

# Solar PV: Agricultural Benefits

## **Introduction**

Solar projects support profitable farming, by combining traditional production with additional revenue from rent thereby increasing the farm's economic resilience. The majority of solar developers encourage multi-purpose land use through continued agricultural activity or agri-environmental measures that support biodiversity, yielding both economic and ecological benefits.

A typical solar power farm only takes up a small portion of the occupied land. Farming may continue between and underneath the solar PV modules by:

- Grazing small livestock such as sheep and free-ranging poultry.
- Cultivating high-value fruits and vegetables, such as asparagus and pumpkins, or non-food crops such as lavender.
- Sowing of wildflower seeds and bee-keeping.



Solar farms can enhance the agricultural value of land, in many instances marginal or previously-developed land has been brought back into more productive grazing management.

## **Solar farm design and layout**

A solar panel is a collection of solar cells which are designed to absorb photon energy and convert it to electricity. Solar PV panels are mounted on supporting structures. These metal frames are anchored by driven or screw piles causing minimal ground disturbance and occupying less than 1% of the land area used. The remainder of the infrastructure occupies less than 5%. Therefore around 95% of the land is available for vegetation growth and can support agricultural activity as well as wildlife.

Photovoltaic panels contain no moving parts, hence the maintenance requirement of a PV system is very low and no noise is generated. Solar releases no emissions to the air, soil or water either. Construction is 100% reversible after the lifetime of the project and the land can be restored in often better condition with enhanced biodiversity.



## **Diversification of farming income**

Solar PV projects provide an increased, diversified and stable source of income for landowners, encouraging the next generation to keep farming the land:

- Rental payments over 25 years (RPI indexed).
- Cheaper electricity.
- Effective hedge against variability in annual farm income and energy price.

Solar PV can meet on-site electricity needs for heating, feeders, ventilation and process energy.

## **Land use**

One concern regarding large-scale deployment of solar energy is its potentially significant land use.

The land area of Ireland is 6.9million hectares, of which about 4.2million hectares are used for agriculture.

If 1000 MW of solar PV was installed on the ground in Ireland, it would only use around 2230 hectares, 0.054% of the land area, generating enough electricity for over 330,000 homes for 30 years.

