

Pioneering a UK-first mobile charging trial with Transport for London

A challenge for many urban electric sites is access to charging power. To solve this, Volvo CE initiated collaboration with a UK start-up on a solution. Now the two companies are playing a pivotal role in the UK-first introduction of an innovative 'on-demand' mobile charging van to power several electric worksites in London.



From left; Ed Lea (Charge Fairy), Mats Bredborg (Volvo CE), Laura Alexander Webber and David Sockett (TfL), Trevor Cole (FM Conway), and Carl Eddleston (TfL)

A six week trial with Transport for London (TfL), the public body that manages London's transportation system, and contractor FM Conway is currently testing mobile charging for Volvo's zero-emission construction vehicles – a concept more commonly associated with passenger cars and now used for the first time with construction equipment.

The innovative solution by London-based start-up Charge Fairy works by bringing electricity to site via a charging van whenever power is needed, helping to address the challenge of having a reliable electricity supply on demand. It aims to simplify electric operation and boost uptime by ensuring electric machines do not have to move away from site for recharging.

It is a pioneering demonstration of like-minded, yet diverse, partners embracing change and coming together across the value chain to enhance air quality and reduce noise pollution in urban environments.



Together with SMT GB, Volvo CE provided an EC18 Electric compact excavator and an L25 Electric compact wheel loader to carry out works by FM Conway at three locations in Redcliffe Gardens in the Royal Borough of Kensington and Chelsea.

A vital role in achieving key targets for UK capital

The use of mobile charging for the site is a UK-first. TfL hope that new advances in technology such as those being trialed at the site could play a vital role in achieving the Mayor of London's target for the capital to reach net zero carbon emissions by 2030.

Carl Eddleston, TfL's Director of Network Management and Resilience, said: "The health of everybody in London is central to our work, and we are determined to meet our 2030 net zero targets. That's why I'm so pleased that we're continuing to take these important steps to reduce emissions and protect air quality."

"The trial of electric construction vehicles at Redcliffe Gardens is such a vital part of achieving our goals, and our work with FM Conway, Volvo CE, and Charge Fairy shows how construction across our transport network can be environmentally conscious. We are going to review the trial results and carry on exploring the best ways to decarbonise our network construction chain."

Intelligent energy delivery

The electric vehicles use a method of recharging that involves real-time updates on the machines' charging levels when on-site, which feeds into the Charge Fairy team who can then send a charging van to the site. This method of bringing the charger to the vehicle allows the construction machines to be recharged in as little as an hour.

Ed Lea, Founder of Charge Fairy, said: "As pioneers in mobile charging as a service, we're excited to bring Charge Fairy technology to the construction industry. We've long advocated that bringing energy to electric vehicles can make more sense than taking the vehicle to a charger—nowhere is this more true than with construction equipment."

"Our work at Redcliffe Gardens with TfL, Conway, and Volvo CE has demonstrated how intelligent energy delivery enables electric plant to operate for a full workday, overcoming one of the key challenges of construction electrification."



Removing barriers for electric worksites

Developments in how vehicles on construction sites are powered and charged could revolutionize how the capital's transport network is built, ensuring London is greener and healthier for all.

Matt Tallon, Sustainability Director at FM Conway, said: "FM Conway is always looking for ways to support Transport for London in reaching their net zero ambitions, and a strong supply chain filled with companies willing to innovate has been key in the delivery of this trial.

"This bespoke charging solution removes many of the barriers we have faced in the use of electric plant machinery, and we've seen from the works on Redcliffe Gardens that it represents a viable option for similar sites in future."

How electric construction can radically transform public health in cities

Construction equipment is responsible for around [400 million tons of CO₂ emissions](#) annually, which is around 1.1% of global CO₂ emissions. But what is more, compact construction equipment is also a significant source of nitrogen oxides (NO_x) and particulate matter (PM) emissions, harmful pollutants that can have a devastating impact on public health. Unlike heavy equipment, which must comply with strict emissions standards, the compact machines are not required to use after treatment systems to reduce emissions of harmful gases and particles.

The approximately 5,000 compact diesel excavators working today in London emit a total of 152.7 tons of NO_x and 8.1 tons of PM annually, which is equivalent to well over 100,000 diesel passenger cars. If these diesel compact machines were replaced with electric-powered alternatives, it would effectively eradicate these harmful emissions – and be the equivalent of removing 10% of London's active cars.

Mats Bredborg, Electrification Leader for Volvo CE, said: "Many Londoners may not realise that the smaller diesel construction machines they pass by every day are entirely exempt from emissions controls. This means they emit disproportionately high levels of harmful pollutants like NO_x and particulate matter, contributing to poor air quality and posing serious public health risks."

"That's why initiatives like this are so important—bringing the industry together to deliver a fully operational, electric, zero-tailpipe-emission solution that helps create cleaner, healthier streets for London."