



### Benefits of a Solar Installation

- Low-Carbon renewable Electricity
- No emissions when generating electricity compared to traditional fossil fuel sources.
- Low Ecological Impacts
- Low visual impact
- Relatively short construction period
- Land can be used for grazing while the panels are in operation
- Land can be restored to its original condition after the lifetime of the project
- 25+ years index linked lease income



Crinacott Solar Park consists of 28,608 solar panels; with each panel measuring 1.67m x 1m. It was commissioned in 2013 and the entire project took just six weeks to construct. During the onsite works solar panels were placed upon a mounting system and were screwed into place with specialist screws that ensure the panels remain in place regardless of the elements. Galvanised steel was used to construct the farms' structural system.



Sheep on the farm are able to graze freely around the solar installation. This helps keep the land around the panels maintained and the farmer does not lose out on valuable grazing acreage. It also has the additional benefit of providing shelter for the sheep during inclement weather and maintains the vegetation around the panels.

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We would like to hear any comments or queries you may have.

# Renewable Energy Project Solar Information Leaflet



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## Who We Are Enerco Energy

Enerco Energy, based near Macroom, Co. Cork is a 100% Irish owned leading renewable energy company, with the capability to develop, construct and operate projects that contribute towards our goal of creating a sustainable future. The company's core activity includes the development and operation of medium to large scale wind farms. Enerco also works in other renewable sectors such as solar and battery storage.



To date Enerco and its associated companies have been responsible for the installation of a renewable electricity generating capacity of approximately 624 MW, with 195 MW under construction and a further 400 MW in the planning process or already permitted.

## Climate Action Plan 2021

### Introduction

In November 2021 the Irish government published the Climate Action Plan to build net zero carbon energy systems and create a sustainable country.

### Current situation

- Ireland missed the target set for 2013-2020 of reducing emissions by 20% (relative to 2005 Levels) by one eighth and more worrying it is expected that recent growth in emissions will put the country on a trajectory to be 25% off target for the 2021-2030 period if we don't implement a new strategy.

### Targets for 2030 and beyond

- Increase percentage of electricity generated from renewables to 80% by 2030.
- 51% greenhouse gas reduction by 2030 and establish a trajectory which leads to Ireland being net zero carbon by 2050.

### Road map to achieve Targets

The greatest saving from known technologies lies in transport and electricity. Three quarters of the adjustments required will not impose a cost on the country.

### The Climate Action Plan proposes:

- Adding 1.5-2.5 gigawatts of grid-scale solar.
- Adding 5 gigawatts of offshore wind.
- 1 million EV's in private transport fleet by 2030.
- 51% Green House Gas reduction
- Ending coal burning in ESB's Moneypoint by 2025 and Bord na Mona transitioning away from peat by 2028.

Source: Climate Action Plan 2021 (05/11/2021)

### Solar in Ireland

At present, solar only accounts for just 1% of Ireland's renewable energy generation, compared to much larger percentages for biomass, wind and hydro. This contrasts with other Northern European countries such as Germany and the UK, which have successfully deployed solar power at a rapid pace over the last decade. Solar has become a much more viable energy source, thanks to both the consistently falling costs and the increasing generational capacities of solar modules.

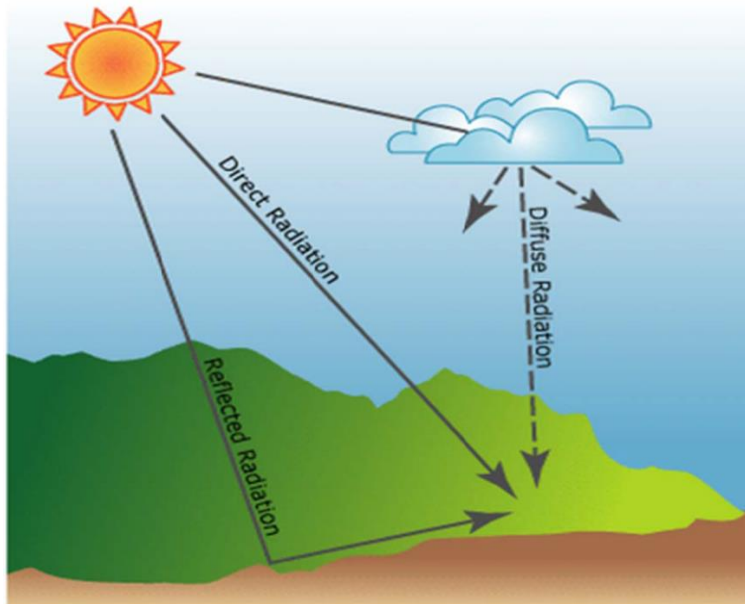
While it is commonly believed that the poor Irish weather limits the potential of solar power, the solar radiation in Wexford is 78% of the level enjoyed in Madrid and is equivalent to the levels found in most of the UK, which increased their installed capacity to over 14GWp in June of 2021.



