Chapter 10 - Biodiversity.

Where Epyc further threatens a threatened species (and I'm not talking about lifestylers)

The Jupiter Revised EARs (and identically the original DGRs) said, in the Biodiversity section, that the Jupiter EIS **must**:

> "identify threatened species, populations and communities listed under both State and Commonwealth legislation that have the potential to occur on site……. threatened fauna species including the 43 identified in the DGR Request (particularly Glossy Black Cockatoo (*Cathyptorhyncus*) & the koala (*Phascolarctos cinereus*))"

The Department listed as the most important threatened fauna species, the **Glossy Black- cockatoo**, even of greater importance than our iconic koala.

As the Glossy Black-cockatoo has a feeding range of 10 kms and as there are feeding locations both within and surrounding the project area, the impact of the Jupiter wind farm on this threatened species must be considered both on and off site.

The Department acknowledges that:

> "the glossy black-cockatoo is listed as vulnerable in NSW under the *Threatened Species Conservation Act 1995"*

In the EIS, ERM's specialists noted:

> "Glossy Black-Cockatoos were sighted foraging, resting, and flying below canopy height within woodland in the Study Area. Evidence of the species foraging was recorded in the majority of areas where Black She-oak existed. All forest and woodland areas containing Black She-oak are presumed to be suitable foraging habitat for the species."

When it comes to impact measurement, consultants, whatever their speciality, seem to sing from the same hymn sheet.
Their assessment matrices are flawed.
Others will point out the developer bias in measuring Visual Impact.
The impact methodology on flora and fauna pursued by ERM uses one matrix for the species and another for the habitat (see below)[1].

The aim, once again, is to end up with a moderate impact.

ERM does this, as Cloustons similarly does with Visual Impact, by having three of the ratings on each of the horizontal and vertical four point scales as medium or less. The overall impact scale is somewhat better than Clouston's Visual Impact scale in that it has one of the 16 possible impact results labeled "Critical", but because of the scale bias and the descriptions, it would be impossible to achieve this rating within a wind farm except for a species thought to be extinct.

[1] Page 60, Biodiversity Assessment. Part 1

Table 4.16 Impact Significance Ratings for Flora and Fauna Species

Baseline Matter Sensitivity/ Value			Magnitude of Effects on Species			
			Negligible Effect is within the normal range of variation for the population of the matter.	Small Effect does not cause a substantial change in the population of the matter, or other matters dependent on it.	Medium Effect causes a substantial change in abundance and/or reduction in distribution of a population over one, or more generations, but does not threaten the long term viability/function of that population, or any population dependent on it.	Large Affects entire population, or a significant part of it causing a substantial decline in abundance and/or change in and recovery of the population (or another dependent on it) is not possible either at all, or within several generations due to natural recruitment (reproduction, immigration from unaffected areas).
	Negligible	Species with no specific value or importance attached to them.	Not significant	Not significant	Not significant	Not significant
	Low	Restricted range or locally endemic matters.	Not significant	Not significant	Minor	Moderate
	Medium	Matters listed as Vulnerable under NSW legislation. Nationally important numbers of migratory, or congregatory species.	Not significant	Minor	Moderate	Major
	High	Matters listed as Critically Endangered or Endangered under NSW legislation, matters protected under Commonwealth legislation. Internationally important numbers of migratory, or congregatory species and key evolutionary species.	Not significant	Moderate	Major	Critical
		linkages in the locality.				

