

## Introduction

The Coolah region is being treated as a commodity for the renewables industry, an industry that is driven by subsidies. What will this mean for our region? It will mean destruction, degradation, disruption & division to our town. If anything like this was happening on the Northern Beaches & other influential urban suburbs, the population would be up in arms. But the people of the Coolah region are expected to simply accept this level of upheaval from the renewables onslaught. They are expected to accept the annihilation of our rural way of life.

To the East of Coolah Town, the TILT Renewables Liverpool Range wind factory will be constructed. 185 turbines, approximately 215m tall, are approved right up to the Coolah Tops National Park, with its koala colony. The only road into the NP will have turbines along it. Large swathes of critically endangered Brigalow Belt South Bioregion will be destroyed. The NSW govt itself has stated there is only 1.7% of this bioregion remaining. Principally on ridges. And these remnants provide refugia for raptors, birdlife & bats, many listed as critically endangered, endangered & vulnerable, according to the EPBA. As well as other wildlife. These very ridges are where TILT Renewables have been given approval to construct their 185 turbines.

To the West & South of our town, ACEN are planning the Valley of the Winds wind factory. One can ask why wind factories are given such flattering names! Here, 131 turbines, 250m in height, are planned. As with the Liverpool Range wind factory, these turbines will be constructed on forested ridges, which provide refugia for wildlife. Because they will be located on ridges, rather than lowland areas, these turbines will stretch 1Km to 1.5Km into the sky.

Large scale industrialisation is planned for our rural region. Not just two wind factories & a total of 333 turbines, many within view of the town, but also substations, BESS, & associated transmission lines. The bitterness & ill-feeling felt by locals towards federal & state govts, & their Departments, is tangible.

In considering the ACEN project, the IPC MUST take a whole of region approach & NOT just consider this project in isolation. The IPC MUST consider the cumulative impact of these renewables projects on the community & environment of Coolah. It would be remiss of the IPC to ignore or playdown the cumulative impact. The cumulative impact alone is a reason why the valley of the Winds MUST NOT proceed.

## Points of Consideration

### State Significant Development

On their website, Barker Ryan Stewart, property development & infrastructure experts, state that 'the SSD assessment process is comprehensive **and involves extensive community participation under the EP&A Act** (my emphasis).<sup>1</sup>

The IPC is informed that 'extensive community participation' has NOT taken place for the ACEN Valley of the Winds (VOW) project.

- ACEN have rented a vacant shop in Coolah. Have not bothered with any improvements as a welcome to impacted residents. Have put a few posters in the window that lack any detail. And worst of all are rarely, if ever, open! On every occasion, that I visited the shopping centre, at least twice a week, it has NEVER been open.
- On their webpage, 'Valley of the Winds Community Information Sessions Leadville & Coolah', ACEN highlight three information sessions, dated March 2021. <sup>2</sup>

Coolah: Wed. March 24: anytime from 3pm-7pm, & Thurs. March 25: anytime between 9am-11am

Leadville: Thurs. March 25: anytime between 9am-11am

This was also at the time of NSW Covid lockdown. Information sessions have not been repeated.

- On the same webpage, ACEN state:

'A Community Consultative Committee (CCC) is also being established for the project under guidelines from the department. The Committee will provide a forum for open dialogue between the Valley of the Winds project team and representatives of the local community, stakeholder groups and local council on issues related to the project.'<sup>2</sup>

ACEN have failed to advertise on their shop front who the local community members are, when the CCC meets, how frequently it meets.

- Instead of extensive community participation & consultation, ACEN have behaved appallingly in their active hostility to locals who have openly voiced opposition to their project. They have caused our local postman to be sacked for voicing his opposition. And they have boycotted a local business for voicing their opposition.

Barker Ryan Stewart state: 'Community engagement plays an important role in assessing SSD projects, by helping to create improved project design, ecologically sustainable development, and reduce environmental impacts'.<sup>1</sup>

ACEN have definitely NOT been facilitating 'extensive community participation' at their shop or through information sessions. They have not widely advertised the CCC.

