

Whitelee Wind Farm: Scotland 2011

A Tensar TriAx[®] mechanically stabilised layer utilizing site-won stone to form new access roads



BENEFITS TO CLIENT

Stabilised access over difficult ground conditions with reduced road construction depth.

THE PROBLEM

There was a requirement to carry heavy loads over low bearing capacity soil conditions including peat for access roads and platforms in the development of a new phase to an established wind farm. The access roads needed to support the trafficking from construction vehicles as well as from the turbine delivery vehicles and cranes.

THE SOLUTION

Tensar mechanically stabilised layers incorporating Tensar TriAx geogrids with site-won stone combined to form new access roads and working platforms.

PROJECT DESCRIPTION



Access roads with Tensar technology providing stability to wind farm construction vehicles

Whitelee wind farm is Europe's largest wind farm and is located on Eaglesham Moor just 20 minutes from central Glasgow. The wind farm has 140 turbines which can generate 322MW of electricity, enough to power 180,000 homes. Whitelee has been carefully planned and designed to work in harmony with the existing environment. After three years of construction, the wind farm was fully operational and producing clean, green energy.

In December 2010, Tensar worked with the project team to provide details for mechanically stabilised layers for access roads, hard standing areas and platforms on phase 2 of the Whitelee scheme. This second phase was to be home to a further 36 turbines to add to the first phase of the site where Tensar had also provided assistance and stabilisation geogrids. The ground conditions across the site were variable and consisted of low strength soils with CBR values of less than 1% in places. Areas of deep peat along the access routes to where the delivery of turbines would take place caused specific concerns for the stability of the access roads under the expected heavy traffic loading.

Tensar designed the access roads providing bespoke Tensar mechanically stabilised layers to suit loading and ground conditions across the site. By using Tensar TriAx geogrids, Tensar was able to reduce stone thickness down to a minimum, ultimately saving the contractor money and time. Tensar supplied geogrids to allow roads of 45km to be constructed as well as several working platforms for turbine erection. Initial construction took place in the winter months where conditions were at their worst but the Tensar mechanically stabilised layers performed extremely well."

CONTRACT DETAILS

The Client: Scottish Power

Contractor: Sisk/Roadbridge JV

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