Erosion Control

Oil Protection Bund, Erosaweb, Great Island Power Station, County Wexford, Ireland

abg creative geosynthetic engineering

Case Study

Project Description

The 460MW Great Island Combined-Cycle Gas Turbine (CCGT) power plant is located near Waterford Harbour in Great Island, County Wexford, Ireland. It replaces the 240MW fuel oil unit at the existing plant site. The gas turbine was fired-up and synchronised to the grid for the first time in September 2014, marking the completion of the construction. The project created more than 1,200 jobs during construction and will supply electricity to more than 500,000 homes.

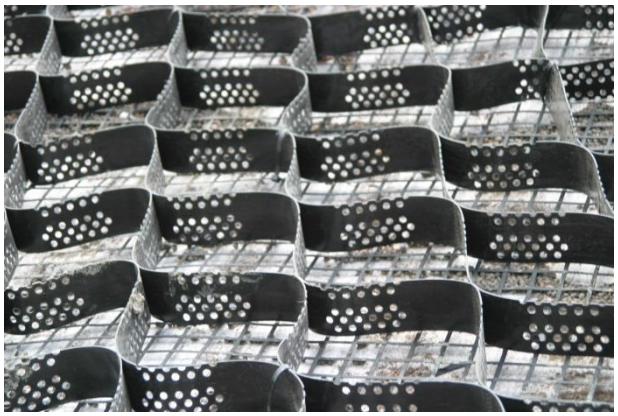
At an investment of more than €330m, it is one of the biggest infrastructural projects in the country and is one of the cleanest and most reliable gas power plant in the country. As part of the upgrades to the site, the existing containment bunds surrounding the oil storage tanks were upgraded to higher safety levels in this highly environmentally sensitive environment.

The Challenge

The existing tank bottom had a concrete floor which ran half way up the slope of the containment bund. The design called for a sealed system in which a HDPE geomembrane was placed across the tank floor and right to the top of the tank slope to contain oil in the event of a spillage. The bund floor was to be finished with a 10mm single sized pebble and the side slopes were to be vegetated. The side slopes in some areas reached a 1:1 slope and it was necessary to provide a method for retaining the soil onto the HDPE membrane without damaging it. A system anchored from the crest with enough depth of soil to sustain plant growth was required.

Project Information

Client	Scottish and Southern Energy (SSE)
Contractor	Balfour Beatty/Lining Technology
Consultant	Tobin
Products	Erosaweb GWX 150/200
Quantity	2,424m^2
Benefits	• Rapid installation • Protects membrane and retains soil • Vegetation on steep slopes (45^0)



ABG Erosaweb GWX 150/200

abg ltd. E7 Meltham Mills Rd, Meltham, West Yorkshire, HD9 4DS
UK t 01484 852096 **e** geo@abgltd.com **Export t** +44(0)1484 852250 **e** export@abgltd.com
www.abgltd.com

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The Solution

ABG Erosaweb geocellular retention system was selected. The HDPE membrane was placed and anchored at the top of the slope. **ABG Abtex SG60P/60PL** loop fabric woven reinforcing and protection geotextile was then laid into an additional anchor trench beyond the HDPE trench. **Erosaweb** was secured in this trench and each panel expanded to its full size and attached using **ABG Abfix Ties** to each of the loop positions across the geotextile. The designed anchor trench was then carefully compacted with selected fill. Topsoil was then placed by excavator into the cells from the bottom working up the slope, after which it was seeded.

Erosaweb placed in anchor trench and expanded down slope

The ABG Service

ABG's Technical Department carried out calculations to assist with the selection of a suitable looped geotextile, loop and tie strengths and most importantly anchor trench configuration. All materials were supplied on pallets for easy deployment on site.

Existing bunds to be lined and extended

Erosaweb anchored in place ready to receive topsoil

Contact ABG today to discuss your project specific requirements and discover how ABG past experience and innovative products can help on your project.

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UK t 01484 852096 **e** geo@abgltd.com **Export t** +44(0)1484 852250 **e** export@abgltd.com
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