Forecourts

Focusing on maintenance to ensure a smooth energy transition

Adler & Allan

ENVIRONMENTAL RISK REDUCTION

Contents

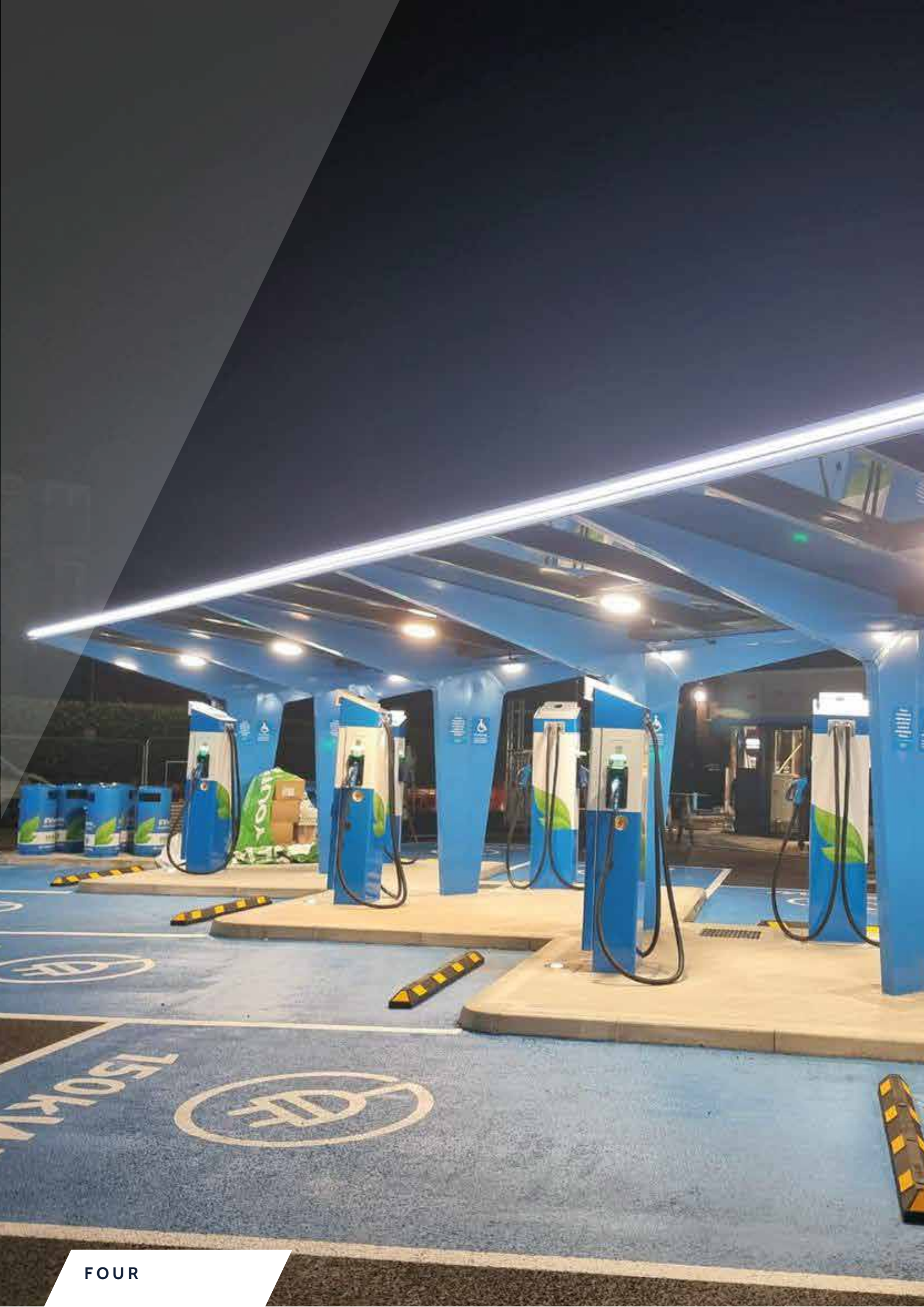
Forecourts

Re-thinking maintenance & forecourt development

Forecourts have been, and continue to be, key infrastructures linking towns and cities across the UK. With nearly 8400 forecourts in the UK, they provide a vital location for all drivers.

They have now become strategic transport hubs; a huge change from the first petrol station which had a single hand operated pump back in 1919.

In this whitepaper we will discuss the changing environment around forecourts, the future energy types that will impact on them, the legislation and subsequent fines for non-compliance that applies to forecourts, and most importantly the maintenance that can be implemented to keep forecourts compliant. In addition, we will also explore asset life extension and maintenance regimes that can help save on costs.



