



PROJECT OVERVIEW

Bedford Borough Council transformed a former landfill site in Elstow into a state-of-the-art solar farm capable of generating 4.2MW of electricity. The project saw Vital Energi arrange for G99 and G100 grid certification and sign off, allowing them to export enough electricity to the grid to power approximately 1,000 homes.

The Council has a Carbon Reduction Delivery Strategy which will help them to become net zero by 2030. The creation of this solar array will assist with achieving this net zero target.

The landfill site closed in 1998 and had to have extensive remediation works, which included the import of 500,000 tonnes of material, including

clay capping. This work was undertaken by the council's contractors. Vital Energi inherited the restored site from the client and undertook all installation works.

The aim of the project was to generate renewable electricity which can be exported to the grid, bringing the dual benefits of reducing local carbon emissions, whilst generating income for the council.

Vital worked with the client's professional team to enhance the original design and were able to create a system which delivered the maximum yield possible through the longest period of the day, within the footprint of available land.

VITAL SOLUTION

Vital Energi worked with the council to design and deliver a long-term solution which would produce both carbon reduction and revenue for an agreed 25-30 year period.

Once the site had been restored, with clay capping and a gas management system, Vital Energi undertook all piling, installation

and infrastructure works to deliver a complete turnkey solution involving over 8,000 solar panels and private wire electrical network.

Designing A Solution to Maximise Generation

Our aim was to work with the client to deliver a design solution which would maximise carbon reduction and revenue for the

PROJECT SUMMARY:



CLIENT

Bedford Borough Council

PROJECT

Elstow Solar Farm

TIMESCALE:

August 2021-March 2022

VALUE:

£3.7m

THE BENEFITS:

- > Transformation of problematic land fill site into renewable energy asset.
- > Installation generates circa 900 tonnes of carbon reduction per annum.
- > Complete service including G99 and G100 grid certification and sign off.

Former Secretary of State for Energy and Climate Change and current Liberal Democrat Leader, Ed Davey visiting the site of the Elstow Solar Farm.



“Vital have made our lives easier, we are delighted the Council chose to partner with Vital, we have worked together well on the project and would definitely like to continue with this partnership on further works. I don't say it very often but Vital have been a wonderful partner and everything they have been involved with, I cannot fault.”

PAUL PACE, CHIEF OFFICER
ENVIRONMENT FOR BEDFORD BOROUGH COUNCIL

council, within the budget and the footprint of the available land. This saw the farm divided into two sections, with a 3MW installation and a 1.2MW installation for an overall capacity of 4.2MW

The system is capable of generating 4.2MW of capacity, despite the export license only allowing 3.5MW of export to the grid. By configuring the system in this way, we were able to trade a higher peak performance for a system which generated consistent electricity for a longer period of the day, meaning the daily generation was significantly improved.

Adapting to an uneven landscape

Solar panels can be vulnerable to high winds, so modules must be securely mounted to the framework, which in turn, must be securely fastened to the floor. On this project we drove vertical piles into the ground and then bolted the framework to it.

As the landscape of the hill is uneven, including slopes and undulation, we used a flexible framework which can ride over small changes whilst producing a stable base. In instances where there was a slope, we stepped the panels to ensure we could fit in the required capacity without losing any yield.

Installing the electrical infrastructure

Vital created the electrical substations which housed additional equipment, including the curtailment system which ensures safe interaction with the grid. We also installed approximately 300m of HV cable which was laid through private land before connecting to a national grid substation.

As part of our work we ensured the project was G99 and G100 compliant and obtained a license to export electricity to the grid.

Utilising our international supply chain to up-spec the client's equipment

The original design had generic inverters specified. Our solar design experts were able to improve the system design and introduce higher specification invertors which matched the overall system capacity. This was done whilst maintaining the capital cost of the project in a challenging economic environment.

Using rapid procurement to protect our client from rising prices.

At the time of the project, the price of solar panels was increasing rapidly. Vital Energi therefore made it a priority to

secure the necessary panels quickly to avoid further increases.

By utilising our robust supply chain, we were able to procure the panels rapidly, ensuring our clients were insulated from further coming price rises.

A secure installation designed to last up to 30 years

In addition to the solar farm and electrical system, we also delivered the surrounding infrastructure, such as access roads, CCTV and surrounding security fencing, making the project a true turn-key solution for the client.