A Review of the Property Devaluation section of the Biala EIS.

Overview

Newtricity's consultant, ERM, effectively acknowledges that lifestyle properties are devalued by wind farms in their vicinity and then proceeds to cite a small, selected group of mainly discredited studies in an attempt to claim there is no adverse effect.

Two of the studies cited by ERM (Hives, 2008; Dupont and Etherington, 2009, for NSW Valuer General) actually provide evidence of wind farms devaluing lifestyle properties, but that was totally ignored by ERM.

This surely is a case of providing misleading information to the Department. Either it was done intentionally or through incompetence. In either case it demonstrates that the Department cannot rely on **any** information provided by ERM, whether about property devaluation or any other matter.

The Department should reject the EIS and tell Newtricity not be come back until it has used a consultant the Department can rely upon to not present false or misleading claims

Detailed Analysis

This section (15.3.3) of the EIS was written by Environmental Resources Management (ERM).

ERM supports our contention in little over one page, specifically:

Lifestyle properties are devalued by the presence of Industrial Wind Farms.

In the Biala EIS, on numerous occasions, in similar terms, ERM tells us how:

> **"The remoteness of the WTGs has assisted in reducing the level of visual impact on residential dwellings in proximity to the PA"** (Project Area)

ERM therefore agrees that residential dwellings are impacted visually by WTGs which can only result in an impact on property prices and that's without considering the noise impacts.

With their inadvertent support, they join all those entities (the Department, the PAC etc) that contend that lifestyle properties are devalued in the presence of wind farms.

They start and finish the section 15.3.3 **"Decrease in Property Values"** with reference to the NSW Valuer General's study much beloved by pro-wind farm consultants as it has a few statements ideal for cherry picking.
To start,

Duponts and Etherington (2009) Preliminary Assessment of the Impact of Wind Farms on Surrounding Land Values in Australia: NSW Department of Lands, Prepared for NSW Valuer General, August 2009.	The study assessed eight wind farms across NSW and Victoria and based on the analysis, no quantifiable effect on property values was identified. Although a small number of rural residential properties (lifestyle properties) reported lower than expected property sales prices, uncertainty remains as to whether this was a reflection of the wind farm or other market factors. Furthermore, no evidence produced from the study suggested that the underlying land use of the property was affected (i.e. agriculture) and no decline in sale prices were evident for rural properties located in nearby townships with views of the wind farm.

To summarise:
The study is now 6 years old.
Capital wind farm was one of the eight, but no properties surrounding Capital were included in the study. Similarly for Cape Bridgewater.
In total, 45 properties comprising broad acre farms, properties in rural townships and lifestyle properties were chosen for their proximity to the remaining 6 wind farms.

Of the lifestyle properties, 4 showed value decreases of 6%, 24%, 25% and 27%.

The only reason that the study authors introduced uncertainty into the argument was that they were pitching (unsuccessfully) for a more in-depth study. After all, they are real estate agents

Statements in this study were made that the data did not support. eg,

> **"However, in most locations there were other lifestyle properties which showed no reduction in value."**

This statement, which the data does not support, morphed within the document to:

> **"There were some possible reductions in sales prices identified in some locations alongside properties whose value appeared not to be affected"**

which was even more unsupported by the data.

ERM then finishes the one page review of property devaluation by quoting from the Yass Valley recommendation by the NSW Department of Planning.

> *"The Department acknowledges that, in relation to impacts on land values, the NSW Valuer-General commissioned a report on the impacts of wind farms on land values in Australia. The report states as its principal finding, based on analysis of previous studies and its own investigations, that the majority of wind farms erected in Australia appear to have had no quantifiable effect on land values."*

Firstly, the Department has no in-house specialists on the topic, but whoever wrote it knows how to use words in the best Departmental fashion. They didn't "agree" with the findings, they "acknowledged" them.

Also, notice the multiple uses of the term "land values". The NSW Valuer General is only interested in "land values" ie. the Unimproved Capital Value. Local lifestyle properties will normally have a recently constructed residence, built to take advantage of the terrain and the view, with no screen plantings to destroy that view.

