

HV SERVICES

OVERVIEW

A collaborative effort by RES' Projects and High Voltage (HV) teams culminated in the successful re-energisation of a large solar farm for one of our clients.

Decoy Solar is a 5.3MW solar farm located in Chichester, England. The site consists of over 26,000 panels and can provide sufficient low-cost renewable electricity for over 800 homes each year.

The site, which is owned by a client, had been managed by RES' Operations & Maintenance team since August 2020. In October 2021, RES' Projects Team, who oversee specialist O&M contracts, was appointed to deliver a large-scale repowering project following a competitive tender process. This included the removal, installation and commissioning of existing inverter stations and customer substation switchgear.

CHALLENGE

The site had been experiencing some challenges, for instance, inverters being obsolete (hence a lack of spare parts).

Given the safety issues surrounding HV works, our Project Management team wanted to ensure that we had full control over all HV procedures allowing works to be carried out safely and to a high standard. We therefore appointed our own internal HV services division which has Senior Authorised Person's (SAP's) in employment who follow our own high-quality Safety Rules.

The DNO had originally advised that the installation would have to be signed off under the new G99 scheme. This would have led to a significant delay in the energisation of the site and so our HV team used their technical knowledge to challenge this decision.



The 33kV solar farm comprises of the following HV equipment:

- › Two panel intake switchgear with integrated voltage transformers at the customer substation.
- › Three park transformer stations which were directly fed from the intake substation with no switchgear.
- › Three inverter stations.

THE SOLUTION

Our projects and HV team met to discuss project timings and agree when the disconnection of the existing equipment should be carried out with one of our SAP's managing the safe systems of works throughout.

The HV team successfully delivered the removal, installation and commissioning of existing inverter stations and customer substation switchgear. This included the HV jointing and testing works (IR, VLF and sheath-testing) to re-configure the site network, as well as the cable terminations for all substations. The team also managed the connection and commissioning of the Ring Main Unit's (RMU) and transformers.

An additional SAP was appointed to support the commissioning work to ensure that the project was completed as quickly as possible enabling the site to be repowered, minimising the downtime.

Overall, our HV team were on site for just under three weeks, with a large majority of that time involving the comprehensive and extensive commissioning.

RESULTS

The HV team used their technical knowledge and experience to challenge the decision to sign the works off under the new G99 scheme to ensure that the project could be reenergised immediately avoiding loss in generation. They worked with the DNO to produce all relevant information and testing to allow for the site to be signed off under the previous G59 scheme, saving our client thousands in lost revenue.

The project was a success with full repowering, commissioning and energisation of the site completed in June 2022 on schedule and budget. The collaborative and in-house approach between the Projects and HV team led to this success.

“By undertaking the role of Principal Contractor at the site and subcontracting our own specialised HV team, we had the flexibility to prioritise work around business needs. As a renewable focussed HV team we understand the importance of timing and can coordinate other maintenance works with HV works to minimise downtime and cost for our clients.”

Simon Deacon, Operations & Maintenance Director