Table 4.17 Impact Significance Ratings for Habitats

Baseline Matter Sensitivity/ Value			Magnitude of Effects on Habitats			
			Negligible Effect is within the normal range of natural variation.	Small Affects only a small area of habitat, such that there is no loss of viability/function of the habitat.	Medium Affects part of the habitat, but does not threaten the long-term viability/function of the habitat.	Large Affects the entire habitat, or a significant proportion of it, and the long-term viability/function of the habitat is threatened.
	Negligible	Habitats with negligible interest for biodiversity.	Not significant	Not significant	Not significant	Not significant
	Low	Habitats with no local designation/recognition and that hold some (but not unique) importance in the landscape.	Not significant	Not significant	Minor	Moderate
	Medium	Habitats for matters listed as Vulnerable under NSW legislation. Nationally important numbers of migratory, or congregatory species. Landscape linkages rare in the locality.	Not significant	Minor	Moderate	Major
	High	Habitats for matters listed as Critically Endangered or Endangered under NSW legislation, matters protected under Commonwealth legislation. Internationally important numbers of migratory, or congregatory species and key evolutionary species. Important landscape linkages in the locality.	Not significant	Moderate	Major	Critical

So, for the Glossy Black-cockatoo, we would expect to see each of these biased matrices used in the assessment process. As I have said before, you are about to be disappointed.

The assessment is below. The assessor has combined three potential impact scenarios:
- Individual mortality
- Habitat degredation, and
- Habitat alienation

Why were the two individual assessment matrices not used? If they were, why are we not shown their contribution to the assessment?

<u>Can you see all the mediums and moderates</u>?

None of the proposed mitigation measures will have any positive effect on the key issues, turbine mortality and habitat alienation. Few, if any, of these mitigation measures will be listed in the Conditions of Consent.

Ecological Feature/Value	Potential Impact	Sensitivity	Magnitude	Initial Significance Rating	Proposed Mitigation Measures	Residual Magnitude	Residual Significance Rating
Threatened Fauna Known to Occur in the Study Area							
Birds							
Glossy Black-Cockatoo (*Calyptorhynchus lathami*)	Individual mortality; Habitat degradation; Habitat alienation	Medium	Medium	Moderate	- HBTs will be avoided through infrastructure micrositing with involvement from a qualified ecologist. - A Bird and Bat Monitoring Plan will be developed and implemented. - Pre-clearance surveys will be undertaken to determine if roosts, nests or dens are present or in use in any trees proposed for clearing. When identified a qualified ecologist experienced in tree clearance should be present when HBT are being removed to mitigate any impacts to fauna. - A tree hollow replacement ratio will be identified and implemented as part of the CEMP. - Laydown or temporary disturbance areas will be located in already disturbed areas to avoid any unnecessary clearing of fauna habitat. - Environmental Compliance Manager or field officer qualified in the handling of fauna to be present on-site during clearing to capture and re-release fauna (where appropriate). - Measures to reduce fauna mortality on access roads will be developed and implemented, including speed limits and appropriate signage.	Medium	Moderate

Local wind farms and the Glossy Black-cockatoo

In 2006 as part of the approval process of the Capital wind farm, a group of turbines commonly known as the Kalbilli cluster were removed from the project.

