WHO ARE WE?

We are SP Energy Networks, part of the Iberdrola Group, leaders in sustainable innovation. As a Distribution and Transmission Network Operator we keep electricity flowing to homes and businesses throughout Central and Southern Scotland, North Wales, Merseyside, Cheshire and North Shropshire.

We do this through the network of overhead lines and underground cables which we own and maintain.

Our three regulated electricity licences are:
- SP Transmission (STP)
- SP Distribution (SDP)
- SP Mamweb (UPM)

Our aim is to deliver a safe and reliable electricity supply 24 hours a day, 365 days a year whilst providing exceptional value for money.

ANGLE DC

Angle DC is a smart and flexible method for reinforcing distribution networks. The project is creating a controllable Inter-horizonal Direct Current (DC) link between two sections of our network, Isle of Anglesey and North Wales. Angle DC is converting existing 11kV Alternating Current (AC) assets to DC.

This innovative project will adapt existing electronic technologies to build Medium Voltage DC (MVDC) link. This will smooth the way for the integration of increasing volumes of renewable generation and accommodate the growth of electricity demand. Angle DC is building confidence in deploying MVDC technologies by other UK Distribution Network Operators and triggering the MVDC supply chain.

LINK BETWEEN TWO SECTIONS

Isle of Anglesey

North Wales

BENEFITS FOR CUSTOMERS

- Increasing the capacity for load and generation connections.
- Reduced shunting of Horizon Nuclear Power Plant via the parallel 11kV network.
- Enhanced power flow through an existing circuit to defer reinforcement which may be necessary for some connection requests.
- More precise control of the flow of power in the distribution circuit for improved efficiency to avoid naturally occurring AC overloads. This prevents the possibility of overload of the circuit, helping to reduce the number of faults.
- Control of voltage at either end of the distribution circuit to enhance the flow of electricity to customers.
- Control of reactive power flow at both ends of the distribution circuit.
- To lower losses and save wasted energy in the wider distribution network due to the improved voltage control.
- Rapid support to the system voltage during faults to enhance the electricity quality of supply to our customers.
- Fault level decoupling between distribution systems.
- Enables faster access to the network for renewable connections. This helps customers who wish to connect low carbon technologies such as wind turbines and photovoltaics to the network.

TIMESCALE

Work Package 1: Medium Voltage Direct Current Specification and Holistic Monitoring System

Work Package 2: MVDC Link - Design of Factory Acceptance Testing (FATs), Site Acceptance Testing (SATs) and Commissioning

Work Package 3: Alternating Current (AC) System Specification and Installation

Work Package 4: Holistic Monitoring System Installation

Work Package 5: Cable Data Gathering and Analysis

Work Package 6: Knowledge Dissemination continued

Work Package 7: Publication of Operational Performance of MVDC converters

Work Package 8: Effective Knowledge Dissemination

SRDC 1: Publication of Holistic Monitoring System

SRDC 2: Publication of MVDC Technical Specification (TS)

SRDC 3: Commissioning of Holistic Monitoring System

SRDC 4: Factory Acceptance Testing (FATs) of MVDC Converters

SRDC 5: Publication of Holistic Monitoring System Data

SRDC 6: Successful Delivery Reward Criteria

CONTACT US

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PROJECT PARTNERS

Project Partners
- CEI Power Conversion

Academic Partners
- Cardiff University

Project Supporters