Besides, that statement was certainly not the "principal finding". From page 3 of the report in the Executive Summary:

> **"The main finding was that the wind farms do not appear to have negatively affected property values in most cases. Forty (40) of the 45 sales investigated did not show any reductions in value. Five (5) properties were found to have lower than expected sale prices (based on a statistical analysis). While these small number of price reductions correlate with the construction of a wind farm further work is needed to confirm the extent to which these were due to the wind farm or if other factors may have been involved."**

As said previously, ignore the last sentence. Aside from the fact that the comment that "other factors might be involved" could be said about any of the 45 properties, including ones whose prices were said not to be reduced, Bob Dupont is a real estate salesman and can't resist a pitch.

The Department's statement actually comes from the conclusion on Page 55 but as the rest of the conclusion is at variance with the data in the report, why should you believe any of it. The first part of the conclusion reads:

> **"From our analysis of previous studies and our own investigations, the majority of wind farms erected in Australia appear to have had no quantifiable effect on land values. A relatively small number of "lifestyle" type properties located very close (less than 500 metres) to wind farms in Victoria were found to have lower than expected sale prices (based on a statistical analysis), and it is possible that audio and visual aspects of wind farms contributed to this."**

From the data in the report, the 4 lifestyle properties were 400 metres, 2.1 kms, 5 kms and 6 kms from the nearest turbine. So 3 of the 4 affected lifestyle properties were much more than 500 metres from the relevant wind farm but the report published a statement factually, and drastically, contrary to its own data.

In a subsequent presentation to the CCC for the Coopers Gap Wind farm (June 20, 2013), Bob Dupont extended this to 1000 metres, but it is still wrong based on his data. The last part of that sentence gives a real estate agent's scientific opinion on visual and noise impacts.
I twice questioned parts of this report by email, including the "500 metres" statement, with Bob Dupont but he declined to rebut the issues raised.

Remember that the NSW Wind Farm Guidelines (draft) under the section headed **Property Values** require:

> **"Relevant considerations may include (but are not limited to):**
> **for the area including whether the area has been identified for future subdivision**
> **- relevant studies and credible research on wind farms and property values**
> **- whether other impacts such as noise and visual impacts are considered to be within acceptable limits"** (Page 22)

NOTE: In most research, the visual impact factor is studied eg. can you see them or not and how far away are they. ERM has provided references to studies below that do that. This is the preferred wind industry model. The other key issue that communities have with respect to property devaluation is the impact of noise and consequently health. ERM has provided little information on the noise/devaluation model, even though the NSW Guidelines require it as above, primarily because the wind industry avoids it like the plague. Hoen et al does investigate a "nuisance stigma" within which audible noise could be included.

ERM, in response, states (Page 15-8) what it has provided:

> *Table 15-1* provides a summary of studies undertaken for Australia and internationally on the effects of wind farms on property values.

No they haven't. They cherry picked 5 of the many available. In no way did they provide "a summary of studies undertaken for Australia and internationally…"

So, in between these two references to the Valuer General's study, ERM quoted the following 5 "relevant studies and credible research":

1. Henderson and Horning (2006)

Henderson and Horning (2006) *Land Value Impact of Wind Farm Development: Crookwell NSW.*	The study analysed 78 property sales spanning a 15 year period from 1990 to 2006 within a 6 km viewshed of the Crookwell Wind Farm. No reductions in properties were reported as part of the assessment.

Their inadvertent blooper "No reductions in properties were reported…", is prophetic. Very few broad acre farms in the district have been subdivided into lifestyle properties as a result of the wind farm activity in the Crookwell region.
ERM personnel did not read the report.

