# London trial reveals electric construction machines slash urban air pollution and emissions



During London Climate Action Week 2025, a crucial roundtable discussion took place at the Swedish Embassy, convened by the Swedish Embassy, the Swedish Chamber of Commerce, and Volvo Construction Equipment (Volvo CE). The event brought together industry leaders, policymakers, researchers, and air quality advocates to tackle the pressing challenge of reducing emissions from construction equipment, with an emphasis on accelerating the transition to zero-emission machinery. The urgent public health crisis posed by air pollution, particularly in urban areas, underpinned the event's message: progress cannot be delayed.

Diesel-powered compact construction machines, common in cities such as London, were identified as significant contributors to urban air pollution. Despite their outsized emissions – in London alone, roughly 5,000 compact diesel excavators emit as much NOx (nitric oxide and nitrogen dioxide) and particulate matter (PM) as over 100,000 diesel cars – these machines often escape inclusion from low-emission zone regulations like the Ultra Low Emission Zone (ULEZ). This regulatory gap has exacerbated pollution problems in densely populated environments. With construction now overtaking cars as the leading source of black carbon emissions in London, bold and coordinated leadership is essential to drive transformative change in the sector.

A highlight of the roundtable was the presentation of positive outcomes from a nearly 12-week trial involving Volvo CE, Transport for London (TfL), and contractor FM Conway. The trial replaced diesel compact machines with zero-emission electric alternatives, which produce no tailpipe emissions such as NOx or PM. Results showed that this substitution prevented nearly 8 kilograms of NOx and non-methane hydrocarbon emissions from entering the air, equivalent to emissions from a diesel car travelling approximately 39,000 miles. Notably, diesel compact machines tend to emit disproportionately higher pollutants compared to larger machinery because they lack particulate filters mandated for bigger equipment and passenger cars. This trial thus demonstrated the potential of electric replacement machines to drastically improve urban air quality.

Supporting this initiative, a UK-first mobile charging trial was conducted, leveraging innovative mobile charging vans supplied by the British startup Charge Fairy. These vans allowed on-site recharging of electric construction machines, mitigating challenges posed by the inconsistent availability of reliable electricity on construction sites. Early data from a six-week trial in London revealed that electric excavators saved over 100 kilograms of CO2 emissions in just two weeks, equivalent to a car driving 600 kilometres, while eliminating harmful pollutants associated with diesel engines. This mobile charging model offers a critical practical solution to facilitate the adoption of electric machinery in urban construction settings.

The discussion emphasised that transitioning to electric construction equipment not only curtails harmful emissions but also reduces noise pollution and vibrations, contributing to healthier and more liveable urban environments. However, stakeholders acknowledged that unlocking the full benefits of zero-emission construction machinery requires accelerated development of infrastructure, green energy provision, supportive policies, and broad collaboration across the entire value chain.

City officials underscored the social justice dimension of air quality, with London’s deputy mayor for environment and energy, Mete Coban MBE, stressing that cleaning up construction emissions is vital to creating a greener, healthier city for all residents. Echoing this, Rosamund Adoo-Kissi-Debrah CBE, a prominent public health advocate, called for treating air pollution as the severe public health emergency it is and urged that legal frameworks, such as Ella's Law, remain central to efforts guaranteeing the right to clean air.

Industry players recognised the importance of partnerships in achieving progress. Fredrik Warneryd, CEO of the Swedish Chamber of Commerce for the UK, highlighted Volvo CE’s leadership in promoting sustainable solutions as a model for the industry. Thomas Bitter, head of Volvo CE’s compact business unit, remarked that ignoring construction equipment in low-emission policies neglects a key opportunity to improve urban health, stressing the need to break down barriers to adoption through unified efforts.

The roundtable concluded with an urgent call for cities globally to integrate construction equipment into low-emission zones, embed sustainability criteria in public works, and collaborate openly to replicate and scale initiatives like London’s. Recognising the often-overlooked impact of diesel compact machines on urban air quality is essential to shaping healthier, more sustainable urban futures.