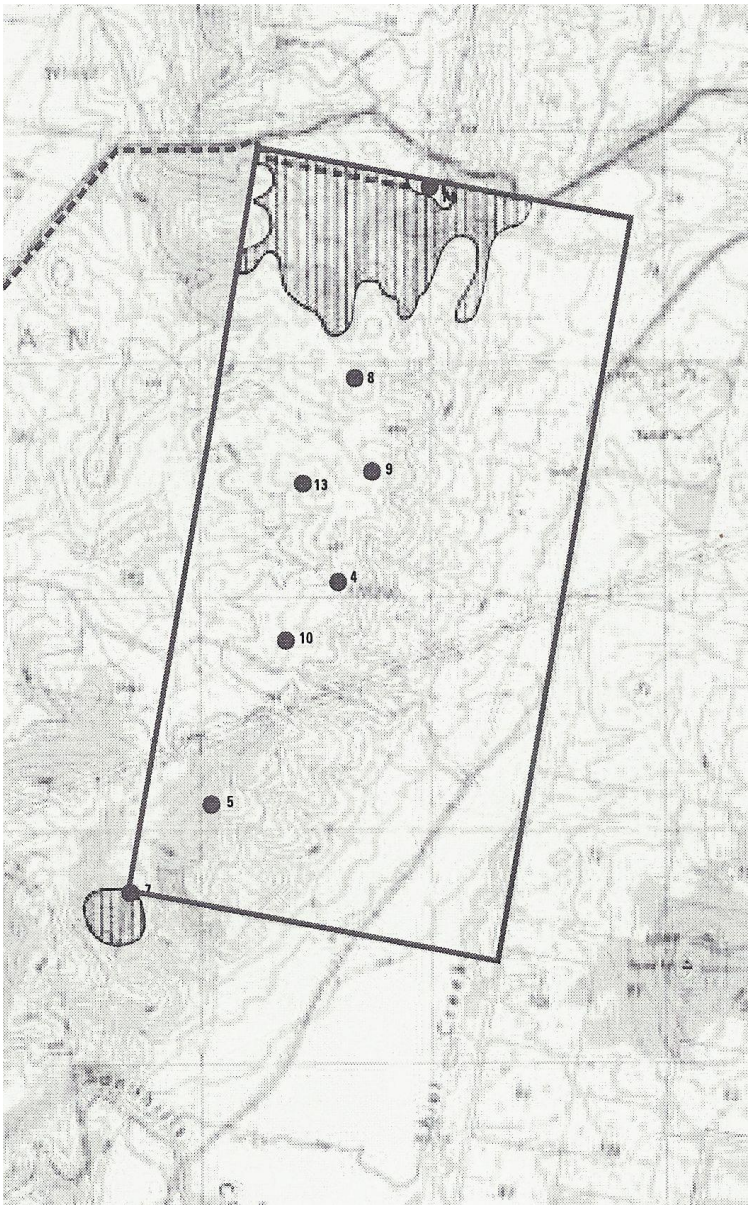
Kevin Mills and Associates, the consultant responsible for the fauna and flora assessment included in their description of the Kalbilli turbine group:

> "The Northern turbines and the most southerly turbine are near stands of Black She-oak, food trees for the threatened Glossy Black-Cockatoo. Evidence of the presence of this bird species was found in several locations, in the form of chewed cones discarded below the trees."

The Kalbilli property is to the west of the Jupiter Project Area.

The primary reason given for the removal of the Kalbilli turbines from the Capital project was the presence of the Glossy Black-Cockatoo habitat.

Below is the layout of the Kalbilli turbine group and the Glossy Black-Cockatoo habitat. The Glossy Black habitat is cross-hatched.



Kalbilli Turbine 4 was to be approximately 4.2 kilometres west of the proposed Jupiter turbine 87. ie. well within feeding range.

