Submission No 111

INQUIRY INTO IMPACT OF RENEWABLE ENERGY ZONES (REZ) ON RURAL AND REGIONAL COMMUNITIES AND INDUSTRIES IN NEW SOUTH WALES

Name: Mr Stan Moore

Date Received: 31 January 2025

Thank you for the opportunity to shin the light on a privileged group, the Renewable Energy developers, at the expense of farmers and their rural communities, agricultural production and food security, and potentially major contamination of agricultural land.

We have a property just south of Goulburn NSW and have a solar factory proposal from BP Lightsource (British Petroleum) and have approx. 3.7km joint boundary and 150M from our home.

Goulburn is not in a REZ, however the matters raised by being in a REZ apply to non-REZ areas.

For instance, the Southern Tablelands(Upper Lachlan and Goulburn Mulwarre Local Governments) currently host 10 of the 19 operating wind turbine factories in NSW.

Goulburn has 4 solar factory proposals, one has been approved. There are 2 very large solar factories proposed for Gundary Plains (Home of the Big Merino) - Gundary and Merino - covering a total of 14.7 square kilometers, approx 1.5 million solar panels, 300 inverter stations with batteries, 2 large grid scale lithium batteries and 2 large 330KV substations. These 2 proposals are 2km apart. Both sites are located less than 10km from the regional city of Goulburn. The cumulative impact is enormous.

The driver for developers is access to the grid and close to "the load" (Sydney).

I am attaching 2 papers based on my research for your consideration.

I have not addressed the issues of fire risk and mental health impact and property devaluation in detail. These are real and totally denied and ignored by developers.

Fire- Gundary Plains can be a tinder box when it comes to fires and those who approve such developments knowing there is an increased risk of fire from the various incendiary devices (solar panels, transformers, lithium batteries) being installed should be held accountable.

Mental health impact - the loss of rural landscape, agricultural land and property value, and the abhorrent treatment by developers has had a big impact of many individuals and families (there are 108 family homes within 4km of the proposed Gundary factory alone). A number of community members have sought specialty help for anxiety and other symptoms, and we have luckily avoided one impacted neighbour committing suicide.

Property devaluation - the value of properties on Gundary Plains are likely to significantly fall should these projects be approved. Our property has been assessed by a property valuer and it has been estimated that there will be a 31% reduction in its value.

This is a significant capital loss for us, and some have said to us that this is "a transfer of wealth to the hosts and developers" and this appears to be the case.

There are many issues that are wrong with these RE developments. I would be happy to elaborate.

I am hoping this inquiry puts a stop to the madness that is currently being inflicted on rural communities.

Sincerely
Stan Moore

30 January 2025

Solar Factory submission

CONTAMINATION AND POLLUTION

The NSW Department of Planning has previously advised the Independent Planning Commission "that to readily release contaminants into the environment, the solar panels would need to be ground to a fine dust…."

The Large-Scale Solar Energy Guideline, Frequently Asked Questions (Guidleine FAQ) provides the following advice on whether solar panels contaminate soil (page4):

> *The metals in solar panels (including lead, cadmium, copper, indium, gallium, and nickel) cannot be easily released into the environment. This is because metals such as cadmium telluride (CdTe) or cadmium sulfide (CdS) are enclosed in thin layers between sheets of glass or plastic within the solar panel. Because of this, the use of metals in solar panels has not been found to pose a risk to the environment.*
>
> *To readily release contaminants into the environment, solar panels need to be ground to a fine dust.*

The Independent Planning Commission has as recently as July 2024 requested the Planning Department to provide further information on contamination risks associated with solar panels. The Department's response included reference to the Guideline FAQ and noted that it was informed by the advice from the Environment Protection Authority (EPA).

Whenever the issue of contamination by solar panels was raised in the past the Independent Planning Commission has accepted the advice contained in the Guideline FAQ. The Independent Planning Commission has also said in the past that "in the absence of any robust contrary evidence", that the risk of contamination from damaged and/or degraded solar panels is minimal.