FOUR

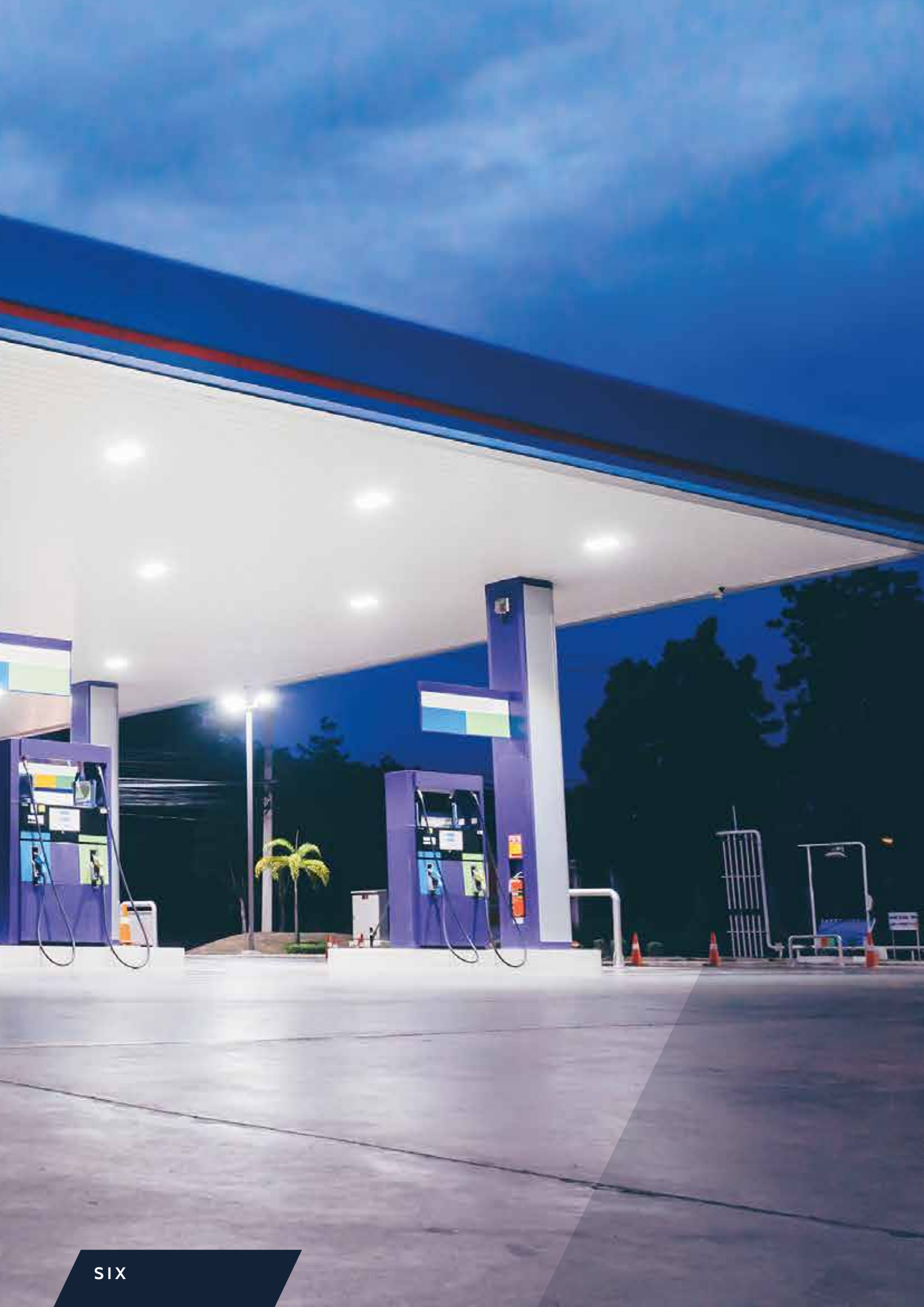
Day to day management

Fuel stations play a critical role that facilitates movement and travel across the country.

Numerous businesses and the general public depend on reliable providers to supply fuel for vehicles. Due to their critical nature in ensuring movement, these centralised fuelling points must be managed and maintained carefully. his obviously adds to the ongoing pressures of operating a fuel station.

Sites and assets need to be looked after in order to protect revenue but also protect the environment from unforeseen pollution incidents. A well-managed and maintained forecourt will be well prepared for future development and help with transition to new energies

A well-managed and maintained forecourt will be well prepared for future development



SIX

Diversification of energy offering

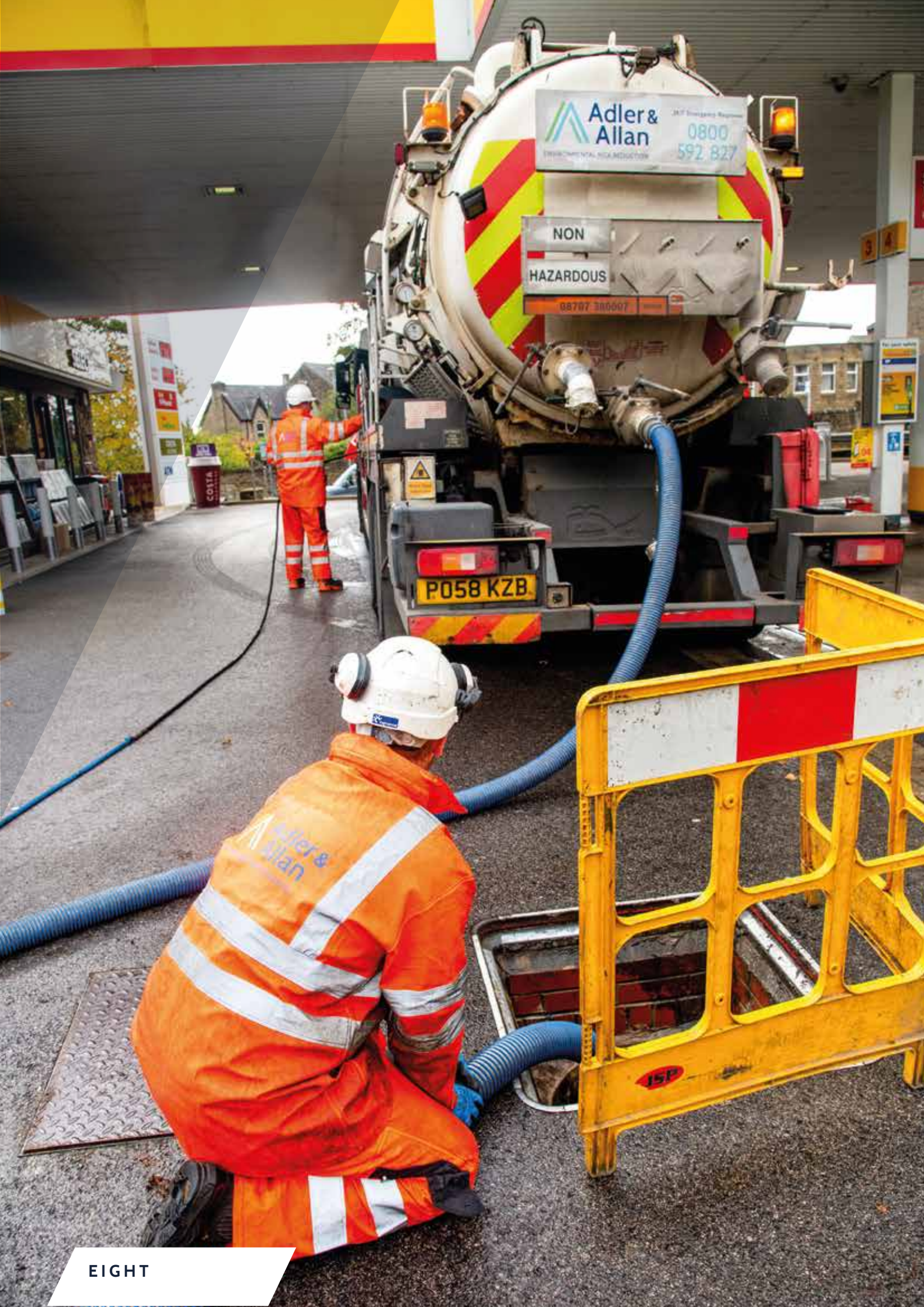
In a market that is shifting towards a changing fuel mix, forecourts of the future will have to offer a wider range of fuelling sources; electricity, natural gas/CNG, gasoline, diesel, LPG, biofuels, hydrogen.