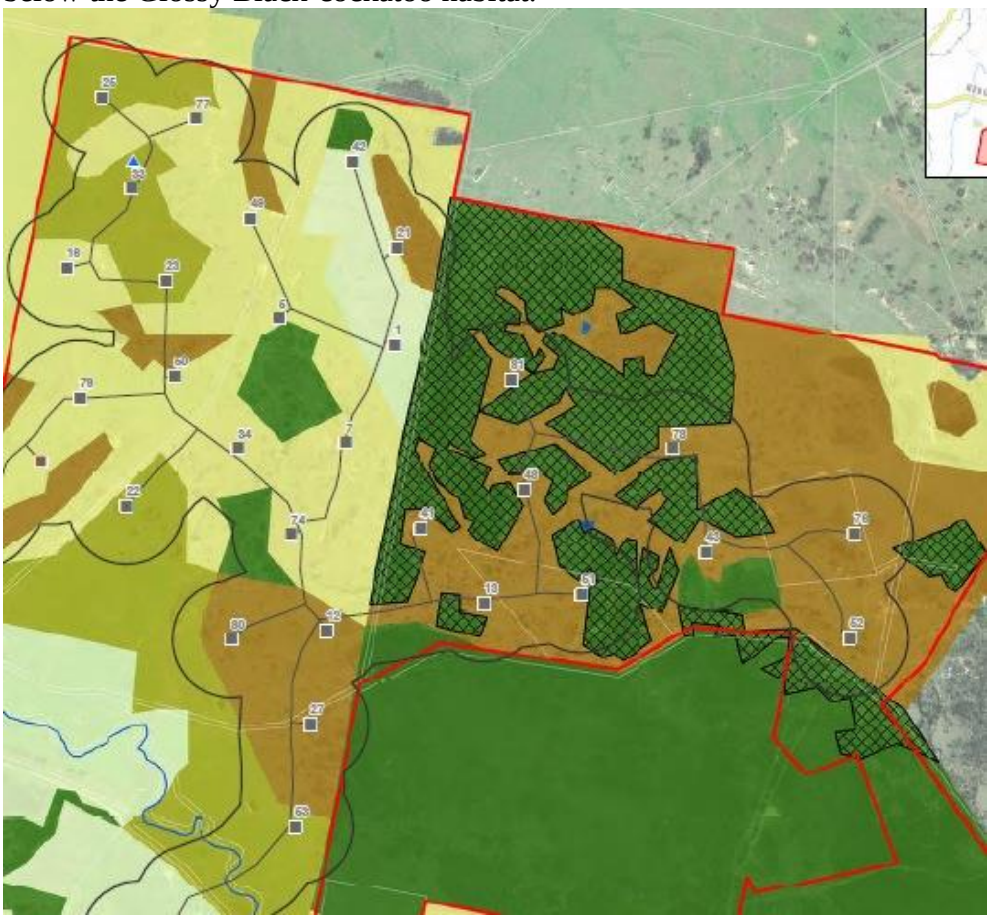
Kevin Mills and Associates, in their surveys, never actually saw a Glossy Black. Neither have I, only the more common Yellow-tailed Black-cockatoo *Calyptorhynchus funereus*
Some Jupiter residents have, of course. ERM's specialists did as well
For example, many lifestyle properties on the Barnet subdivision (to the west of Jupiter Central) are heavily wooded, some with stands of Black she-oak, most with hollow nesting trees.

One such property is 23/DP1010936 (residence J185) which adjoins the Jupiter Project Area. The property boundary is approximately 1410 metres from the nearest turbine (17) and 12 turbines are closer than 3 kilometres from the property. This lifestyle property, like many surrounding it, is heavily covered with native bushland and will remain so.
The following picture (of 20) was taken, at dusk, on March 30, 2016, on the property. The photographer is experienced at identification.

The flock of Glossy Black-Cockatoos contained 11 birds.
Other properties, equally densely wooded adjoin this property and are closer to the wind farm (one is a host, but Glossy Blacks would not know that)
The direct flight path from this location to the major feeding ground in the northern section of the PA is through the wind farm.

<u>Glossy Black-cockatoo and the E3 environmental zone</u>.

Below is a section of Fig 6.7a (Biodiversity Assessment, Part 2). All turbines shown are in the E3 environmental zone. Glossy Black-cockatoo habitat is cross hatched. The large Crown land parcel is directly below the Glossy Black-cockatoo habitat.



Somewhere between 80 and 427 hectares of Glossy Black-cockatoo habitat are within the northern section of the project area.[2]
EIS surveys found this area actively used by feeding Glossy Black-cockatoos
That habitat contains 9 turbines.
All of that habitat is within the E3 zone.
The northern section of the wind farm surrounds a large parcel (approximately 200 hectares)[3] of Crown bushland. That area is likely to be a nesting area (ERM didn't bother to find out, although they agree it is a "possibility"[4]). This area is also wholly within the E3 zone. As you can see, flight paths between the feeding habitat and the Crown land section will be through turbines.
The flight path to and from the Kalbilli feeding habitat will be through turbines.

