

Hydrogen: Opening More Lanes on the Road to Decarbonization

Some say the journey to zero-emission transport should stay in a single, battery-electrified lane. Others believe multi-lane highways will get us to decarbonization faster. At Dinex, we see hydrogen — in fuel cells and combustion engines — as vital complementary technologies, and if the market takes that lane, we have the solutions to support it.



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going the extra mile

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Battery-electric trucks and buses have proven their worth for urban and regional deliveries on predictable routes. But for the heaviest, long-distance applications, hydrogen's advantages stand out: it's carbon-free, offers more than three times the specific energy of diesel, and is easy to store, transport, and refuel.

The shift to hydrogen-powered transport is likely to come in two waves: first with hydrogen combustion engines (H_2 -ICE), and later with fuel-cell electric vehicles (FCEVs). Here's a quick look at each technology, why both matter, and how Dinex delivers the systems that make them work.

Step no.1: The Hydrogen Combustion Engine

Not long ago, the idea of a hydrogen-fueled engine was met with skepticism. This year, MAN launches a 200-vehicle pilot series, other major OEMs are presenting prototypes, and JCB holds one of the world's first type approvals.

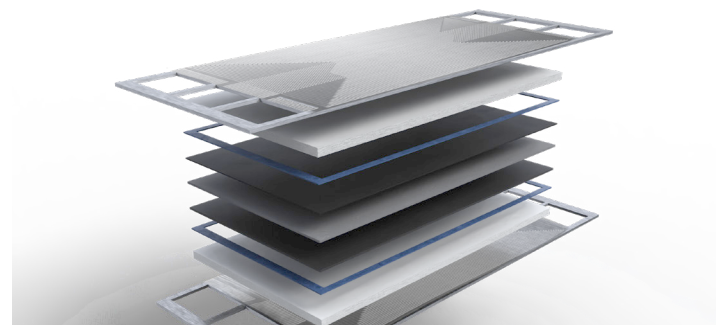
Technically similar to today's gas engines, an H_2 -ICE allows OEMs to use their existing production lines and supply chains, making it a rapid first step toward hydrogen transport and the refueling infrastructure it requires.



Burning hydrogen produces almost no CO_2 , but NO_x still needs control — and Dinex's NO_x Slip Catalyst (NSC) with SCR keeps emissions comfortably within the strictest limits.

Step 2: Hydrogen Fuel Cell Electric Vehicles

FCEVs use hydrogen to generate electricity for an electric drive-train, with only water vapor as the by-product. Still in the early stages for trucks, they are viewed as the long-term option where battery-electrification is less suitable.



At their core is a catalyst-coated membrane (CCM), where hydrogen and oxygen react to produce electricity. Dinex's high-performance CCMs combine durability and efficiency, and are tailored for Heavy-Duty applications.

Ready with solutions for all lanes

From hydrogen combustion engines to fuel cells, the road to zero-emission transport needs more than one lane. At Dinex, we already provide aftermarket solutions that make existing vehicles a little greener, while using decades of catalyst-coating expertise to help OEMs bring hydrogen-powered transport to market. And when the time comes, we'll remain a strong, full-system partner to the aftermarket for service, maintenance, and replacements. So whatever lane the market chooses, we'll be there to drive a greener and cleaner future.

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