

## Why Solar?

Solar is a passive form of technology, providing local and sustainable electricity that adds security to the world's energy mix. This, combined with its affordability and supply to peak electricity demand periods, makes it an ideal energy source.

Solar offers several advantages to the community:

- Solar arrays are only about 2.75m tall.
- Through environmental impact assessments and best practice land management, solar farms can be designed to enhance habitats and boost biodiversity.
- Solar farms do not emit any noise beyond the site boundaries. Once installed there is minimal maintenance activity required.
- Solar farms can help strengthen rural economies by creating local jobs, contributing significant property tax revenue, providing dependable revenue to landowners in order to supplement farm income.

## Comprehensive Planning & Community Involvement

With solar farms having a life span of up to 40 years, it's important to us to be stewards of the land and long-term partners of local communities.

At Lightsource bp, we work with various stakeholders when building our solar farms to make sure our projects benefit the local community – not just by generating clean electricity but by improving the local ecosystem as well.

We construct our solar farms with a view to improving soil health, fostering biodiversity, and strengthening rural economies. From ecological assessments to community engagement, we do our best to create solar farms that local communities can be proud of.



## Design and layout of a solar farm...

The design of a solar farm takes into account many elements from type of panels and spacing through to future land use, biodiversity values.



### Dual land use

Where appropriate, solar farms can be designed to accommodate grazing around the rows of panels, maintaining an agricultural use of the land.



### Beekeeping

Where possible we try to accommodate beekeeping on our projects. Working in partnership with local beekeepers, we identify an area suitable for bee hives and include pollinator friendly planting.



### Open spaces

Many areas of the solar farm do not contain panels. Wide margins are left around the boundary to avoid panels being shaded.



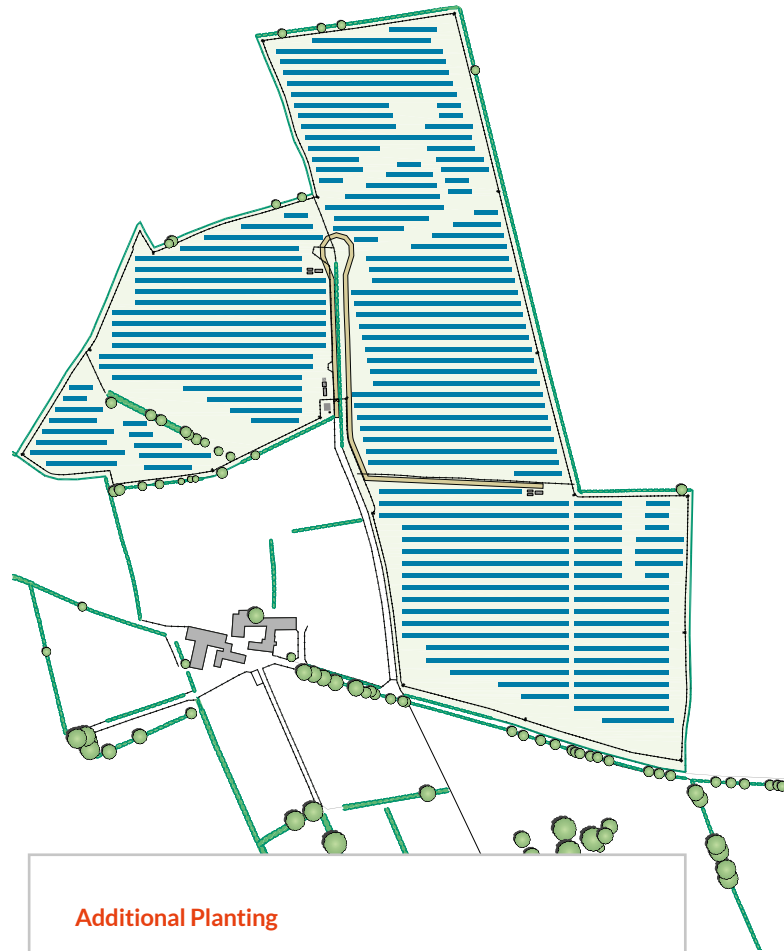
### Biodiversity Enhancements

We look at ways we can support wildlife and boost local habitats.



