

In addressing this Paper I would like to state it's not something that can be toyed with, the Code has to be clear with an eye on the present and the future, not simply on how we access energy supply but more directly on how the people of this State will live, work and provide food as well as energy needs in the future.

To do this it's necessary to achieve an environment where it's safe to live and work, where the States natural environment is maintained to a high standard to ensure our fauna, flora, avian and human species can survive and thrive.

This document states ...'proposed changes will be consulted on from October when the Code is released for consideration.' and ...'key changes proposed are explored in this document.' Yet the EPA is currently conducting a Major Review of environmental noise guidelines, which is due to conclude sometime in 2020 after NHMRC research and its findings are available. Surely it would be appropriate to wait for the EPA's updating of their Guidelines before moving forward with discussion of Planning and Design Code changes?

The Executive Summary of the discussion paper uses terms such as 'appropriate' 'amenity' and 'noise concerns', each of which are important and require careful consideration, in context, with health issues a high level focus without placing interests of industry ahead of those of citizens of South Australia would have to live for many years with consequences of inappropriate changes.

LOCATION

Consideration should be made to where energy production takes place, whether it is possible to include more production where it's needed and thereby reducing delivery costs.

Within the discussion paper the section 'Turbines are getting taller', has more to be considered than the factoring in of Aviation considerations and Visual Amenity.

- Maximum restriction on the Height and MW capacity of turbines
- Restriction of the number of turbines in any applied for project
- Restriction to the distance between projects
- Maximum number of turbines installed within a defined area/district

In urban areas there are such restrictions on building heights and industries are and have been restricted to prescribed areas to reduce/prevent annoyance and possibly danger to residents, yet these same considerations are not being offered to people living on rural properties.

This could be considered Government approved discrimination of what protection someone living in an urban area has and what protection is acceptable for those living in rural areas.

SETBACKS and NOISE

Recommended changes to setback distance and noise are considerably negligent in their ability to protect residents and the environment. The focus appears to be to appease requirements of the renewable energy industry.

- Vesta is current largest turbines are around 5.6MW, blade sweep of 162 mts or 20,000m² with a standard sound noise level of 104dB(A)
- The Golden Plains project in Victoria is to have around 200 5+MW GE turbines producing between 800 and 1000MW, 158m blade sweep

South Australia's Development Planning needs to consider how to set controls on this industry to ensure the security of rural communities, not just supplying energy.

As with all man made machines Industrial Turbines emit noise.

- What type of noise, to what intensity and how it affects humans, as well as the natural environment is contentious?
- Therefore urgent consideration of Regulators to work not only with the industry but with independent acousticians and medical experts to re-write a Code to ensure the safety of both.
- A regulation for setbacks suitable to ensure the safety of neighbours, and those travelling through areas near projects is also urgently needed.

The setback distance proposed is created from a 'pick from the hat' rather than understanding the types of noise/sound/vibration being emitted and the ability of people and animals to physically cope with it.

Extensive independent research is being and has been undertaken with more people accepting machinery of this nature cannot and is not benign.

The current noise Standard was created many years ago with full co-operation of the industry therefore could be seen to have been designed out of self-interest.

- Setback distance should be relevant to the size of turbine being installed.
- Setback proposed from townships are inadequate to allow expansion of rural towns
- Government wishes to expand the population of rural towns
- Setback proposed for project neighbours who live in rural locations should be the same or greater than that for townships.
- Existing setbacks proposed are discriminatory. They assume people living on the edge of a township are more susceptible to the noise emitted than those living and working in rural areas.

Standards for Noise and Setback should not be created using the 'pick from a hat' method but should be based on independent acoustical and scientific research with a need to ensure the safety of human and animals living with environmental changes in a location adjacent to or near these Projects.

- Acceptance that over the past 20 years much has changed and adequate updating is required
- Equipment and methods of use to measure noise levels need to be updated to ensure the full range can be recorded.
- Claims that 'background' noise from tree's bushes and other 'barriers' can 'mask' the noise from the multiple Industrial Turbines is no more than wishful thinking on the part of the industry.
- A machine that reaches into the air around 162m with a blade spinning at a regular speed and beat depending on the speed and direction of the wind cannot be compared to the rustling of trees and bushes.