The first of two key issues singled out in the biodiversity study was:

> "• the Glossy Black-cockatoo was considered as likely to be significantly impacted, relating to potential exclusion of areas of high quality foraging habitat, if the species was to avoid areas habitats immediately surrounding WTGs;"[5]

Let us understand that:
First we have the bulldozer coming in to clear the access tracks, excavate the turbine foundations and the laydown areas, followed by the formers and roller and water trucks. Then the steel for the foundations and the fabricators. Followed by the concrete and the concretors. Then the turbines with their individual component parts and the crane. You get the picture. Repeat 9 times and operate for 25 years.
As with some of the Jupiter Visual Impacts, you do not need to have relevant qualifications to predict the outcome.

We hear again this nonsense of the "development footprint" and how so little of the feeding habitat will be affected. Included in the calculations are the access tracks supposedly 8 metres wide. Is ERM therefore telling us that Glossy Black-Cockatoos, feeding10 centimetres outside this area, will not be affected as the many vehicles used during construction and operations scream past? Can ERM please redo the calculations for the "feeding footprint"?
(I note the access tracks have some sharp corners. Is there any additional clearing of habitat required for the passage of the blades?)

So here we have a significant environmental impact in a zone where the Goulburn Mulwaree LEP prohibits wind farms. Is it reasonable to assume that one of the key reasons that the area is zoned E3 is because of the presence of a large "prime" area of habitat for an endangered species?

The Department must prohibit turbines in the whole of the E3 zone.
Commissioner Roseth[6], subsequently supported by Chief Justice Preston[7], gives you some assistance:

> "A development that complies with all planning controls would be considered more reasonable than one that breaches them"

Whilst this principle relates to views, it is equally applicable to other impacts.

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[2] Even though ERM states "The ecological assessment identifies that 427 ha of Glossy Black-cockatoo habitat has been mapped in the E3 zone." (Page 6.17, main section), I think the "acreage" is incorrect.
[3] Described as a "patch" by ERM. Misleading and deceptive?
[4] Page 165 – Appendix D, Part 2
[5] Page III, Biodiversity Assessment. Part 1
[6] Tenacity Consulting v Warringah Council (2004) 134 LGERA 23, at para 29
[7] Taralga Landscape Guardians vs Minister for Planning at para 149

In summary:

ERM advises:

> "The key potential impact to the Glossy Black-Cockatoo is the species' potential avoidance of the high quality foraging habitat in the north of the Study Area due to the presence of WTGs. Avoidance of this habitat may impact the local population by forcing birds to fly further in search of food and potentially reducing the carry capacity of the immediate region, resulting in lower population sizes to be sustained."[8]

Wind farm consultants cannot bring themselves to give an absolute opinion. "avoidances" are only "potential" and "may impact" therefore "potentially reducing".
Is there no study of changed feeding habits of birds, any species, under noisy spinning turbines? Or is this another unique feature of the Jupiter wind farm? Or is ERM not telling us all it could?

As for flying into turbines there is no proof offered to support this statement, qualified as it is:

> "the species is not considered to be at significant risk of WTG collision" (emphasis added)

As I have said before, I have never seen a Glossy Black-Cockatoo, but Sulphur Crested Cockatoos regularly fly to their feeding habitat across my property. I judge they are regularly at blade height (37 – 173 metres in our case). Have Glossy Black-Cockatoos an extra gene that causes them to fly lower?

If ERM doesn't know the answers, then we must assume the worst case. (the "precautionary principle" as ERM unwisely introduces on Page III of the Biodiversity Assessment Part 1)

After all, they don't know where they nest, they have not bothered to check with peers whether this species could fly at rotor height, especially when flying between feeding and/or nesting sites and/or watering sites, they have not bothered to check with peers whether putting 9 turbines in the middle of the only feeding area for some kilometers will upset them.

The impact on the Glossy Black-cockatoo gives the Department another reason to delete all turbines in the E3 zone. Grasp it.

[8] Page E3 Biodiversity Assessment. Part 2