Submission regarding the Aviation Impact Assessment (AIA) in association with the Hunter Transmission Project (HTP)

I have been a member of Hunter Valley Gliding Club (HVGC) since its inception. I have also worked as a professional engineer on various construction projects for over 10 years and was closely involved in negotiations between HVGC and a neighbouring coal mine when they wised to build a hill just beyond the western end of the runway. Those negotiations resulted in the mine building the hill that now exists but the club's involvement and good will on the part of the mine resulted is the hill being entirely below the Obstacle Limitation Surface (OLS) that was defined for the airfield. I therefor have some understanding of the requirements of a project such as the HTP and I understand the need for the project which will contribute to the reliability of electricity supply throughout NSW.

After reviewing the AIA with particular reference to its discussion of impacts on HVGC I believe there are a number of omissions and incorrect statements which lead to an incomplete analysis.

The AIA describes an OLS that is broadly compatible with the CASA model and the model that the club has used in negotiation with the neighbouring mines. Figure 12 shows the takeoff/approach area which rises at a slope of 1:20 and which on the diagram does not intersect the HTP corridor. The discussion in the AIS also notes that the nearest point of the corridor to the airfield is around 1.8 km. There is no commentary however on the fact that there is a change of direction of the corridor very close to the end of the takeoff/approach area. There will certainly be a tower at the change of direction. That tower will be about 1.8 km from the end of the runway and at 85 m high the slope from the top of the tower to the runway threshold will be very similar to the 1:20 of the takeoff/approach area so while it is technically outside the defined OLS it is close enough to it be a concern for an aircraft that is either taking off or approaching at an abnormally low level for whatever reason.

The AIA includes Table 7 which purports to examine the options if an emergency occurs at various heights during a takeoff. This analysis may be correct for the situation in which a sudden and obvious event happens such as the launch cable breaking or the tug suffering an immediate engine failure but there is no discussion of the much more insidious case in which a tug/glider combination or in fact any departing aircraft is climbing but the engine is delivering less that the expected power for whatever reason. In this kind of situation the strong temptation for the glider pilot (especially if of limited experience with the particular glider and/or tug) will be to "hang on" and the pilot of the tug or departing aircraft will be fully occupied trying to sort out whatever problem is occurring. In that situation an obstacle that is close to the departure path and close to the 1:20 surface slope will become a serious distraction at least.

The AIA talks about mitigation and planning requirements in the event that a competition is planned in which gliders will arrive from an easterly direction and it quite correctly points out the requirements for pilot awareness in that situation but it does not consider cases in which an aircraft (glider or otherwise) is approaching at an abnormally low height for whatever reason. It also comments that individual obstructions above the 45 m horizontal surface exist at many airfields. This is no doubt true but if a single obstruction is in the way an approaching aircraft has the possibility of manoeuvring around it. A transmission line is more like a solid wall than a single

object and the only realistic option is to fly over it or turn away and land in a paddock. While landing in a paddock may be an option for a glider pilot it is not likely to be front of mind for a power pilot who is low for whatever reason and has an airfield in sight.

There are also some errors of fact: The interactive map shows a 330 kV power line southwest of the airfield and southwest of Jerry Plains Rd. In fact this was moved a few years ago and is now north of Jerry Plains Rd and much closer to the western end of the runway. It is also below the club defined OLS and does have some visibility enhancing balls on it in places close to the airfield.

For the general discussion of OLS and the vicinity of an airfield I also point to CASA document Multi-part advisory circular AC 139.E-01 and AC 175.E-02 v2.0. This is a draft that is out for discussion at this stage but it includes the following definition of the vicinity of an aerodrome. Note that it differentiates airfields on the basis of the type of operations that are allowed being either visual or instrument operations; not on the basis of being certified or not:

Vicinity of an aerodrome	The defined limits of an aerodrome means the area enclosed by the perimeter of the surfaces specified below: a. the surface 45 metres above the elevation of the nearest limit of the landing area and extending horizontally outward for a distance of 3,000 metres; b. the surface extending outward from the end of a landing strip having the following dimensions and slopes: i in the case of an aerodrome open only to aircraft making non-instrument approaches—the width of the landing strip at the landing strip end; a width of 750 metres at a point 3,000 metres outward from the end of the landing strip and a slope of 1 in 40 rising outward from the end of the landing strip; or

Note also that it specifies that the 45 m horizontal surface extends out to 3,000 m from the end of the landing strip and specifies a slope of 1:40 (much flatter than the 1:20 that has been used in the AIA).

It is also worth pointing out that the towers are 85 m high because they will carry two 500 kV circuits. If they were only carrying one 500 kV circuit they would be around 45 m high. This suggests that there is an option to consider replacing the small number of towers in the vicinity of the airfield (probably 3, maybe 4 or 5?) with two 45 m towers side by side instead of one 85 m tower. Obviously this would require a wider footprint in the relatively short area involved but it would dramatically improve the risk analysis and would allow the HTP to conform to likely CASA guidelines.