VITAL ENERGi

CASE STUDY

Sandscale 2 MW Solar Farm

INDEPENDENT CONNECTION PROVIDER - CONTESTABLE WORKS

PROJECT OVERVIEW

Westmorland and Furness Council's commitment to achieving their net zero goals saw them commission a new solar project. The ambitious undertaking involved the design and construction of a 2MW Solar Farm, comprising nearly 3,700 solar PV panels spread across an expansive 11.9-hectare site.

As part of the project, we were tasked with executing all the High Voltage Contestable Works, which included connecting the new system to the Distribution Network Operator's distribution network. On this project, the Distribution Network Operator was Electricity North West (ENW), who, upon completion, adopted the complete grid connection.

To achieve this, we needed to navigate the intricate design, build and adoption requirements stated by Electricity North West. Each Distribution Network Operator has its own unique set of G81 design documents and specifications, making it crucial for the system to comply with all their rules and regulations.

Electricity North West is responsible for maintaining high standards of quality control on its networks, requiring Independent Connection Providers (ICPs) to be accredited for the scopes of Contestable Works. The accreditation process involves rigorous audits to verify compliance before the assets can be adopted. On this project our High Voltage scopes of Contestable Works under the National Electricity Registration Scheme (NERS) was audited by Lloyds Register Quality Assurance.

Upon successful completion and adoption of the Contestable Works, Electricity North West integrated the newly installed electricity distribution system into their existing grid infrastructure and assumed responsibility for the operation and maintenance of the adopted assets, ensuring the long-term viability of this renewable energy project.

VITAL SOLUTION

As the Independent Connection Provider, we are able to fulfil all DNO liaison and handle the essential steps and communication involved in delivering the High Voltage Contestable Works, in line with the requirements of ENWL and LRQA's NERS. This included handling all design and construction works from the High Voltage Point of Connection provided in the ENWL Point of Connection offer (G99 application) through to the sign off for the adoption agreement.

As well as our ICP undertaking Vital Energi also performed the full design, procurement

PROJECT SUMMARY:

CLIENT
Westmorland & Furness Council

PROJECT
£2.8m Solar Farm & Independent Connection Provider Works

THE BENEFITS:

- 3,700 solar panels installed
- Capable of generation 2MW of clean electricity
- Extensive liaison with the distribution network operator.
- Fully compliant design and delivery.
- All works adopted by the distribution network operator.
- Vital Energi delivered the complete supporting 11kV electrical infrastructure package

(Right) We took complete responsibility for installing the 11kV High Voltage cabling including civil engineering, laying the cable and reinstatement works.
(Below) We designed and delivered the complete supporting electrical infrastructure package, including the sub stations.

‘Sandscale Park solar farm is an example of us using our assets in an innovative way to meet a serious challenge. The rise in energy costs is affecting us all, and by establishing this site we’re now able to generate our own energy and ensure security for the future, which can only be a positive thing.

COUNCILLOR ANDREW JARVIS, WESTMORLAND AND FURNESS COUNCIL’S DEPUTY LEADER AND CABINET MEMBER FOR FINANCE

and installation of the client’s 2MW Solar Farm and associated equipment such as inverters, substations, control system and HV connection to the grid.

Design and Approval

During the design process we worked closely with ENWL to develop the scheme in line with their specific requirements. This culminated in the submission of a detailed design pack for their approval, ensuring compliance with the Distribution Network Operator’s G81 design standards and specifications requirements.

Infrastructure Installation

The project encompassed excavation, laying of 11kV cables, backfilling, and reinstatement works. We also handled the termination of these cables onto 11kV Ring Main Units, ensuring proper connectivity throughout the system. Working in partnership with the DNO we safely undertook the jointing works of the new adoptable cables to the existing ENWL network.

Substation Development

As part of the installation we managed the design, supply, install, testing, and commissioning of the 11kV substations. This included the full fit out of the substation that housed, not only the Switchgear, but also the Battery Tripping Units (BTU), ENWL’s Remote Tripping Unit (RTU), full earthing system, along with all building services and electrical interconnections. During the development of the substation ENWL requested the substation was future proofed and we installed motor mechanisms to both the ring switches and circuit breaker to allow them to remotely switch the unit for maintenance and fault rectification purposes.

Collaborative Approach

The project’s success relied on us to collaborate closely with, Westmorland and Furness Council, ENWL, Atlas Utilities, and Lloyds Register Quality Assurance. This teamwork facilitated smooth project execution and full NERS accreditation for the Contestable Works which included laying the HV Cable, HV Jointing and HV Substation.

Risk Mitigation

By maintaining full control over both HV and LV electricity systems we were able to oversee crucial areas such as quality control and scheduling. By not being reliant on the local Distribution Network Operator for connection we were able to avoid any lengthy delays for grid connection.