The Brockaghboy Windfarm

The Brockaghboy Windfarm is located approximately 30 miles east of Londonderry in Northern Ireland, and was fully commissioned in February 2018. It has a capacity of 47.5MW.

Obelisk approached Laplace to provide a control and automation system to monitor the High Voltage (HV) infrastructure at the Brockaghboy Windfarm. We were tasked with providing a Detailed Design Specification (DDS) which would satisfy the elaborate specification requirements outlined by Obelisk.

Our Solution

The client wisely decided to invest in the most up to date substation protocol (IEC61850), bringing the advantages of modern networking technologies to the substation. Our team of expert engineers wrote a complex software programme linking the SCADA and PLC which met the needs of the specification. The control panel Laplace built then provided an interface between the hardwired and soft signals, and the SCADA system. This enabled remote access, meaning that the client is able to remotely monitor and control the system.

Finally, Laplace conducted in-house testing using our state-of-the-art PC based simulation software allowing for an efficient and thorough examination to confirm everything was working to our high standards, and to the user specification.

Aim & Objectives

The aim of this project was to build a complex control and automation system to assist in the sustainable maintenance of Brockaghboy Windfarm.

- To design and commission a SCADA/PLC system to monitor the equipment associated with the complex High Voltage infrastructure.
- To meet the elaborate User Requirement Specification (URS) provided by Obelisk.

MEGAWATTS
47.5

TURBINES
19

Benefits

- The new IEC61850 has implemented new capabilities which are simply not available with the majority of legacy protocols.
- This protocol implements a single ethernet connection, significantly reducing space, labour, cost and time.
- The system is able to remotely monitor consumption data, and the quality of the power, enabling energy optimisation.
- Laplace are able to remotely access the site to provide system support, and alarm response.

Laplace Initiative

- Laplace have the ability to transform a complex user specification into visible and efficient results, by implementing our company initiatives, using intelligent design, and creating a bespoke control system.
- We can effectively deliver the most up to date and efficient substation protocol, to a tight deadline, and within a pressured environment.
- Full in-house testing can be carried out without the need to connect directly to plant.

Brockaghboy Windfarm