

NEWCASTLE AND HUNTER VALLEY SPELEOLOGICAL SOCIETY INC.

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28th January, 2024

Department of Planning Major Projects

RE Hills of Gold Wind Farm - Nundle & Crawney Area Objection to the Proposed Development

The Newcastle & Hunter Valley Speleological Society Inc (NHVSS) has previously raised objections to the proposed Hills of Gold Wind Farm (the 'Project') in a letter dated 23/12/2020 and individual members of the society have also lodged objections. Our objections are grounded in deep concerns regarding the preservation of our region's caves, biodiversity, and ecological integrity, as outlined in previous submissions to this commission.

The amended development proposal has not addressed the main issues that are of concern.

The main concerns are detailed below in regard to the bat populations within the project area.

Bat Concerns

1. Bat Populations

There are five karst areas containing caves within 25 kilometres of the project site.

Of these Timor & Crawney Pass have known bat roosting caves within 5 kilometres of the proposed turbine sites, Barry Cave has extensive roosting caves 15 km to the east, Glenrock Caves and Lawler Cave about 25 km to the south east and Barrington Cave about 18 km to the south

The Bird and Bat Adaptive Management Plan (BBAMP) and the Environmental Impact Statement (EIS) study have major flaws in them. These assessments have failed to capture the full extent of biodiversity in the region, as evidenced by their documentation of only 8 out of the confirmed 12 bat species.

As an illustrative example, correspondence with Susan White that is listed in Appendix F of Amendment Report (Nov 2022) gives the impression that cave and bat information for the Tamworth area was sought, it is concerning that it appears that the request sent to her did not clarify that the area of interest also included caves in the Upper Hunter Valley, so the caving areas of Barrington, Crawney Pass, Barry, Lawler, and Glenrock would not have been included in the information provided in her response and nor was our club's contact details provided, along with Kempsey Speleological Society, to assist with a more current data about caves and bat inhabitants. Our concerns are magnified by the reliance on outdated information, notably a book, Australian Karst Index, published in 1985 that is referenced in that correspondence. While valuable at the time of publishing, this source fails to reflect our ongoing discoveries and documentation of caves and their inhabitants. That book notes 23 caves at Timor, 4 of which mention bats, and of these, only 2 were reported in the correspondence with Susan White. However, we currently have 89 documented caves in the Timor area, 80 of which are documented in Timor Caves (2008). I'm sure there are more which have yet to be documented. The Australian Karst Index book is so dated that it doesn't even contain all the caving areas previously mentioned and the couple that are, are also very outdated in caves that are documented. The book contains only 3 of the 9 known caves at Crawney Pass, 1 of 2 in Barrington, and there are a further 171 caves in the other areas that do not

appear in that book. This staggering increase highlights the inadequacy of relying on outdated information to inform critical decisions about environmental conservation and land management.

2. Bat Foraging

Table 3-3 of the Submissions Report (December 2020) lists the risk to bat communities as a key matter raised in Community Submissions (Objections).

There are two karst areas containing caves (Timor & Crawney Pass) with known bat roosting areas within 5 kilometres of the proposed turbine sites, Barry Cave 15 km to the east, Glenrock Caves and Lawler Cave about 25 km to the south east and Barrington Cave about 18 km to the south.

We believe the removal of 5 turbines to increase spacing for foraging, roosting, and migrating, falls short of what is required to ensure safe passage between regional cave roost sites. No scientific evidence is provided that the removal of 5 turbines will have any effect on the danger to bat migration and foraging.

The regional Large Bent-wing Bat populations and specifically their flight paths between the significant roost sites at Barrington Cave (Tomalla), Main Cave (Timor) and other significant roost sites at Timor, Barry Cave (Barry Station), Glenrock Caves and Crawney Pass Caves, has been completely overlooked. Barrington Cave has in the past been observed to have hundreds to thousands of individual Large Bent-wing Bats (Rutledge in Rutledge, J. 2003; Helman in Rutledge, M. 2002; Scott in Rutledge, M. 2001). The Submissions Report indicates that the project design avoids impact to breeding habitat for threatened microbats but failed to recognize that the protection of the foraging and the migratory flight paths themselves is what conserves the breeding behaviours and therefore populations.

There are 12 documented species of bats known at Timor caves with other possible species not yet identified. (Timor Caves Hunter Valley NSW – Rutledge et al 2008). The other cave locations listed here have not been studied to the same extent and consequently less is known of the bat species, roost sites and populations.

The proposed project is well within the nightly foraging range of bats from these caves as well as the forest dwelling bats.

3. Bat Migratory Paths

Studies have shown that bats migrate large distances between roosting sites. We understand that bats originating from the Willi Willi Bat Cave in the Kempsey region can migrate as far as the Hunter. The migratory paths between different roosting caves will pass through the proposed Hills of Gold wind farm site. They will certainly pass through the turbine site to migrate between Crawney Pass, Timor and Barry caves. We note that the EIS and the BBAMP have not identified any of these migratory or foraging areas.

4. Bat and Bird Monitoring program

The Bird and Bat Adaptive Management Plan (BBAMP) is not detailed (Table 5-3: EES_9a and 9b). More details are required on who is responsible for the monitoring program and if these reports will be available publicly, and how often.

We vehemently reject the assertion that risks of harm to microbat populations, including their habitat, has been mitigated. The very fact that a monitoring program has been introduced to the Submissions Report (Table 5-3: EES_9a and EES_9b) confirms that genuine concerns are held by the Biodiversity Conservation Division of DPIE's Environment Energy and Science division.

