

World's first all-electric, high-capacity drilling rig carrying out work on HS2 construction site

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HS2 Ltd's construction partner Balfour Beatty VINCI Joint Venture (BBV), is trialling the world's first all-electric, high-capacity drilling rig on a construction site in Warwickshire, as the Joint Venture steps up its plans to meet HS2 Ltd's ambition for diesel-free construction sites.

Andrea Davidson, HS2's Air Quality Manager said: "We are proud to be working with our supply chain and leading manufacturers to drive a step change in the UK construction industry, demonstrating the viability and benefits of emissions-free heavy electric plant.

"Being at the forefront of a ground-breaking trial like this is another step on our journey to achieving our target of all diesel-free construction sites by 2029, and net zero carbon from 2035 - helping HS2 to become the most sustainable infrastructure project ever delivered."

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The 100 tonne BAUER eBG33 drilling rig creates an overall reduction of 1292kg CO2 per day compared to a traditionally powered rig and also reduces noise by 50%. In terms of performance, the rig is able to carry out exactly the same tasks as a traditional rig.

This innovative new machine is being used by BBV's deep foundations contractor SB3 (a Joint Venture between Bachy Soletanche & Balfour Beatty Ground Engineering), and works alongside a diesel-powered rig to construct large diameter piles, with the aim of demonstrating that heavy, electric-powered construction plant can perform the same tasks as traditional machines.

Dan Fawcett, Innovation Director at BBV said: "We're committed to driving real innovation across everything we do. That's why we're so excited to trial the world's first all-electric, high capacity drilling rig at one of our HS2 sites in Warwickshire. This pioneering project marks a major step forward towards transitioning to all-electric powered plants, which is great news for the environment too.

"We'll look to share what we learn from this trial and extend it across our other sites, as well as the wider industry."

Tim Laemmler from BAUER Maschinen GmbH, the rig's developers and manufacturers, said: "We're thrilled to be leading the industry with this electric rig. It is great to be working with HS2, BBV and SB3, as the first UK specialist contractor to demonstrate the capabilities of the product. We're fully committed to bringing emission-free equipment to the deep foundation sector. There is a strong desire to promote our new electrified equipment as a genuine, reliable alternative to fossil fuel driven machinery."

Chris Merridew, SB3 JV Board Director said: "Our team was eager to support Bauer as the first end user of the electric rig and its new technology. It has the potential to be a massive game changer for the industry and the wider construction sector in our continued drive to reduce carbon, noise and emissions."

The BAUER eBG33 replaces the diesel engine drive with a powerful electric drive. The environmental benefits include reduced exhaust and noise emissions; high energy efficiency due to modern three-phase asynchronous motor; and flexibility through an integrated frequency converter. BAUER are also trialling different E-connection concepts and an innovative concept for set-up operation via an autonomous secondary drive which is independent of the power supply.

Photo credit: HS2 Ltd