



Information Sheet

Solar farms

How do Solar Photovoltaic panels work?

Solar Photovoltaic panels (PV) are constructed out of special materials which allow the solar panel to convert light from the sun. They do this both from direct sunlight and from diffusing light through clouds into electrical energy – this is called the “photovoltaic effect” which is why the panels are referred to as Solar Photovoltaic (PV) panels.

Each panel is comprised of many ‘solar cells’ which generate electricity in the form of direct current (dc for short).

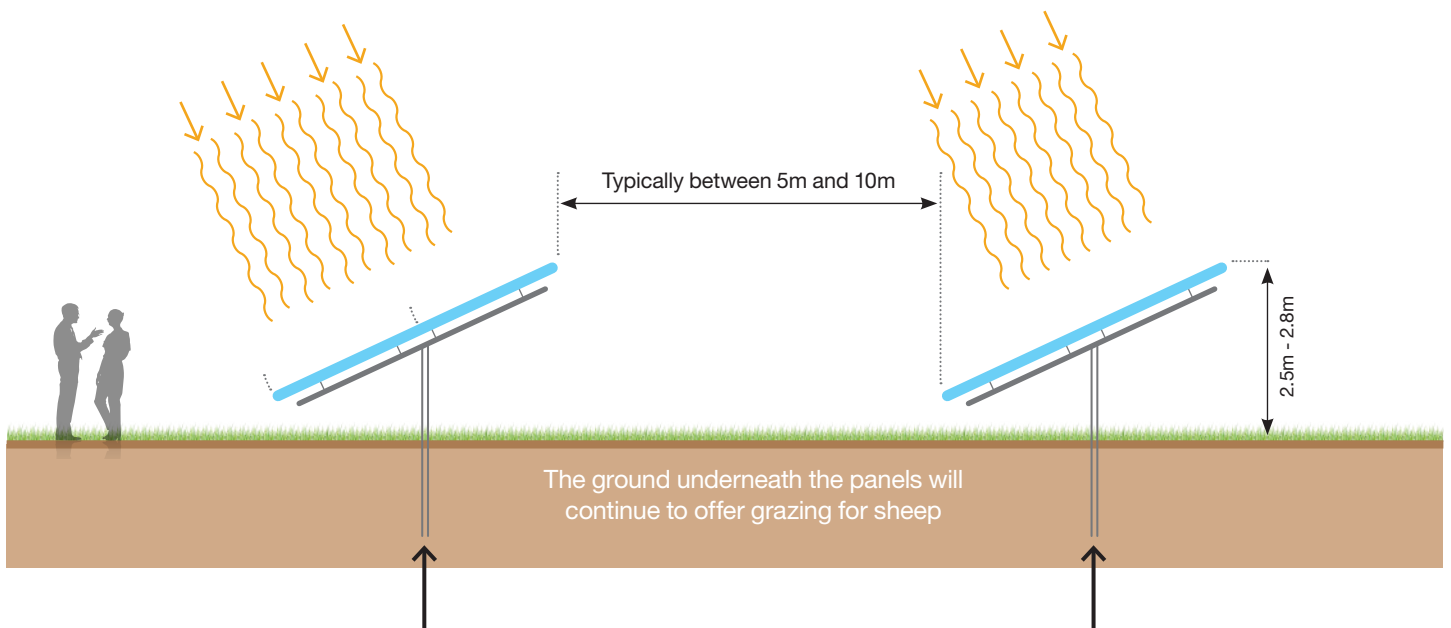
This is the same form of electrical energy stored in batteries but is different to the alternating current (ac) electricity that we get in the national grid and in our homes.

The panels are mounted on rows, typically two rows of panels per frame. The frames generally face due south and are mounted at an angle of between 20 and 30 degrees, so that the highest part of the frames are 2.5m – 2.8m above ground.

Solar projects use ‘inverters’ to convert the dc current into the ac current needed in our homes.

In order to efficiently carry the electricity to where it is needed the national grid network operates at a higher voltage than we use in our homes. Each inverter has an integrated transformer to increase the voltage, and there is also a main substation operated by the local grid company to manage the grid connection.

The inverters and transformers are located in small containers around the site. They are less than 3m in height and typically 2.4m wide by 6m long.



The solar panels are supported by steel piles driven or fixed into the ground. These will be removed from the ground at the end of the project.