Well, here is the robust contrary evidence.

Researchers at the Institute for Photovoltaics and Research Centre SCoPE, University of Stuttgart and the Institute for Sanitary Engineering, Water Quality and Solid Waste Management, University of Stuttgart, 70569 Stuttgart, Germany published a paper on 29 January 2021 titled **Leaching via Weak Spots in Photovoltaic Modules**.

Abstract:

> *This study identifies unstable and soluble layers in commercial photovoltaic modules during 1.5 year long-term leaching. Our experiments cover modules from all major photovoltaic technologies containing solar cells from crystalline silicon (c-Si), amorphous silicon (a-Si), cadmium telluride (CdTe), and copper indium gallium diselenide (CIGS). These technologies cover more than 99.9% of the world market. We cut out module pieces of 5 X 5cm2 in size from these modules and leached them in water-based solutions with pH4, pH7 and pH11, in order to simulate different environmental conditions. Unstable layers open penetration paths for water-based solutions, finally the leaching results in delamination. In CeTe containing module*

pieces, the CeTe itself and the back contact are unstable and highly soluble. In CIGS containing module pieces, all of the module layers are more or less soluble. In the case of c-Si module pieces, the cells' aluminium back contact is unstable. Module pieces from a-Si technology also show a soluble back contact. Long-term leaching leads to delamination in all kinds of module pieces; delamination depends strongly on the pH value of the solutions. For low pH-values, the time dependent leaching is well described bu an exponential saturation behaviour and a leaching time constrant. The time constant depends on the pH, as well as on accelerating conditions such as increased temperature and/or agitation. ***Our long-term experiments clearly demonstrate that it is possible to leach out all, or at least a large amount of the (toxic) elements from the photovoltaic modules. It is therefore not sufficient to carry out experiments just over 24h and*** **conclude on the stability and environmental impact of photovoltaic modules.**

A copy of the paper can be made available on request.

Concern water may be contaminated by water run-off from the solar site onto neighbouring properties.

Soil contamination of the solar site and neighbouring properties is also a likelihood.

Livestock producers as part of their accreditation are required to identify risks and now they have an additional contamination risk which will have to be managed at an additional cost, presuming it is able to be managed.

An accredited livestock producer will have to ensure their livestock do not graze contaminated areas nor drink water that has flowed from the solar site. If this development is approved, the livestock producer will have to develop a plan to address the contamination/pollution likelihood. No doubt there will be a cost involved. Will the developer pay or compensate for having to undertake work that has been made necessary because of this development.

Australia cannot afford the undermining of its food security and public health and therefore it is prudent to adopt the "precautionary principle" when it comes to the possibility of contamination and pollution. The importance of avoiding contamination is critical for the retention of Australia's domestic and international markets for primary produce and the associated food security of the nation. It is also important to avoid contamination of potable drinking water for humans.

Finally, Australia's food security is protected by prohibiting large scale renewable projects on productive agricultural land; (See Paris Agreement Article 2 (1) (b) –" in a manner that does not threaten food production").

HEAT ISLAND IMPACT

Studies around the world show that large solar farms create a heat bank extending several hundred metres from the perimeter of the panels. It is naturally worse in the summer months. You don't need to be a scientist to understand this. But no Australian government has commissioned any studies to explore the extent of the heat bank and the impact on people living close by. The fact the ENVIRONMENTAL IMPACT STATEMENT does not even address this question for the people who would be living in the shadow of this monstrosity should render this entire project unviable from the start.

