

I would like to object to the proposed Burrendong wind turbine project, SSD-8950984

I am very concerned about the following items in the EIS:

1.0 The visual impact to many residents of the area will be huge. 250m high turbines are not something you can ignore. Plant screenings will not hide these massive wind turbines situated on ridgelines.

2.0 There are areas that will be noise affected including part of the Dam that Figure 2 of the Noise Assessment shows will be in the 30-35dB range. It has been found repeatedly in other wind turbine proposals that the proponent's reports by their employed acousticians err to the low side by up to 10dB. As there are readings that are very close to the standards allowed, a review of the noise report by an independent acoustician should be undertaken.

2.1 Infrasound has been dismissed in the EIS. Infrasound, the inaudible sound 0-20Hz occurs when large masses are in motion. Wind turbines, with their huge structures create noise annoyance and the silent infrasound through blade pass harmonics. More and more reports (including peer reviewed reports) are showing health effects from infrasound emanating from wind turbines, particularly as the wind turbine size has increased. ⁱ Regardless the blanket statement that says infrasound is not an issue, these new reports should be acknowledged and their risk detailed.

2.2. Recognised by locals as a home to a koala population, Steven Philips from ecological consultancy Biolink has stated that low-frequency noise has the potential to displace koalas from habitat, particularly if it is sustained.

2.2.1 The Jupiter wind farm was rejected by DPE in 2018. The Federal Administrative Appeals Tribunal directed, during the approvals process, that there is a well-established pathway from annoyance to adverse health outcomes; a significant proportion of wind farm noise is in the low frequency range; humans are more sensitive to low frequency sound and it can therefore cause greater annoyance than high frequency sound; low frequency noise and infrasound may have other effects on the human body; noise measurement using dB(A) is an inadequate measure of relevant wind farm noise and wind farm noise measurement should not average noise over time and frequencies; wind farm low frequency noise can be greater indoors than outdoors at a dwelling. With larger turbines, as they are so recent and few are in operation, hard data is impossible to find, yet it has been found that as wind turbines get larger, infrasound also increases. Without data it can only be estimated by modelling that infrasound of 250m tall wind turbines will affect any human or animal up to 20km away in excess of chronic exposure levels of 80dB(Z)ⁱⁱ.

3. 0 Whilst impacts to property values have been dismissed in this EIS, the studies that are often quoted by wind developers are old and limited in scope (eg Urbis 2016). It is quite obvious that the factors that can affect property values, in particular visual amenity and noise from the larger, bigger turbines, are likely to increase. Nigel Woods prepared a detailed property values reportⁱⁱⁱ for the Bowman Creek wind farm proposal which showed the conclusions of the Urbis was selective in nature and by further analysis estimated an approximate 30% drop in property values in the area near to wind developments. Such a drop in property values would be devastating to any neighbouring property owners and needs to be addressed (and not just by a "neighbour payment").

4.0 It is a basic tenet of aviation safety that hazards be lit at night to remind aviators of their presence and prevent aviation accidents. No hazard that is 250m tall should be left unlit as this flies

in the face of aviation safety. The EIS should be amended to reflect this safety requirement and the visual impact of these lights on the area and the residents within at least 20km needs to be evaluated before any approval is considered.

4.1 Aerial firefighting is acknowledged to be a high risk activity with low visibility from smoke and turbulence generated from the fire.

Whilst the Aviation Impact Statements says “ *Aerial firefighting stakeholders including NSW RFS were consulted with. Refer to Section 5 for details.* ” Section 5 lists the stakeholders and NO OTHER AERIAL FIREFIGHTING STAKEHOLDERS apart from RFS (which is known to respond to every single wind project with the same few sentences which can be basically summed up as “no comment”) was recorded. Therefore the proponent has made a FALSE statement.

With visibility much reduced by smoke in a bushfire situation, this adds complexity to the safe management of the aircraft and fire bombing as a result, would be negatively impacted by the wind turbines. Whilst aerial tankers can drop from above the height of the turbines, this would severely reduce accuracy and effectiveness.

Routine risk management will dictate that large air tankers and possibly small air tankers as well, will be instructed to stay clear of turbine areas when visibility is obscured by smoke. This will be in the project area and in adjacent areas. Dropping from a higher altitude will be ineffective for getting retardant onto the fire. Losing large fixed-wing support in turbine areas will reduce firefighting effectiveness. Helicopters are not capable of suppressing a broad fire front. **This is the case regardless of what position turbine blades are in.**

It is folly of the highest order to increase the risk to nearby agricultural land, livestock, homes and residents to the profit-driven motives of developers who don't live nearby and won't have to cope with the impacts.

5.0 The EIS displays a lack of biodiversity related surveys. Any impact to the viability of an identified endangered species needs to be amended to avoid this habitat.

5.1 No targeted flora surveys were undertaken and areas were excluded from surveys.

5.2 Whilst there is much anecdotal evidence from locals about koalas, Ark Energy has made no concerted effort to determine the extent of the koala population and blithely states that no significant koala population exists. The koalas would not agree.

5.2 All over NSW, new wind projects are being proposed and many of these propose to remove critically endangered habitats and ecological communities. The cumulative effects of the removal and impacts to these is unacceptable and needs to be taken into full consideration by DPE and the proponent, not just as a stand-alone project.

6.0 The project site encompasses a large part of the Burrendong Dam and has placed the turbines on ridgelines above the Dam. The Dam is a water catchment that is a popular sport and recreation destination, with the NSW government describing it as “*offering year-round attractions for water sports and fishing enthusiasts, nature lovers, bush walkers and campers*”.

6.1 Having 70 turbines 250m tall in this area will change the landscape character dramatically. Given its promotion as an escape for “*nature lovers*”, introducing massive turbines will be aesthetically displeasing and will likely impact the attraction of the area for tourism. This is likely to have negative economic impacts for locals who depend on tourists for their income and will drive down property prices (see 3.0 above).

6.2 Figure 3 of Appendix S shows the watercourses. The construction of access roads, hardstands and turbine pads will have a detrimental effect with run-off, with soil and potentially contaminants, being washed down these watercourses and ultimately into the Dam, causing silting and potentially a polluted Dam.

Whilst considered state significant, this is still a development by a private, foreign owned, profit-driven developer. Residents should not have to bear the brunt of a foreign, private developer’s project and all its associated impacts. I request that the Department of Planning and Environment reject the proposal of the Burrendong wind farm.

I reserve the right to add to my objection at a later date.

Annette Piper

ⁱ <https://stopthesethings.com/2014/12/17/21-peer-reviewed-articles-on-the-adverse-health-effects-of-wind-turbine-noise> ; <https://www.youtube.com/watch?v=Wul-56rg9d4> ; <https://www.nature.com/articles/s41598-021-97107-8>

ⁱⁱ Professor Christian-Fredrich Vahl at Mainz University Medical Centre, experiments on the exposure of heart tissue to infrasound Quote: “whether we hear it or not, every form of energy has physical effects and infrasound is particularly dangerous, because we don’t hear it.” “As medical researchers, it is strongly recommended that infrasound levels generated by wind farms do not approach pathological levels. **It is the recommendation of this research group to set the level of infrasound no higher than 80 dBz** (20 dBz below the critical value of 100 dBz) as the maximally tolerated limit for chronic exposure”.

ⁱⁱⁱ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SUB-18873739%2120210508T033151.346%20GMT>