

Good News Friday Edition 9 – Solar Panels Combined with Farming



AGRI-VOLTAICS

In our last edition we looked at Community Solar projects. It makes good practical sense to use part of farmland close to regional towns to generate clean energy for the local area and for the local community to be involved.

In this edition we are looking at agri-voltaics – solar panels combined with farming activities. Incredibly there are other benefits that are becoming evident with solar farms that can address a host of the most important challenges of our time.

The shade from the solar panels can provide protection for animals, so in many situations sheep are easily grazed under the panels. The panels catch moisture, attract condensation which drips on the ground under the rows of solar panels. This shading and the additional moisture improves the conditions for grass to grow.

Originally, grasses (vegetation) under the solar panels would be maintained by mowers, tractors and using chemicals to kill weeds but now grazing with sheep can achieve this in an environmentally friendly way.

There are two examples of farmers in central west NSW who lease part of their properties to Solar Farm operators. The farmers have reported an increase in the quality and quantity of wool harvested from the grazing sheep. One of them, a Mr Warren, states that over the last 4 years the additional moisture and grass growth also provided drought resilience for his property (<https://pv-magazine-usa.com/2022/06/01/solar-panels-keeping-sheep-fed-during-drought/>).

An American Study by Dr. Elnaz Hassapour Adeh, a researcher at Oregon State's College of Agricultural Sciences, found that several key grazing grasses under solar panels were able to [significantly increase their output mostly due to significantly increased water efficiency](#) – by 328%. Dr. Elnaz Hassapour Adeh said nobody designed or engineered this, it just happened by

accident. She said that this study is part of a larger “*effort to understand links among energy, water and food systems*”.

The discovery of the micro-climate under solar panel arrays has led broadminded thinkers like Wynergy, a local business out of Tamworth, to focus on the integration of the solar arrays with farming. In this scenario they have raised the solar panels up higher off the ground and spread them out. In between the rows of solar panels, crops and pasture can be grown, allowing room for the seeding and harvesting equipment to operate. This is integrated with timed grazing management for wholistic management of the land (Short video [\(4\) Facebook](#)).

Planting mixes of Australian native perennial grasses adds to the drought tolerance and adds conditions for biodiversity to be re-established.

Arnprior solar project

Arnprior solar project build in 2009 on farmland located in Ontario Canada was a pioneer for this region. It supplies renewable energy to around 7000 homes. The owner of the property wanted to return some of the land to agriculture and to care for wildlife. The owner of the solar farm EDFR took interest in the idea. In 2015 EDFR began phasing out the use of pesticides and herbicides. By 2016, as declining bee populations became an international focus, EDFR reached out to a local honey company to install hives at the site. Two hives were installed, and side by side with renewable energy, 100 jars of honey per year were produced. Today, efforts have expanded, and over 300 jars are made each year.

In 2017, EDFR received funding by the Government of Canada to provide a habitat for the monarch butterfly. Arnprior solar project received an award from the Habitat Stewardship Program for Species at Risk. In tandem with the Pollinator Partnership, EDFR then planted native wildflowers and milkweed, the exclusive host plant for monarch butterfly larvae. Within a month of the partnership, larvae and butterflies began to appear. Today sheep have also been integrated into the farm management system (<https://www.pv-magazine.com/2022/06/07/butterflies-bees-sheep-and-solar-energy-production-can-coexist/>).

This makes me so excited – we can generate clean energy, create shelter for stock, repair the land, improve the soil, build drought resilience, improve yields, improve habitats, as well as providing farmers with two additional income streams while they create healthier food and sequester carbon - win, win, win, win, win, win, win, win, win.

Two of the key imperatives for this time is to transition to clean energy and to take carbon from the air and restore its balance in the soil – this could be a practical and achievable way to fulfil these aims.