Nowhere in the report does it mention a sample of 78. Maybe someone has counted up the properties in the appendix and everyone has used it from then on. Unfortunately if so, the counter doubled up and still got it wrong. There were 58 property sales in the Crookwell area in the study period within 6km of the site. They did not **analyse** them all. From the 58, they extracted 16 for detailed study (on which they based their conclusions).
How did they choose them? The report does not tell us.
Additionally:
- Crookwell wind farm opened in 1998. It was the first in NSW. Little research had been done at that stage on health/sound issues. Wind farms were cute.
- The study was done in 2006 – it is now 9 years old.
- It is written by real estate agents for a renewable energy company (Taurus Energy - now Epuron)
- 8 turbines, 600 kW each, 67 metres tall (45 M tower plus 44 M diam blades.) Compare this to the Biala WTGs at 185 metres. Crookwell turbines at 67 metres are much smaller than the **towers** of Biala (110 metres). The swept area of the blades (the bit that visually impacts us the most) for Biala turbines is nearly 12 times those at Crookwell.
Dinky turbines in a dinky wind farm.
- The wind farm is on a single property with an absentee owner. The surrounding land is "used primarily for stock grazing", so this is a study about broad acre agricultural land. The wind farm was proposed before surrounding rural properties had a chance to be subdivided into lifestyle allotments
- There is nothing scientific about the study at all. The authors are exploiting their valuing skill using the "before and after" and "comparable sales" methods. They specifically excluded "Multiple Regression Analysis" due to sample size which poses the question:
What statistical method was used here:

> **"We then compare the affected and non affected sales over time to determine if a correlation exists between the Wind farm development and land value movements."**

Or was it wet finger in the air correlation.

There is nothing in the study that gives any detailed methodology on how they got from the detailed sales data to the conclusions. Only one sale in the detailed sample is to a "tree changer" Others were to locals.

NOTE: A real estate agent (who no doubt moonlights as an acoustic consultant) did a site look-see and decided noise wasn't a factor.

> **"Site investigations indicate that shadow effects and noise were not noticeable on adjoining properties except a concessional allotment in the north eastern corner of the subject."** sic

2. Hives, A 2008.

Hives (2008) *Wind Farms: The Local Experience*, Presentation at the Australian Property Institute (API) Country Conference.

The study assessed the 12 individual property sales surrounding the Waubra Wind Farm near Ballarat, NSW. The study concluded that:

- Landowners involved in the Project experienced an increase in land value;
- rural property values were unaffected; and
- lifestyle properties in the vicinity of the township were most vulnerable, however the reported decline in sale prices may have been driven by other market factors.

You shouldn't quote studies that can't be found online at the time of writing.
So, ERM make the case with three conclusions above:

1. Obvious but irrelevant
2. The comment relates to **town, rural-residential and lifestyle blocks and farming land.** (12 in total - see below).

3. We agree, but there we go again with the "decline could be due to other factors" fallback strategy.

However, from an unpublished study "A Tale of Two Windy Cities: Public Attitudes Towards Wind Farm Development" Bond 2009:

> **"A property valuer in Victoria has been studying the impact of wind farms on property values. Hives (2008) states that the more intrusive the wind turbines in "lifestyle" terms, the bigger the impact on price. In some costal** (sic) **areas of Gippsland with high lifestyle value, property values had fallen by as much as a third.**
> **However, in other areas where farming was the focus the impact on land value had been insignificant and in cases where there was an income stream from towers, the land price actually increased. At Waubra near Ballarat, where a third of the proposed 128 wind turbines have now been built, Hives said that the impact on land values of town, rural-residential and lifestyle blocks and farming land had been mixed. But this analysis was based on only twelve properties. He does point out that with the market being os** (sic) **strong in recent years that the effect may be masked."**

And from the Valuer General's study, much favoured by ERM:

> **"Hives (2008) concluded that lifestyle values had the greatest potential to be affected as a large part of their value is typically derived from the aesthetic qualities of the surrounding environment."**

3. Hoen et al 2009

Hoen, B; Wiser, R; Cappers, P; Thayer, M & Sethi, G (2009) *The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis,* Ernest Orlando Lawrence Berkeley Laboratory, December 2009.	The assessment involved 7,500 sales of family homes within 16 km of 24 wind farms across nine states within the United States of America (USA). No evidence of widespread property value impacts in communities surrounding wind energy facilities was reported.