This will require adjusting their real estate layouts (tanks, batteries, pumps, etc.). Significant investment will be required in infrastructure to serve the new fuel mix.

Many forecourt providers are looking for improved ways to manage their current assets and extend their life expectancy in order to facilitate the investment required to improve the fuel offerings provided on their sites.

As the fuel types on forecourts change and to match the requirements of motorists, then legislation will also change and be modified. New policies will come into force dictating procedures for electric vehicle and hydrogen vehicle usage in combination with current hydrocarbon vehicles.

In addition, the current legislation will also remain in force ensuring that owners and operators are protecting any legacy infrastructure.


Adler & Allan
0800 592 827
NON
HAZARDOUS
P058 KZB
COSTA

Forecourt legislation

When operating a forecourt there is a huge responsibility on maintaining a safe and secure site.

Pollution incidents on well maintained sites are rare, which is no coincidence. Sites that have little or no checks on separators or alarms in place are more likely to experience an incident that could lead to environmental damage.

Pollution incidents on well maintained sites are rare, which is no coincidence

Companies can now be fined up to 100% of their pre-tax profits in found to be operating a site that is poorly maintained that leads to a pollution incident.

The Environment Agency regularly investigates environmental incidents and for those companies that decide to not implement guidance and good practice, they are held to account. Companies can now be fined up to 100% of their pre-tax profits in found to be operating a site that is poorly maintained that leads to a pollution incident.

These large fines have been introduced to ensure that companies implement significant changes to avoid further incidents and to deter other businesses from not following legislation or implementing appropriate guidance.

To help operators run a compliant site there are several legislation and guidance documents which should form part of robust legal understanding when dealing with forecourts. This industry guidance and regulations has led to consistent good practice and procedures and helped to protect workers, infrastructure, and the environment.


DO
NOT
ENTER

To understand how this collection of documents relate to forecourts, and specifically asset maintenance, a quick overview of each follows:

The Petroleum (Consolidation) Regulations

The Petroleum (Consolidation) Regulations came into force in October 2014 and combined and updated all previous legislation on petrol storage and operations.

The primary purpose of the regulations is to ensure that petrol is stored and handled safely, recognising it to be a dangerous substance and highly flammable liquid that can give off vapour and be easily ignited when not stored and handled safely.

DSEAR

The Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) are concerned with preventing or limiting the harmful effects of fires, explosions and similar energy-releasing events and corrosion to metals.

The DSEAR 2002 are concerned with protection against risks from fire, explosion and similar events arising from dangerous substances used or present in the workplace. They set minimum requirements for the protection of workers from fire and explosion risks related to dangerous substances and potentially explosive atmospheres and from gases under pressure and substances corrosive to metals and require employers to control the risks to the safety of employees and others from these hazards.

CIRIA C736

CIRIA C736 Containment systems for the prevention of pollution 2014. (Secondary, tertiary and other measures for industrial and commercial premises). The need for more comprehensive guidance on secondary and tertiary containment systems emerged following the fire at Buncefield Oil Terminal in 2005 and the ensuing pollution events.

The guidance has a particular focus on fire, flood and spills and should be read and implemented by anyone who may have a risk of a containment system failing and causing a pollution event. This advice, if correctly followed, is aimed at preventing another incident like the Buncefield event.

From sites with just one tank to large chemical sites with multiple storage units, this guidance sets out clear advice on the implementation of a detailed risk assessment and classification system for containment systems and how secondary and tertiary containment systems should be planned, designed, and built. It also focuses on the various containment systems, the necessary upgrades that are required to some, and most importantly the ongoing maintenance that is essential to ensure a compliant site.

