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PLANET

CLIMATE ACTION

Driving Carbon Reduction Through Digital Innovation

Colleagues uncovered some astonishing finds Digital optimisation is reshaping the way Tarmac manages energy, carbon and operational performance across its asphalt network. In 2025, the business accelerated the rollout of advanced AI-powered optimisation tools, intelligent burner systems, and demand-led bitumen heating controls. These innovations share a common aim: to use data-driven insight to make every tonne of asphalt more efficient, more consistent and significantly lower in carbon.

AI-Driven Optimisation: Real-Time Insights for Lower Carbon Production

A new generation of AI optimisation boxes is being deployed across Tarmac’s asphalt plants. Compact and intelligent, the units analyse real-time production data, spotting any inefficiencies, recommending adjustments, and helping teams fine-tune operations throughout the day.

Across the business the impact has already been substantial. By improving mix consistency, reducing fuel consumption, and cutting material waste, the technology is contributing to a projected 9,000 tCO₂e saving over a two-year period into 2026.

At Elstow alone, the system has already supported a 10% reduction in energy costs, with operatives reporting clearer decision-making and more stable production performance.



Martin Wyatt, Asphalt Area Operations Manager for the South East, highlighted the importance of embracing AI:

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The strong results achieved so far are helping set a benchmark across the network, demonstrating how technology and skilled teams can unlock meaningful operational and environmental value.

Modernising Burner Controls: Smarter Systems for Cleaner Production

In parallel, Tarmac is upgrading outdated analogue burner controls with modern, computer-based systems that enable remote access, continuous monitoring, and real-time flame adjustment.

At Snodland Asphalt, a new burner control system has quickly proven its value, delivering a measurable improvement in both efficiency and reliability. Since replacing the outdated analogue unit with a modern, digitally controlled system, the site has consistently saved one litre of Liquefied Petroleum Gas (LPG) for every tonne of asphalt produced, a reduction that reflects not only more precise flame control but also the advantages of continuous performance monitoring. The software gives operators clear, real-time insight into burner behaviour, allowing issues to be identified and resolved faster than before, while remote access removes the need for frequent engineer call-outs.

“The new system has futureproofed our burner, allowing us to blend different fuel types simultaneously. As new lower carbon fuels become available, we can reduce our carbon footprint and use the most cost-effective options.”

Tony Simmons, Manufacturing Excellence Manager

These enhancements strengthen site performance today, while preparing operations for cleaner fuels and future decarbonisation pathways.

Smarter Energy Management at Stevenage:
Turning the Heat Down and Results Up

At Stevenage, an ULTICOLOUR plant producing smaller batch sizes, energy efficiency gains can be harder to achieve. By focusing on the site's most energy-intensive process though, the team identified a major opportunity to optimise its bitumen heater.

Working collaboratively across regions, the team at Stevenage introduced remote-controlled heating software linked to an app, giving operatives greater control over the site's bitumen heaters. Instead of running continuously, the heaters can now operate on demand, with temperatures adjusted in line with product demand and refined in real time to respond to changing weather conditions. This simple but powerful shift has transformed the performance of Stevenage's heating system, delivering a reduction in energy consumption and improving overall site reliability.

“The greater control that the app gives us has been key to the improvements in energy usage on site. Now we can ensure that the heaters are only turned on when they need to be, even in winter.”

Shaun White, Section Manager

Alongside new LED lighting and a series of targeted equipment upgrades, the initiative shows how practical, accessible digital tools can drive significant energy and carbon savings, even at smaller specialist plants like Stevenage.

Looking Ahead

Looking ahead, Tarmac's integration of AI insights, digital controls and intelligent monitoring technologies represents a major advancement in decarbonising asphalt production. These innovations are already improving energy efficiency across a varied plant network, reducing emissions, cutting material waste, and strengthening product consistency and operational reliability.

By preparing sites for emerging lower carbon fuels and future automation, the business is laying the groundwork for long-term transformation. Through empowering teams with real-time data and smarter tools, Tarmac is creating a more efficient, resilient and more sustainable manufacturing platform, which will play a vital role in delivering the lower carbon infrastructure the UK needs.