

Frequently asked questions

Solar Farm

How does a solar farm work?

Solar cells convert light into electricity using the photovoltaic effect. The solar cells are grouped into modules or solar panels, which are linked together into a group known as a string. Inverters change the electricity from DC (Direct Current) into AC (Alternating Current) which is necessary as only AC is considered safe enough for use in the home. From here the voltage of the electricity is increased dramatically by a transformer before it enters onto either Distribution Network (local) or Transmission Network (national).

How long does it take to build a solar farm?

Generally, the construction period is 16 weeks from start to finish. This also includes the time it takes to commission the site when no physical construction works are taking place. This timeframe can be lengthened in some cases due to adverse weather or unexpected technical challenges.

After construction, access for operations and maintenance activities are required only three or four times per year.

What size is the proposed Corley Solar Farm?

The size of a solar farm is measured as total megawatt peak (MWp). This is the total output of each solar panel in watts multiplied by the number of panels on site. Corley Solar Farm is approximately 18MWp. The site area is 55 acres incorporating open grassland to allow for access and maintenance and areas affected by shading.

What size are the solar panels?

Solar panels are typically 1.6m by 1m in size and are generally mounted 0.8m from the ground to around 2.5m in height. The ground clearance is sufficient for plants, sheep grazing and other habitats.

What size are the containers housing the inverters, transformers, batteries, and substation?

Most equipment is housed in standard sized shipping containers which are 2.6m in height. The smaller footprint substation buildings are typically slightly higher at about 3m – 3.5m high with the design being specified by WPD.

Do solar farms make any noise?

Solar panels have no moving parts. Any noise produced will generally be from the fans used to keep electrical infrastructure equipment cool which is sited over 150m away from housing. The silence of a solar farm is one of the things visitors often comment on.

What is the impact on the land?

No widespread ground levelling is required and there is practically no loss of soil coverage as enough sunlight and rain can get through/between the panels to maintain healthy plant life.

How are the panels attached to the ground?

Normally, solar panels (modules) are attached to an aluminium mounting system which is bolted to galvanised steel posts which are driven into the ground. This avoids the need for a concrete base platform and makes it easier to recycle the system at the end of its life. The depth of the steel posts is determined by engineering calculations taking wind loading and ground conditions into account but is typically around 1.5m. Small concrete foundations are required for the inverter, transformer, and switch gear housings to ensure they are installed on level and stable footings.

Can traditional farming continue under solar panels?

A solar farm enables continued agricultural use of the fields. Our solar farms are designed with grazing in mind and sheep can continue to graze the grass growing around and under the solar panels for the lifetime of the solar farm. As nitrogen-based fertilisers and spraying are not used, native grasses and wildflowers are naturally re-established which support bees and insects.

Will the solar farm damage wildlife?

Due to the protected rough grassland environment with minimal human disturbance, wildlife flourishes. At an Oxfordshire solar farm which is grazed by sheep we have noticed a great increase in skylarks. Solar farms can deliver tremendous benefits for wildlife and pollinators. Reinstating and planting new hedgerow and trees will create wildlife corridors, linking areas of local woodland and having far-reaching benefits including biodiversity and habitat provision, carbon storage, and pollination for food provision.

Do solar farms affect aircraft?

Solar farms have been installed near airports worldwide. There have been no reports of disturbances from environmental tests or from open-space solar farm usage. In fact, pilots have been reported to use solar farms as visual markers for navigation.

Is a solar farm dangerous to my health?

We are not aware of dangers to health from solar farms. Pager power are experienced solar farm consultants and have written a useful article regarding common concerns in 2019. The green energy produced by the solar farm will be offered to the service station which will assist in the decarbonisation of the transport network, reducing the current health risks associated with poor air quality and automotive/HGV pollution from the road network.

Do solar farms create glare?

Solar cells are made to absorb as much light as possible and not to reflect it: They are light converters and have extremely low reflection levels, which increases the efficiency of the cell. Any reflection that may occur might be caused by the mounting structure and would be limited, as the sun's position changes all the time.