BS EN858-2:2003

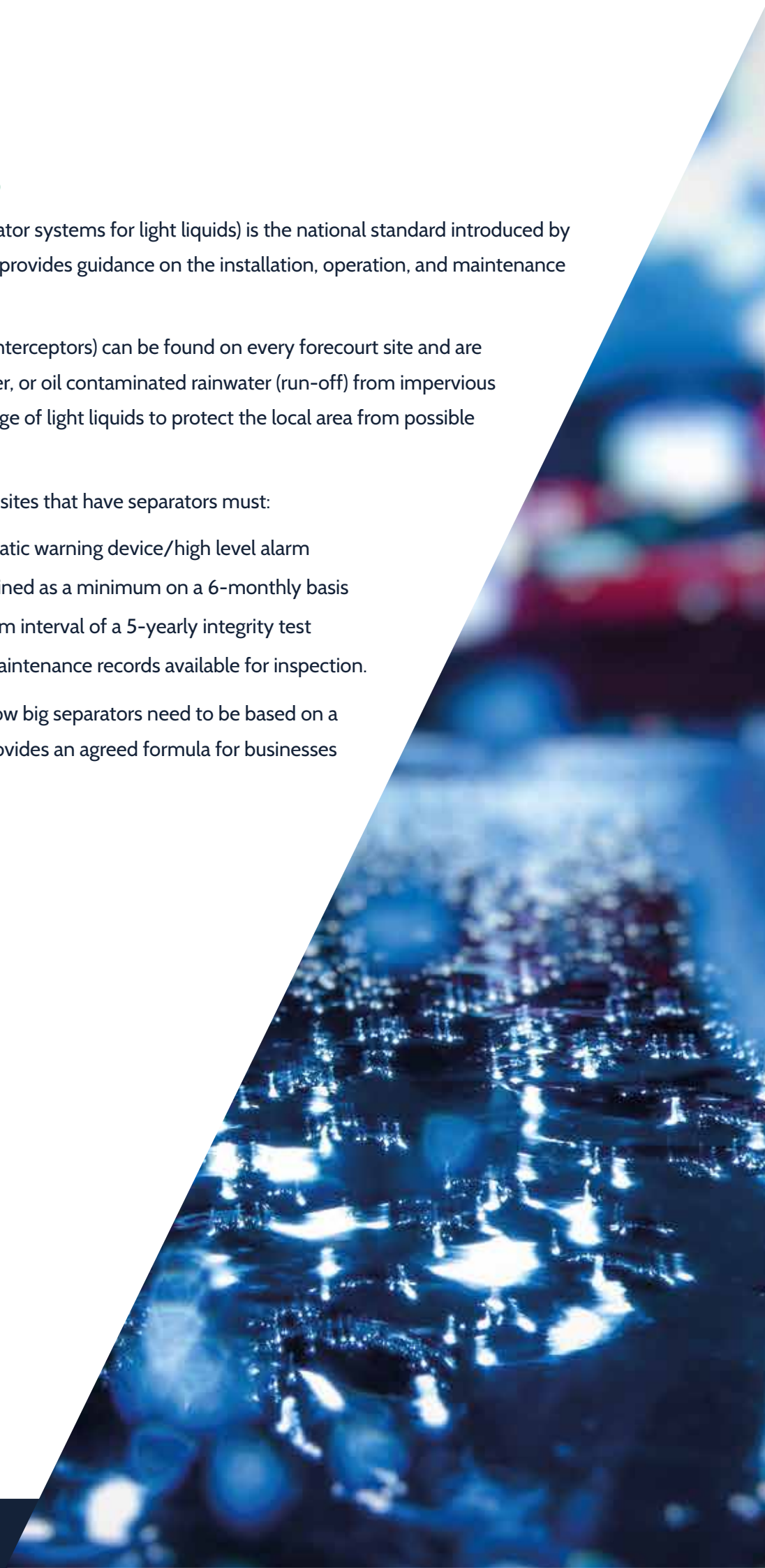
BS EN 858-2-2003 (Separator systems for light liquids) is the national standard introduced by EU members in 2003, and provides guidance on the installation, operation, and maintenance of light liquid separators.

Separators (also known as interceptors) can be found on every forecourt site and are installed to treat waste water, or oil contaminated rainwater (run-off) from impervious areas, and to hold any spillage of light liquids to protect the local area from possible pollutants.

The guidance states that all sites that have separators must:

- Be fitted with an automatic warning device/high level alarm
- Be serviced and maintained as a minimum on a 6-monthly basis
- Be subject to a maximum interval of a 5-yearly integrity test
- Have full service and maintenance records available for inspection.

The guidance establishes how big separators need to be based on a number of variables and provides an agreed formula for businesses to calculate.



Ageing assets and ongoing maintenance

This legislation and guidance establish the elements that are required for a compliant and efficient running forecourt

A forecourt asset that is poorly maintained is more likely to experience a pollution incident. In this event an enforcement action, from a body like the Environment Agency, can be mitigated by demonstrating all reasonable efforts were made to implement proper prevention systems.

This relies on detailed inspection and service records and ongoing maintenance of your containment systems. Without these elements in place an operator would leave themselves open to substantial fines and penalties.

To ensure asset availability, safety, and reliability, routine maintenance is required. Whether planned, reactive, or preventive, an asset maintenance strategy can mean the difference between a productive forecourt or costly closures.

It is beneficial to keep in mind that asset failure can cost a business ten times more than it does to implement a working maintenance plan and costs substantially less than the purchase of a new asset.