What ERM didn't tell us.

From the study:

> ***"3.2.1. Tabular Data***
> **Berkeley Lab obtained tabular transaction data from participating counties containing 7,459 "valid" transactions of single family residential homes, on less than 25 acres…"**

Footnote 28 says:

> **"Single family residences on more than 25 acres were considered to be likely candidates for alternative uses, such as agricultural and recreational, which could have an influence on sales price that was outside of the capabilities of the model to estimate. Because all records were for parcels that contained a residence, the model did not contain any "land-only" transactions. Further, none of the transactions provided for this research were for parcels on which a turbine was located."**

So, the study specifically excludes the type of lifestyle property near the Biala wind farm

This was further reduced to 15 acres (6 hectares) in the follow-on study. Hoen et al 2013

> **"The 15 acre screen was used because of a desire to exclude from the sample any transaction of property that might be hosting a wind turbine, and therefore directly benefitting from the turbine's presence (which might then increase property values)."**

A very readable critique of this study is available at
http://www.bpwtag.ca/hoen-critique.pdf
This critique also provides links to a number of other negative reviews. For instance,
Lisa Linowes of the Industrial Wind Action Group – better known as windaction.org. She had this to say about her critique:

"We worked closely with an appraiser experienced in regression analysis and hedonics in developing our comments. Given the flaws in Hoen's approach, we are confident that a qualified appraiser with experience in regression techniques and the problems of hedonic analysis will effectively counter Hoen's conclusion. You may be interested to know that neither Hoen or the others who were part of his research team have any experience in real estate appraisals or the correct application of regression techniques for determining house value."

4. Canning, G & Simmons, L (2010)

Canning, G & Simmons, L (2010) *Wind Energy Study - Effect on Real Estate Values in the Municipality of Chatham-Kent, Ontario,* Report prepared for the Canadian Wind Energy Association, February 2010.	The study in Ontario, Canada reported that where wind farms were clearly visible, there was no empirical evidence to indicate that rural residential properties reported lower sale prices than similar residential properties within the same area that were outside of the viewshed of a wind turbine.

This study has not to our knowledge been used before in a NSW EIS. The first thing to find out is who commissioned the study. You guessed it, the wind industry, namely CanWEA (the Canadian Wind Energy Association, Canada's equivalent of our very own Clean Energy Council) That in itself does not indicate bias, but let us be aware of who pays the bills.
This study has fatal flaws, among them being:
- it only considers the impact of visibility
- even then this is narrowed to "can you see one or more turbines" Yes or No.
- distance from a turbine was not considered to be a studiable factor. In fact some properties in the control group were closer to the turbines than the study group properties.
- the extraordinary small sample (83, of which the study group numbered 20) makes regression analysis very suspect.
- sales were only considered which happened after the wind farm was constructed
- at the time of the study another 165 turbines had been approved over a number of projects (but not built). Maybe the control group's values had already been impacted by these wind farms.
- properties could meet the yes/no criteria for the control group if **"the view was sheltered either by bush lots or tree rows"**
- "All of the comparable sales were inspected from the roadway"

From table 1, where "lotac" is the "lot size in acres", you can see that these rural residential properties were not as we are used to (typically 100 acres). The study excluded properties in hamlets or towns.

id	sp	bsmntfin	gar	loc	cond	watinf	age	lotac	hsesf.00s	viewshed3
1	96000	none	garage	3	3	1	30	0.373	17.85	avg viz
3	124000	none	garage	1	3	1	49	0.744	10.73	avg viz
4	79000	none	garage	1	3	1	44	0.625	7.92	no viz
5	174000	none	garage	1	5	1	97	0.920	23.26	no viz
6	99500	none	garage	1	3	1	98	0.497	12.70	no viz
7	120000	none	none	1	3	1	82	1.311	15.14	no viz

5. Renewable Energy Project (2003)

Renewable Energy Project (REPP) (2003) *The Effect of Wind Development on Local Property Values,* Renewable Energy Policy Project, May 2003 (US Government).	More than 25,000 records of property sales across the USA in the vicinity of wind farms were analysed. The study concluded that there was no statistical evidence that property values within the viewshed of a wind farm, were affected by wind farm developments.

