

Dear Commissioners

Please find attached my Submission for the Bowmans Creek Wind Farm Project (SSD – 10315) (Project).

I am making a submission that objects to this proposed development going ahead.

**I am making a submission because I am concerned about the health impacts the proposed wind farm will have on me and the Department of Planning (the Department) have not asked Ark energy for adequate clarification regarding the impacts the wind farm will have on my health.**

The seventh most common matter raised in submissions objecting to the project was Health. Of the 131 submissions 45 raised health impacts as an issue.

Despite 45 submissions being made regarding the health impacts of the Bowmans Creek wind farm the assessment report provided to the IPC and the recommended consent conditions provided by the Department did not include one reference to health impacts.

The Department have not adequately assessed the health impacts of the project on my health and the health of other neighbours.

Health issues were raised by others at the public IPC hearing into the project.

In my original objection submitted in response to the EIS I raised various issues regarding the proposed wind farm and the impact on my health. However, for whatever reason the Department have chosen not to pursue my issues with Ark energy but relied on the wrong information Ark energy included in the EIS and the wrong information they have submitted since.

I am an epileptic and I have suffered mental health issues because of the proposed wind farm.

Ark energy were made aware that I suffer from Epilepsy when my husband sent them an email addressed to Julian Kasby on July 21, 2019. Included in the email was the following paragraph,

We have not had the opportunity to adequately raise any issues we can see with the wind turbines, including the fact Sandra suffers from epilepsy. Sandra's epilepsy must be managed very carefully, she must have a full medical every 12 months to maintain the use of her driver's licence, she must have a full medical periodically to obtain Priority Assist from Telstra to make sure we have a continuous phone service this also includes her filling in a Statutory Declaration witnessed by a JP. Sandra is under the careful medical management of a specialists, and any seizures must be followed up straight away and she automatically has her driver's licence suspended for 6 months. As you can see her medical condition is managed very well by Government agencies, private providers, and the health profession this is because the best-case scenario after a seizure is the loss of her driver's licence the worst-case scenario is death.

Mr Kasby replied via email on August 2, 2019, with the email including the following paragraph,

“In accordance with the SEARs we will be conducting a full Environmental Impact Assessment and specifically, this will include a Visual Impact Assessment following the criteria outlined in the Visual Assessment Bulletin. This will include an assessment of any potential visual impact at your residence and also an assessment of the potential for shadow flicker. There will also be an assessment on the potential for any health risks from the project having regard to the latest advice from the National Health and Medical Research Council. As you have brought Sandra’s condition to our attention, we will ensure that the potential for impacts to anyone suffering from epilepsy is included within this section. I would be happy to personally come and provide the relevant results of the assessment to you prior to the document being lodged with the Department”.

Despite being provided with the information in July 2019 some 20 months prior to the EIS being submitted for assessment, Mr Kasby didn’t catch up with me prior to the assessment being conducted nor prior to the assessment being lodged with the Department. Ark energy have not caught up with me since the EIS was submitted either.

As a result, Mr Kasby and Ark energy were not aware and are not aware of the triggers that cause my epilepsy. I believe this to be a deliberate tactic by Ark energy because they do not want to understand the facts but rely on information that is not relevant to me. Ark energy have done this to give the charade that they have addressed the issues associated with Epilepsy.

Included in the executive summary of the EIS Ark energy identified “Minor Issues” this included the following “Other assessments were undertaken in this Environmental Impact Statement for aspects ranked in the Project risk assessment as moderate or low, including:” – health was included in this part of the summary.

This is despite:

- 1,100 deaths in 2019 being attributed to epilepsy in Australia, (Ref Australian Government Australian Institute of Health and Welfare).
- 3.5% of the Australian population suffering from epilepsy, (Ref Epilepsy Action Australia) this is approximately 840,000 people and
- Ark energy have not consulted with the community regarding any health issues that need to be taken into consideration and included in the EIS.

**Section 7.19 Health** in the EIS also includes various commentary including:

- Relevant studies
- Noise
- Shadow flicker
- Photosensitive Epilepsy

Regarding these sections, I make the following commentary:

**Relevant studies** – Regarding epilepsy they only refer to a study carried out in 2015 by the National Health and Medical Research Council (NHMRC).

- This study does not consider the majority of people who suffer from epilepsy or any adverse impacts a wind farm may have on these people.
- The study looks at Shadow flicker and references the following:
  - Flashing lights can trigger seizures among people with a rare form of epilepsy called photosensitive epilepsy. From the parallel evidence, the risk of shadow flicker from wind farms triggering a seizure among people with this condition is estimated to be extremely low.

