Infrastructure

# Access tracks & crane hardstandings at North Kyle Wind Farm, UK

## Base course reinforcement

- **Project name**
  North Kyle Wind Farm, New Cumnock, Scotland, UK
- **Client**
  Brockwell Energy Limited, UK
- **Designer/consultant**
  Tony Gee and Partners, UK
- **Contractor/installer**
  Jones Bros Civil Engineering UK
- **Products**
  Secugrid® 30/30 Q1
  Combigrid® 40/40 Q1 GRK 4 C

Naue

Fig. 1: Installation of base course material

Fig. 2: Installation of Combigrid®

## Energy of the future from the ashes of the past: North Kyle Wind Farm revitalises former coal mines

The North Kyle wind farm in East Ayrshire, Scotland, is being developed on the derelict site of former surface coal mines. Set to commence power generation in autumn 2024, the 49-turbine project will produce up to 220 megawatts - enough to supply over 160,000 homes. Developed by Brockwell Energy Limited, the project also promises economic revitalisation in a region hard-hit by the coal industry's decline.

Jones Bros Civil Engineering UK was appointed as principal contractor - its 20th wind farm project in Scotland. Work includes excavation and backfilling for cabling, crane hardstanding, reinforced concrete turbine foundations, and road infrastructure improvements: upgrading 20km of existing roads and creating 24km of new access tracks to support heavy construction traffic.

## Sustainable construction with Naue geosynthetics

For access tracks and crane hardstandings, Jones Bros opted for Naue's geogrid products, as used in previous projects like Benbrack wind farm. Naue's Secugrid® and Combigrid® geosynthetics reinforce weak subsoils, ensuring durable access routes. Some turbine roads must cross deep, low-bearing peat soils (CBR 0.5%-2.5%). Naue's engineering team provided preliminary designs for base reinforcement, using Combigrid® 40/40 Q1 GRK 4 C as a foundation layer, combined with Secugrid® 30/30 Q1 where additional strength was needed.

## Efficient materials for lower costs and reduced environmental impact

Secugrid® and Combigrid® are supplied in 4.75m-wide, 100m-long rolls. For North Kyle, Naue delivered around 12km of each product. Jones Bros' project manager Kieran Pugh praised Naue's range of geosynthetics, noting their cost-effectiveness and reliability. These products reduce the need for aggregate, leading to financial savings, fewer site deliveries, and lower carbon emissions.

Secugrid® is manufactured from high-strength, low-creep polyester or polypropylene bars with welded junctions - ideal for long-term applications. Combigrid® combines a geogrid with an integrated filter geotextile, enhancing bearing capacity and material separation. Both products are manufactured under strict quality control, ensuring consistent performance and easy installation.

This project is an example of the endeavour to implement numerous UN Sustainable Development Goals (SDGs). This project exemplifies a commitment to SDG 9 (Industry, Innovation and Infrastructure) by employing advanced geogrid technologies - specifically Naue's Secugrid® and Combigrid® - which optimize load distribution, extend road lifespans, and bolster resilience against extreme weather conditions. Moreover, the reduced reliance on traditional aggregate materials, achieved through these geogrid and composite solutions, supports SDG 12 by promoting responsible consumption and production. Finally, by minimizing aggregate use and lowering carbon emissions, the project contributes to SDG 13 (Climate Action), demonstrating a sustainable and forward-thinking approach to construction.

By integrating advanced geotechnics, North Kyle Wind Farm exemplifies sustainable energy innovation, transforming former coal mining sites into a green power source for future generations.