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INTELLIGENCE UPDATE

Energy crisis elevates the importance of fuel management

Max Smolaks 17 Apr 2026

The ongoing military conflicts in the Middle East have caused diesel prices to increase by up to 40% in the US and up to 80% in other geographies. This has a direct and immediate impact on the majority of data center operators that use diesel-fueled standby generators to supply power to the facility in the event of a grid outage.

On-site fuel storage is essential to data center resiliency. Any disruption to fuel supply increases the costs of running the data center — with some regional markets affected more than others.

In much of Europe and the US, grids are relatively stable and outages are rare. Standby generators are mostly operated during testing and maintenance and, as a result, fuel consumption on-site is relatively low. The situation is different in parts of Africa, India and Asia-Pacific: grid outages can be frequent, resulting in a heavy reliance on standby generators (see *The effects of a failing power grid in South Africa*). Increasing diesel prices are having a greater inflationary effect on the costs of operating digital infrastructure in these markets.

As diesel prices continue to rise, operators may feel increasing pressure to adjust their practices to ensure on-site supplies last longer. There are measures they can take to boost the longevity of diesel stocks and minimize consumption.

Correct fuel storage pays dividends

The Uptime Institute Tier Standards mandate operators have at least 12 hours of fuel storage for all certified facilities, but many sites store supplies sufficient for as long as 48 or even 72 hours. In markets with stable grids, operators can temporarily reduce their storage minimums to avoid buying fuel at an inflated price. They should aim to use older fuel first.

Fuel longevity can be ensured with fuel polishing systems that remove contaminants such as water, microbes, particles and oxidation products. These contaminants accumulate over time and can clog filters, damage fuel injectors and cause generators to fail. Biodiesel and diesel blends are especially vulnerable to biological contamination as the primary constituent, fatty acid methyl ester (FAME), is hygroscopic and biodegradable.

Polishing systems are standalone pieces of equipment often integrated into the fuel supply system, and many operators already have them in place. Those that do not can take advantage of non-disruptive fuel polishing services offered by some fuel suppliers. The quality of fuel can

be monitored through regular fuel testing services, typically conducted by a third party.

Some Uptime Network members further recommend inspecting fuel tank lids and seals monthly to prevent water ingress, ensuring all fuel hoses and lines are properly maintained, and applying the same maintenance standards to the facility's day tanks as to their storage tanks.

Generally, it is recommended to store biodiesel (or blended biodiesel) for up to a year and mineral diesel for up to two years. However, with regular polishing and testing, diesel can be stored indefinitely.

Generator testing can wait

Some operators might want to revisit the frequency of generator testing. Testing weekly is common, but likely more frequent than necessary. There are no widely followed standards or recommendations for testing schedules, but Uptime consultants recommend testing on a monthly, or at least quarterly, basis.

Until diesel prices stabilize, shorter quarterly test runs are preferable, but this should be discussed with the genset manufacturer, because the equipment's age and climate conditions can affect testing requirements.

Genset maintenance runs, typically conducted once a year, can be combined with test runs for fuel efficiency. In regions where grid outages are frequent, an outage event can replace a generator test run.

HVO looks more attractive

Given rising costs of conventional diesel and biodiesel, some operators may choose this moment to switch to hydrogenated vegetable oil (HVO), increasingly branded as "renewable diesel."

HVO is a drop-in replacement for mineral diesel, made from waste food stocks, raw plant oils, used cooking oils or animal fats. It reduces carbon dioxide emissions by up to 90%, particulate matter by 10-30% and nitrogen oxides by 6-15% (see *Vegetable oil promises a sustainable alternative to diesel*).

HVO can be blended with conventional diesel or used at 100% concentration. It is FAME-free and not susceptible to microbial contamination, so 100% HVO does not require polishing. Many diesel genset manufacturers have tested and approved its use with their equipment.

Shortly before the Iran war, HVO carried a 10% premium over conventional diesel in Europe, which hosts some of the world's largest production plants. In the past two months, prices have increased due to growing demand and rising transportation costs, but if purchased at the right time, HVO can now be cheaper than diesel.

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Offerings include the organization's Tier Standard and Certifications, Management & Operations reviews and assessments including SCIRA-FSI financial sector risk assessment, the Sustainability Assessment, and a broad range of additional risk management, performance, availability, and related offerings. Uptime Education training programs have been successfully completed by over 100,000 data center professionals, such as the much-valued ATD (Accredited Tier Designer) and AOS (Accredited Operations Specialist). The Uptime Education curriculum has been expanded by the acquisition of CNet Training Ltd. In 2023.

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