



# ECO-LYNC

**Customer:** Balfour Beatty

**Sector:** Construction and infrastructure

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# ECO-LYNC

## BACKGROUND

The construction and infrastructure sectors typically use a significant amount of energy to deliver large-scale projects. Construction sites are normally powered through connections to the National Grid or through the use of diesel generators.

As part of our quest to help our customers reduce carbon emissions, we have worked hand-in-hand with Balfour Beatty and Invisible Systems to develop Eco-Lync - a state-of-the-art, cloud-based energy and power management system which can reduce site emissions by as much as 80%, allowing major cost and carbon savings to be made. For Balfour Beatty projects, this system was known as EcoNet.

Eco-Lync is used to manage the power supply of temporary site accommodation and works by controlling and reducing the energy output from appliances used in cabins, such as electric radiators, hot water heaters and drying room dehumidifiers. The system can also control floodlights, EV and electric machinery charging points in the site compound. Working silently in the background using wireless IoT (Internet of Things) sensors, it automatically turns appliances and equipment off when not in active use. A transmitter monitors energy demand in real-time and a receiver sits inside the cabins to isolate circuits and turn off equipment as and when required.

This means sites become much more energy efficient as power consumption is regulated during times when demand is at its highest. Large, noisy diesel generators can be replaced with smaller ones or leaner grid supplies can be used to connect to electricity from renewable sources.

The system shuts equipment off overnight, leading to significant cost and carbon savings, whilst reducing noise levels. Carbon consumption is reduced dramatically, and fuel costs are driven down. Energy costs can be reduced by up to £110 per welfare cabin every single month.



▲ EcoNet is a game changing innovation for managing energy usage and operational carbon at Balfour Beatty and we encourage its adoption across the wider industry.

To address the challenge of climate change we must drastically reduce our reliance on, and in a short time, eliminate, the combustion of all hydrocarbon fuels for the provision of electrical power for site operations. Managing and conserving our power and energy demands through EcoNet is a key enabler of low and zero carbon power sources such as grid, solar, hybrid battery and hydrogen technologies. ▲

Michael Flood, Energy Manager,  
Balfour Beatty

▲ This system has been developed over the course of three years and we believe it will have a major impact on the construction industry. More and more customers and end users are seeking to enhance their sustainability credentials and Eco-Lync allows construction sites to reduce their energy and carbon levels by 30-80%. The system automatically reduces the peaks in energy demand across construction sites. This is achieved by the Eco Lync technology managing both the demand and supply of energy. It typically allows users to switch from a 100kVA generator to a 60kVA generator which is cleaner, more efficient and less expensive in terms of rental costs. ▲

Pete Thompson, CEO, Invisible Systems

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## THE SOLUTION

The Eco-Lync system was first used on Balfour Beatty's East Leeds Orbital Project from June 2020 to present - a major highways contract to build 7km of outer ring roads around Leeds city centre to help ease congestion. Within the first six months of use, Eco-Lync resulted in an 83% reduction in carbon emissions across the site by running on a capacity-constrained grid supply, actively managing electric vehicle charging and optimising the heating, hot water and external lighting running schedules.

Since the Leeds success, the system has been adopted on 48 other Balfour Beatty sites nationwide and project lifecycle emissions reduction will total 7,720 tonnes of CO<sub>2</sub>. Other projects include the A51 Junction Improvement Scheme in Tarvin, near Chester, where a conventional generator set-up has been replaced with an Eco-Lync+ arrangement, with an unsynchronised pair of generators providing load on demand and saving 44% of fuel and carbon emissions in the process.

At the Shrewsbury North West Relief Road eight cabin compound set-up, an Offgrid Ingenium hybrid unit has been deployed. Eco-Lync is significantly reducing generator engine run hours and optimising fuel savings from the system. After the site first mobilised it was four weeks before its first fuel delivery was taken and compared to traditional generator setups the site has saved 3,300 litres of red diesel in this time, a 72% reduction in fuel and carbon emissions.

At the East Rhyl Sea Defence Scheme, Eco-Lync has enabled the compound set-up to be grid-powered in a capacity constrained area, reducing its CO<sub>2</sub> emissions by 82% and avoiding 183 tonnes of CO<sub>2</sub> going into the atmosphere.

Balfour Beatty are so impressed with the Eco-Lync system that the company has committed to installing it on any new site in the UK with more than six welfare cabins.

▲ We were delighted to partner with Balfour Beatty and Invisible Systems to work on this innovative way of reducing carbon emissions on construction sites. Sunbelt Rentals is totally committed to continue working alongside our customers, acting responsibly and sustainably. This is one of a number of projects which is an important part of our overarching Sustainability 2030 strategy ▲

Jamie Fountain, Account Director  
- Balfour Beatty, Sunbelt Rentals



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