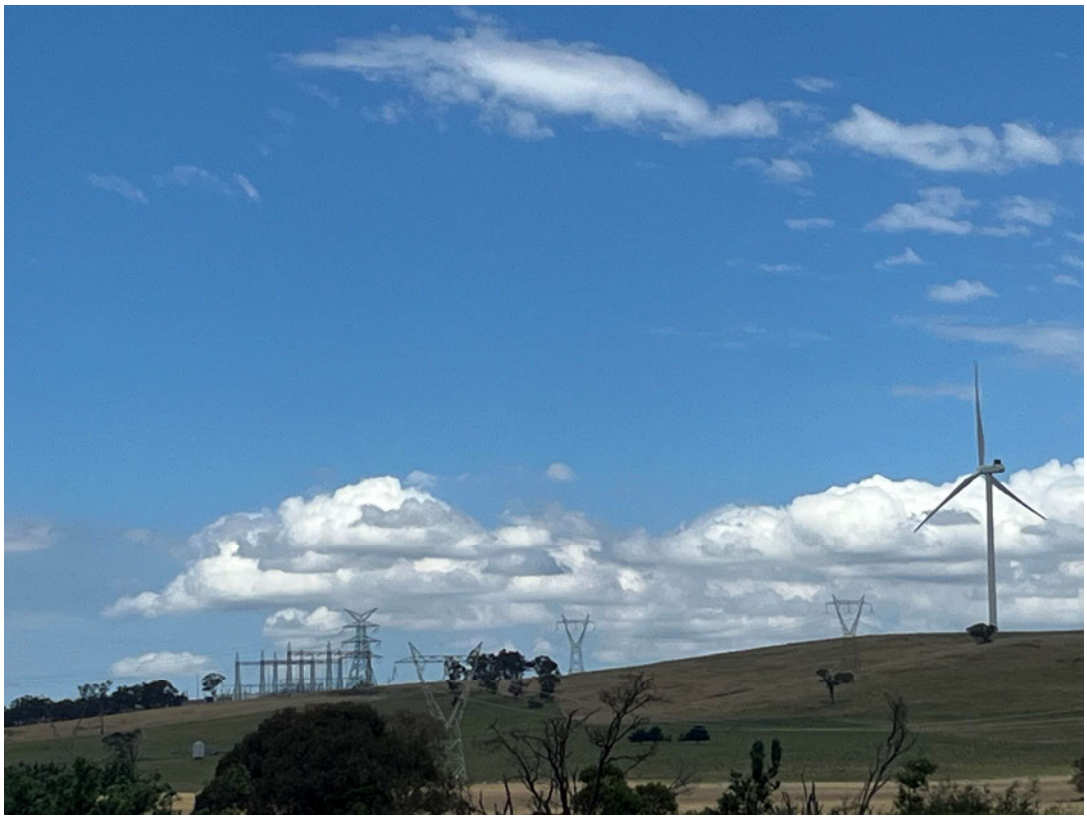
What Australian would want their hot summer days made "more hot" by living next door to one of these things?

The truth is the heat island impact has never been anticipated by policy makers regarding large industrial scale solar factories.

LIES BY OMISSION AND DECEPTION – Sub station related

Photo of the Collector Wind Turbine Factory sub station and switch station beside the Hume Highway at Lerida. This links into the parallel 330KV line to the line that crosses the proposed solar site.

There is no mitigation for these as would be claimed by RE Developers.



DECOMMISSIONING AND REMEDIATION

Typically, developers simply say that the law regarding decommissioning will be followed at the time of decommissioning.

Developers are unlikely to own the project when decommissioning is required.

It is fairly clear that decommission of this project will not be carried out by the developer because they usually have no intention of owning, running and managing this project. These developments change hands regularly, so who will be responsible for decommissioning and remediation?

Like so many renewable energy projects in our region, the factory will be run down in its final years and managed by a $2 shelf company. If these panels are decommissioned then it will be paid for by the taxpayer. It is beyond our comprehension that governments at all levels and of all hues have let the large scale renewables sector get away with this outrageous lack of accountability to the future and to future generations on the question of decommissioning.

The last owner will be a “Shelf CompanyName Australia Pty Ltd” with no asset backing and they will walk away from decommissioning as the current value decommissioning cost (using the NSW Planning calculator) will be approximately $140,000 per MW of solar panels.

The cost of decommissioning will far exceed the value of the land on which the solar panels and infrastructure are located, therefore the landowner will also walk away leaving the cost for the taxpayer or rate payer. It is therefore unlikely that a cleanup will ever occur.

