

How m.e reduced Kier's onsite modular small power energy consumption by 59%



measurable energy



As featured on the BBC News, the m.e Platform has been installed in two onsite portable cabins in Wales with Kier. The installation completed by on-site electricians was a simple swap out of the existing plug sockets. The m.e Power Sockets were then configured to connect to local Wi-Fi and ready for use. After baselining the energy use and carbon intensity, m.e's innovative technology automatically reduced site office cabin energy consumption by 59% during autumn/winter and greenhouse gas emissions by 40%. Over the course of a full year m.e automatically measured and then eliminated:

Sockets	34	34
Electricity Source	National Grid*	Diesel Generator**
Initial Cost (first year)	£1,275	£1,275
SaaS Cost/year from year 2	£510	£510
Electricity Cost (£) Reduction/year	£1,369	£3,013
Energy (kWh) Reduction/year	4,566 kWh	4,566 kWh
CO₂e (tonnes) Eliminated/year	1 t	3.8 t
Payback in months	12 months	6 months

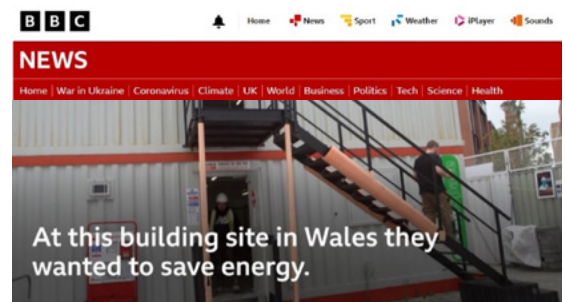
*National Grid savings calculated at the current average 30p/kWh

** Providing diesel generator used, savings using 190p/L diesel price and average emissions at 0.85 kg CO₂/kWh

The m.e Platform enables cost-effective quick wins in decarbonising construction operations. When cabins are powered by diesel generators the savings in both emissions and diesel costs are significantly higher. Depending on the model of the generator the CO₂e avoided is approximately 3.8 tonnes per year and the energy cost reduction is at minimum £3k per year.

Local weather API

A custom weather dependant control was also established to automate the dehumidifier based on the current weather. The system pulls data from the closest Met Office weather station and automatically turns off the socket when it has been dry for 4 hours. It then turns it back on after 1 hour of heavy rain or 3 hours of light rain. This alone saved 208kg of CO₂e in a year from just one device.



Want to discuss how the m.e Platform can be used to eliminate wasted energy in your portable and modular buildings? Get in touch measurable.energy info@measurable.energy [@measurableUK](https://twitter.com/measurableUK)



Further savings

The system provided risk mitigation across the two cabins by detecting power anomalies as well as faulty devices. During the installation, a faulty heater was identified through the live data and unplugged before causing serious damage or fire risk.

Savings that would eliminate a further 10-25% (£722 – 30p/kWh or £1,589 on a diesel generator) have been identified by the system by running rulesets at weekends and site shutdown periods. An additional £882 saving would be had from using Demand Side Response just 10% of the time. This would mean there are a further £2,471 of savings available to be had on this installation:

Sockets	34	34
Electricity Source	National Grid*	Diesel Generator**
Initial Cost (first year)	£1,275	£1,275
SaaS Cost/year from year 2	£510	£510
Electricity Cost (£) Reduction/year	£2,973	£5,484
Energy (kWh) Reduction/year	6,972 kWh	6,972 kWh
CO ₂ e (tonnes) Eliminated/year	1.2 t	4.7 t
Payback in months	6 months	3 months

What have Kier said about this installation and case study:

“measurable.energy have piloted their power sockets and energy management service with one of our projects and the results are very exciting. We are keen to explore the wider applications of their service both for our own energy use behaviours and for what we can offer to our clients”

Iain Casson, Head of Sustainability, Kier