Sandwiched between procurement and disposal, maintenance and operation is the longest stage of the asset life cycle. Deploying a successful forecourt maintenance plan can be a complex process but can ensure that those assets can provide a service long after their expected disposal date.

An asset maintenance strategy can mean the difference between a productive forecourt or costly closures.

Asset life extension

Ageing is inevitable, it happens to us all and especially happens to the assets we operate and manage.

As many of the assets in the forecourt industry are nearing the end of their originally intended design life, asset life extension has become an increasingly attractive option to avoid decommissioning assets, which is a costly and logistically complicated process.

However, there are several challenges in relation to hazard management that requires a number of key factors to be effectively managed. It is not always about the age, it's about the condition, and the impact over time.

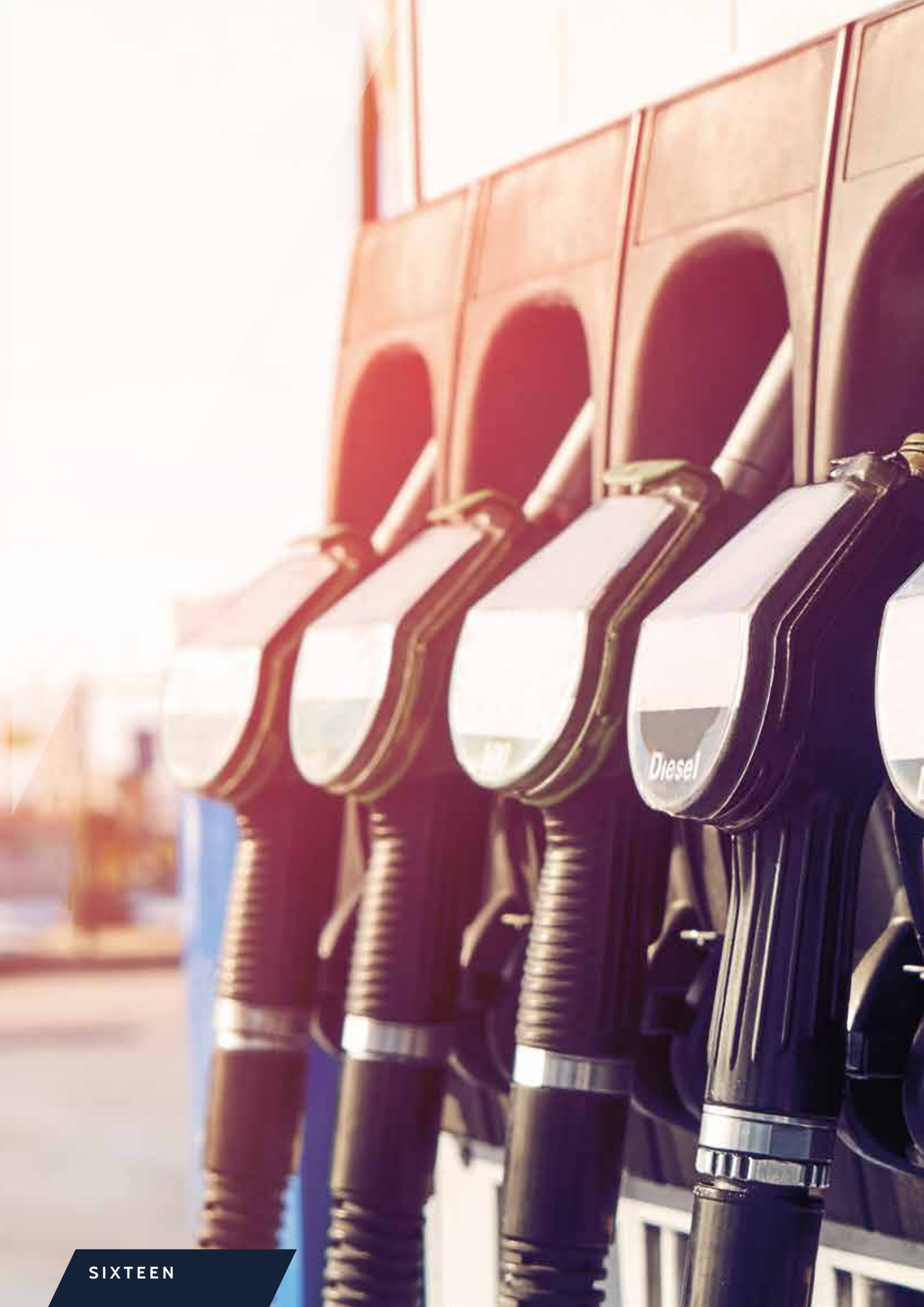
Many forecourts are assessing their current assets and evaluating their operations for the next 10-15 years. With so many new developments taking place in energy use and provision, i.e. electric vehicles, HVO, and potentially hydrogen, forecourt operators are juggling the issues of keeping their current sites operational and planning for the expense and introduction of new assets.

This has led to many operators examining their forecourt assets and their life cycle. Some assets' life cycles can be stretched, but can only be done if the assets are within a safe operating range for their estimated lifetime and required operating conditions, and if no failures occur that will generate adverse consequences.

Many of the assets in the forecourt industry are nearing the end of their originally intended design life.

Impacts on human health and safety, the environment, reputation, and finances such as production losses, and recovery costs, are all important considerations when contemplating asset extension.

Ensuring that assets have been monitored and maintained correctly allows forecourt operators to plan for new developments on their sites without the worry of asset failure or replacement.


