

Case Study

Severn Tunnel Electrification

Background

The Severn Tunnel is a 134 year old tunnel, which is a four-mile-long connection between South Gloucestershire and Monmouthshire in South Wales.

An innovative electrification system, for the railway track through the Severn Tunnel, is being installed by the ABC Electrification joint venture that includes Costain, Alstom and Babcock.

The tunnel required electrification as part of the great western main line modernisation strategy to help reduced journey times between south Wales and London by as much as 15 minutes and provide an additional 15,000 weekday seats.

Challenge

The project was a fast-track, 6-week project in which the site needed to be active for 24 hours, 7 days a week to ensure it was completed on-schedule, otherwise it would cause significant disruption to rail users.

As the project was taking place in Autumn, site lighting was needed for 12 hours due to the longer nights.

Moreover, as the lights were needed to run for 12 hours a day, 7 days a week, for the full 6 weeks, the carbon and financial cost would have been significant.

It has been a phenomenal team effort, involving over 250 engineers and close working with our principal contractors Alstom, Babcock and Costain - ABC Electrification teams as well as numerous suppliers, designers and sub-contractors including Amco, Keltbray, Prolectric and Arup, to deliver this essential stage of the electrification project.

Remember that these are Victorian tunnels that were never designed for electrification. We're trying to minimise the amount of intervention needed on the track.

Carbon Savings
2,213 kg of CO₂e

Fuel Savings
826 litres of fuel

Cost Savings
£1,531



The Solution

ABC Electrification required 12 hours per night constant operation for the duration of the works.

The requirement was for automatic switch on at dusk and automatic switch off at dawn.

This requirement is simply accommodated within the ProLight

Solar Tower Light, and can be achieved either through setup to automatically trigger via our Smart Remote Portal, manual programme adjustment onsite or remote control via our Smart Remote Portal.

The Result

The units operated successfully for the duration of their time on site with no human intervention, no maintenance and zero noise, which was required as it was in close proximity to the site cabins.

Most crucially the lights required no diesel or refuelling and emitted zero carbon emissions.



As the project was taking place in Autumn, site lighting was needed for 12 hours due to the longer nights and run for 7 days a week, for 6 weeks, so the carbon and financial cost was a key consideration.

Why choose Prolectric?



No Emissions
No fumes or greenhouse gas emissions.



No Refuelling
No fuel costs, spills or refuelling labour costs.



Advanced technology
Remote control, monitoring and reporting capabilities.



No Noise
Ideal for urban, residential or night time projects.



Minimal Maintenance
Setup and forget technology.