

Decarbonizing Transport with Hydrogen

Researching the development of hydrogen-powered vehicles to decarbonize transport in India

[Entoo](#) is an EV-first fleet that solves the problem of last-mile logistics of customers across eCommerce, food tech, and grocery verticals, with a fleet of more than 3000 electric 2-wheelers and more than 300 electric three-wheelers. However, they have not expanded into first mile and long distance line haul as they do not have appropriate vehicles identified for the same.

Entoo is hence currently exploring vehicles using hydrogen fuel.

Two years after the Paris Agreement, at the COP23 meeting in Bonn, the Hydrogen Council—a consortium of 18 companies in the automotive, oil and gas, industrial gas, and equipment industries—presented its vision of how hydrogen can contribute to the ambitious climate targets. It considered hydrogen an enabler of the transition to a renewable-energy system and a clean-energy carrier for a wide range of applications. If serious efforts are made to limit global warming to 2 degrees, the council estimated that hydrogen could contribute around one-fifth of the total abatement needed by 2050. This vision is ambitious but feasible if policymakers, industry, and investors step up efforts to accelerate the deployment of low-carbon technologies.

Hydrogen is a versatile energy carrier and can be produced with a low carbon footprint. Decarbonizing transportation is one of the main missions of Entoo. Today's transportation sector depends almost entirely on fossil fuels and creates more than 20 percent of all CO₂ emissions. Hydrogen-powered vehicles, with their high performance and the convenience offered by fast refueling times, can complement battery electric vehicles to achieve a broad decarbonization of transport segments.

Not only are battery electric vehicles (BEVs) and fuel-cell electric vehicles (FCEVs) not competing, but the growing success of BEVs may actually drive uptake of FCEVs. Both technologies benefit as electric mobility becomes widely accepted and growing scale reduces the costs of electric drivetrains and other components. Industry experts believe that the total cost of ownership of BEVs and FCEVs could converge over the next decade and become competitive with internal-combustion-engine (ICE) vehicles 12 or 15 years from today.

Based on their entire lifecycles, FCEVs achieve very low CO₂ emissions, in part because they don't require large batteries whose production is energy and resource intensive. Even when FCEVs use hydrogen from natural gas without carbon capture, they emit 20 to 30 percent less CO₂ than vehicles powered by internal combustion engines. In reality, hydrogen is already less CO₂ intensive than this: a number of refueling stations draw their hydrogen supply from electrolysis with renewable electricity, and production from fossil sources can be paired with effective carbon capture and storage.

There is hence a need to research the development of hydrogen-powered vehicles to decarbonize the transportation sector in India.

What Does The Winning Company Get?

An opportunity to conduct a pilot implementation of the technology in Entoo's existing massive infrastructure in India. Integrators and startups can be plugged in easily to Entoo's operations if the pilot is successful.

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