Diesel

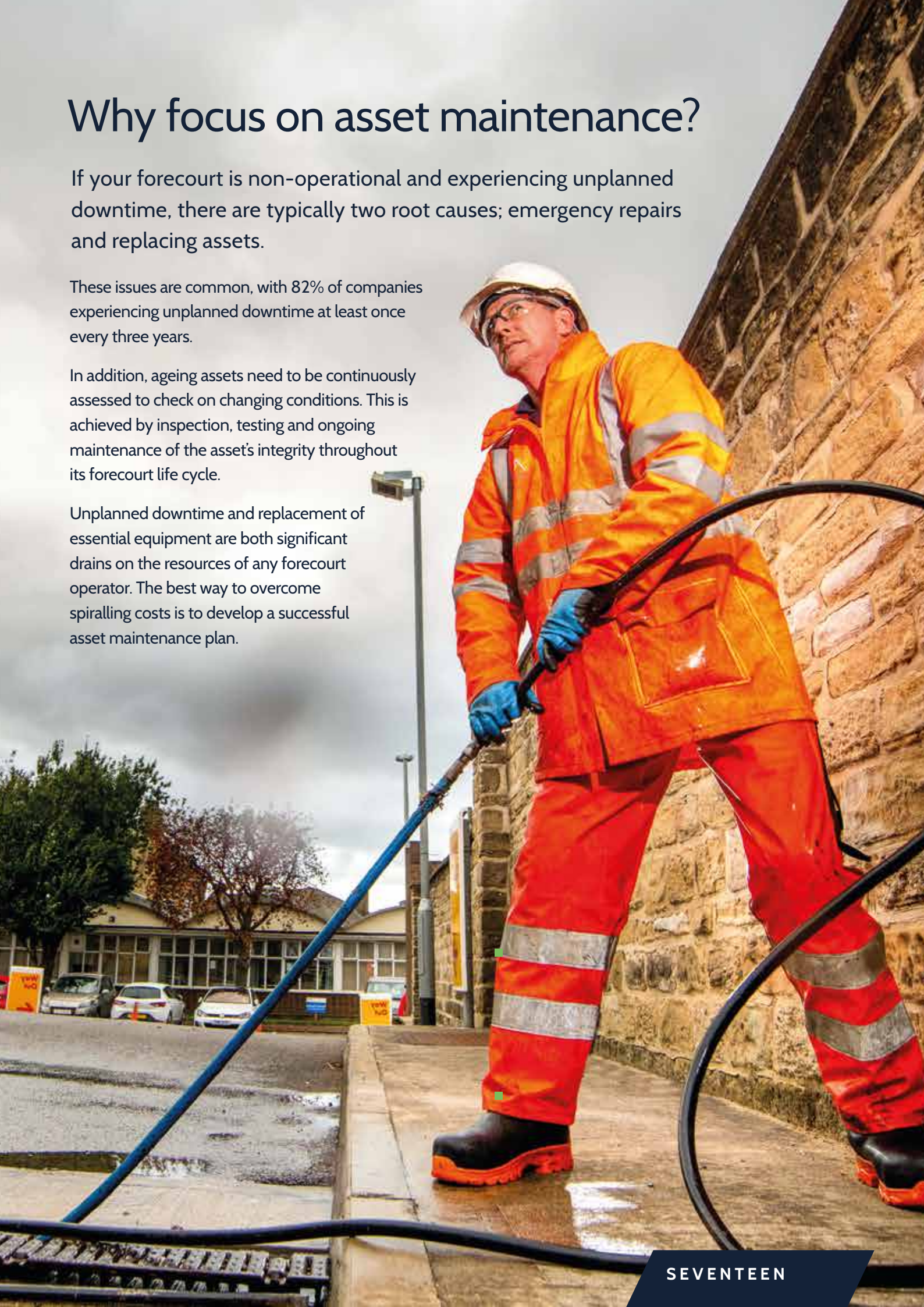
Why focus on asset maintenance?

If your forecourt is non-operational and experiencing unplanned downtime, there are typically two root causes; emergency repairs and replacing assets.

These issues are common, with 82% of companies experiencing unplanned downtime at least once every three years.

In addition, ageing assets need to be continuously assessed to check on changing conditions. This is achieved by inspection, testing and ongoing maintenance of the asset's integrity throughout its forecourt life cycle.

Unplanned downtime and replacement of essential equipment are both significant drains on the resources of any forecourt operator. The best way to overcome spiralling costs is to develop a successful asset maintenance plan.



What does an asset maintenance plan look like:

Asset identification

Having an asset register makes it easy for you to find and identify assets that require regular maintenance. This data will help you locate assets and identify how they're being used. As well as knowing when they were purchased and how much they cost to run.

Current state of assets

Once an asset has been chosen, you need to know what condition it is in. How much wear and tear has it incurred? How many operational cycles has it performed? And how many services and repairs have been performed? This information should also be included in your maintenance reports.

