prolectric™ SMART CLEAN TECHNOLOGY + Balfour Beatty / JONES BROS CIVIL ENGINEERING UK

Case Study

Caernarfon to Bontnewydd Bypass

The JV welcomed the opportunity to participate in the trial of this new sustainable power solution, confirming it as a viable and more sustainable alternative to traditional generators, and look forward to working with Prolectric again in the future.

Jon Muff
Project Manager
Balfour Beatty.

Background

The project started in 2014 with construction starting in 2019 and involves the construction of a new bypass to carry the A487 around Caernarfon and the adjacent villages of Llanwnda, Dinas and Bontnewydd.

The current route is prone to high traffic congestion at peak times.

The 9.8km route will remove traffic congestion from the existing route and improve commuter journey times.

Challenge

Noise and air pollution affects the quality of life for residents along the A487 with the high volumes of traffic.

As this was already a major issue, reducing the air pollution and noise made by the construction works would be crucial for the residents in the area.

Jones Bros needed an alternative to traditional diesel fuel generators, which would have only added to the problem. During the construction phase the main compound of temporary site offices had grid power.

However, as the new bypass is almost 10km in length there was a requirement to provide welfare facilities for workers along the route.

As there is no access to mains power, normally these compounds would be powered by diesel generators that run 24/7. Balfour Beatty and Jones Bros identified that this wasn't an efficient use of the generators as they are a major contributor to $C0_2$ emissions on site.

prolectric™ SMART CLEAN TECHNOLOGY

www.prolectric.co.uk
info@prolectric.co.uk
01275 400 570

prolectric™ SMART CLEAN TECHNOLOGY + Balfour Beatty / JONES BROS CIVIL ENGINEERING UK

Power Solar Hybrid Generator

Case Study A487: Caernarfon to Bontnewydd Bypass

The Solution

ProPower Solar Hybrid Generator

- The project saw the deployment of Prolectric's ProPower - a revolutionary solar-hybrid off-grid temporary power solution.
- ProPower offered a cleaner, quieter, more sustainable method of delivering temporary power to the site.
- The unit consists of a 3kWp retractable solar array, 30kWh Li-ion battery storage, 22kVA diesel / HVO generator and an internal fuel tank.
- Being trailer mounted, the ProPower unit was easy to transport and deploy on site which reduces transport costs and install times.
- During a two week trial in March 2021 the ProPower ran for over 60% on solar and battery and reduced diesel usage by over 1,200 litres which meant a CO_2 reduction of over 3.3 tonnes in only two weeks.
- The trial demonstrates how sustainable power solutions such as the ProPower can help the construction sector work towards sustainability targets whilst still being commercially viable.

Product — Features

- Solar powered, the ProPower reduced emissions and fuel, reduced noise and required less maintenance.
- No mains power or trenching was required as the ProPower is a fully off-grid power solution.
- Mobile, easily deployable and able to power up to 6x 32ft site welfare cabins
- Delivered fully charged and set up on site with a Smart Distribution Board by the Prolectric team.

Carbon Savings
3.3 tonnes of CO_2e

Fuel Savings
1,200 litres of fuel

Zero Fuel Hours
60%

Solar Power Generation
76 kWh

Why choose Prolectric?

Reduced Emissions
Offers huge CO_2 emissions benefits vs traditional diesel generators.

Reduced Noise
Silent overnight power from battery storage, ideal for urban & night projects.

Advanced technology
Remote control, monitoring and reporting capabilities.

Reduced Fuel Usage
The ProPower can cut fuel usage by up to 90%.

Minimal Maintenance
Reduced generator run-time means less maintenance.

prolectric™ SMART CLEAN TECHNOLOGY
www.prolectric.co.uk
info@prolectric.co.uk
01275 400 570

THE QUEEN'S AWARDS FOR ENTERPRISE: SUSTAINABLE DEVELOPMENT 2021