BENEFITS TO CLIENT
Savings associated with reduced thickness of granular fill for access road and working platforms for a large wind farm project.

THE PROBLEM
The site for a new wind farm development was underlain by weak peat soils and was located a long distance away from the nearest source of suitable granular fill material. Access roads were needed for construction traffic, as well as the heavy turbine delivery vehicles and cranes which initially required large thicknesses of granular fill. Working platforms were also required to support the heavy crane operational loads and once again large amounts of granular fill were going to be needed.

THE SOLUTION
A Tensar's mechanically stabilised layer (MSL™) incorporating Tensar TriAx® geogrids was designed to form the new access roads and working platforms for the wind farm site, which took into account the low strength soils and anticipated high trafficking loads and produced thinner and therefore more cost effective construction.

PROJECT DESCRIPTION
The project required construction of 30km of access road to allow the installation of 30 wind turbines. Low bearing capacity soils containing peat with typical CBR's of 1 to 2% (undrained shear strengths between 20 and 50kPa) had been encountered across the site which would normally require significant construction thickness for the access roads and working platforms. The provision of a Tensar MSL which incorporated layers of Tensar TriAx geogrid meant that granular layer construction thicknesses could be reduced across the site.

As required by local regulations, the upper 20cm of existing ground were stripped. Then locally available fascine mats and a lightweight geotextile filter were used to form a regulating platform for the road construction with Tensar TriAx geogrids; which was simply rolled out and the site specific design thickness of a well graded granular fill was placed and compacted above the TriAx geogrid. A coarse grading of stone, with a maximum particle size of 63mm was used directly on the geogrid with a layer of finer granular fill then added to form a smoother running surface for site vehicles. The granular fill material was imported from a distance of up to 50km away and so reducing the thickness of granular construction reduced the number of deliveries required for the site.

The Tensar mechanically stabilised roads and platforms performed well during the wind farm construction phase and will remain to service any future turbine maintenance operations.

Designer: Blizzard Design
Contractor: SC Global Service Provider, Bucharest
Client: EDP Renováveis, Renovation Power, Bucharest

Preparation of a working platform  Tensar mechanically stabilised access roads carry high loads imposed by turbine delivery vehicles  Stabilised access roads after installation operations were completed

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