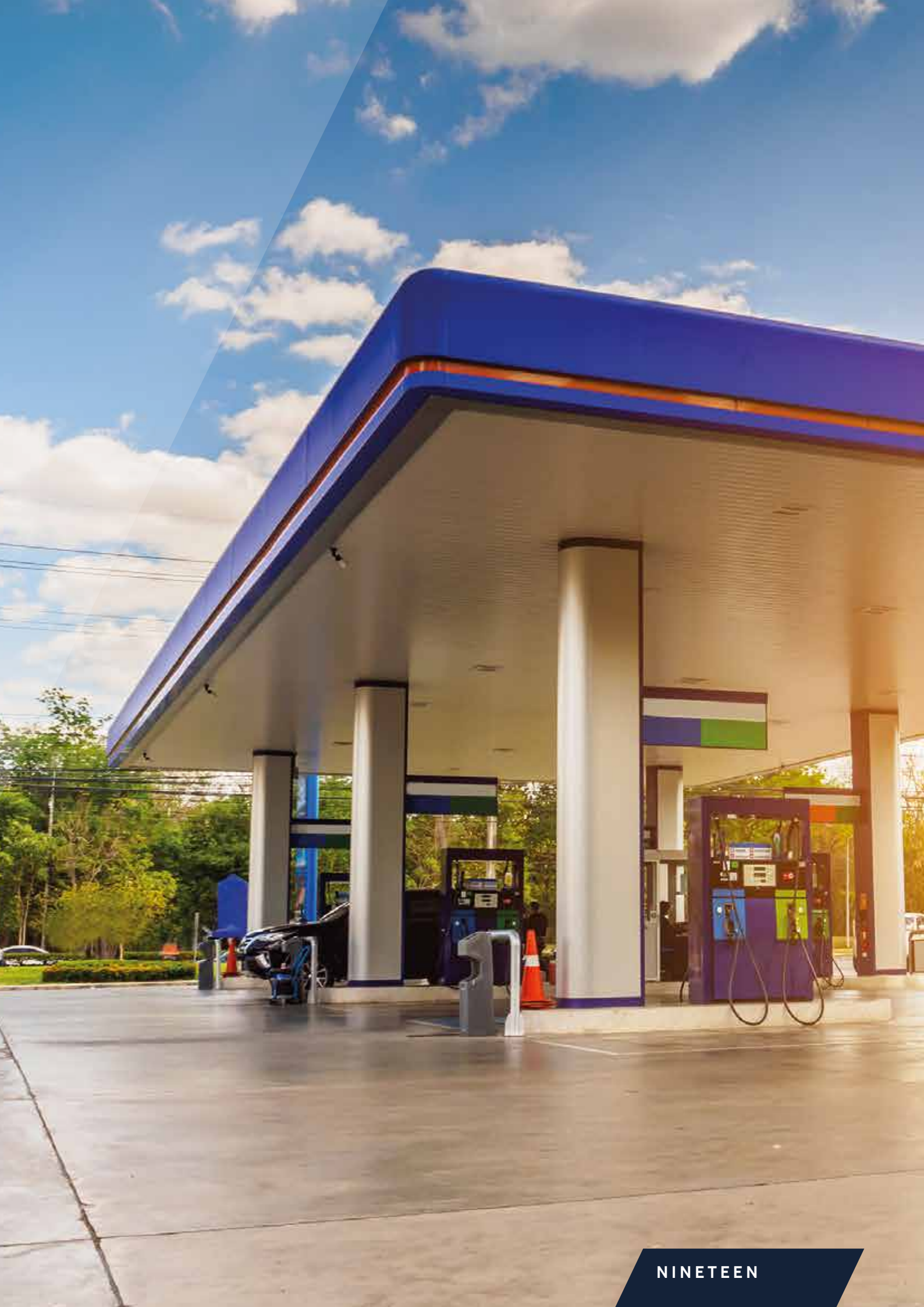
By examining the condition of each asset on your forecourt you can understand its current stage in the asset life cycle. This will also help to identify the type of maintenance required to extend its period of optimal working performance and its life expectancy.

Asset purpose

By understanding an asset's purpose and function you can also assess how important an asset is to your operations. Meaning you're aware of any potential impacts when an asset is temporarily disabled. This is crucial when compiling an asset maintenance plan. You should know how long the maintenance will take and if it will be performed outside of forecourt operating hours, as well as how costly downtime will be.

Monitor asset performance

Once a maintenance strategy is in place, it's critical to monitor your asset's performance. In doing so, you'll get a clear indication of how your plan is working. Performance can be measured by comparing the condition of an asset after a set number of intervals. As well as comparing the costs incurred when it comes to breakdowns and repairs.



Planned preventative maintenance

With a detailed asset maintenance plan in operation, your forecourt should be less likely to encounter a pollution event due to poorly maintained equipment. The additional element to add to a maintenance plan is continuous planned preventative maintenance.

The process of scheduling routinely planned maintenance is critical for forecourts that rely on their fuel assets for revenue. This is why preventive maintenance is an approach being adopted by more and more forecourt operators. The advantages of preventative maintenance on forecourts include:

- Reduced unplanned downtime of forecourt
- Fewer breakdowns of equipment and machinery that are essential for operation
- Improved reliability of critical assets
- Fewer expensive corrective and emergency repairs
- A prolonged life expectancy of assets leading to a lower turnover rate
- Improved collection of asset data
- Increased safety and reduced risk of injury

A correctly documented PPM schedule can help partners demonstrate they have taken all reasonably practicable measures to mitigate the risk of a pollution incident. This should be beneficial for any forecourt operator should an enforcement body investigate and subsequently issue fines and penalties.

Preventive maintenance is an approach being adopted by more and more forecourt operators.

A reliable environmental partner will supply you with the appropriate PPM schedule and all relevant documentation demonstrating that equipment is maintained in line with manufacturer's instructions, industry agreed good practice, and relevant standards.

They will also ensure that you have implemented an asset maintenance plan which will aid operations on your forecourt sites by ensuring optimum efficiency and also maximises the life of each of the assets.

Why implement any changes?

As we have discussed, it is clear to have a fully operational site then good, ongoing maintenance is essential.