They have, therefore, NOT met the DPIE requirements of the SSD assessment process which 'involves extensive community participation under the EPBA Act'.<sup>1</sup>

## **Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)**

According to the EPBC Act, Australia has 'strong laws in place to protect our environment. They help us to protect our unique plants, animals, habitats and places.'<sup>3</sup>

It is, therefore, the duty of the DCCEEW & the NSW Govt. to ensure protection of the 'unique plants, animals, habitats & places' of the Coolah region, including the Coolah Tops National Park.

In approving the construction of a total of 316 turbines on every ridge in the Coolah region, right up to the Coolah Tops NP, the federal & state govts are condoning the destruction of these ridges & associated refugia.

They are, therefore FAILING to abide by the EPBC Act.

This also applies to the high places of the VOW wind factory. Unique & threatened flora & fauna are also found on ridges where VOW wind turbines are planned. These also deserve protection.

Under the EPBC Act, the IPC must protect flora & fauna of the ridges south of Coolah Town by NOT allowing the VOW project to progress.

### **Health & welfare**

In their excellent INDEPENDENT study of wind turbines & adverse health effects, Dumbrille, McMurtry, & Krogh (2024) found that 'the weight of evidence indicates occurrences of adverse health effects (AHEs) from living and working near industrial wind turbines (IWTs). Descriptions of the AHEs being reported by those living or working near the turbines are similar. These occurrences have been associated with exposure to audible and inaudible noise annoyance'.<sup>4</sup>

Their conclusion: 'Based on our analysis of clinical, biological, and experimental evidence . . . we conclude that there is a high probability that emissions from IWTs, including infrasound and LFN, result in serious harm to health in susceptible individuals living and/or working in their proximity. Symptoms include significantly disturbed sleep, headaches, noise sensitivity, irritability, anxiety, pressure on eardrums, sinus problems, panic attacks, vertigo/balance problems, erratic/high blood pressure, tightened scalp/forehead, eye strain, and nausea'.<sup>4</sup>

In the light of this study & other similar studies, the IPC must heed the advice of the WHO which states: 'When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking, action should be taken to protect the public health, without awaiting the full scientific proof'.<sup>5</sup>

On this basis, the IPC should not permit the VOW project to progress.

The concept of adverse health effects linked to wind turbines has been castigated by pro-renewables lobby groups, who would prefer the public to view operational

turbines as benign. However, increasingly, international peer-reviewed studies are finding an increasing array of adverse health effects in both humans & animals.

Dr. Nina Pierpont, a Johns Hopkins University School of Medicine-trained M.D. & Princeton (Population Biology) Ph.D. recipient, published her peer-reviewed tome, 'Wind Turbine Syndrome – A Report on a Natural Experiment' in 2009. Since that time, her findings have been relentlessly criticized. Not rationally explored, as good science would decree, simply metaphorically shot down. However, her findings, based on the symptoms of her patients, are increasingly being substantiated by similar cases around the world.<sup>6</sup>

While responses, like that of Simon Chapman (2017), 'Wind Turbine Syndrome: A Communicated Disease' are proving to be questionable.<sup>7</sup>

Once again, the IPC should act in the interests of local people, & employing the precautionary principle, of 'Do No Harm', by not approving the VOW project.

### **Bushfire risk & air safety**

Where aerial firefighting operations are required, wind turbines, MET towers, & solar farms, through their associated transmission infrastructure, can pose a more obscured threat to aircraft that need to operate at lower levels. Wherever there is bushfire, there is smoke. Where bushfire is impacting in close vicinity to a wind farm, the turbines, the MET towers, & their transmission infrastructure, may be hidden within the plume of resulting smoke. This is a dynamic phenomenon that constantly changes with the movement of the smoke plume.

Aerial firefighting crews will do all that they can in order to suppress the progression of the fire & endeavour to keep the fire as cool as possible so that ground crews can access the fire flanks more safely in order to extinguish the flames. Aircraft are also uniquely effective in often being able to attack the front of a fire directly.

However, when the threat of hidden wind turbines and MET towers becomes an issue, the efficacy & efficiency of aerial firefighting aircraft may significantly diminish. The safety of the aircrews must be considered in preference to the consequences of the impacting fire & compromises made in order to uphold it.

