Case Study: Galliford Try

Off Grid Battery Packs for Hybrid Power Supply

The A46/A53630 Growth and Housing Fund scheme involves improvements of a major connection between the strategic A46, the Leicester local highway network and an area of significant housing growth in North Leicester. The proposed improvements are to provide gyratory and signalisation improvements to the A46 Anstey Lane Junction; duelling of the single carriageway section of Anstey Lane (A5630) between the A46 interchange and Bennion Road roundabout; and improvements to Bennion Road junction.

The local constraints of the scheme meant that the site accommodation area could not be provided with a permanent mains power supply. As part of energy reduction initiatives Galliford Try took the decision to use battery packs to accompany the generators that would power the site. The battery packs would allow the site utilise hybrid power and the site to be powered by battery at periods of low demand in order to reduce generator running time.

APPLICATION

The site utilised two Off Grid Powercubes to accompany each of the 80KVa diesel generators. To provide a bespoke site power solution utilising two diesel generators each linked to a hybrid unit, to help reduce fuel consumption and CO2 emissions. Meaning the site can be powered without the need of a generator when fewer people are using the base. The bespoke configuration also allows the opportunity for at least one of the hybrid units to provide power when certain areas of the site offices are unoccupied.

One of the challenges of running this site is that the works continue for 24 hours with both a night and day shift. The use of this system has shown that with careful planning, the benefits of hybrid power can be utilised for most situations. The battery packs have a potential run time of up to 10 hours depending on demand.

RESULTS

Since the power sources went live on the A46/A5630 works in September last year, the solution has already reduced fuel consumption by over 35,000L, and cut CO2 emissions by over 94Tonnes – the approximate annual emissions of 59 diesel cars in the UK*. Compared to using a standard generator the solution has also provided a net saving to the contractor of over £6,000 over the period to the end of December.

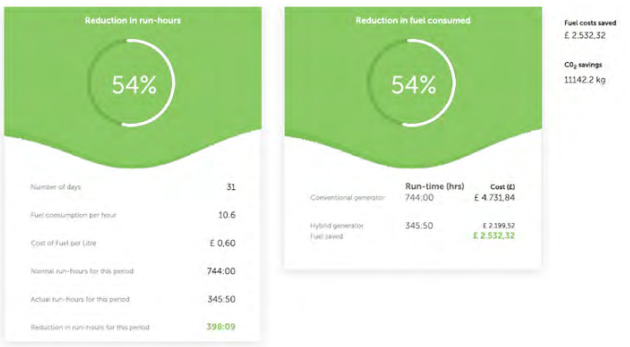
BENEFITS

The following future savings are estimated from the units for January to June:

- £9484 net saving.
- 109.9T Reduction in CO2 emissions.
- 41,612L Diesel saving.

The overriding benefit from the use of these hybrid battery units is the reduction in environmental impact. Estimated totals for the scheme are for a 204T reduction in CO2 emissions over the duration of the project. This enables Galliford Try to construct the new works, while minimising our impact on the local surroundings.

Breakdown of Savings in Engine Hours and Fuel



IMPROVEMENT

We improved the system on another project by incorporating this with a main system, which enables the batteries to run during periods of low demand and save grid energy usage. We believe this system can be implemented on most of our schemes going forward and provide overall benefits.