ENHANCING COMMUNICATIONS AND SAFETY IN RENEWABLE ENERGY OPERATIONS

Background and challenges

A leading UK renewable energy company has been at the forefront of sustainable energy for over 80 years. With a core focus on economically regulated electricity networks and renewable energy generation, the organisation is dedicated to providing the energy needed today while building a cleaner energy future. It develops, builds, operates, and invests in critical infrastructure that supports the transition to net zero, with most assets and projects based locally, reinforcing its commitment to a sustainable future within the UK. As a leader in the renewables sector, the company operates multiple wind farms across remote areas of Scotland and Northern England. However, limited LTE coverage in these regions has presented significant communication challenges.

The organisation required a robust radio system to ensure seamless communication between field staff, on-site control rooms, and central control centres.

Solution

Simoco implemented a comprehensive Digital Mobile Radio (DMR) system tailored to meet the specific needs of the renewable energy company The solution included the deployment of 33 repeater sites across eighteen wind farms, ensuring extensive coverage and reliable communication. The DMR system provides vital voice communications necessary for daily operations and includes telephone interconnect capabilities, allowing seamless communication between on-site staff and central control rooms located off-site. The system features GPS-based lone worker safety enabling real-time monitoring of employees working in remote locations. By integrating these capabilities, the solution significantly enhances both the operational efficiency and workforce safety.

Challenges faced:

Remote site locations

Wind farms are situated in remote areas across Scotland and Northern England, creating logistical challenges for maintaining stable communication networks and ensuring seamless connectivity among team members in the field.

Lone worker safety

Ensuring the safety of employees working alone in isolated and challenging environments required advanced protection systems to prevent and respond to potential emergencies.

Operational communication needs

The customer needed a robust and reliable communication infrastructure that could support real-time voice communications, and integrate with existing control centres to maintain operational efficiency and safety standards across wind farm locations.

Secure. Reliable. Adaptive.

Key aspects influencing the decision to choose Simoco

Simoco was selected for its fully integrated voice and protection system, designed to support critical communication needs. The system enables a streamlined Emergency Response process from a central point, establishing a standardised communication platform and operational procedures for employees and contractors across all onshore sites.

Connection to the On Shore Control Centre (ONCC)

The DMR system ensures that field staff are constantly connected back to the ONCC. This connection enables real-time data transfer and communication between field personnel and the ONCC. The seamless integration with the ONCC ensures that all operational activities are monitored and managed effectively, improving overall coordination and operational control.

Lone worker support

The lone worker safety features included within the DMR system ensure that employees working alone in remote areas can signal for help if needed, thereby improving their safety and security.

Voice communications

The DMR system provides clear and reliable voice communication between field staff across the wind farm site, on-site control rooms, and central control rooms.

Sustainability and green credentials

Simoco is committed to helping renewable energy providers achieve their sustainability goals. By delivering reliable communication systems that enhance operational efficiency, organisations can optimise resource usage and reduce waste - supporting a greener, more sustainable future.

Man down detection

The system's man down feature automatically detects if a worker had fallen or was in distress, triggering an alert to ensure immediate assistance, thereby providing an additional layer of safety for staff in hazardous conditions.

Enhanced system resilience

Simoco provides backup batteries for each base station site. These backup batteries ensure that communication systems remain operational even during power outages, providing an additional layer of reliability and security for wind farm operations.

Result

The implementation of Simoco's DMR system has transformed the communication and safety infrastructure of wind farms in Scotland and the North of England. By providing reliable voice communication and advanced safety features, the customer has enhanced both operational efficiency and employee safety. This solution addresses critical challenges and sets a new standard in the renewables industry.