

# Community Information Pack

## PROPOSED SOLAR FARM IN EAST LAOIS



Lightsource Renewable Energy is working on a proposal for a solar farm on lands between Stradbally & Timahoe, Co. Laois. Lightsource develops and operates solar farms and rooftop installations in Britain and Ireland.

The proposed fields have been chosen for the project because they are well-screened by surrounding hedgerows and trees, so there are few views from the surrounding area. The solar farm will be designed to accommodate the grazing of small livestock, such as sheep or chicken, to allow the land to be kept in agricultural production. The wide field margins and boundary hedgerows will be managed to create and enhance habitats for local birds and wildlife. We are currently undertaking a range of site studies which will be submitted with the planning application – more information on this will be available at our community information event (see details below).

Generating energy locally means that Ireland can reduce its reliance on imported fossil fuel supplies. We work with local communities throughout the life of the solar farm to ensure our projects are the best fit for the local area. If you would like to learn more about how you can get involved in this project or more information on solar energy, please get in touch with our team, or come and meet us in person at St. Joseph's Hall, Stradbally on Wednesday 5<sup>th</sup> April or Timahoe Community Hall on Thursday 6<sup>th</sup> April.

### Benefits

21,960 homes powered by clean, locally produced electricity

Designed to accommodate grazing

Biodiversity enhancement opportunities

Education opportunities

Opportunities for residents, students and community groups to get involved in our plans



*Solar farms provide great opportunities for supporting agricultural activities*

Get involved!

## COMMUNITY INFORMATION EVENTS



**Weds 5<sup>th</sup> April**

**St. Joseph's Hall**  
Stradbally  
Co. Laois

**Thurs 6<sup>th</sup> April**

**Timahoe Community Hall**  
Timahoe  
Co. Laois

Drop in any time between 5.00pm to 8:00pm on either date

# Who are we?



We are Lightsource, Europe's leading solar energy company. We fund, develop and operate solar installations across Britain and Ireland – working with local communities, businesses and landowners to develop projects generating green energy, locally and sustainably. The solar power produced by our projects in Ireland will provide a source of clean, renewable power to be used locally by businesses and communities. Our commitment to Ireland is long-term and we believe we can help make Ireland's energy mix more sustainable now and into the future. The Laois project is our fourth project on the island of Ireland.

Lightsource has offices in Dublin, Belfast, London and Bath – with regional operations and maintenance offices close to our existing sites.

# Why solar power?

The diversification of farmland by introducing solar energy generation is a tried and tested solution and we believe that, when implemented responsibly, solar farms are a revolutionary way of generating clean, locally-produced energy while retaining the land's agricultural use. So why choose solar power?

