

**Orange Grove Solar Farm
Gunnedah NSW**

NSW DEPARTMENT OF PLANNING AND ENVIRONMENT

SUBMISSION

Madam Secretary

I respectfully submit my submission against the above development in Orange Grove Road Gunnedah.

My interest in the area stems from a 40 year association with the cattle property known as *Orange Grove* and from which Orange Grove Road takes its name.

The Overland Sun Farms proposal for a solar farm in Orange Grove Road Gunnedah has resulted in such a raft of unanswered questions from the developer that serious concerns must be entertained for the value of such a development in such a location, the site of which has obviously been chosen for the financial value it would return to Overland Sun Farms.

I have been unable to extract from the EIS effective answers to the following issues:

1

How this development fits in with the New England North West Regional Plan for renewable energy

The Regional Plan recommends in Direction 5

appropriate smaller scale renewable energy projects using biowaste, solar, wind, hydro, geothermal, or other innovative storage technologies.

This is sensible in that it has obviously been designed to enhance current agricultural activity. How could hundreds of thousands of solar panels do this?

2

How construction of such a large-scale development will affect flood patterns in Orange Grove Road

Orange Grove Road has always been a corridor for flood waters from the Namoi River, and under current agricultural conditions, the water can escape

The construction of security fencing to prevent unauthorised access to the solar farm would obviously have an unquantifiable effect during a flood. The flood impact information provided by the developer is at best hopeful.

3

How issues of glint and glare will be managed for residents in the vicinity

Orange Grove Road is quite densely populated for an agricultural area. The Developer could not explain how issues of glint and glare, as well as night lighting, were to be managed or reduced. One particular property is 100m from the western boundary of the proposed development which means the panels would be angled towards the house in the afternoon making it unliveable.

4

How will Overland Sun Farms clean the panels as well as dealing with potential damage created by ongoing adjacent agricultural activities

Solar panels require constant maintenance in order to keep them productive. Dust from ploughing and drift from aerial and ground spraying will reduce the efficiency of the panels. The *American Polywater Corporation* advises that water alone will not remove dust/bird droppings and other types of contamination. That, in addition to using an irrigation style system, or tankers to wash the panels, some kind of detergent is necessary, and as such, promotes their product *Polywater Solar Panel Wash* for the purpose. Will the developer use scarce groundwater to clean the panels, and how much will be available given the high call on that resource for current agricultural purposes? Who will monitor the type of detergent going into the ground?

5

What measures will be taken to mitigate harm to wildlife

In his article *Effects of Solar Power Farms on the Environment* April 2017 Sciencing (USA) David C Laine points out that California's Ivanpah Solar Generating System was scrutinised when increasing numbers of bird deaths were reported. Their wings had been melted or burned off by heat from the solar farm's panels. What measures will the developer put in place to address this kind of problem?

As has been demonstrated in the above regrettable scenario, the temperature rise created by the panels will create a micro climate which will not only impact wildlife, but cannot other than also impact adjacent crops and livestock.

6

What is the long-term effect on soil microbiology

Agronomist Keiren Knight from *Best Environment Technologies Pty Ltd*, writing about the proposed Bathurst solar farm, explains how solar panels block UV light, which disrupts soil microbiology by stripping carbon from the aggregate. This results in the soil becoming hard and compacted.

Weeds such as Bathurst burr, fleabane and Paterson's Curse prefer tight, compacted soil, and thrive in the environment where pasture is not as dense and healthy and will not be eaten by stock. Edible pasture becomes less nutritious and prone to attack from insects and disease. Stock numbers decrease per hectare as the land becomes less productive. The result is an area of former high productivity beginning to match stock patterns much further inland where arid conditions result in stock numbers being allocated per square kilometre.

7

What is the long-term effect on the ecology of the solar farm site

Dr Alona Armstrong, Lancaster Environmental Centre, University of Lancaster, article in *The Guardian*, Australian edition 2013 considers the potential long-term effects of solar farming.

But we just don't know enough about what happens to the soil, plants and wildlife in areas where ground-mounted PV parks are constructed. The phenomenon is still a new one and rapid development is taking place on the basis of ignorance. But the effect PV panels have on the local climate, and what impacts this has on the plants and soil is very important.

Should governments be playing Russian roulette with a highly productive grazing and cropping environment by introducing hundreds of thousands of solar panels with the capacity to concentrate heat and light with unknown consequences for that environment?

8

How many local people will be employed by the developer

The Executive Summary of Overland's EIS states

ES5 Justification and Conclusion

The project will generate direct and indirect economic benefits, through the creation of employment opportunities

But later in the section

Matters raised at community information session

Employment it states

Overland indicated that local employment was the desirable outcome and that it would endeavour to work with stakeholders to maximise employment opportunities for the local community where possible.

Considerable discrepancy exists between the Executive Summary's ***creation of employment opportunities*** and the public information session where local employment becomes a ***desirable outcome ...where possible***.

Is the Executive Summary position on local employment for the benefit of the Department, who hopefully, will have forgotten this by the time they have waded through the intervening 70 pages to the public information sessions?

Will the ***where possible*** see Gunnedah watching a parade of imported workers because ***desirable*** and ***possible*** for sound economic reasons becomes undesirable and impossible?

The following questions I respectfully submit to the Department

9

Is locking up productive agricultural land for solar farms the most financially effective use of that land?

Are there locations further west which could be utilised for the same purpose but are less attractive to this developer because these sites would result in smaller profits?

10

Are the financial returns to the developer an issue in the Department's approval of such developments?

11

Do State Significant Projects force the Department to modify it's stated reason for existing, being *to make people's lives better by making NSW a great place to live and work?*

I thank the Department for considering this submission.

Rhonda Lumsden

Burnie, Tasmania and frequent visitor to Gunnedah