The current regulatory environment is turning a blind eye to the problems of the future and it is very likely that many of these largescale solar farms will be left rotting in paddocks in 20 or 30 years time. This is a potential landscape and environmental disaster. (The panels are full of toxic ingredients that leach into the ground and they are a blight on the landscape, especially when they are no longer in use.)

By not requiring the developer to lodge a decommissioning/remediation bond is a further subsidy provided to the developer.

Also, decommissioning does not include remediation. The remediation cost is likely to be very costly as the contamination from the solar panels leaching will be toxic and dangerous. Solar factory pollution and contamination is likely to be the next asbestos.

It is beyond comprehension that governments at all levels and of all hues have let the large scale renewables sector get away with this outrageous lack of accountability to the future and to future generations on the question of decommissioning.

There needs to be a requirement for the developer to provide to the government a financial bond to cover decommissioning and remediation as the industrial factories change ownership regularly and the last owner is unlikely to have the finances to conduct the necessary decommissioning and remediation.

NOISE and NUISANCE

Living in a quiet rural lifestyle area, one is rarely worried by man-made noise.

Noise is an unwanted sound. The noise of insects or the leaves rustling in the trees outside the bedroom windows at night are just sounds, they are not annoying. But a dog barking at night is an unwanted sound – it's a noise.

Developers usually say they always base their modelling on a worst-case scenario and they will say that their information inform how they are proposing to reduce and mitigate the impacts of noise during the construction period.

Sound requires a source. The source produces vibrations which cause pressure changes in the air. The resulting sound waves of pressure travel out in all directions from the source. The direction of the sound is influenced by the design of the source and the wind direction.

Decibels - the sound pressure measured in decibels (dB). Decibels measure the sounds people hear.

Developers deceive by saying the noise levels they produce are decibel levels. This is not correct. Decibels levels measure noise statistics, not real noise levels. The statistical numbers are not real and produce a much lower number and this does not take into account the spikes that occur when real noise levels are measured nor the real noise people hear. Spikes in noise can be typically 10dB higher than the statistical level.

While not taking into account that real noise levels are higher than those stated their modelling predicts that our property is located within an area where some of the construction noise may be audible (>45dB). [should be "will be audible"]

Developers' computer model typically does not take into account the topography of surrounding hills. The construction noise contour should be extended to the ridge tops of the surrounding hills.

Developers usually go on to say they have additional noise mitigation measures and say things such as "reasonable and feasible general noise controls are proposed to mitigate such impacts".

After construction there will be the long-term noise nuisance of ongoing operating noise (Inverters and Battery stations including each of their air conditioning systems along with the axis tilting mechanism) for up to 40 years

Lightsource development – Goolma Road Wellington NSW

EXAMPLE: Referral document made under Part 7 of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 - Application Number: xxxxx

Section 1.2.1 Provide an overview of the proposed action, including all proposed activities.

Typical Proposed Activities and Impacts

"Construction activities will result in direct impacts to fauna and flora species and ecological communities through vegetation clearing, earth moving, cut and fill excavation and associated habitat loss. Indirect impacts to ecological communities may occur through temporary changes to noise, dust and hydrology features during the construction phase. Once the proposed action is operational, no further biodiversity related impacts are expected."

Response - The description of the physical work to be undertaken and highlighted above illustrates that the proposed construction would result in a sterile environment in which a significant proportion of the reptiles and birds that rely on fallen timber, undisturbed rocks and undisturbed ground in order to survive will no longer be able to live. No further biodiversity related impacts would occur as there will be few living native creatures to re-colonise the land other than rats, rabbits and foxes that will be protected within the perimeter fence. The native creatures will have no protection in the form of standing trees or fallen timber and will therefore have no incentive to re-colonise the area.