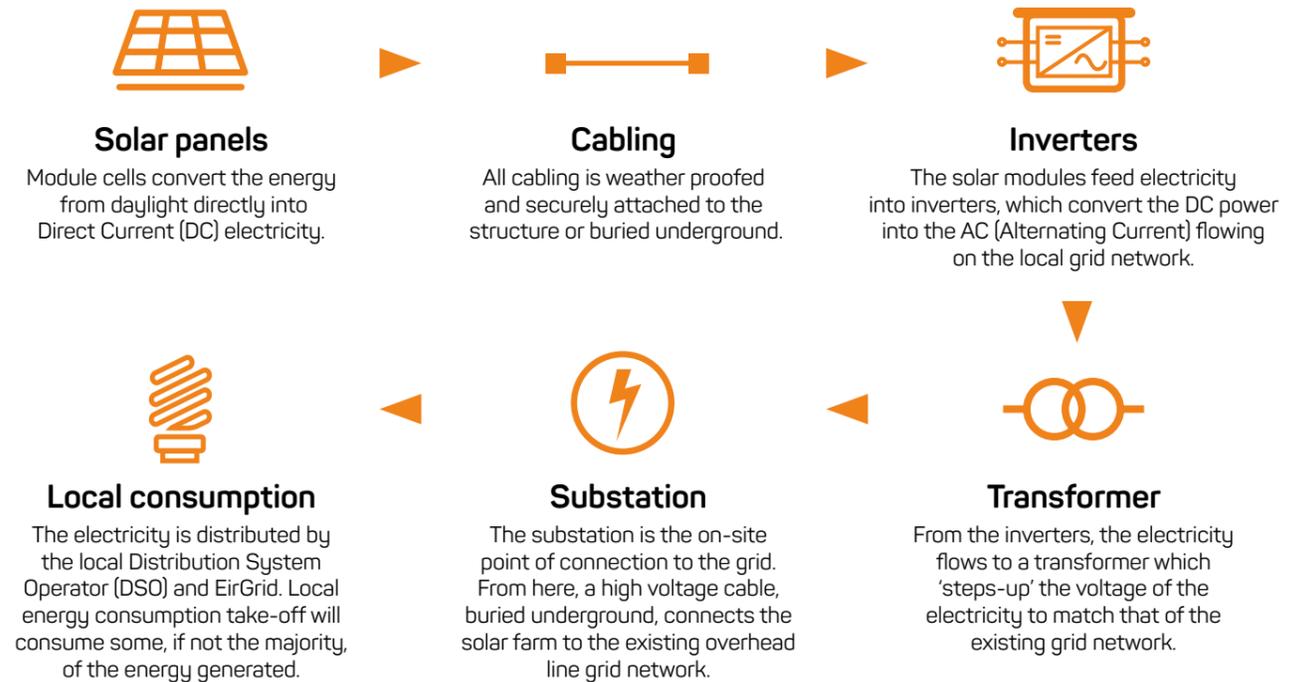
- Agricultural use**  
 About 70% of a solar farm is open grassland. So, where appropriate, the land can remain in agricultural use with smaller livestock, such as chickens or sheep grazing comfortably around the panels. The infrastructure is raised so that livestock can also graze and take shelter beneath the panels, so stocking densities are hardly affected.
- Boosting biodiversity**  
 Solar farms can provide havens for local wildlife habitats to flourish undisturbed and for biodiversity levels to increase, meaning our declining native species can repopulate and find food throughout the seasons.
- Low visual impact**  
 The solar panels on Lightsource sites typically only reach a height of 2.5m and unlike other forms of generation can be well-screened from wider views by existing vegetation and new planting of trees and hedgerows.
- Bridging the energy gap**  
 Compared with traditional power plants, solar farms are quick to deploy. A solar farm capable of generating power for thousands of homes can be operational in a matter of months.
- Supporting farmers**  
 Renting land to Lightsource for the generation of renewable energy can provide rural businesses with a predictable, steady income stream which can support the rest of the farming business. The increase in local farm incomes then helps to boost the rest of the local economy.
- Meeting targets**  
 Ireland has binding targets to increase the percentage of its electricity procured from renewable sources to 40% by 2020, the majority of which will be from onshore wind. If Ireland doesn't meet these targets, the Sustainable Energy Authority Ireland believe annual fines of between €100-€150m per percentage point missed will have to be paid by the Irish taxpayer. By adding solar to Ireland's already varied energy mix, we can reduce the likelihood of missing these targets.

# What is a solar farm?

## Components of a solar farm:

Our solar panels don't move or produce anything except clean electricity. So how do they work?

Each solar panel is made up of silicon-based photovoltaic (PV) cells which convert the light energy from daylight into electrical energy. Daylight from the sun hits a negatively doped silicon layer which 'excites' electrons, effectively 'removing' them from their atoms. This creates a potential difference between the two layers of silicon and stimulates a flow of electrons. The flow generates Direct Current (DC) electricity. As there are no moving parts, the process happens silently.

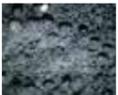


## What are our solar panels made of?



**Glass and Cells: Silicon (Si)**

Silicon is the largest component on a solar panel, forming both the photovoltaic cells and the anti-reflective glass which protects them. To make the cells, sand is melted using electricity. It is then purified and distilled, formed into 'wafers' and given an anti-reflective silicon nitride coating to maximise light absorption.



**Framing and Conductors: Aluminium (Al)**

The horizontal and vertical lines across the panels are screen-printed aluminium conductors. They conduct the electricity produced by the silicon cells to the cabling.

The panels are fixed onto an aluminium framework which quickly dulls to a non-shiny finish. The framework has galvanised screwed-in foundations, it is quick to install, very strong and can be removed easily to allow the ground to be fully restored once the plant is decommissioned.



**Why blue?**

The cell coating is blue in order to absorb the light most efficiently. Black would be even more absorbent, but it gets hotter and the technology works best at cooler temperatures.



**Conductors: Silver (Ag)**

The aluminium conductors are plated with silver to protect them from the elements.

More details of these components will be available at our community information events

# Our initial thoughts...

Proposed solar farm on lands between Stradbally & Timahoe, Co. Laois

Our plans are in the early stages, so our design and planting proposals will evolve as we gather local input and assess the results of our ecological, landscape and heritage assessments. For further details, please join us at our community information events on Wednesday 5th or Thursday 6th April. Our consultations with the local community will help us design the final plan, which we will then submit for planning permission.

## NB -Provisional solar farm layout illustrated

### How much energy?

 79 Megawatts Peak (MWp)

 21,960 households powered

 35,200 tonnes of carbon emissions saved, every year

 ...Equivalent to taking 7,820 large family cars off the road



#### Species-rich grass

Species-rich grass will be sown throughout the site, including the areas oversailed by panels.

