140 properties in this group, many of which will suffer "significant Visual Impacts".[3] If not, why was the EIS released without this departmental confidence and what corrective actions is the Department planning to take?

**Vegetative Mitigation**

I and others have pointed out the futility and the dangers of new vegetative screening as suggested in this LVIA. A bushfire (or wildfire as the Department calls ours) being stopped 800 metres from your residence certainly focuses the mind when it comes to flammable vegetation within its curtilage. Many of us will modify our existing garden layout. No-one can be expected to maintain existing screening vegetation within the curtilage of the residence. What seemed like a good garden design idea twenty years ago which now fills the gutters or a bad design by a previous owner will be modified or removed over the years to suit building extensions, changed or additional infrastructure within the curtilage and just plain danger. Or it will selectively die as global warming overtakes us.
Therefore, existing screening vegetation within the curtilage should be ignored as a mitigation measure and topography should remain as the only mitigation factor within that curtilage.
Garden design and infrastructure within the curtilage should be dictated by the desires of the owner and not the needs of a developer.

We look forward to O'Hanlon's honest appraisal of the deficiencies of the Visual Impact assessments put forward by Clouston Associates. Anything less than a critique resulting in the rejection of the Jupiter DA on this issue alone will raise many further questions.

[3] The revised SEARs require:
"including consultation with all landowners of non-associated residences within 3 km of a proposed turbine where significant visual impacts are predicted to identify potential approaches to mitigate any adverse impacts, including consideration of negotiated agreements"