



The access road crossed over an area of very soft peat bog.

# Tensar ensures on-time delivery

TriAx<sup>®</sup> ensured access roads were built in time for the arrival of turbines for a wind farm in Dumfries and Galloway.

## CLIENT'S CHALLENGE

Renewable energy company RES needed to build a new access road and tracks, plus improve public highways to allow construction and maintenance traffic (including lorries carrying wind turbine sections) to reach the site of Glenchamber Wind Farm. As the site is surrounded by peat bogs, the access roads and wind farm tracks had to be capable of supporting heavy loads, while being economic to build.

## TENSAR SOLUTION

The access road and wind farm track design incorporated Tensar's TriAx geocomposite and TriAx geogrid into site-won aggregate to create a mechanically stabilised layer. The design met project requirements, while minimising the use of aggregate compared with a traditional 'dig and replace' solution. Tensar products were also used in the widening of a single carriageway road.

## Glenchamber Wind Farm

Subgrade stabilisation

📍 Scotland

## BENEFITS

### Economic

access road design over deep, soft peaty ground

### Minimising

the use of site-won aggregate

### Enabling

on-time delivery of wind turbines

### Performance

construction and operational performance, with minimal maintenance.



The access road had to be capable of supporting lorries bringing the turbine sections to site.

## PROJECT BACKGROUND

The Glenchamber Wind Farm in Dumfries and Galloway, south west Scotland, generates enough electricity to meet the demands of about 20,000 homes in the area.

Renewable energy firm RES appointed local contractor Luce Bay Group to build the wind farm and construction began in February 2015, with the sections of the 11 turbines (blades, tower sections, hubs and nacelles) due on site a year later.

The site is surrounded by peat bogs and so, along with widening 4.5km of local roads, Luce Bay Group had to build 5.9km of wind farm tracks and a 2.8km long road across the soft peaty ground. Both allowed construction traffic to reach the site (including the turbine deliveries) and provided permanent access for maintenance vehicles.

Digging out peat and replacing it with site-won granular material to form a stable road foundation would have been time-consuming and expensive, so Luce Bay Group and its geotechnical consultant JNP Group worked with Tensar to come up with an alternative design.

The solution comprised a TriAx TX170-GD geocomposite laid beneath the granular road base, plus TriAx TX160 geogrid incorporated within the aggregate, to form a mechanically stabilised layer. These 'floating roads' were capable of supporting the heavy construction traffic and will also perform throughout the wind farm's operational life.

A total of 110,000m<sup>2</sup> of TX170-GD and TX160 was used on the project. Tensar's products were also used in the widening of the local roads and ensured everything was ready in time for the arrival of the first turbine sections in February 2016.

Main contractor:

**Luce Bay Group**

Consultant:

**JNP Group**

Client:

**RES**

*“Tensar’s products minimised the use of site-won aggregate over areas of soft peat and firmer ground, delivering roads that performed immediately, allowing the project to be completed in time for the arrival of the turbines”.*

**David McCracken**

**Project Manager**

Luce Bay Group

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