Project Profile

Tallentire Wind Farm, Cumbria —Civil and Ancillary Works

Client: Renewable Energy Systems (RES)
Designers: JNP Group (Civil works), DR Murray (Sustainable Drainage & Land Drainage)
Date: Main Civil Works - Jul 2012 to Jan 2013

Design and Construct contract for Civil and Ancillary Works for a 6 turbine wind farm site constructed in farmland near Cockermouth in Cumbria. The wind turbines procured for the site by RES are Vestas 2.0 MW units and commissioning is expected to be in May 2012.

The main construction work includes;

- Establishment of temporary and permanent works compounds.
- Topsoil strip to working areas with specific stockpiling and storage within each landowner boundary.
- 7.5km of minimum 5.5m wide imported 6F5 & Type 1 stone site roads and turbine spurs, widened at bends and junctions to suit swept path of turbine delivery vehicles. A layer of geo-grid was provided at formation level to ensure long term stability of the road construction on the clay formation.
- Section 278 works to the site entrance off the A595 and to a site track crossing of an unclassified public road.
- 6 nr 40m x 20m crane hardstandings constructed using imported type 1 stone .
- 6nr 19.4m dia octagonal reinforced concrete gravity foundations for the 2.0MW Vestas wind turbines.
- Each turbine base requires 400m^3 of concrete which is completed in one pour and includes casting-in of the 12 tonne turbine insert 'can'.
- Sustainable drainage system to the whole site including swales, check dams, mini-settlement & stilling ponds and outfalls to existing water courses with gabion basket headwalls.
- Permanent stockproof fencing to working areas across fields and provision of silt fencing to all downslope working area fences.
- Crossings of many field boundaries (walls and fences) and provision of new field gates and cattle grids to allow farm access.
- Protection slabs to 3 crossings of gas and water trunk mains.
- Extensive field drainage interception and re-construction where the existing land drainage was disrupted by the works
- 20m x 6m control building
- Re-soiling, reinstatement and seeding of road & cranepad margins and swales.

Civil & Ground Engineering Contractors

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Tallentire Wind Farm, Cumbria —Civil and Ancillary Works (cont'd)

- 10km of cable trenches for electrical and telecoms cables.
- A Spoil Management Plan has been developed to retain all surplus topsoil and excavated soils on site in specifically identified areas agreed with each landowner/farmer.
- A rain water harvesting system has been installed to the control building for grey water provision.

The 20m x 6m Control Building is built over a 1.5m deep reinforced concrete substructure which provides space for the power and SCADA cables. The building is traditionally built with rendered blockwork and slated pitched roof and provides space for Utility switchroom, wind farm switch room, control room and Scada room as well as office and welfare facilities. An 80m deep borehole water supply has also been installed to provide water for the welfare facilities in the control building which was completed by our in-house drilling teams.

The site is in an ecologically and archaeologically important location and during the topsoil strip for roads and crane hardstandings archaeologists kept a watching brief although no items of importance were found. Ecology surveys were also carried out prior to site commencement and restrictions were placed in 2 site areas because of the presence of nesting birds and a badger sett.

The site crosses a number of landowner boundaries and continuous liaison was required with each landowner to ensure preparation, construction and reinstatement work was carried out to their satisfaction and that our activities did not impinge on field access, harvesting, livestock movement or other operations.

Working closely as a team with RES project management and engineering staff and our designers has ensured that any problem areas encountered have been quickly resolved and have not impacted on the tight delivery programme.