However, it should be noted only 3% of the people with epilepsy suffer from photosensitive epilepsy (ref Epilepsy foundation). In Australia that would be approximately 25,200 people or 0.1% of the population.

The EIS did not consider any information from organisations that deal with the more general forms of epilepsy. Ark energy may argue that the NSW Bulletin and Guideline only include reference to the NHMRC (2015), and they have complied with this requirement. However, the Bulletins and Guidelines don't say that the only requirements are the findings of the NHMRC (2015). By using this simplistic approach Ark energy have not met the requirements as required by the Guideline and Bulletin.

**Noise** – The EIS again refers to the NHMRC (2015) which found that direct evidence to be of limited value because none of the studies measured noise levels at private dwellings. As a result, NHMRC relied on parallel evidence and Ark energy included the following as a direct reference from the NHMRC (2015) report:

*“There is no evidence to suggest that the health effects from wind farm noise would differ from health effects of other noise sources at similar levels. Based on the studies referred to above, wind farms would be unlikely to cause health effects at distances of more than 500 m, where noise levels are generally less than 45 dBA. At this distance, effects on sleep are likely to be modest at the population level. At distances of more than 1,500 m from wind farms, where the wind farm noise level may be in the order of 30–35 dBA, sleep disturbance is unlikely.”*

This is Ark energy choosing to cherry pick the information they have included from the NHMRC (2015) report.

Also included in this section of the report was the following:

### **6.1.2 Parallel and mechanistic evidence - Noise in other environments**

“The World Health Organisation (WHO) reported a number of effects on sleep when night noise was in the range of 30–40 dBA (measured outside). These include body movements, awakening, self-reported sleep disturbance and arousals. The intensity of the effect varies with the nature of the source of the noise and the number of noise events. Vulnerable groups (e.g. children, people who are chronically ill and elderly people) are more susceptible to effects on sleep. However, even in the worst cases, the effects seem modest. A recent meta-analysis concluded that people consistently reporting 5–6 hours or less sleep a night have a higher risk of heart disease and stroke.

Prolonged noise-related annoyance may also cause health effects, as evidence suggests that stress pathways may be active in annoyed individuals and psychological stress may be a risk factor for cardiovascular disease.

In a separate report WHO have also indicated that to achieve a good night's sleep, the equivalent sound level should not exceed 30 dB(A) (inside the bedroom) for continuous background noise. And:

- A change in sound level of 5 dB will typically result in a noticeable community response.
- A 6 dB increase is equivalent to moving half the distance towards a sound source.
- A 10 dB increase is subjectively heard as an approximate doubling in loudness.

This is relevant because whilst Ark energy was asked to conduct background noise monitoring at our home they refused. Ark energy refused other request to conduct background noise monitoring at any properties on the McCullys Gap side of the project. Ark energy does not know what the background noise levels are at our home. A lot of the time it will be below 25dB so even complying with the 35dB limits will be of a major concern for me based on the WHO findings.

It has been proven that if the wind farm is approved it will not align with the advice contained in the NHMRC (2015) or the recommendations made by the WHO.

This position is supported by the recent decision in the Victorian Supreme Court which found that noise from the Bald Hills Wind Farm created a nuisance to its neighbours.

**Shadow flicker and Photosensitive Epilepsy** – Ark energy have indicated they have assessed shadow flicker generally in accordance with the Visual Bulletin.

They have not there is NO reference to shadow flicker in the Visual Bulletin. This is recognised by other wind farm developers in NSW. An example of this is contained in the EIS for the Crookwell 3 wind farm where they state there are no guidelines by which to assess the impact of shadow flicker in New South Wales, the shadow flicker assessment prepared for the Crookwell 3 wind farm adopted the Victorian Planning Guidelines which state:

“The shadow flicker experienced at any dwelling in the surrounding area must not exceed 30 hours per year as a result of the operation of the wind energy facility”.

Again, Ark energy is trying to dupe the community that there is nothing to see here, and we are meeting the requirements as required by the NSW planning legislation.

In section **7.19.3 Shadow Flicker** of the EIS, Ark energy also include a section on Photosensitive Epilepsy, Ark energy refer to two reports Cherry picking the information from the reports to suit their arguments. One of the reports they rely on is referenced as *Harding et al, 2008*, and refers to the flicker frequency of less than 3 Hz (Section 7.19.3 of the EIS). In Section **7.21 Shadow Flicker** of the EIS Ark energy then references “The National Wind Farm Development Guidelines (EPHC, 2010) (Draft National Guidelines suggest a distance equivalent to 265 maximum chords as an appropriate limit.

