



# A CARBON EXERCISE

TRAINING & TECHNOLOGY TO MAXIMISE  
PERFORMANCE



GallifordTry

**LYNCH**



# BACKGROUND

Lynch is collaborating with Galliford Try on the A47 Blofield to North Burlingham Scheme, which aims to replace the existing single-lane section with a new two-lane dual carriageway. Galliford Try are committed to operating sustainably, making ESG an integral part of their updated strategy. They prioritise operating in a socially and environmentally responsible way. They adopt sustainable resourcing and consumption practices and take measures to mitigate carbon production and climate change to protect our environment and biodiversity.

# SUSTAINABILITY

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Sustainability at heart is one of Lynch's core strategic pillars. We champion ecofriendly practices, social impact, fairness and integrity throughout everything we do. A key part of our sustainability commitment is our goal to achieve netzero carbon emissions by 2040 (Scopes 1 & 2). We are collaborating closely with our valued customer Galliford Try, who is committed to operating sustainably, making ESG an integral part of their updated strategy. They prioritise operating in a socially and environmentally responsible way. They adopt sustainable resourcing and consumption practices and take measures to mitigate carbon production and climate change to protect our environment and biodiversity.

Together, we are supporting National Highways Environmental Sustainability strategy, ensuring we leave a thriving planet for future generations.

## THE CHALLENGE

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- The A47 Blofield to North Burlingham Scheme is a greenfield site. This makes it difficult to implement all electric plant and equipment for the construction of the new road. With limited infrastructure, and the semirural geography of the site, Galliford Try needed to explore other methods of reducing carbon emission during construction.
- The absence of a reliable power grid provides challenges in charging or operating electric machinery, often requiring on-site renewable energy solutions or temporary power sources.
- All-electric equipment may face limitations in terms of power output and runtime compared to traditional diesel-powered machinery, potentially affecting productivity.
- The cost of setting up charging stations or energy storage systems can also be high, further complicating the transition to all-electric plant on the Blofield site.

# THE SOLUTION

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Our solution was a two-pronged approach that involved a combination of targeted training and enhancing the skills of our workforce, and using new technologies to optimise our processes.

This innovative technology minimises the risk of contamination, enhancing both fuel quality and engine performance.

# THE TRAINING

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Lynch and Galliford Try worked to inspire behavioural change by carrying out Eco Operator Training for all Blofield Plant operatives when the archaeology work began. Lynch's NOCN-approved Eco Operator model focuses on reducing unnecessary idling, completing thorough prestart checks, and selecting appropriate power modes for the task at hand to be as efficient as they are safe.

**From January 24 - September 24:**



**FUEL SAVING OF:**

**2773.64L**



**CO<sup>2</sup> EMISSIONS:**

**FROM 3,576.6 KG**



**COST SAVINGS BY:**

**£3.3K**

# THE TECHNOLOGIES

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## **Ultimate Cell Truck Engine V3.0**

This smart retrofit fuel cell technology optimises combustion engines by producing hydrogen on demand. It introduces small quantities of hydrogen into the engine air intake via electrolysis, in response to driver throttle commands. The technology is straightforward, requiring no hydrogen storage tanks in vehicles or on-site.

The unit can be scaled up to three or six cells, depending on the equipment needed. This patented device is designed to work with all types of fuels, including diesel, petrol, LPG, and ethanol, meeting both US and European standards.

## **FuelActive fuel filters**

FuelActive's patented floating fuel pickup system delivers 92% cleaner fuel to the engine by drawing from just below the fuel surface. In contrast, standard fuel tanks draw from the bottom, where natural contaminants such as water, sediment, rust, and diesel bug accumulate. This innovative technology minimises the risk of contamination, enhancing both fuel quality and engine performance.

# THE TRIAL

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Between **September and October 2024**, we installed a 3-cell Hydrogen Unit and FuelActive Filters on a 25-ton Hitachi machine working on the A47 Blofield to North Burlingham Scheme.

These systems were allowed to run over a six-week period whilst data was collected and analysed.

# THE PROCESS

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Our team worked closely with key stakeholders from Galliford Try's sustainability team and conducted weekly catch-up calls. Together, we analysed the data and eliminated extraneous variables, such as idle times. We closely matched the machine class and weight, with another completing a similar job and studied consistent idle and working percentages. We consistently reviewing various data points throughout the trial period, allowing us to provide a controlled representation of the technology.

## The Results

Over a 6-week testing period, the test machine burned 3,092L of fuel and the control machine burned 3,522L of fuel. This equated to savings of:



**FUEL SAVING OF:**

**430L**



**CO<sup>2</sup> EMISSIONS:**

**FROM 1,136KG**



**COST SAVINGS BY:**

**£500.00**

Thanks to the technology, we achieved a **14% reduction in emissions**. Crucially, we encountered no fuel-related breakdowns, maximising equipment uptime and performance.

# NEXT STEPS

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The introduction of the Ultimate Cell Truck Engine V3.0 and FuelActive's groundbreaking fuel pick-up system represents a pivotal shift in our operational and environmental strategies on our customer's projects.

This step change marks a significant move towards more sustainable and efficient construction practices. Lynch plans to retrofit FuelActive filters and Ultimate Cell hydrogen kits across our fleet, further reducing fuel costs and carbon emissions for our customers, all while maximising uptime and operational efficiency.

# OUR PILLARS

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Our strategic pillars govern everything we do,  
**Helping Our Customers Build Britain's Infrastructure.**

This project aligns to:



## **SUSTAINABILITY AT HEART**

We champion  
**eco-friendly  
practices, social  
impact, fairness &  
integrity** throughout  
everything we do.

**HELPING OUR  
CUSTOMERS BUILD  
BRITAIN'S INFRASTRUCTURE.**



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