# Solar Technology



Typical Panel



## How it Works

When exposed to sunlight, the PV cells produce direct current (DC) electricity, which is then transformed to AC electricity through an inverter to enable its usage.

The PV cells respond to both direct and diffuse solar radiation, meaning that even in overcast days a PV system can produce electricity (Figure above). The output however is greater when there is more direct sunshine. The sunlight conversion rate, which is a measure of a panels efficiency, is around 23% in modern panels.



Typical Inverter Cabin



Typical Ground Mounting

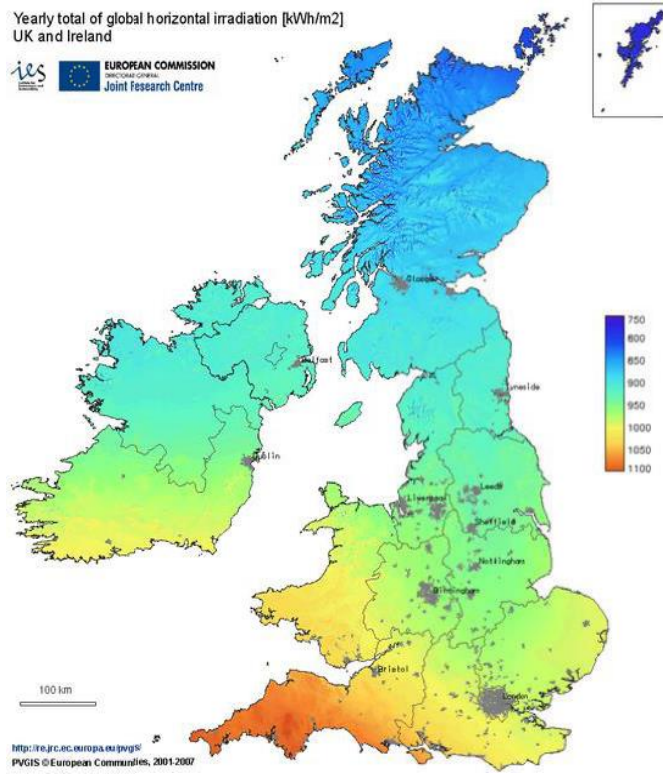
## What is Solar Photovoltaic (PV) Technology?

Photovoltaic technology enables the conversion of solar light directly into electricity. Therefore, one of the most abundant free energy sources - that from the sun - can be harnessed to power domestic electrical equipment such as appliances, computers, and lighting. This is different from solar thermal technology used for hot water. The technology consists of PV cells connected in PV modules (panels or arrays) which are semiconductors, typically made of crystalline silicon.

## Security of Energy Supply

Ireland imported about 69% of its energy requirement in 2019, one of the highest ratios in Europe. The more of its own energy Ireland can produce means we would be less vulnerable to foreign conflict interrupting fossil fuel supply lines. There is an opportunity to develop a strong indigenous solar industry that will take advantage of Ireland's solar resource (Figure left) reducing this import dependency while maintaining the Irish government's commitment to addressing climate change and delivering net benefits to the Irish economy.

Source: SEAI – Energy in Ireland 2020 Report



Grazing Below Solar

## Solar On Your Land

For landowners prepared to diversify their land use, solar energy generation can provide a stable, secure additional income stream. The land underneath the solar panels may also remain suitable for grazing in some scenarios with many arrays in the U.K having sheep grazing beneath the panels.

Typically, an installation size guide for utility solar would be:

- Up to 1.4 hectares per MW of solar installed.
- In a uniform, south-facing field
- Generally leased for 35 years.

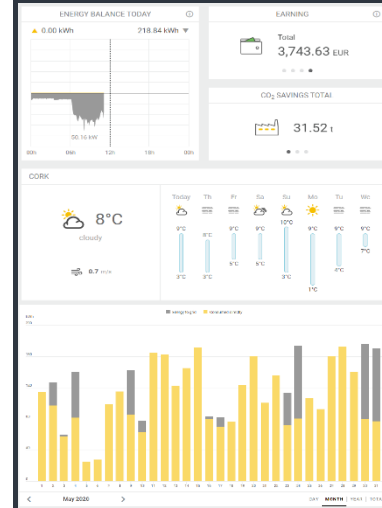


## Land Requirements

- The land must be south facing with either flat terrain or sloping gently.
- The land must be free for the most part from shading and large obstacles such as buildings and trees in order to maximise the output of the solar array. Trees which may grow to bigger heights when mature must also be accounted for in the design phase.
- The site ideally should be located close to an existing electricity substation.
- Land with few obstacles e.g., fences, drains etc is best suited for the solar development.
- Marginal ground is suitable and can generate a significantly enhanced income for the landowner.



# Solar Technology



Energy Monitoring Portal



Typical system wiring



Typical Inverter Mountings