According to the Australasian Fire and Emergency Service Authorities Council Limited (AFAC) in their Wind Farms and Bushfire Operations Guideline V3.0 (2018), "Turbine towers, meteorological monitoring towers and power transmission infrastructure pose risks for aerial firefighting operations. Meteorological monitoring towers and power transmission infrastructure are generally difficult for aerial personnel to see, if they are not marked appropriately. If wind turbines were not shut down, moving blades and wake turbulence would create significant hazards for low flying aircraft, thus the shutting down of wind turbines, in an emergency situation, is defined in wind farm emergency procedures. A wind farm facility's power lines may pose electrocution risks, that are exacerbated due to smoke during a bushfire".<sup>8</sup>

This clearly has a potential amplification factor for bushfire risk to properties within

and surrounding wind farms. In turn, insurance premiums and other mitigation measures need to be bolstered in response, creating another increase in cost to surrounding farmers and graziers, as well as a general amplification of bushfire risk to other land classifications.

In their National Airports Safeguarding Framework, CASA make the following advisories in “Guideline D”.<sup>9</sup>

“Voluntary provision of obstacle lights

41. CASA’s regulatory regime for obstacle lighting provides an appropriate level of safety for normal aircraft operations. Certain flying operations, by their nature, involve lower than normal flying, for example aerial agricultural spraying, aerial mustering, power line inspection, helicopter operations including search & rescue, some sports aviation, & some military training. Pilots conducting such operations require special training & are required to take obstacles into account when planning and conducting low flying operations.

42. In making decisions regarding the marking & lighting of wind farms & wind monitoring towers, wind farm operators should take into account their duty of care to pilots & owners of low flying aircraft.

Turbulence

43. Wind farm operators should be aware that wind turbines may create turbulence which noticeable up to 16 rotor diameters from the turbine. In the case of one of the larger wind turbines with a diameter of 125 metres, turbulence may be present two kilometres downstream. At this time, the effect of this level of turbulence on aircraft in the vicinity is not known with certainty. However, wind farm operators should be conscious of their duty of care to communicate this risk to aviation operators in the vicinity of the wind farm. CASA will also raise awareness of this risk with representatives of aerial agriculture, sport aviation & general aviation”.

In short, wind & solar farms increase the bushfire risk in the areas where they are built. That is not only a foolish risk to take onto a host’s property, it is quite unfair to impose onto host’s neighbours.

Because of bushfire risk & air safety, the IPC must not approve the VOW project.

## **Agriculture**

Agriculture is of utmost importance to the Coolah region, which is noted for grain crops, cattle, mixed farming, lucerne & hay, fat lambs & wool.<sup>10</sup>

According to the NSW Govt, Dept of Primary Industries, ‘The value of agricultural production in the Central West Slopes & Plains Sub Region (CWSP), including Coolah, was over \$1.77 billion from a range of livestock for meat & wool, cotton, broadacre crops & vegetables.

Agriculture & agricultural product manufacturing employ the largest percentage of people across the Sub Region (ABS 2015/16).

The Central West Slopes & Plains has the advantage of large areas of unfragmented land that allow the achievement of economies of scale for broadacre agriculture, including irrigation. This coupled with suitable soils & water supply, infrastructure as well as access to markets in Dubbo, Orange, Sydney, & Newcastle make the Sub Region one of the most successful and profitable in NSW.<sup>11</sup>

The Coolah region, & the entire Central West, has been referred to as prime agricultural land. As such, fed & state govts. have a duty of care to protect agricultural land, for food & fibre production. And to ensure the high quality of this food & fibre, for both the national & international market.

Increasingly, international research is highlighting agricultural land degradation caused by wind turbines.

Wang, Li & Liu (2023) conducted research on wind farms located in the grasslands of China. Their research found that 1) the soil moisture within wind farms decreases most significantly, with a decrease of 4.4 % observed; 2) in summer and autumn, the declines in soil moisture in the downwind direction are significantly greater than those in the upwind direction, with the opposite occurring in spring. (3) Wind farms aggravate the soil drying in grassland areas, which may have impacts on grasslands ecosystems.<sup>12</sup>

The grassland of China can equate to the low-lying farming areas in the Coolah region. We can extrapolate that, as in China, VOW wind turbines will create declines in soil moisture which have a direct impact on agricultural production. Indeed, residents in the vicinity of the Hallet wind factories, four in total, near Hallet, in South Australia, are already experiencing this drying effect.