Using the National Wind Farm Development Guidelines Ark energy have then concluded the extent of shadows from turbines, based on a distance of 265m x a blade cord of 5m = 1,325m. Ark energy have then indicated they have been conservative and extended the assessment distance out to 2km.

As stated, Ark energy are cherry picking from the different reports to support their argument that shadow flicker will not be an issue due to distance and flicker frequency. However, Ark energy have failed to include all the relevant information from the Harding 2008 report. The Harding 2008 report was prepared by Graham Harding, and Pamela Harding from the Neurosciences Institute Aston University, Birmingham, United Kingdom, and Arnold Wilkins from the Department of Psychology, University of Essex, Colchester, United Kingdom. The report reviewed Wind turbines, flicker, and photosensitive epilepsy: Characterizing the flashing that may precipitate seizures and optimizing guidelines to prevent them.

The report includes the following:

*“Wind turbines are known to produce shadow flicker by interruption of sunlight by the turbine blades. Known parameters of the seizure provoking effect of flicker, i.e., contrast, frequency, mark-space ratio, retinal area stimulated, and percentage of visual cortex involved were applied to wind turbine features. The proportion of patients affected by viewing wind turbines expressed as distance in multiples of the hub height of the turbine showed that seizure risk does not decrease significantly until the distance exceeds 100 times the hub height. Since risk does not diminish with viewing distance, flash frequency is therefore the critical factor and should be kept to a maximum of three per second, i.e., sixty revolutions per minute for a three-bladed turbine. On wind farms the shadows cast by one turbine on another should not be viewable by the public if the cumulative flash rate exceeds three per second. Turbine blades should not be reflective.”*

The report also includes the following *“To avoid the problems of shadow flicker Verkuijen and Westra proposed that wind turbines should only be in-stalled if flicker frequency remains below 2.5 Hz under all conditions, and that wind turbines should be sited where buildings were not in East-NE or WNW directions from the turbine”.*

If Ark energy were to reference the complete Harding 2008 report, they would not be able to reach the conclusions, they have. The report indicates **risk does not diminish with viewing distance**, flash frequency is therefore the critical factor and should be kept to a maximum of three per second. And whilst Ark energy have indicated their wind turbines will only rotate and have a frequency of 1Hz the turbines stack up in the public’s view with multiple turbines near each other including multiple turbines being visible one behind the other. This will have the potential to give a flash frequency exceeding the 2.5Hz or 3Hz as recommended by the Harding 2008 report. To exacerbate the issue a lot of homes are also in an East-NE or WNW directions from the turbine. Our home is WNW of the wind turbines.

Ark energy and the Department may indicate the risk is acceptable because there are only approximately 25,000 people in Australia who suffer from Photosensitive Epilepsy. This assumption would be wrong because Ark energy have failed in their consultation process to identify how many people suffer from Photosensitive Epilepsy in the area impacted by the wind farm. As recommended by the Harding report 2008 this would have to include any people who live withing 14km of any of the wind turbines.

Ark energy have tried to cover up this shortfall by misrepresenting the facts including most of the facts from the Harding 2008 report that they rely on in the EIS.

When we chose our home at 1661 Sandy Creek Road “Diamond T” it was after we had conducted a lot of homework and evaluation. Ensuring it met all the criteria to minimise any triggers that would cause an epileptic seizure and to minimise any of the other issues that can be encountered when you have epilepsy. **My safe place.** The attributes of the property include:

- No intrusive external noises especially at night causing sleep disturbance.
- No intrusive nighttime lights
- A beautiful property with an outstanding landscape providing a relaxing atmosphere minimising stress.

Most people with epilepsy can have various triggers that can result in a person suffering a seizure including one or more as described below:

- **Sleep deprivation**
  - Sleep deprivation is a common trigger of seizures for many people.
  - Sleep and epilepsy are closely connected. Sleep can affect the frequency, occurrence, timing and length of seizures.
  - drinking too much coffee or caffeinated beverages can worsen seizures by disrupting your sleep.
- **Alcohol consumption**
- **Using 'recreational' drugs**
- **Emotional stress**
  - Emotional stress can lead to seizures. Emotional stress is usually related to a situation or event that has personal meaning to you. It may be a situation in which you feel a loss of control. In particular, the kind of emotional stress that leads to most seizures is worry or fear.
  - Other emotions that have been linked with stress and seizures are frustration and anger. Sometimes the stress is a 'major' event, but most often people report a build-up of stress.
- **Missed medications.**

I have had some seizures that can be attributed to sleep deprivation and emotional stress.