The machinery drivers will not be stopping to rescue the lizards, snakes, lady birds, wombats, echnidas etc that they drive over when they strip the pasture cover, bulldoze the trees and disturb other animals that will not be able to escape because of the industrial perimeter fencing. These creatures currently live in harmony with the grazing animals that provide food via organic matter including faeces, parasites, bacteria. Glass and steel produce no organic matter.

Public Liability Insurance

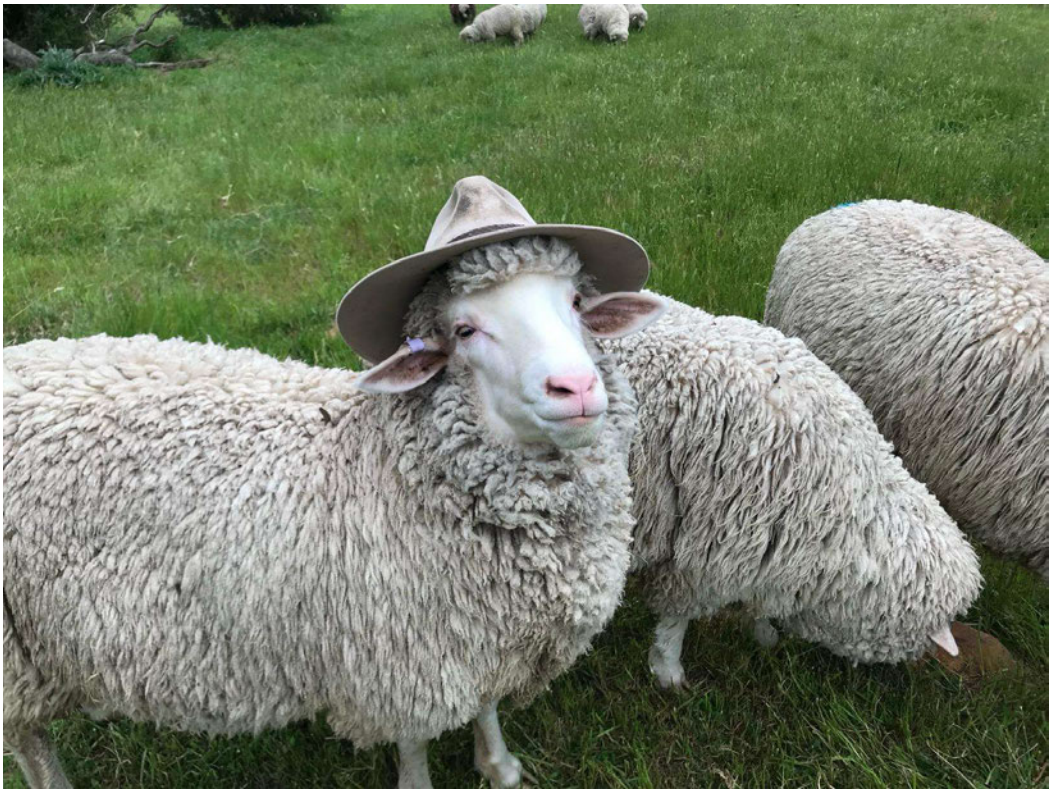
Farm businesses usually hold $10 to $20 Million Public Liability Insurance. The quantum and premium level is assessed based on a farm business having primary production farms as its neighbours.

The Public Liability increases massively when a neighbour hosts a large scale wind energy generation factory. By way of example, should a fire inadvertently start on a neighbouring farm and it was to burn on to the neighbouring large scale wind energy generation factory and burn a significant amount of the infrastructure, the liability could be in the $100s of Millions.

A farm business is currently unable to get Public Liability Insurance to cover such a potential liability and the premium cost would be prohibitive if it was available. This increased cost is caused by having a large scale industrial factory as a neighbour. Farms in the vicinity of these factories are therefore effectively uninsurable.

A possible solution would be for the large-scale wind energy generation factory developer/operator to indemnify neighbours for any Public Liability Insurance claim greater than $10M.

FROM THE SHEEP'S MOUTH: *Beats trying to graze under solar panels*



Stan Moore – – 30 January 2025