

SPRING WISE



Oberon Fuels

These low-carbon and carbon-negative fuels could transform transportation, construction, and more

Spotted: In 2024, the World Economic Forum announced that hard-to-abate sectors (including heavy transport, cement manufacturing, and oil and gas) had cut their absolute greenhouse gas emissions for the first time between 2022 and 2023, reducing emissions by 0.9 per cent. But despite some progress, these industries continue to account for around 40 per cent of the world's greenhouse gas emissions, and have a way to go to be on track with 2050 net-zero targets.

Energy-intensive sectors like heavy transportation, heating, and industry are notoriously difficult to electrify, and urgently need more sustainable fuel options in order to decarbonise. Typically, this requires investment in expensive equipment and infrastructure upgrades, which companies often can't afford. US-based Oberon Fuels wants to help.

According to company Director and CEO Rebecca Boudreaux, Oberon Fuels works to leverage “existing infrastructure to deploy more renewable molecules faster,” helping the three billion people who depend on Liquefied Petroleum Gas (LPG) as key energy source switch to greener alternatives. The company does this with its renewable dimethyl ether (DME), which is made using renewable feedstocks like biogas and organic waste.

Oberon Fuels' renewable DME can be blended with propane (an LPG that's responsible for over two per cent of global CO₂ emissions) to create fuels with a significantly lower, and even negative, carbon intensity. According to the company, propane with a blend of up

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to 20 per cent renewable DME fuel will cut its greenhouse gas emissions by up to 60 per cent – without requiring any changes to existing handling procedures or infrastructure.

The company’s renewable DME could also accelerate the widespread use of renewable hydrogen fuel by making it much easier to transport. Every renewable DME molecule contains six hydrogen atoms, meaning that one LPG tanker could carry nearly four times as much hydrogen as a gaseous hydrogen tanker, with limited modification. To turn renewable DME into usable hydrogen on site, Oberon Fuels has also developed a patent-pending renewable-DME-to-hydrogen reformer technology. According to the company, this solution could cut the cost of transporting renewable hydrogen by 70 per cent compared with conventional methods.

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Oberon Fuels began commercial production of renewable DME back in 2021 at its Maverick Innovation Center in California, which has a production capacity of 1.5 million gallons per year. Boudreaux shared with Springwise that, having already been fabricated, the company’s skid-mounted reformer system “will undergo further assembly and commissioning” at the Center in 2025.

Boudreaux added that Oberon Fuels has already started the design of its second and third plants, with plans to begin production next year, and has also secured a multi-site feedstock agreement with a major agricultural partner. As well as scaling up the Oberon Fuels’ DME-to-hydrogen pathway, Boudreaux explained that the company is also expanding its focus “on producing low-carbon methanol for the maritime and chemical industries, which faces increasing pressure to reduce emissions.”

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