### Cultural/historical heritage

Lightsource bp takes all reasonable measures to ensure that a development has no adverse impact on cultural and historical heritage.

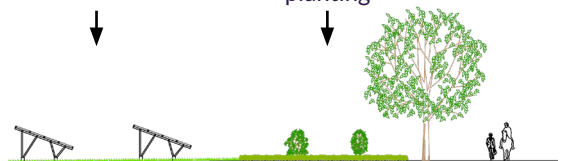


### Additional Planting

Additional planting added into any project takes into consideration local species, wildlife habitats and ensuring minimal damage to existing vegetation during construction.

Solar panels

New planting



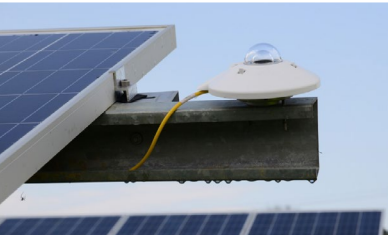
Illustrative section at 0 years



Illustrative section at 5 years



## Components of a solar farm



### Solar panels

Solar panels (or modules) are arranged in rows with wide margins to prevent shading.

### Cabling

Cabling is weather-proofed and securely attached to the structure or buried underground.

### Pyranometer

Pyranometers measure daylight levels at the site. This data is compared with the generation data to give an indication of whether the solar farm is working efficiently.

### Inverters

Inverters convert the DC power into AC (Alternating Current) flowing on the local consumer's private network. Shown here are 'inverter cabinets' which house the equipment.

### Transformer

From the inverters, the electricity flows to a transformer which 'steps-up' the voltage of the electricity to match that of the existing network.

### Substation

This is the on-site point of connection to the grid. From here, a high voltage cable buried underground, connects the solar farm to the existing overhead line grid network. The design of the substation will depend on the voltage and requirements of the network operator.

### Local consumption

The electricity is distributed by the local electricity network operator.

## FAQs

### Are solar farms irreversible development?

No - at the end of our lease period the installation will be dismantled and removed without harming the land.

### How is the equipment protected?

Our solar farms are enclosed by a fence - usually timber and wire agricultural fence of about 2 metres in height. This is positioned on the inside of any hedgerows and trees with wide margins in between the fence and field boundary. We also install CCTV cameras to monitor any movement on the site.

### Are solar farms noisy?

The panels produce electricity silently. The inverters (and the fans which keep them cool) do make some noise, but they are housed in cabins positioned away from the site boundary.

### How are the panels kept clean?

Generally, rainfall helps to keep the panels free of dust and dirt. The panels will be thoroughly cleaned as required using specialist equipment and water brought in on trucks, to make sure the installation operates efficiently.

### Do solar installations pose a health risk?

No - solar is a passive technology which doesn't produce any harmful by-products. All electrical equipment we use meets local regulatory standards.

### How electricity is produced...

Each solar panel is made up of 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.



## Local benefits



### Jobs

Our projects will create jobs during construction, hiring local subcontractors and recruiting from the local labor pool.



### Tax Revenue

Over a project's lifetime, it will contribute to local taxes, benefitting local schools, street maintenance, fire stations, parks and other community public services.



### Revenue for Landowners

Land is leased by Lightsource bp from local landowners, providing families with a new source of reliable revenue for 25-30+ years, and helping keep the land in the family for generations.



### Educational Opportunities

The solar farm will provide educational opportunities for local schools and universities, with Lightsource bp providing curriculum support, research opportunities and site tours.



### Clean, Local Energy

Enhancing air quality by helping to mitigate the health effects of harmful air pollutants.



### Philanthropic Commitments

Lightsource bp is committed to dedicating funds to philanthropic activities and charitable donations to local organizations.



### Enhanced Biodiversity

We're committed to minimizing the effect of the solar farm to the ecosystem as well as improving soil health, fostering biodiversity and pollinators, and creating wildlife habitats wherever possible.



## Contact Us

If you would like to find out more about Lightsource bp or our sustainability strategy, please get in touch through email and we will try our best to answer any questions you may have.

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