To control my risks of seizures I do not drink any alcohol or caffeinated drinks, I have never taken recreational drugs I ensure I take my medication on time every time and I have a nighttime regime to ensure adequate sleep. One of the reasons for our move to Diamond T was to remove emotional stress from my life. This approach had served me very well in controlling my epilepsy.

Whilst epilepsy is not a psychological condition, it can place people living with epilepsy at a greater risk of developing one.

Unfortunately, the co-existence of psychological conditions, such as anxiety and depression, in people living with epilepsy is not uncommon. It is estimated that around half of all adults with epilepsy experience depression and around 20% experience generalised anxiety disorder anxiety.

Depression and anxiety disorder include some of the same triggers as epilepsy including:

- **Sleep deprivation**
- **Alcohol consumption**
- **Using 'recreational' drugs**
- **Emotional stress**

Prior to the proposed Bowmans Creek wind farm being made public I did not have any mental health related health issues. However, since mid-2018 when it became apparent the proposed wind farm would impact on our way of life and my safe place, I have suffered from mental health issues. I now suffer from depression, emotional stress and cannot sleep leading to sleep deprivation. My mental health has continued to deteriorate since that time. I must now take medication to control my depression and work closely with a psychologist.

As a result of my mental health my prescribed medication to control my epilepsy has increased by 25%. This increase does not come without a cost and the side effects have increased dramatically.

My mental health issues commenced after Ark energy built a 120m tall wind monitoring masts that was extremely visible from our house. The mast was built despite:

- Julian Kasby and Donna Bolton from Ark energy catching up with me and my husband at our home on April 13, 2018, and informing us we would not see any infrastructure from our home.
- Not obtaining a DA and the structure not being an exempt development.
- No consultation with us regarding the erection of the mast, it was just there.

Despite making numerous complaints the tower remained in place for over four years and did not comply with NSW planning legislation for the majority of that time.

No one cared, the people who have an obligation to ensure legislation is complied with just looked the other way, including the NSW Department of Planning.

### **Since that time:**

#### **On a personal basis**

- There has been no direct consultation with Ark energy,
- Ark energy have tried to use bullying techniques to get my husband to sign a neighbour agreement that would prohibitively restrict his rights as the owner of our family home and property.
- Ark energy have advised the NSW Department we will have to plant vegetative screens around our home to restrict views from our home. Note these will create a death trap for us during bush fires.
  - When I asked Mr Kasby about this issue at one of the community meetings, he just shrugged his shoulders – He didn't care.
- Ark energy have advised the NSW Department we will have to close our windows at night, close the curtains and turn on our lights to create a mirror effect in the windows so we cannot see the lights on the wind turbines outside.
  - This was after they lied in the EIS about advice, they received from the Department of Defence but then denied in the EIS they received the advice from the Australian Department of Defence.
  - Even prisoners are allowed to turn their lights off at night.
  - I will have to endure lock up conditions in line with the Covid 19 lock up restrictions for the rests of my life.
- Ark energy have advised the NSW Department of Planning we will have to close our bedroom windows at night to minimise any noise.
- At community consultation meeting Ark energy and their representatives have bullied and abused me and told me they can run power lines through our property close to our home without our consent.
- Ark energy have ignored the impact on the other homes we own, these homes will be impacted by the wind farm.
- Ark energy have manipulated the photomontage for our home to indicate minimal visual impacts of the wind farm on our home. The Department are aware the photomontage does not meet the requirements of the Visual Assessment Bulletin but have chosen not to pursue these matters.
- Ark energy have ignored the fact our grazing property boundary is very close to some of the wind turbines, and we must operate and run our grazing property out on the property not from our home. We live outside for most of the time, our property is our livelihood. This will exacerbate any impacts the wind turbines will have on me.

### On a community basis

- Ark energy did not comply and have not complied with the requirements of NSW planning legislation, including the:
  - Wind Energy Guideline
  - Wind Energy Noise Assessment Bulletin
  - Wind Energy Visual Assessment Bulletin
- Since the EIS was published Ark energy have continued to provide misleading information to the NSW Department. Despite this:
  - The Department are giving Ark energy a free rein and are not holding Ark energy accountable.
- The CCC has been deactivated by the Department, despite:
  - The CCC being the main conduit for consultation with the community and
  - The NSW Wind Energy Guideline 2016 indicating a CCC should be established and operate during the EIS preparation and assessment and evaluation of impacts.
- Ark energy indicated in the Executive Summary of the EIS that they acknowledge that:
  - *During consultation, a number of residents indicated that they were experiencing elevated levels of stress and anxiety due to the anticipated visual impacts of the Project. The primary strategy to manage stress and anxiety in relation to the Project is for the Proponent to continue to engage in and maintain transparent, evidence-based and ongoing dialogue with concerned landholders and other community members, based on the results of the Environmental Impact Statement.*

Ark energy have not done this, they have not engaged in ongoing dialogue with concerned landholders, and they have not been transparent they have tried to mislead people in the community. There has been no community consultation in any format for over two years.