- Nor can it be compared to noise from fencing tin rattling as it's possible for someone to knock in some nails or remove a piece of rattling tin to stop annoyance but they cannot stop or remove an Industrial Wind Turbine.
- Setback distances should depend on the size, strength and number of turbines being installed.
- That they do not include noise from existing Industrial Turbines previously erected when undertaking noise assessment is a failure to adequately provide for the full spectrum and intensity of noise at a location being assessed. This omission ensures inadequate assessment for the safety of those living near these projects.
- A scale of setbacks should be developed with the assistance of independent scientific, medical and engineering experts taking into consideration the location, topography, number, height, capacity and noise emitted.

HUMAN HEALTH

Comments in the discussion paper relating to the NHMRC's comment could be seen to indicate a desire to mislead readers. In fact the NHMRC did include in their Draft Review that '*...there is consistent but poor quality evidence that proximity to wind farms is associated with annoyance and, less consistently, with sleep disturbance and poorer quality of life*'.

They have since provided research funding for research using a methodology approved by them. This research is still not yet completed and changes to setbacks etc. should await the results.

Governments and Planning authorities responsible for Human health and the environment are required under the RIO Declaration on which the Paris Accord was created should remember principles of that Declaration including:

Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

*In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, **lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.***(my emphasis)

Planning policy changes in 2012 followed public consultation but there was virtually no acknowledgement of their concerns but acceptance the industry above the rights of citizens to be '*...entitled to a healthy and productive life in harmony with nature.*' were pandered to.

PROPOSED CHANGES?

Page 10 of the discussion paper, highlights changes being proposed in this current process will retain some of the draconian and dangerous aspects of the 2012 changes.

For instance, is it 'appropriate' to identify Wind Projects in farming, primary production and rural zones? Especially, when it's stated it's to provide '*... **certainty for renewable energy development in South Australia***'. (my emphasis)

There has been a considerable investment in Renewable energy in South Australia and continuing to destroy our rural and regional environment simply to provide certainty to an established industry is not viable for the environment, human health or future of this State.

Especially when Regulations are not based on scientific outcomes for the environment or human health, and have no upper limits set for size, capacity or even quantity of Turbines in total or in individual projects. Nor is there any consideration around the accumulated impact of so many turbines where one project abuts another, in many cases simply because of their desire to easily access the Grid.

Before more are approved it's time for the Government to conduct a complete scientific examination of the environment, effects on human, flora, fauna and avian species in areas where turbines are currently operating, as well as the true worth and value and life span of this form of energy production.

With relation to 'noise concerns', there are more and more people reporting adverse health effects and or annoyance from the 'noise' emitted from these turbines. Reports are increasing not only in Australia but across the globe wherever these turbines are installed.

Yet below are the proposed changes to apparently accommodate these concerns, but these changes again appear to be 'pulled from a hat' and have no relevance to the actual situation and concerns.

Page 11. Current system – 2km setback from townships and settlement zones and urban areas.

The proposal to increase the 2km setback by 10metres for each additional metre over 150 metres is not viable to protect people living on the edge of such places, neither does it allow for the expansion of these townships etc. If the Government wishes to encourage more people to live and work away from the main populated areas restricting the ability of such places to grow seems redundant.

Page 11. Current system – 1km setback from non-associated dwellings.

Setbacks from neighbouring homes of 1.2km! This is even less than for people living on the boundary of townships and settlement zones even before a 10mt additional setback, which is not applied for those living on a rural property.

Why are these people being discriminated against? They live in some of the quietest and most beautiful environments in our State, yet they are expected to now live with the intrusion of industrial machinery into their lives. This is not farming machinery which is used occasionally; it is not machinery that can be shut away in a shed out of site. Nor can it be shut down when people need rest or a quiet time to enjoy their environment. They lose control of their living environment and have less control than people living within a city or town where noise annoyance is regulated. Discrimination is apparent.