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* Paragraph 1 – [[1]](https://www.recyclingproductnews.com/article/43451/volvo-ce-attends-talks-focused-on-reducing-emissions-from-construction-equipment)
* Paragraph 2 – [[1]](https://www.recyclingproductnews.com/article/43451/volvo-ce-attends-talks-focused-on-reducing-emissions-from-construction-equipment), [[3]](https://www.volvoce.com/europe/en/about-us/news/2025/compact-electric-machines-air-quality/)
* Paragraph 3 – [[1]](https://www.recyclingproductnews.com/article/43451/volvo-ce-attends-talks-focused-on-reducing-emissions-from-construction-equipment), [[2]](https://www.volvoce.com/global/en/news-and-events/news-and-stories/2025/pioneering-a-uk-first-mobile-charging-trial-with-transport-for-london/), [[4]](https://www.bbc.co.uk/news/articles/cgl0kz898g4o), [[5]](https://tfl-newsroom.prgloo.com/news/tfl-trials-mobile-charging-with-electric-construction-vehicles-for-the-first-time-to-cut-emissions)
* Paragraph 4 – [[2]](https://www.volvoce.com/global/en/news-and-events/news-and-stories/2025/pioneering-a-uk-first-mobile-charging-trial-with-transport-for-london/), [[4]](https://www.bbc.co.uk/news/articles/cgl0kz898g4o), [[6]](https://www.heavyquipmag.com/2025/03/10/volvo-to-provide-a-zero-emission-worksite-in-london/), [[7]](https://electrek.co/2025/03/28/london-pilot-brings-mobile-charging-to-electric-construction-equipment/)
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* Paragraph 8 – [[1]](https://www.recyclingproductnews.com/article/43451/volvo-ce-attends-talks-focused-on-reducing-emissions-from-construction-equipment), [[3]](https://www.volvoce.com/europe/en/about-us/news/2025/compact-electric-machines-air-quality/)

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## Bibliography

1. <https://www.recyclingproductnews.com/article/43451/volvo-ce-attends-talks-focused-on-reducing-emissions-from-construction-equipment> - Please view link - unable to able to access data
2. <https://www.volvoce.com/global/en/news-and-events/news-and-stories/2025/pioneering-a-uk-first-mobile-charging-trial-with-transport-for-london/> - In March 2025, Volvo Construction Equipment (Volvo CE) collaborated with Transport for London (TfL) and contractor FM Conway to conduct a six-week trial of zero-emission construction vehicles in London. The trial aimed to improve urban air quality by replacing diesel machines with electric alternatives. A key innovation was the use of mobile charging vans provided by Charge Fairy, a UK-based startup, which enabled on-site recharging of electric machines, addressing the challenge of reliable electricity supply on construction sites. This initiative supports London's goal to achieve net-zero carbon emissions by 2030.
3. <https://www.volvoce.com/europe/en/about-us/news/2025/compact-electric-machines-air-quality/> - Volvo CE highlights the significant impact of electric compact machines on urban air quality. Diesel compact machines, exempt from stringent emission controls, emit harmful pollutants like NOx and particulate matter, contributing to poor air quality in cities. By transitioning to electric-powered compact machines, cities can substantially reduce these emissions, leading to cleaner air and improved public health. The article underscores the importance of adopting electric construction equipment to meet global air quality standards and enhance urban living conditions.
4. <https://www.bbc.co.uk/news/articles/cgl0kz898g4o> - In February 2025, Transport for London (TfL) initiated a six-week trial of zero-emission construction vehicles, marking a UK-first in mobile recharging technology. The trial involved replacing traditional diesel-powered equipment with electric excavators and wheel loaders at construction sites in London. The electric vehicles were recharged on-site using a mobile charging van provided by Charge Fairy, a British startup. Early data indicated that the electric excavator saved over 100kg of CO2 in a two-week period, equivalent to driving a car 600km, and eliminated additional harmful pollutants compared to diesel counterparts.
5. <https://tfl-newsroom.prgloo.com/news/tfl-trials-mobile-charging-with-electric-construction-vehicles-for-the-first-time-to-cut-emissions> - Transport for London (TfL) and FM Conway partnered with Volvo Construction Equipment (Volvo CE) and Charge Fairy to trial zero-emission construction vehicles in London. The six-week trial aimed to reduce emissions and improve air quality by replacing diesel machines with electric alternatives. A key feature was the use of mobile charging vans, enabling on-site recharging of electric machines. This initiative supports London's commitment to achieving net-zero carbon emissions by 2030 and demonstrates the potential of electric construction equipment in urban environments.
6. <https://www.heavyquipmag.com/2025/03/10/volvo-to-provide-a-zero-emission-worksite-in-london/> - Volvo Construction Equipment (Volvo CE) is leading a collaboration in London to electrify urban construction worksites. In partnership with Charge Fairy, Transport for London (TfL), and FM Conway, Volvo CE is introducing a UK-first solution that uses mobile charging vans to power electric construction machines on-site. This initiative aims to reduce emissions from urban construction and supports London's goal to achieve net-zero carbon emissions by 2030. The project addresses challenges in electric construction machinery adoption and demonstrates the viability of electrifying urban construction equipment.
7. <https://electrek.co/2025/03/28/london-pilot-brings-mobile-charging-to-electric-construction-equipment/> - A new pilot program in London is testing mobile charging solutions for electric construction equipment. In collaboration with Transport for London (TfL), contractor FM Conway, and Charge Fairy, Volvo Construction Equipment (Volvo CE) is deploying electric machines at construction sites. The mobile charging vans provide on-site recharging, addressing the challenge of reliable electricity supply on construction sites. This initiative aims to reduce emissions and improve air quality in urban areas, supporting London's goal to achieve net-zero carbon emissions by 2030.