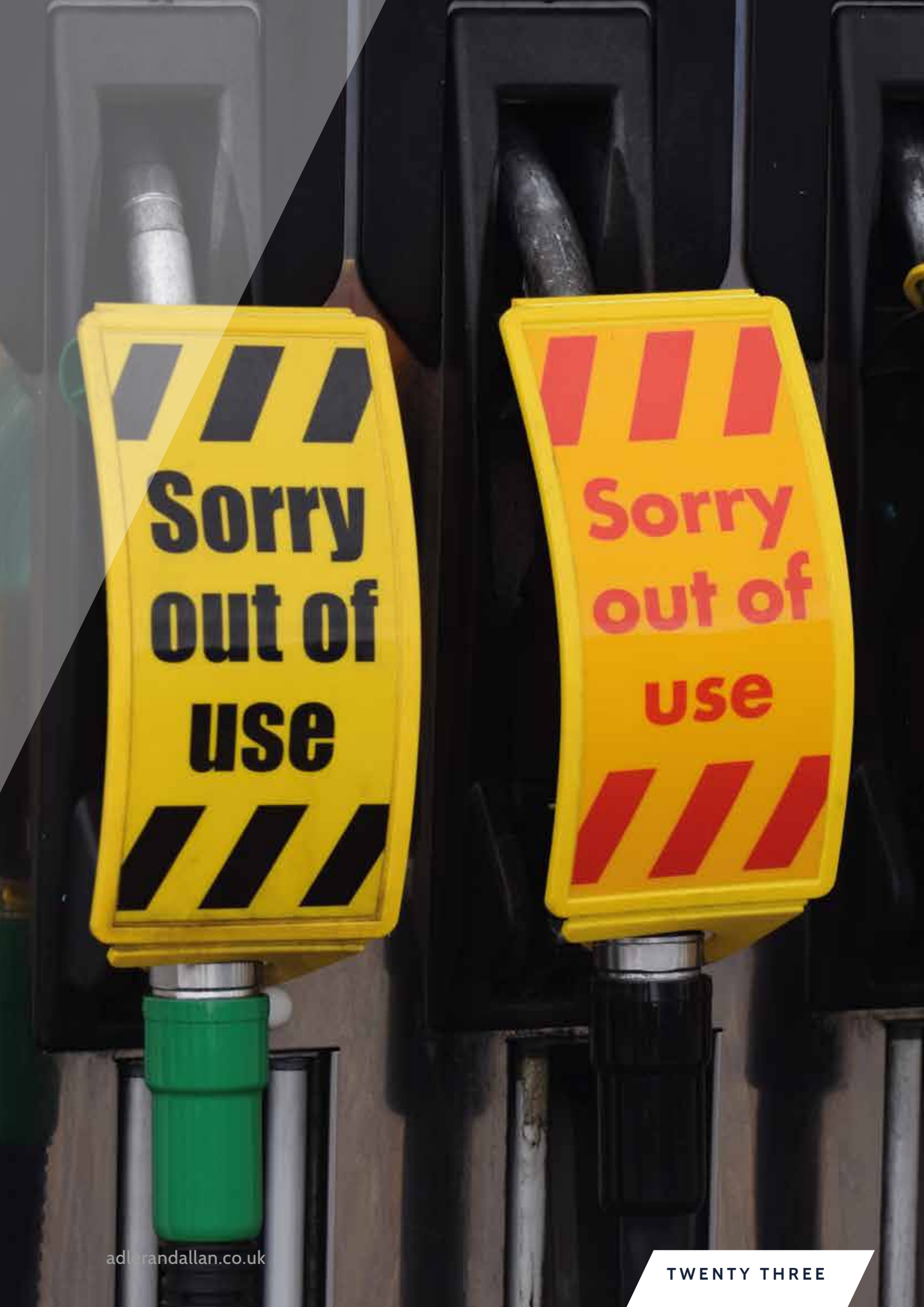
Sites that have fully operational separators, pumps, and other fuelling equipment will generate more revenue and will encourage repeat business from motorists, Sites that have pumps out of actions or forecourt closed or barriered off, do not perform well and deter customers.

The legislation relating to forecourts is clear, however the guidance and good practice is not always implemented, Problems can arise from poorly performing separators or incorrect storage of oils, In this event, many operators may find themselves open to prosecution, whereas compliance with good practice and guidance would have likely prevented the situation.

Ongoing site maintenance is paramount if operators wish to avoid excessive penalties. With the possibilities of businesses impacted heavily by fines after experiencing pollution events it can result in possible forecourt closures or sites out of action for extended periods.

Forecourts that are operated with preventative maintenance regimes are more likely to be fully operational and provide the services that motorists desire. Looking after their sites will reflect positively on them and operators will develop a good reputation for running a well-maintained forecourt.

Most importantly, protecting the environment is a legal requirement. Having procedures in place to help with the maintenance on forecourt sites helps to protect the local environment by reducing the risk of a pollution incident.


Sorry
out of
use
Sorry
out of
use

Ensuring compliance in a changing energy landscape

The forecourt environment is rapidly evolving to encompass current hydrocarbon provision with EV chargers and potentially hydrogen supply

During this transition it is even more critical that operators have proactive risk reduction services and tailored, specialist support that can significantly reduce the risk of an environmental emergency – and the penalties and fines imposed following a pollution incident. In doing so they are ensuring they are operating compliantly and reducing he opportunity of a pollution event.

If a pollution event should occur, enforcement action can be mitigated by demonstrating all reasonable endeavour was taken to implement proper prevention systems. This relies on detailed inspection and service records and ongoing maintenance of your forecourt site.

A compliant, well maintained, environmentally sound forecourt should be the starting point for any operator and working with a reliable environmental risk partner can maintain these levels and assist with legislation changes and new fuel developments.

Adler & Allan

ENVIRONMENTAL RISK REDUCTION

0800 592 827

adlerandallan.co.uk