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Decarbonizing Your Operations on the Path to Net Zero

As companies and large energy users implement carbon reduction strategies to meet their net-zero goals, the demand is growing for diversified clean energy fuel sources that still maintain operational resiliency. In light of these rapidly approaching net-zero goals, there is an urgent need to find sustainability solutions that can make an impact today and have long-term benefits. Organizations need to take a portfolio approach to meet decarbonization goals and avoid stranding existing grid and distributed assets as technology evolves.

Renewable fuels are helping organizations transition away from fossil fuels, without sacrificing power reliability, and accelerating their path to net zero. Renewable diesel and renewable natural gas (RNG), two emerging renewable fuel types, reduce carbon footprints across operations and are fully interchangeable with their fossil counterparts.

This article highlights the positive impact renewable fuels can have on an organization's decarbonization plan.

Fossil Fuel Consumption and the Rise of Alternative Energy Solutions

For more than a century, we have relied on fossil fuels, a finite natural resource, as our primary energy source. In 2020, fossil fuels (petroleum, natural gas and coal) accounted for 79% of total U.S. energy consumption and 90% of total carbon emissions, according to the U.S. Energy Information Administration. The electric power sector is the largest consumer of fuel, followed by the transportation and industrial sectors. Together, these sectors accounted for 88% of fuel consumption.

Diesel and natural gas are important to operations across every sector of the U.S. economy. They both also play a significant role in powering generators for critical industries, including schools, hospitals, factories, data centers, and military installations. Operations across these industries are becoming increasingly interconnected, making reliable uninterrupted power more important than ever. At the same time, severe weather events that impact the central electrical grid are becoming more frequent, driving up the need for backup generators, and therefore diesel fuel and natural gas. Without an alternative to fossil diesel and natural gas, organizations will be unable to achieve their net-zero goals.

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The Environmental Impact of Renewable Fuels: Accelerating the Path to Net Zero

Renewable diesel and RNG have the potential to displace a substantial amount of carbon emissions. In the last few years, diesel and natural gas consumption accounted for roughly 45% of total U.S. emissions, according to the U.S. Energy Information Administration.

Fossil diesel and natural gas are produced from decomposed remains of plants and animals that lived millions of years ago. When burned, these fossil fuels release carbon that was once sequestered deep inside the earth into the atmosphere. Renewable diesel and RNG, on the other hand, are carbon neutral because they are produced by using already existing carbon molecules in the stratosphere, which can be processed into renewable fuels over and over again. It's a virtuous, circular cycle. This means that no new carbon is released into the atmosphere.

Compared to fossil diesel, renewable diesel:

- Produces up to 80% less greenhouse gas emissions over its life cycle
- Emits no new carbon emissions from the engine and significantly less pollution
- And is produced from 100% renewable raw materials

Compared to fossil natural gas, RNG produces:

- 51% less greenhouse gas emissions over its life cycle
- 21x less potent emissions than methane released directly into the atmosphere

Not only do both renewable diesel and RNG burn cleaner than their fossil counterparts, but they drastically reduce emissions across their life cycles. Organizations that switch to renewable fuels can immediately reduce their emissions and, in turn, improve their carbon reduction goals and Environmental, Social and Governance (ESG) scores. Renewable fuels require no new infrastructure or equipment modifications, making them an attractive solution for organizations as they approach their net-zero targets.

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Looking Ahead

PowerSecure, a leading microgrid solutions company, provides clean and reliable power for everyday operation and back-up power during unanticipated grid outages. PowerSecure not only helps organizations achieve energy security but is also continuously improving its offerings to help them reach their sustainability goals. As organizations continue to develop their future-ready energy strategies, it is important to partner with a solutions provider that adapts with fuel technology changes. Flexible, forward-facing technology solutions will be key to building the future of energy and achieving net-zero goals for a brighter future.

Although the RNG supply chain is not yet fully developed, renewable diesel is currently available in California, Oregon, and other future-ready states with low-carbon fuel standards, as a fossil fuel replacement.

Renewable fuels are a today and forward-thinking solution with sustainability benefits across their life cycles. These drop-in-ready fuel sources seamlessly integrate with PowerSecure's PowerBlock generation systems, while delivering optimal performance to maintain operational resiliency.

To learn more about renewable fuels and how PowerSecure is helping customers prepare to be future ready, visit powersecure.com/renewable-fuel-ready.