

# Green hydrogen: India Inc's next big thing

Even as policies and supply chain take shape, conglomerates and RE companies are investing heavily in this new fuel

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New Delhi/Chennai, 25 August

A central guiding policy on this fuel is on the drawing board with unique incentives and a regulated supply chain is yet to emerge. But marquee names in India Inc as well as renewable energy (RE) companies have already bet big bucks in green hydrogen manufacturing.

Most major industrial houses are doing so as part of their decarbonisation drive. Leading this pack is Reliance Industries Limited (RIL), which, sources said, plans to utilise the green hydrogen it produces for in-house consumption initially, not retail sales. This is in line with its ₹75,000 crore green energy push announced in 2020.

"There is immense demand in the various arms of the conglomerate for green hydrogen so that priority would be to meet that. The production plan is fairly large scale, enough to bring the cost down. The company is looking to utilise global technology to reduce manufacturing costs," said a source privy to the matter.

In October 2021, RIL joined hands with Danish company Stiesdal A/S to develop and manufacture hydrogen electrolyzers.

On almost similar lines, state-owned oil marketing company Indian Oil Corporation aims to replace at least a tenth of its current fossil-fuel-based hydrogen at its refineries with carbon-free green hydrogen.

In fact, most companies plan to consider captive use first. The Hinduja group, which launched its renewable energy business in 2016, is looking to expand in green hydrogen manufacturing for this purpose. Sumit Pandey, CEO, Hinduja Renewables, told *Business Standard*, that there is a large in-house



## GREEN SIGNALS

■ RIL, as part of its ₹75,000 crore green investment push, will set up electrolyzers for manufacturing green hydrogen. Aim - 1-1-1 = 1 kg hydrogen at \$1 in 1 decade

■ Adani Petrochemicals to commence business with a variety of green fuel offerings

■ Adani New Industries Ltd to

invest \$50 billion along with TotalEnergies in building a green hydrogen ecosystem

■ ACME to invest \$1.5 trillion in Tamil Nadu, Karnataka and Oman over the next 7 years for green hydrogen production

■ L&T commissioned its first green hydrogen manufacturing unit to produce 45 kg daily

requirement across segments, from transport to fertiliser, steel, and even fuel blending.

"We want to leverage the group's presence in the supply chain across sectors. Transport would be one major sector. While still in initial stages, we are in discussion with foreign companies to partner for technology tie-ups," he said.

Commercial vehicle maker Ashok Leyland, part of the Hinduja group, plans to include multiple fuels in its portfolio. "We are working on multiple alternative fuels such as compressed natural gas/liquefied natural gas, methanol, and hydrogen with various key partners and look forward to having a complete portfolio of commercial vehicles in the alternative fuel area in the next two-three years," N Saravanan, chief technology officer, told this paper recently.

Hinduja Renewable, which already has a 360 Mw of solar power capacity,

is planning to combine the green energy synergy with hydrogen manufacturing. "These are initial plans but there is definitely an emerging supply synergy with group companies such as Ashok Leyland, Hinduja Agro, steel manufacturing and even fuel blending through our group company Gulf Oil," Pandey said.

But there are others that are looking to cash on this growing market. Leading the pack is Adani Enterprises Limited, which has launched a separate petrochemical company and a new energy company with the core focus on green fuels. Adani Petrochemicals plans to offer a variety of green fuels and utilise its supply chains and RE units for production and transport.

The company has a four-pronged plan to manufacture Green Hydrogen, Green Methanol, Green Ammonia and Green Fertiliser, said senior executives. For each fuel, the company plans to reach out to different sets of buyers. It

will also participate in Central government tenders for green hydrogen and fertilisers, said sources.

Adani has partnered with French major TotalEnergies to create "the world's largest green hydrogen ecosystem". In this strategic alliance, TotalEnergies will acquire 25 per cent in Adani New Industries Ltd (ANIL) from Adani Enterprises Ltd (AEL), a recent company statement said. ANIL is looking to invest close to \$50 billion over the next 10 years in green hydrogen and allied ecosystems.

Among the manufacturing majors, L&T last week commissioned a green hydrogen plant at its A M Naik Heavy Engineering Complex in Hazira, Gujarat on August 20. Currently in the pilot stage, the hydrogen would be utilised in-house by blending with natural gas in the manufacturing process, a company said.

Gurgaon-based ACME Group has said it is planning to invest about ₹1.5 trillion in green hydrogen and ammonia for its upcoming units in Tamil Nadu, Karnataka and Oman. The RE company is also looking for foreign equity partners and off-take tie-ups for these projects. "Over the next seven years, we will be investing ₹1.5 trillion on three projects. We expect phase-1 of the Tamil Nadu unit to be ready by 2024," Sandeep Kashyap, chief operating officer, ACME Group, said.

Another renewable energy major ReNew Power has recently signed a preliminary agreement with the Egyptian government to invest \$8 billion to produce green hydrogen in the country.

Despite this bullishness, prices will be competitive only with an assured market. "Offtake would need government support. Blending targets, viability gap funding, and demand aggregation from key sectors can help bring the price down," Pandey said.

The current cost of green hydrogen in the country is around \$5 per kg. The Union ministry of new and renewable energy is drafting a standard bidding document (SBD) for awarding manufacturing tenders for green hydrogen. The ministry is considering 4,000 million tonne production annually, and is in discussions with the ministry of fertilisers for off-take, said senior officials.

The SBD is part of the Green Hydrogen Policy announced by the Centre in February this year. It outlines the purchase obligation of green hydrogen for several industries and also offers several incentives like open access and waiver on transmission charges. The ministry is looking to offer demand aggregator tenders for procuring green hydrogen. Clearly, India Inc is readying itself in anticipation of a well-defined policy.