



## How we reduced wheel wash emissions with hybrid power

To support more sustainable construction practices, Sunbelt Rentals trialled a battery assisted hybrid power solution for wheel wash operations on a major UK infrastructure project. By rethinking how site equipment is powered, the team significantly cut fuel use and carbon emissions while maintaining the continuous operation required.



87% fuel reduction over 30 days



1,431 kg CO<sub>2</sub> saved per week

£75

£75 average weekly cost saving



Zero operational downtime

£360

Over £360 weekly Social Value created

## Wheel wash systems are essential for keeping construction sites compliant, requiring reliable, uninterrupted power.

Traditional diesel driven setups consume large volumes of fuel. This trial explored how hybrid battery technology could reduce environmental impact without compromising performance.

### Challenges

The existing wheel wash system relied on a diesel generator that consumed 2,914 litres of fuel over 30 days - an unnecessary cost and carbon burden. Any alternative needed to provide continuous power, operate seamlessly in a live site environment and minimise operational risk. The challenge was to maintain compliance while drastically reducing fuel consumption and emissions.

### Solution

Sunbelt Rentals introduced a battery-assisted hybrid configuration that allowed the wheel wash to run primarily from lithium battery units. The generator operated only during low-demand periods to recharge the batteries, dramatically cutting runtime and improving overall efficiency.

An initial setup using a 60 kVA Stage V generator delivered strong results. To optimise performance under heavier load conditions, the system was later upgraded to a 100 kVA Stage V generator while retaining all environmental advantages.

This approach demonstrated how existing rental equipment can be applied in smarter ways to support sustainable construction without adding complexity or compromising reliability.



### Our equipment and services supplied at a glance

- Stage V 60 kVA Generator
- Stage V 100 kVA Generator
- 45/75 Lithium Batteries

### Result

The trial delivered a substantial improvement in both environmental impact and operational efficiency. Fuel consumption fell from 2,914 litres to just 372 litres over the 30 day period—an 87% reduction. This equates to weekly carbon savings of 1,431 kg and around £75 in reduced fuel costs.

The weekly carbon saving is equivalent to powering an average UK home for three months or removing a car from the road for over six months.

Following the success of the trial, the hybrid setup has been permanently adopted on site, with further deployments planned across additional work areas. The results demonstrate how a simple, well engineered approach can deliver measurable benefits across construction projects nationwide.

“ This project really highlights the power of practical innovation. By rethinking how we use existing technology we've created a straightforward solution that's already delivering measurable environmental and financial benefits.

The battery unit trial exceeded our expectations and has the potential to transform how we power sites across the UK.

**Craig Holland**  
Project Manager