#### Vegetation Retained

The existing trees and hedgerows in and around the site will be retained.

#### Green open space

Wide spaces around the site boundaries and between the rows of panels will leave the majority of the solar farm's grasslands completely open and uncovered.



#### New planting

In addition, we plan to plant vegetation along a north eastern boundary with native planting to reduce views from nearby properties.

#### Low height

The panels would reach a maximum height of 2.5 metres so views of the site would be mitigated by surrounding hedgerows and trees.



#### Rural fencing

A timber and wire agricultural fence of about 2 metres in height will be used, appropriate to the rural setting. The fence will sit inside the surrounding vegetation leaving wide field margins on the outside.



#### New planting

At present, there are some glimpsed views into the site along the R426 road the west of the site. We plan to 'gap up' the vegetation along the western boundary with native planting to reduce these views.



#### Livestock grazing

The solar farm is being designed to accommodate the grazing of small livestock, such as chickens or sheep. This will allow for continued agricultural use, enabling the farm to produce food as well as locally-generated energy.

#### Construction Access

#### Restored quarry

All new cabling will be buried underground so there will be no new overhead lines.

#### Biodiversity enhancement

The design avoids using areas shaded by boundary vegetation by leaving wide field margins around the site perimeter. These spaces can be utilised to improve prospects for wildlife by sowing wild flowers or installing hibernacula. The specific enhancements we propose here will be decided using the results of our ecological surveys as well as local input and ideas. If you would like to help shape our plans, please get in touch.



The operation of the solar farm would be of no disturbance to farm animals, wildlife, walkers or motorists. There will be no flood lighting, the solar panels will not move, and as they are designed specifically to absorb daylight with an anti-reflective surface ensuring any reflection of light is dull and minimal.

Proposed location:



# Case studies



Crookedstone Solar Farm, Antrim, NI

## CROOKEDSTONE SOLAR FARM

### Powering Belfast International Airport

Crookedstone, in Antrim, Northern Ireland, is the first large-scale solar farm on the island of Ireland. The project was completed in partnership with Belfast International Airport and the solar farm connects directly to the airport's electricity supply – providing 27% of their annual demand and saving 2,345 tonnes of carbon emissions each year, which is equivalent to taking 469 cars off the road each year.



Condover Airfield, Berriewood Farm, Shropshire

## PITCHFORD SOLAR FARMS

### Livery Yard and Sheep Grazing

Pitchford, in Shropshire, is home to two neighbouring solar farms totalling more than 21MW. Berriewood Farm is home to a family-run riding school and livery yard with over 100 acres of grass and woodland. Berriewood Farm hosts several shows and events every year using the tracks which run alongside the solar farm.

Nearby Stockbatch Farm is home to 200 ewes which graze within the solar farm site. The sheep are used for their milk which is sold to local cheese makers. The ewes are milked twice a day in the dairy adjacent to the solar farm. The sheep keep the grass short, whilst the solar panels provide year-round partial shelter which helps to protect the sheep from strong winds, hot sun and freezing temperatures.

The passive nature of solar farms means that the production of energy goes hand in hand with the ongoing agricultural activities at each farm.



Wilburton Solar Farm, Cambridgeshire

## WILBURTON SOLAR FARM

### Biodiversity and Bee Keeping

Wilburton Solar Farm in Cambridgeshire was installed in 2011 and has now been generating clean energy for 5 years. This solar farm receives widespread support from the local community, primarily due to noticeable improvements in biodiversity. Wilburton has become a 35-acre pollen, brood seed and wild bird seed paradise. As a consequence, the site has seen a marked increase in bird and wild mammal numbers, together with much improved quantity and variety of insects and invertebrates. In 2015, with the agreement of the farm's landowner, Lightsource partnered with a local bee farmer and installed 10 hives along the site's southern boundary - producing honey which is sold in the local community.



Newlands Solar Farm, Devon

## NEWLANDS SOLAR FARM

### Sheep Grazing

The Lightsource solar farm at Newlands Farm, Devon, was installed on agricultural land used for sheep grazing. With the solar farm in place, sheep continue to graze the entire solar farm area, allowing the land to produce both food and energy.

As well as continuing the land's traditionally agricultural use, sheep grazing also reduces the need for grass cutting on site. The hedgerows around the solar farm at Newlands Farm have been planted with holly, beech and hawthorn to provide year-round screening, as well as food sources and nesting opportunities for local birds.

# Frequently asked questions

## Why harvest energy instead of food?

It isn't a choice - solar farms can do both. The proposed solar farm on lands between Stradbally & Timahoe is being designed for the grazing of small livestock, enabling us to generate energy whilst continuing the agricultural use of the land.



