

E10 brings a greater set of challenges for UK forecourts

With less than six months to go, Dan Gibson, Wetstock manager at Suresite, considers some of the challenges around E10, and how engineering and wetstock solutions can support retailers in the next step.



In September, the UK government will introduce a new standard unleaded fuel grade: E10. Named for its increased ethanol content - a 10% mix instead of the current standard 5% - the introduction of E10 is a key part of the government's ambition to reach net-zero emissions by 2050. Ethanol is a renewable biofuel derived from plant materials, and as the source crops grow, they absorb harmful CO₂ from the atmosphere. It is expected that the switch to E10 will help cut UK CO₂ emissions by as much as 750,000 tonnes per year.

Keeping a site "dry"

Ethanol is hygroscopic - meaning it can absorb water and moisture from the air. A higher ethanol content in the standard petrol grade increases the chances of water absorption, and can result in

subsequent damage to the fuel storage and dispensing system. As the fuel takes in air from the ullage space - the unfilled headspace of a container - the ethanol absorbs moisture. Over time, this process can lead to an ethanol-water mix which is corrosive, meaning potential long-term damage to filters, pipe fittings and older tank linings.

Forecourt operators will need to ensure every element of the overall tank storage system is sound in order to prevent water from entering the system. Engineering experts will need to confirm all gaskets are in good condition, and that the materials they are made from are compatible with the higher ethanol grade, otherwise they will need to be replaced. A broken valve system could allow in air, which in turn could create a build up of condensation inside the tank. Implementing a strong maintenance plan, partnership working with forecourt engineers, and good controls for detecting water in the system, will help retailers to ensure their site is dry.

Working with a wetstock management provider to monitor and detect water ingress will be crucial when it comes to tackling problems in the fuel system swiftly and efficiently. A provider will collect data on just about everything happening on site - sales, deliveries, pump flow rates, and fuel levels. Identifying anomalies in this data is key - slow flow through a forecourt pump could be indicative of a far greater problem. If water has found its way into the fuel storage tank, then it will be contaminating the fuel and in turn, contaminating customers' cars. Monitoring live, real-time data will enable forecourts to spot a problem within minutes, pause fuel sales, and rectify the issue before taking the forecourt back online. A failsafe system will also ensure that data capture will continue despite any disruption or failure, and won't require an engineer to visit at an additional cost.

Controlling and managing leaks

The need to mitigate and control fuel leaks is not a new problem for the forecourt sector; one that comes with large fines and potentially extensive damage to the local environment. Perhaps one of the greatest challenges with introducing E10, is the long term damage and problems which this higher ethanol blend can cause slowly over time and is therefore more difficult to spot. It's this damage to forecourt systems caused by the ethanol mix - such as water ingress and the presence of bacteria - that increases the chance of a fuel leak.

This again is where the monitoring of wetstock data and a trained set of eyes looking for such issues is key - enabling forecourts to take preventative action before changes in the system become problematic or dangerous. Rather than waiting for a traditional tank gauge to generate an alarm - typically set at around 25-35mm of water - great wetstock management will employ a real time, data-driven alert system, allowing the forecourt operator to set a trigger threshold according to their own needs. This is particularly helpful for those sites operating a zero water tolerance policy.

Forecourt infrastructure and making site adaptations

One of the concerns with the introduction of any new fuel grade, is the infrastructure, size and customer usage of a forecourt site.

For a small percentage of drivers of older vehicles, E10 will not be compatible for use with their cars over long periods of time, as the ethanol content can damage the seals, hoses and plastics within the fuelling system. Some owners are being advised to continue fuelling their car with E5, which will still be available in the UK as the new premium unleaded option at pump. Some forecourts, given the space available, may want to offer both E5 and E10 in order to cater for as many of their customers as possible.

For these forecourts with limited tankage, one way to expand the number of fuel grades on offer will be to increase the number of tanks, typically by adding one above ground. However, the nature of the construction of petrol forecourts in the UK makes large-scale adaptations such as this very difficult. Making any major changes to the infrastructure of a forecourt in order to make room for all four fuel grades, will mean retailers have to put their entire site out of action for the length of the building works.

By monitoring and reviewing live wetstock data, retailers will be able to determine consumer appetite for each fuel grade, and identify which pumps are busiest. This information, alongside the careful and efficient management of stock, can help forecourts to decide which grades - if they do not have the space for all - to sell, and in which nozzles each grade should be directed according to demand.

With any introduction of a new fuel grade to the UK market, there are bound to be some challenges along the way. A forecourt's greatest safeguard is knowing the site inside and out. Our advice is to use the coming months to understand what "normal" means for each individual site, and use baseline data to identify unusual patterns that could point to a problem. The great news is that upgrades needn't be done immediately. Retailers should begin key conversations with forecourt engineers and wetstock management providers who can support them through this next step.

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