A further recent study by Li, Ma, *et.al.* (2024) focused on the Linxiang wind farm in Hunan Province, China. These researchers found that 'wind farm construction had significant negative impacts on soil physicochemical properties & vegetation cover. Specifically, wind farm construction led to a decrease in soil organic carbon, total nitrogen, effective phosphorus, and quick-acting potassium content, changes that indicate a reduction in soil fertility. In addition, the construction and operation of wind farms altered the local microclimate of the soil, affecting soil temperature and water evapotranspiration, which in turn affected the physicochemical properties of the soil. Although wind farm construction had a small effect on soil pH, overall soil fertility decreased.'<sup>13</sup>

Extrapolating from these findings, there is high probability that soil fertility of the ridges where VOW turbines are constructed, will decrease. This will seriously impact any remaining remnant vegetation, after the construction phase. There is also probability that soil fertility on adjacent farms will also decline. Prime agricultural land will be impacted by the depletion of soil fertility.

As a corollary, farming expenditure will increase as farmers will be required to increase the amount of fertilisers used to maintain soil fertility.

In yet another study, Gao, Wu, Qiu, *et al.* found that 'Wind farms in plains, hills, & low relief mountains are leading to a loss of forest carbon sinks. . . The greatest loss is in the hilly areas, amounting to 52,657.06 tons and an average economic loss of \$7.90 million. . . . the loss of economic value of carbon sinks reflects the negative spillovers caused by wind power'.<sup>14</sup>

As previously stated, there is an increasing number of international research studies being undertaken on the 'negative spillover of wind power'.

The farmers of the Coolah region will be forced to negotiate these negative spillovers in their day-to-day farming activities. This will lead to an increase in the cost of farming. And unlike hosts who will be, if any, additional income.

The IPC MUST see the value of maintaining prime agricultural lands. Any industrial activity that threatens this agricultural landscape MUST be vetoed. The IPC has this power. They need to use their power wisely. For the future of agriculture in the Coolah region.

### **Noise & Infrasound**

Noise, infrasound & vibrations have been referred to previously. However, it is important to elaborate on these aspects, using both research articles & anecdotal reports.

In Norway, Velilla, Collinson, *et.al.* (2021) concluded that 'anthropogenic vibratory noise levels can impact larger soil fauna, which has important consequences for soil functioning. Earthworms, for instance, are considered to be crucial ecosystem engineers and an impact on their abundance, survival and reproduction (by wind turbine vibrations) may have knock-on effects on important processes such as water filtration, nutrient cycling and carbon sequestration.'

They go on to state: 'Human-induced sensory pollutants can directly affect organisms through an impact on their perception, physiology & behavior . . . . It is possible that wind turbine-induced vibrational noise masks the vibrational cues of approaching foraging moles, making earthworms in noisy areas more prone to predation. Vibratory noise could also be misleading to earthworms, who may not be able to distinguish between vibratory cues coming from an approaching predator such as a mole, and the subterranean waves from the turbines.'<sup>15</sup>

A Waubra Foundation document, entitled: Emission of Sound and Vibration, found the following: 'Wind turbine blades produce airborne pressure waves (correctly called sound but which, when unwanted, is called noise) and ground-borne surface motion (vibration).

Recent measurements have indicated that turbines generate vibrations even when shut down, presumably from the wind causing the flexing of large blades and the tower structure, and that this vibration (when turbines are shut down) can be measured at significant distances.

The airborne energy manifests as sound across a range of frequencies from infrasonic (0 to 20 Hertz(Hz)) up through low frequency sound (generally said to be below 200 Hz), and into the higher audible frequency range above 200 Hz. (Hertz is the variation in a particular changing level of sound pressure, at the rate of one cycle (or period) per second).

Sound at 100 Hz is audible at sound levels of around 27dB (decibels) for an average person, whilst the level of sound required for average audibility rises quite quickly below frequencies of, say, 25 Hz.

Sensation, being non-auditory but bodily recognition of airborne pressure waves, occurs at lower pressure levels of infrasonic frequencies than can be heard. At infrasonic frequencies the “sounds,” i.e., pressure waves, exist and may be detected by the body and brain as pressure pulses or sensations, but via different mechanisms to the perception of audible noise.

Periodic pressure pulses are created by each turbine blade passing the supporting pylon. This is an inherent consequence of the design of horizontal axis wind turbines. These energy pulses increase with increasing blade length, as does the power generating capacity. People living near turbines have described the effect of these pulses on their homes as “like living inside a drum”.