What is the visual impact of a solar farm on the landscape?

Renewable energy development decisions are never black or white and the interplay between the natural and built environment is always a balancing act between competing interests. Not everyone will agree that a supply of renewable energy is more important than the effect on the landscape, however, the effects of climate change on the countryside (e.g. visual/ecological) cannot be ignored.

Solar farms are generally screened by existing or planted vegetation to minimise visual impact. Placing solar farms on flat south-facing land or gentle slopes also helps to minimise the impact on the landscape.

Whilst existing natural screening is sought, shading needs to be avoided in the design of the panel layout, otherwise the site would not yield optimum electricity generation.

National Planning and Climate Change Policy explicitly states that protecting the landscape should not preclude renewable energy schemes 'except in the most exceptional circumstances', such as a nationally designated landscape. The landscape and visual impact assessment (LVIA) will accompany the planning application.

Where will the electricity go?

A suitable connection to the grid has been secured which is a deciding factor on the placement of a solar farm. Electricity will also be used on site by the vertical farm and offered to the service station which will help progress decarbonisation of the motorway by offering energy security, generated locally with reduced losses otherwise associated with the transmission network.

What will happen to the existing public footpath?

Full access to the public footpath will remain and it will be enhanced, allowing 5m of rough grassland either side of it as it passes through the solar array.

Where will the access be?

Access will be from Smorrall Lane.

What fencing will be used around the site?

Agricultural stock fencing will be used for most of the site.

What is the life of a solar farm?

Due to a lack of moving parts solar farms are very reliable and have potential to last a long time with minimal maintenance. The solar panels themselves will degrade in efficiency over time but are projected to last between 40-50 years with some estimates say they could run for longer. Other equipment such as transformers or inverters will require replacing at intervals of around 20-25 years. The life of the site itself, owing to this inbuilt reliability and modular nature will likely be decided by its planning permission and local demand.

What happens afterwards?

Once the solar farm ceases to operate, it will be decommissioned. The modules, associated plant and equipment will be removed for recycling and the site will be returned to its original agricultural use.

Vertical Farm

What will be grown in the Vertical Farm?

Baby leaf vegetables, herbs, Asian greens, speciality, and mixed greens can be grown as well as nutritional yeast and seeds. The decision on what crops will be grown will be influenced by market demand.

Is a vertical farm environmentally friendly?

A vertical farm uses 95% less water than land farming with 20 times more yields for the same square meterage. Zero pesticides and heavy metals will be used. Fresh nutritious local produce will be produced all year-round reducing food miles and pollution whilst increasing food security. The renewable energy to run the vertical farm will come straight from the solar array.

How does a vertical farm work?

Inside the highly insulated building, a soil-less hydroponic system is used. In place of soil, a circulation system and hydroponic media distributes water, nutrients, and air to the plants. LED lights deliver very specific types of light to the plants at exactly the right times, all powered by the solar array.

How many local jobs created?

The vertical farm will create approximately 30 new local jobs of varying skill levels with appropriate training where necessary.

Will the building be lit up at night?

Only low-level lighting will be used where necessary around the building.

What will the hours of operation be?

Standard operating hours are anticipated between 8am-5pm, although there will be a reduced staff presence on site 24/7 for security and core duties.

Where will the staff park?

It is anticipated that around 15 cars may be parked on site at any one time. Walking, cycling and electric vehicle use will be encouraged.

How many van and light lorry movements will there be every day?

It is anticipated that there may be between 6-12 pickup and delivery vehicle movements a day depending on the type of crop being grown, which will also govern delivery pick up times.

How tall will the vertical farm building be?

The building will measure approximately 6m to the ridge. Surrounding trees are higher than this.

Will the building have many windows?

The vertical farm will generally only have windows in staff wellbeing and office areas.

Where will the water runoff from the roof go?

Rainwater that cannot be harvested for use within the vertical farm will feed into an adjacent wildlife/attenuation pond.