

> Site information

Highfield Energy Park

The development is split over two land parcels – the main site includes a ground mounted solar farm with an installed capacity of 60MWp and the smaller northern site includes a battery energy storage, substation and point of connection compound allowing connection into the existing 66kV line which passes through the northern site. The solar farm will generate electricity equivalent to the average annual consumption of around 20,600 UK homes.

Site location and overview

The site is located to the southwest and northwest of Whittonstall. Approximately 100ha of land, about half of that shown on the map will be needed for the solar farm and about 2ha will be used for the substation, battery and point of connection.

(Detailed location is shown on the 'Why this site' board)



x20,600

The solar farm will have an installed capacity of 60MWp, the equivalent to the electricity usage of approximately 20,600 UK homes.

Development components

> Photovoltaic panels

Each panel will be approx. 2.4m x 1.1m x 4cm.

> Mounting system

The mounting system comprises upright galvanised steel posts which are screwed or pushed into the ground and an aluminium support frame which is bolted together. The complete assembly including the modules will be angled to face south. The lower part of the assembly will be 0.7m off the ground while the top of the assembly will be up to 3m high. The system is designed to be 'reversible' leaving only small holes to be back filled when removed upon the completion of the project.

> Inverters

Inverters are required to convert the direct current (DC) generated by the photovoltaic modules to grid compatible alternating current (AC).

> Substation and batteries

An electricity substation will be installed on site close to the point of connection to the 66kV overhead line which crosses part of the site. The compound will also house battery storage containers and associated inverters and transformers. Cabling from the panels / inverters will be routed to the switchgear kiosk at the solar farm via a network of shallow trenches which will be back filled. A buried cable will then link the solar farm and substation.

> Fencing

We are proposing a 'deer fence' (wooden post and metal mesh) up to 2.4m in height.

> CCTV

We propose installing CCTV cameras on the site. The cameras will be located inside the site and will point inwards. Typically installed at a height of 3m.

Operation

The solar farm will begin to generate electricity following commissioning and being connected to the grid. The photovoltaic panels will continue to generate electricity for a project lifespan of 40 years after which all infrastructure would be decommissioned and removed from the site. The batteries will be available to import and export electricity for the same 40 year period.

The site will be monitored remotely and will not require any permanent staff to be located on site. The proposed development requires low maintenance and as such there will be infrequent visits to service the installation.

To ensure agricultural practices continue the grass in and around the solar array will be grazed by sheep and the soils taken out of intensive agricultural practice and allow to rest and naturally improve.

Grid connection

Exagen has received a grid connection offer from Northern Powergrid confirming that a connection is possible into the existing 66kV overhead line crossing the northern site. The electricity from the solar farm will be transmitted via an underground cable from the solar farm switchgear kiosk to the substation. The exact route has not yet been confirmed but is likely to generally follow the shortest route.

Construction

> Timing

Works will commence upon gaining the necessary planning and grid connection approvals. Construction will take approximately 6 months

> Construction access

All construction traffic is proposed to access the Main site via the A68, minor road and junction used by the existing wind farm. The point of connection compound would be accessed off Lead Lane. Vehicle type and routing will be examined moving forward to minimise disruption to the local road network.

> Site preparation

This will involve the preparation of the site to receive the delivery of equipment. This may involve the construction of a temporary access track and will involve the preparation of areas for the storage of equipment and the housing of temporary site offices.

Layout & construction

> The locations for the uprights will be identified using GPS to ensure accuracy. Uprights will be screwed or pushed into ground to avoid the use of concrete foundations. The mounting framework will then be assembled by hand. The solar PV panels also fixed to frame, again by hand. Shallow trenches will be excavated between the panels, the inverters and the substation position. Cables will be laid in the trenches and back filled.

Restoration

> All areas subject to temporary works including some access tracks and other temporary infrastructure, would be re-instated to a condition in keeping with the quality of the areas before works commenced. All construction waste (largely comprising packaging) will be disposed of in accordance with local regulations.

Local contractors

> Local contractors will be used as far as possible in the construction process.