

Extending our blasting technology capabilities to renewable energy markets, by supporting wind farm construction across the UK.



As onshore wind energy becomes one of the fastest growing utility-scale, renewable energy technologies in the country, the need for civil engineering expertise to effectively enable wind farm sites and turbine bases to be built is continuously growing.

Recognised for our digitalized expertise, safety standards and collaborative approach, EPC-UK has been successfully expanding its involvement in wind farm construction over recent years. By employing technologically advanced, highly effective blasting procedures, EPC-UK is ensuring its customers meet environmental compliance regulations, optimise blast performance, and reduce costs.

Applying blasting technologies to wind farm construction - clients and sites:

Kennoxhead Wind Farm - South Lanarkshire, Scotland
Client: Orsted

Clocaenog Forest Wind Farm - Denbighshire, North Wales
Client: Jones Bros Engineering

Brenig Wind Farm - Denbighshire, North Wales
Client: Jones Bros Engineering

Clyde Wind Farm - South Lanarkshire, Scotland
Client: Jones Bros Engineering

Pen Y Cymoedd Wind Farm - Aberdare, Mid Glamorgan
Client: Cambrian Ltd.

Tullymurdoch Wind Farm - Tayside, Scotland
Client: Cambrian Ltd.



The projects

Wind farm developments are typically constructed in hard stone areas, unsuitable for excavation using digging methods, so blasting technologies are considered a highly effective solution to enable the necessary preparatory and civil engineering operations.

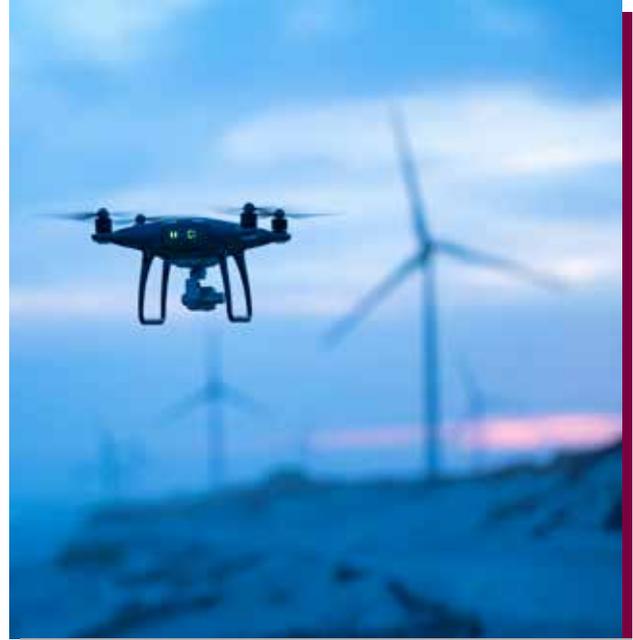
Using an exemplary level of expertise, EPC-UK applies technologically advanced routes to blast within borrow pits; alleviating stone for site road development and making the ground suitable for back fill trenching.

The objectives

- Get it right, safely and accurately, first time guaranteed
- Secure operational trust and capability and establish strong partnerships
- Alter required parameters to assure environmental compliance
- Implement multideck technologies to reduce the Maximum Instantaneous Charge initiated at any one time
- Continuously adhere to site mixing licences and relevant blasting permits
- Provide local residents with monitoring assurances and support public liaison meetings
- Manage a competitive blasting cost and effective blasting fragmentation performance
- Assure a safe 'Zero Harm' working environment

Situational challenges

The majority of wind farms are located in remote areas. Here, untouched rock formation requires borrow pit development prior to commencement of the main blasting works. Due to the uneven ground on these sites, and as a matter of safety, we utilise our D7 remote control drilling rig to perform safe and effective operations.



Implemented technologies

Full ROG (Rock on Ground) package - providing a single-source solution to meet the needs of customers requiring drilling & blasting, commercial explosives, blasting accessories and technical services.

Drone photogrammetry for surveying - performed by our CAA (Civil Aviation Authority) Standard drone pilots, the surveys combine photogrammetric techniques with photo overlays to create highly accurate models in incredible detail for blast design.

Expertir software - an integrated software application that seamlessly and coherently combines surveying and blast design using multiple streams of data from GPS, hole probing, laser scanning and drone photogrammetry. From the created 3D site maps, engineers can generate precise pre- and post-drill profiles, accurate loading and timing plans, and measure environmental impact and CO2 production from the blasting process.

Environmental impact assessments - to map-out project capabilities and compliance assurance using state-of-the-art 'flight', 'monitoring' and 'analysis' technologies prior to blasting.

Expert consultancy and in-house support - a professional problem-solving and exploratory services toolkit delivered by our Civil Engineering team to manage and mitigate risk.



Values that define the way we work

Across every operation performed, the EPC-UK teams apply methods that support the company's established SPIRIT ethos, demonstrating **safety, passion, integrity, respect, innovation, and teamwork.**

By increasing our presence and applying our expert capabilities within the onshore wind farm development sector, we're further demonstrating our committed approach to ensuring our EPC-UK's SPIRIT ethos works in practice.

The **safety** of our operators, customers and site communities is constantly placed as our paramount priority. Our **passionate** involvement in the development of technological **innovations** that not only keep people safe and adhere to compliance limits, but serve to **respectfully** reduce environmental impact, is evident and effective. We each take a share in the responsibility for improving operating methods for the benefit of the environment, so believe in adopting a collaborative approach, performing as a **team** with our partners and developing the **integrity** to work together; for the industry, for sustainability and to ensure well-designed, valuable construction activity is fit for the future.

Advanced technology - greener operations

By developing and applying digital blasting technologies, EPC-UK is moving towards a paperless blasting specification, with cloud platform data available that is easy to access and interpret. Our CO2 reporting tools are becoming increasingly advanced and important, providing customers with essential tools to record and help reduce CO2 impact.

Utilising our specialist technologies enables us to improve blast performance and fragmentation, increasing efficiencies and delivering better results in terms of load and haul and crushing. Subsequently, vehicle wear, tear and fuel usage are reduced, and the overall extraction process is made more economical and environmentally friendly.

A collaborative route to compliance

The success of the wind farm construction projects we have been involved with can be attributed to the trust and integrity we nurture and value within our operating partnerships.

Working in collaboration with companies committed to developing green, renewable energy technologies, we're together helping to reduce our national reliance on coal and natural gas as we share a vision to drive better environmental outcomes for the future.

Delivering improved blasting technologies, the digitalized way

Digital blasting technologies are increasingly enabling the development of renewable energy solutions. Progressively, EPC-UK is leading the way towards safer, more efficient practice and reduced emission blasting techniques across our specialist industry, helping to support the drive for decarbonization and the wider environmental agenda.

