



**CASE STUDY -
CLEAN ENERGY SOLUTIONS
PENKETH & WHITTLE FLOOD
RISK MANAGEMENT SCHEME**

Client: Environment Agency

Contractor: VolkerStevin

Location: Warrington

Duration: 12 months

Products: Battery Storage Unit, 60kVA Generator
and Energy Management System.

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As part of the countries ongoing flood alleviation plans, the Environment Agency have committed to and invested in over 1000 schemes across the UK, to be delivered throughout 2021-2022. These schemes will better protect homes and businesses from flooding.

Given the nature of these schemes they're often in environmentally sensitive areas and/or near residential areas. So, reducing the impact on the surrounding environment is high on the agenda for companies entrusted with delivering these projects, and none more so than VolkerStevin.

This project will reduce the risk of flooding to property between Penketh Brook and Whittle Brook and the works involve a flood relief culvert on Penketh Brook beneath the canal and railway (and associated habitat creation) along with improvements to the Widnes Road trash screen (Penketh Brook).

The team will also install tidal gates on Whittle Brook and silt removal from blocked culverts.

THE CHALLENGE

The site is a 16 cabin set up located in between two key waterways, on a greenfield site near residential areas and businesses. Minimal impact on noise and air quality is a key objective of lead contractor, VolkerStevin. Add to this the planned Government changes to rebated fuels from 1st April 2022, increasing the need to further reduce fuel costs.

THE SOLUTION

An integrated hybrid power solution was the answer.

Instead of the more traditional single generator set up, site installed a battery storage unit (BSU) and energy management system (EMS) alongside a fuel powered generator.

This meant site could downsize from a 100kVA to a 60kVA generator by better controlling and regulating power through the EMS.

The EMS controls, regulates and monitors energy requirements on site and is programmed to switch specific devices off when not needed or in use.

The BSU can then power site when loads are lower (typically weekends and overnight).

On this particular site the EMS switched all non-essential energy consuming devices off at 5.30pm (lights, hot water, heating etc) and turned them back on the next a day at 5.30am, ready for the arrival of the site team.

This allowed the load to switch from the generator to the BSU during evenings and weekends saving thousands of pounds in fuel as well as providing periods of silent, emission free power.

THE RESULT

By introducing cleaner energy solutions, the VolkerStevin team significantly reduced running costs for their temporary power solution, lowered their emissions and provided silent power over night and at weekends.

John Macmanus, Works Manager, VolkerStevin said :

"The EMS is greatly beneficial; as soon as you lock the site at 5.30pm you don't have to worry about what to switch off and what to leave on. You don't notice the EMS, but you know it's there in the background, with the BSU saving you money, fuel and reducing your emissions."



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We tracked the savings...

Typically, a site set up like this with 16-cabins requiring 24-hour power and a 100kVA generator, (consuming up to 10 litres of fuel per hour) would cost an average of £2,766 per week* (rate includes 100kVA generator and fuel).

By adding a Battery Storage Unit (BSU) and Energy Management System (EMS) the weekly running costs reduced to £1,423 per week*(rate calculated includes hire rates for 60kVA generator, BSU, EMS and fuel).

Giving a total weekly saving of £1,343 per week*.

The estimated CO2e savings across 12 months are 121,433 kg*
(*based on the average weekly savings measured across 23 weeks with a 60 kVA generator and a 50% load)

Besides greatly reducing running costs, the addition of the BSU and EMS also provided silent power overnight, every night (noise reduction 58%).

The generator run time reduced from 3888 hours to 1675 hours across a 23-week period.

Generator run time reduced by 58%.

The solution saved 53,711kg of CO2e across 23 weeks.

Battery Storage Units and Energy Management Systems are just two of the Cleaner Energy Solutions Sunbelt Rentals UK have to offer. To find out more about our wide range of Greener Solutions visit [Environmentally Friendly Solutions | Sunbelt Rentals](#)



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