Things are getting desperate if you have to use a 12 year old study.
This is the landmark (and unique) study that concluded that property prices went **UP** around wind farms.

The paper has been widely discredited especially on its statistical methods. Tellingly, from the review by Hugh Kemper, June 1, 2004:
"It is noteworthy that this study does not answer the basic question of how wind turbines affect property values. George Sterzinger (primary author), executive director of Renewable Energy Policy Project (REPP), admitted as much in response to critics who stressed that the study contains no proof that wind farms were the reason for the changes in property values: 'We have no idea'…noting REPP did not have enough time or money to answer that question. (Cape Cod Times 20/06/03)".

That's it. They led with their best 6. It would be hard to pick a weaker group of studies to support their case.
Then ERM had the gall to say:

> **"A review of <u>available</u> literature did not find a correlation between declining property values in proximity to wind farm developments" (my underlining)**

<u>Conclusion</u>
An appalling piece of scholarship by ERM which does not attempt to answer the requirements of the Guidelines through the DGRs.
As most entities know, eg
- The Department (why would they recommend purchase of unsaleable properties)
- Developers (why would they purchase unsaleable properties)
- The Valuer General (why would they lower rateable valuations)
- Some members of the PAC (why would they implore the Department to resolve the issue)
- The real estate industry
- The current owners and potential buyers

and so on,
properties, especially lifestyle properties, are devalued by the presence of wind farms and more particularly through visual and noise pollution.

Inadvertantly, ERM has proved that, despite the quality of the submission.

And finally, having feverishly told us that wind farms have no impact on property prices, ERM states (Page 15.12):

> the Proponent will consult with local and regional realtors periodically in order to identify trends or changes associated with wind farm impacted properties to determine a correlation between the Project and property values in the region.

Why?

<u>Recommendations:</u>

The Department should reject the EIS and tell Newtricity not be come back until it has used a consultant the Department can rely upon to not present false or misleading claims

If the Jupiter EIS, currently being reviewed by the Department, contains a property devaluation section as poor as this one it should be deemed not ready for public review.

That the Department accepts the proponents offer (should a resubmitted section on property devaluation still contain it) to do an ongoing study of the impact of wind farms on property values in the region (including Gullen Range, Capital etc) and builds the requirement into the conditions of approval including:

- to make it easy on the proponent, that only lifestyle properties need be studied.
- that the Department, not Newtricity, commission the researcher to do the work, which must cover all sales **and** attempted sales.
- that all data and results are published.

- that the vendors of any residences shown to be devalued by the Biala wind farm be compensated.

Community Consultation

This is not meant to be an all-encompassing critique of the Community Consultation process. I'll leave that to others.

I note from Section 7.5.1

> During the public exhibition period, there are further opportunities for the community to engage with the Proponent, and the expert consultants that undertook the specialist technical assessments supporting the EIS. A community information session will coincide with the public exhibition period. This will provide the community with an opportunity to meet with the representatives of Newtricity and technical specialists to discuss the EIS process; learn about the Project and the approach undertaken to assess project benefits and impacts.

I went to this recent community information session. I specifically wanted to raise some issues with the experts from Clouston Associates on Visual Impacts, DNV GL on noise and shadow flicker and Fulcrum 3D on photomontages. None of those technical specialists were present. I am past the stage of hearing ERM generalities, especially now that the author of the Biala EIS is no longer associated with the project. Not a total waste of time though. I did have another delightful conversation with Newtricity's sole employee, Annmaree. Too pleasant and honest for the wind farm business.