Larger turbines produce a greater percentage of their total sound emissions as low frequency noise and infrasound than do smaller turbines. Therefore replacing a number of small turbines to a lesser number of larger turbines, whilst keeping the total power output of a wind project constant, will increase the total infrasound and low frequency noise (ILFN) emitted by the development. This effect will be compounded by increased wake interference, unless the turbines have also been repositioned further apart in accordance with the spacing specifications for the larger turbines. Wake interference results in turbulent air flow into adjacent turbines, with a consequent loss of efficiency, and increased ILFN generation.<sup>16</sup>

Anecdotal evidence from residents near the Hallet WF in South Australia & the Crookwell 2 WF near Crookwell, NSW, confirms the impact of noise & vibrations for locals. They too, have described the situation, as ‘like living inside a drum’, with the Crookwell resident in the process of engaging a lawyer.

The residents of the Coolah region should NOT be expected to endure similar condition. The IPC must say no to ACEN’s VOW project.

## **ACEN EIS**

The ACEN EIS, as expected, plays down the negative spin-offs of the VOW WF. The biodiversity section was compiled by contracted ecologists, whose aim was to ensure approval of the project.

Local residents had/ have neither the expertise, the time, or the subsidised dollars, to mount an authoritative counter-argument.



The ACEN EIS is a dispassionate clinical document compiled by professionals in some distant urban centre, far from the Coolah Valley. Local residents' opposition can be viewed as emotional, & their arguments superficial. But the locals are speaking from the heart when they say, they want to protect their much loved local environment. And not see it destroyed by wind turbines raping the ridges.

As stated ecologists employed by ACEN, will act in ACEN's interests. Not in the interests of Colah Town locals. As such, they produce documentation that plays down the value of our environment, including flora & fauna.

And the NSW Govt. regards the ACEN EIS as a verifiable account, without adequately raising questions regarding the accuracy of findings.

In an issue of SSD, the NSW Govt. should have employed Govt ecologist/s to compile an Independent thorough investigation of the region the VOW will occupy, like that undertaken by the Australian Museum, entitled: Australian Museum Surveys of the Vertebrate Fauna of the Coolah Tops National Park'.<sup>17</sup>

Instead both ACEN, & the NSW Govt are justifying the destruction of critically endangered flora & the death of vulnerable wildlife, if not endangered & critically endangered wildlife, including the migratory Swift Parrot.

In the US, wind factories are permitted wildlife 'takes'. In Australia, Govts & wind companies do not talk about 'takes'. However, bird & bat deaths are understood & accepted. When Adani wanted to establish a coal mine in Queensland, there was uproar when it was found this coal mine would impact a threatened bird species. However, there is no uproar when wind factory companies decide to construct a wind factory in a rural region, with a similar impact on threatened species. ACEN have calculated 2 Wedgetail eagle deaths a year from the operation of their wind factory. If the turbines survive 20 years, that equates to the loss of 40 slow maturing wedgies. Does the IPC find this acceptable?

A grave concern to locals that the wind turbine layout, turbine type, the consideration of other matters such as tonality, low frequency noise & sound power levels can all change & are issues that will be considered **after** approval of the EIS.

ACEN are therefore given unmitigated permission to act according to their own interests. Would any other industry be given this level of leniency?

## **Global emissions**

Perhaps the greatest irony of the renewables debacle is that the destruction, degradation, disruption, & division caused by the rollout of the ACEN wind factory, as well as TILT Renewables wind factory, will make absolutely NO dent in carbon emissions, which have & will continue to rise that to India & China & their escalating use of fossil fuels, including coal from Australia.

We are witnessing one of the greatest, if not the greatest folly of our time!

In SUMMARY

The IPC should & MUST reject ACEN VOW WF. With the approval of the TILT project, Coolah people & the Coolah environment, have already done their 'heavy lifting' in the interests of keeping the lights on in Sydney & other urban centres.

Sadly, the mood of Coolah people is that we will not be actively listened to, we will not be heard. The IPC will not decide in our favour, That the decision to approve is a foregone conclusion. And the IPC Coolah visit was merely a tick box exercise.

Our voices are but whispers from the bush against the strident shouts from the renewables lobby.

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