There are only 8 species of microbats recorded in the project EIS study, however there are at least 12 species of micro bat which have been recorded in the Timor area (Rutledge et al. 2008) just 5 km

from the 2 project sites. This indicates that the EIS study is cursory and was not conducted over an appropriate time period nor covered sufficient area to be credible. The EIS study is deficient.

5. Blade Strike

Recent studies from Tasmania and Victoria have augmented our understanding of the impact of wind turbines on bat populations, highlighting the significant mortality rates among micro-bats attributed to both direct blade strikes and blade proximity-induced trauma. These studies build upon earlier research such as the study by Symbolix (Stark and Muir, 2020), which quantified post-construction windfarm strikes across Western Victorian sites. However, the newer investigations emphasize that micro-bats face substantial risks even without direct contact with turbine blades, as they are susceptible to barotrauma caused by rapid changes in air pressure Baerwald et al. (2008). This trauma, akin to the bends experienced by scuba divers, leads to multifocal pulmonary haemorrhage, congestion, and bullae, contributing significantly to micro-bat mortality rates.

Moreover, the recent studies prompt critical inquiries into the spatial extent of the impact zone, questioning how far micro-bats afflicted with barotrauma can travel before succumbing to their injuries. These findings underscore the potential underestimation of bat fatalities associated with wind turbines, as the current methods for carcass detection may fail to capture the full extent of mortality rates induced by blade proximity. As stakeholders navigate the complexities of renewable energy development, a comprehensive understanding of wind turbine-related bat fatalities becomes imperative, informing decision-making processes aimed at mitigating the ecological impact on micro-bat populations and fostering sustainable energy solutions.

A recent UK study (Richardson et al. 2021) found that wind farms negatively affected over 30 bat species and have potential consequences for bats population viability, particularly species which already have low numbers.

Richardson et al. (2021), determined that even if bats were foraging closer to the ground, they would still be at risk of collision with the blade tips as they neared the ground. The turbine blade minimum sweep height above the ground at many sites where bat kills occurred, was 30 m above the ground and the bats were also being killed with blades with a clearance of 40 m above the ground. The UK based study by Richardson et al. (2021) found that. "Given that more than 50% of bat fatalities in Europe are *P. pipistrellus*, these findings help explain why Environmental Impact Assessments conducted before the installation of turbines are poor predictors of actual fatality rates".

It would be logical to assume that the Project's EIS was lacking as at least 4 additional microbat species have been found 5 km away at Timor. We consider the EIS bat surveys undertaken as inadequate as they were carried out at just a few selected locations. As determined by extensive studies overseas, a pre-wind farm assessment is a poor predictor of likely bat fatalities.

Raptors Concerns

One of the other concerns is the documented destruction of eagles and hawks directly attributable to wind farms. The Hills of Gold Wind Farm has been deliberately placed at the top of the Crawney escarpment which is a location with significant updrafts that would favour eagles and hawks hovering during their foraging. The proposed wind turbines are directly where the raptors will hover for foraging. The submission has not addressed the threat to the Wedge Tailed eagles known to frequent this area.

Vegetation and Vulnerable species

The proposed wind farm should not proceed because it significantly impacts on the threatened ecological community of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland. There were also endangered and vulnerable fauna species found on the study site which include the Koala, Large-eared Pied and the Spotted-tailed Quoll and Greater Glider to name a few. Clearing habitat of these threatened and endangered species and others not listed here is no justification to build a wind farm.

The impact on threatened forest dwelling bat species identified in the Environmental Impact Statement (EIS), such as the Eastern False Pipistrelle, Eastern Coastal Free-tailed Bat and Yellow-bellied Sheath-tailbat would be substantial. The Yellow-bellied Sheath-tailbat and Eastern False Pipistrelle relies on mature hollow-bearing trees offered by the native forest woodlands along the ridges proposed for construction of wind turbines. Likewise, the Eastern Coastal Free-tailed Bat relies on mature trees with hollows or loose bark to roost under. Loss of suitable habitat is unacceptable to these vulnerable species.

The EIS states, “*Thirteen threatened terrestrial fauna species were directly observed within the Development Footprint, including Koala, Greater Glider, Spotted-tailed Quoll, Southern Myotis, Large-eared Pied Bat, Little-Pied Bat, Eastern False Pipistrelle, Eastern Coastal Free-tailed Bat, Little Bentwing Bat, Large Bent-winged Bat, Greater broad-nosed Bat, Eastern Cave Bat and Gley-headed flyingfox. In addition to the threatened fauna species directly observed within the Development Footprint, the detailed habitat assessments identified a high likelihood of occurrence for an additional four fauna species; Booroolong Frog, Border Tick-tailed Gecko, Eastern Pygmy Possum and Squirrel Glider. The field surveys identified two species of raptor most at risk of collision, Nankeen Kestrel and Wedge-tailed Eagle.*”

Clearing such a huge amount of established vegetation will enable soil erosion to occur, which could affect the downstream karst areas (Crawney Pass Caves) which contain caves and specialized ecological systems. This project is not environmentally sound.

Conclusion

In conclusion NHVSS strongly object to the proposed Hills of Gold Wind Farm for the grounds listed above. We believe that adequate research into the impact of the project on the abundant local micro-bats populations (and other threatened species) have not been undertaken in the EIS.

References

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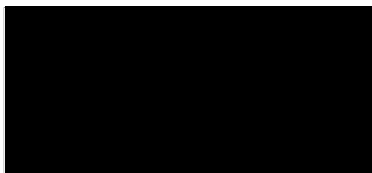
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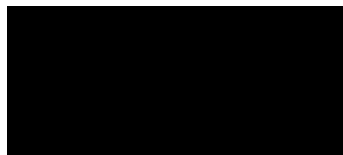
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Newcastle & Hunter Speleological Society

Yours faithfully



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