Page 11. Noise. Environment Protection (noise) Policy requirements. **As per current system.**

As discussed above the standard is out of date therefore the EPA needs to update the standard to one which correctly relates to today's situation. The EPA needs the ability and funding to ensure effectively being able to update as required; they also

need staff trained in the area of assessing the acoustics effectively and the authority and equipment to properly undertake 'spot' checks at projects. These should consist of acoustic testing as well as testing for contamination around turbine bases to ensure there's no unreported spillage. They also need to be informed as soon as a turbine has a mechanical problem or if something such as a blade is damaged or 'thrown' so they can attend, test and assess for contamination and ensure any clean-up is undertaken immediately.

Page 6. Information about the size of turbines increasing in height and capacity, unfortunately this information is fast becoming redundant as turbines are now being proposed at 250+ heights with a capacity of 6MW. Having a fixed maximum height and MW capacity would enable authorities to better assess projects to ensure citizens are not over run with projects as a result of unsuitable regulations.

If a turbine or other Renewable energy project plan was for a factory within a zoned industrial area it would be required to meet strict Regulations to ensure there is no adverse noise, or other disturbance to near residents. The Renewable industry in South Australia has none of these restrictions.

Projects are proposed to accommodate as many turbines as possible only restricted by accessible land. There's no control on the number or size and capacity of turbines in a project. The only restriction is if the EPBC are consulted and they make changes to 'mitigate' in other words, allows them to cause some harm to the environment and the fauna, flora and avian species.

Human beings are irrelevant in both the Federal EPBC body and State Regulations and the EPA which appears to have little ability to move beyond Government Policy and operates under a reactionary model rather than a preventative one.

VISUAL AMENITY

Visual Amenity as a reason to object to or refuse projects was removed in the 2012 changes. Yet it appears to be included in these proposed changes.

However, as it's not specifically detailed in the Discussion Paper it is difficult to know what is proposed.

Visual Amenity is important to our States environmental tourism as well as to the lives of those who live in our rural areas.

The view of Industrial Machinery in the form of Wind Turbines across vast areas of our rural landscape detracts from the natural and farming environment. The sense of peace is destroyed when Heavy Industrial Machinery is evident.

Destruction of the peaceful outlook of our rural and outback areas will diminish our attraction to tourists. The beauty of our States natural environment will be lost.

This is already happening; along the Highway toward Port Augusta we will soon have views of Turbines and Solar installations interrupting the view of the Lower Flinders Ranges.

If a tourist travels to the Flinders Ranges or other outback destinations and all they can see is a sea of Industrial Machinery they will not return. The States unspoilt rural outback will become less attractive to both residents and visitors. The peace and beauty will be lost.

SOLAR

The rush to install Large Scale Solar energy plants follows the uncontrolled rush and unexplored dangers of Wind Turbines. At no stage has there been scientific research into these large projects. It has simply been a case of expanding on the acceptance of Small Scale Rooftop Solar.

Page 7 comment '...can be an efficient land use with zero environmental impact after installation.'

Where is the evidence of this, has it been researched here in Australian conditions? To establish a properly and appropriate Policy there needs to be evidence to prove these massive Large Scale projects are safe and do not irreparably damage the environment.

Nowhere in Australia has this been done. YET it has been decided to forge ahead, with a setback distance of 500m from Conservation areas, 100m from Townships and rural living areas and only 30m from all neighbouring land.

Once again we have a 'pick from the hat' decision.

What about reflection has there been research conducted to ensure these projects don't cause reflections that can be distracting to people living nearby, passing by in cars or on foot.

Do the panels issue any contaminants when highly heated?

What if there's a storm and panels are damaged do they emit contaminants dangerous to humans and the environment.

What if there is a home or workplace/shed on or close to the boundary of a neighbouring property is there an additional setback.

Is 100m sufficient distance from an industrial site for homes?

Until appropriate research in the area of Large Solar installations has been conducted then humans and the environment are possibly being placed in danger.