## Will the solar farm impact historical features in the area?

No – we conduct thorough heritage assessments and ensure we avoid areas containing significant buried remains, as well as avoiding sites which would adversely impact views from historical monuments. This site is well-screened from the surrounding area and the proposed panels reach a maximum height of 2.5 metres.

## How will the equipment be protected?

The solar farm will be enclosed by a timber and wire agricultural fence of about 2 metres in height, appropriate for its rural setting. This is positioned within the current field pattern and on the inside of any hedgerow planting. No flood lighting is required. CCTV cameras will be installed along the fence-line and are activated by movement. The cameras only monitor the boundary fence and area within the solar farm, so as not to impinge on privacy.



## Will the solar farm cause traffic disruption?

Once the solar farm is in place it requires very little maintenance and the occasional visits in regular cars or 4x4s would cause no traffic disruption. Whilst the solar farm is being installed, a traffic management plan will be in place, including organising off-peak daytime deliveries. It would take about 3-5 months to install the solar farm, averaging about 15 deliveries per day.

## Is there a danger to motorists or aircraft as a result of reflection from the panels?

No - solar panels are designed to absorb light rather than reflect it. It is generally accepted that solar farms are not dangerous to aircraft. In fact, many airports have solar installations on their premises – Lightsource has also completed a large-scale solar project with Belfast International Airport.

## Are solar farms noisy?

Solar is a passive technology, the panels produce electricity silently, so the majority of a solar farm is generally very peaceful aside from the buzz of insects in the grass. The inverters (and the fans which keep them cool) do make some noise, but they are positioned in cabins towards the centre of the site so you would not expect to hear any noise from beyond the site boundary.



## How are the panels kept clean?

Typically, in the UK and Ireland, rainfall helps to clean the panels. But occasionally they will need to be cleaned manually using water and a brush. Lightsource uses a tractor-mounted system which we call the "Clean Machine". It is able to clean 10x more panels per day than hand washing.

## Do Lightsource solar farms pose a health risk?

No - solar farms are passive installations which do not produce any harmful by-products. Certain types of solar panels contain heavy metals, such as Cadmium. However, Lightsource does not use these products. All of the electrical equipment we use meets the Electromagnetic Compatibility (EMC) Directive and is CE marked. The electromagnetic radiation that may be emitted from the electrical equipment will be below the acceptable thresholds and will not interfere with radio transmissions.

If you have a question we haven't answered here, please send us an email and we'll ask one of our experts and get back to you - or come along to our community information events on Wednesday 5th or Thursday 6th April.

# Get involved!

You can send us your feedback, comments or support via our online Planning Portal:

1. GO TO  
[www.lightsource-re.ie](http://www.lightsource-re.ie)



2. CLICK  
Planning Portal  
(top right)

Planning Portal



3. TYPE  
'EAST LAOIS'  
into the search box

Search here



You can also contact us by phone or email. If you would prefer to write to us by hand, please get in touch and we will happily send you a pre-paid envelope.

We are still gathering information from our detailed wildlife and landscape assessments in order to refine our designs. As a result, it will be several weeks before we submit a formal planning application. Before we do, we would welcome any feedback or suggestions you may have.

We welcome you to attend our community information events on Wednesday 5th April or Thursday 6th April (see front page for details). We would also encourage anyone who can't attend the community event to visit our website where the plans can be viewed and suggestions regarding the proposal can be put forward.

## The Planning Team

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[www.lightsource-re.ie](http://www.lightsource-re.ie)

## Community engagement



At Lightsource, we place a strong emphasis on community engagement. Local knowledge and input is important in the development stage of the project, when we are shaping our plans. However, the opportunities for community involvement don't end once a solar farm has been installed.

The technology on a solar project is passive and easily accessible, with no emissions or harmful chemicals, unlike more complex energy generation methods. As such, our operational solar farms can provide an excellent educational resource for communities wanting to learn more about the solar power on their doorstep.

We are keen to involve communities and facilitate educational activities as much as possible. As well as opening up our solar farms for regular open day events, we have also assisted local schools, higher education students and ecologists with biodiversity research projects by providing access to our sites.

We also work alongside and consult local interest groups such as farming and beekeeping associations to continually review and improve our sites.

## Find out more...

We have many videos on our YouTube channel which go into more detail on the operation of our solar farm sites.



Crookedstone Solar Farm, Antrim, NI



Marley Thatch Solar Farm, Devon

Visit our  
YouTube channel  
'Lightsource  
Solar' to watch  
the video!



Open Day at Dunsfold Park Solar Farm, Surrey



[www.youtube.com/LightsourceSolar](http://www.youtube.com/LightsourceSolar)