On a personal basis Ark energy are advising me that I will have to live in lock down conditions for the rest of my life. It has been recognised by all levels of Government that vast numbers of people suffered from mental health issues because of lock down conditions due to Covid 19. However, I will be forced to live in lock down conditions for the rest of my life not for the few months of Covid restrictions.

Ark energy and the Department are trying to shift the blame and focus by indicating the issues they need to address are our fault, because we could volunteer to have a neighbour agreement and vegetative screening planted. They are not our issues, and we are not to blame.

My stress levels are exacerbated because the wind farm approval appears to be a done deal. Despite the vast majority of submissions opposing the project and the submissions highlighting hundreds of shortfalls in the EIS the Department is choosing to ignore the majority of these submissions and the issues raised. The Department have accepted the information provided by Ark energy and have chosen not to pursue Ark energy's noncompliance with the legislated requirements further and are not holding Ark energy accountable for their non-compliance with NSW Planning Legislation.

The Department is rewarding Ark energy at the expense of the non-associated neighbours and the community, and endorsing Ark energy by not holding them accountable as they continue to provide false and misleading information.

The NSW Department are not complying with the purpose of their Organisational Compliance Policy. The policy states.

*"This policy establishes that the Department of Planning and Environment (department) is committed to complying with all legislative and regulatory obligations in the performance of its functions".*

As indicated in the Paris Agreement and with adopting the Paris Agreement, the Australian government amongst other things acknowledged the following:

*"Acknowledging that climate change is a common concern of humankind, Parties should when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity".*

I also have a right to health. The right to health is the right to the enjoyment of the highest attainable standard of physical and mental health.

The UN Committee on Economic Social and Cultural Rights has stated that health is a fundamental human right indispensable for the exercise of other human rights. Every human being is entitled to the enjoyment of the highest attainable standard of health conducive to living a life in dignity.

For me personally Ark Energy have not adequately addressed their obligations towards me in regard to my human rights, my right to health, and my vulnerable situation, and they have not respected the human rights of the local communities.

It is the NSW Department of Planning's role to ensure my human rights, my right to health and my vulnerable situation is addressed. The Department have been negligent in their functions they are not ensuring my human rights, my right to health and that my vulnerable situation is addressed.

I am also aware that I am not the only person who has indicated that their mental health is suffering because of the proposed Bowmans Creek wind farm. Unfortunately, people do still struggle to discuss their mental health issues and the NSW Department of Planning cannot assume silence means there are not others suffering because of the wind farm.

Again, it is the NSW Department of Planning's role to ensure their human rights, their right to health and any other vulnerable situations are addressed.

Ark energy and the Department do not want to address the health issues associated with the project; they are attempting to hide the truth. They are engaging in propaganda by referring to any health issues as wind farm syndrome, trivialising, belittling, and bullying anyone who raises health issues.

The Department of Planning and Environment has not met its commitments ensuring the project complies with all legislative and regulatory obligations in the performance of its duties and functions.

The Department and Ark energy are not meeting the requirements of Occupational Health and Safety legislation in NSW.

By their omissions the Department are attempting to mislead the IPC, that there are no health issues associated with the project. Health issues have not been adequately assessed.

**The Department are continuing to be negligent in the duties.**

**The Department have been negligent in their duty, they have not ensured Ark energy have complied with the requirements of the relevant NSW legislation, guidelines, and bulletins for this project. The Department have misled the community and undermined the planning process in NSW by their actions and inactions.**

**The Department have knowingly provided false and misleading information to the IPC. The Department are not complying with the purpose of their Organisational Compliance Policy. The policy states.**

***“This policy establishes that the Department of Planning and Environment (department) is committed to complying with all legislative and regulatory obligations in the performance of its functions”.***

**The Department must be held accountable for their actions.**

**There should be an enquiry into the Department to investigate their conduct which at best could be described as incompetent and at worst could prove to be corrupt.**

Sandra Wood