ALTERNATIVE LOCATIONS FOR SOLAR

As for where these can be placed Solar Towers could be installed in industrial areas in and around Adelaide, all new high-rise structures could have a top floor accommodating Solar Panels and maybe even towers of solar panels.

To proceed at speed does not offer adequate protection and if future research proves dangers exist who will bear the cost to health and the environment?

The mistake to rush ahead with Wind Turbines without adequate research and Policy should have been warning enough not to repeat the error.

STORAGE BATTERIES

Presently and no doubt into the future these Large Scale Batteries will not be 'base-load' capable, but will be used as a form of 'short circuit arrester' for times when there is an interruption to the power supply.

Batteries to store excess production could be built anywhere there is no reason they cannot be placed in towns and cities. Excess energy does not have to be stored at the site of production.

However, there is a problem with this form of energy storage and that is we are in the infancy of using MASSIVE battery storage. We know small batteries we use every day can have problems of overheating, or simply exploding. Do we know this cannot happen with these collections of batteries joined together to create a Large Storage facility?

Placing them behind some form of fencing to 'hide' them from view can be utilised within towns and cities and they could be placed in areas the same as substations are.

But no matter where they are placed what if an accident happens; will the batteries explode and maybe catch fire and cause damage to surrounding areas? Will they contaminate the air and ground? If they can what would be the arrangements to contain damage and contamination? What if a problem causes a bushfire? Who will be responsible and who will pay compensation?

Again it's the Government rushing ahead before consideration of consequences. This is a recurring theme.

DECOMMISSIONING

One item which is now being addressed but has no detail in the Discussion Paper is the process of decommissioning.

This should be a high priority when the first Wind Turbine Project was proposed, but it seems to have slipped below the horizon, fortunately for the companies.

The minimal attention to decommissioning to-date hopefully will be addressed in these Policy changes.

Currently it seems when a Wind Turbine project reaches its use-by date the process is to remove all above ground structure as well as the cabling and 'rehabilitate' the area, but leaving the massive concrete structures in the ground.

Concrete is one of the world's most horrendous pollutants, yet it is to be left in the ground!

These areas while proposed to have soil placed over the top will always have that dreaded concrete below the surface. Impermeable and a hindrance to the land being used for grazing or even cropping as the widely spaced concrete could make deep watering problematic.

Then over time when land changes hands will later owners know where these buried concrete obstructions are?

It's sometimes suggested sites could be re-used with new turbines replacing the old ones. However, newer turbines are bigger and require larger footings; will they then need to put more concrete into the ground to accommodate larger turbines in different positions?

Will a new planning application for larger and differently spaced turbines be required?

Hopefully this will be addressed in changes to the Planning Code. Or are companies going to be able to side-step this issue?

Increasingly projects receive approval then companies makes a request to use larger and maybe fewer turbines, but they don't appear to have to put in any further environmental, noise etc reports and have them assessed, why not?

DECOMMISSIONING who's responsible for overseeing?

When decommissioning occurs the EPA should be on hand to ensure no contamination occurs and if it does it is immediately cleared up before the decommissioning progresses.

It should be mandatory for a record to be kept as to where and how all recyclable materials have been disposed of and anything that cannot be recycled should be disposed of in Government designated areas where companies pay a continuing 'storage' fee.

Prior to planning approval all companies should be required to place an independently assessed decommissioning fee into an account which cannot be accessed for any other purpose. This account will be transferrable to any other company that takes over the project.

Payment of a 'storage' charge will need to be negotiated between seller and purchaser and arrangements approved by the State Governments legal representatives.

There should also be a mandatory period set for the decommissioning to commence and be completed at the time of an application being approved and this should be set as close to the cessation of operation as possible as and not greater than 6 months.

CONCLUSION

More work needs to be urgently undertaken and Policy created to accommodate all aspects of these projects, we cannot continue to endanger lives and the environment when what we are meant to be doing is saving it.

"Act in **Haste**, Repent at **Leisure**",

Unfortunately it will not be Leisure but a Disaster that we will be repenting.

JA Rovensky