

New Policy To Cut Green Hydrogen Cost By 40-50%: Indian Oil Corporation

IOC will set up green hydrogen plants at its Mathura and Panipat refineries by 2024 to replace carbon-emitting units

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New Delhi: India's largest oil firm Indian Oil Corporation (IOC) will set up 'green hydrogen' plants at its Mathura and Panipat refineries by 2024 to replace carbon-emitting units as it sees the just announced green hydrogen policy as a watershed moment in the country's energy transition that will help cut costs.

SSV Ramakumar, director for research and development at IOC, says the new policy will help cut the cost of manufacturing green hydrogen by 40-50 per cent.

"This (policy) is the single biggest enabler by the state for production of green hydrogen," he said.

Oil refineries, fertiliser plants and steel units use hydrogen as process fuel to produce finished products.

In refineries, hydrogen is used to remove excess sulphur from petrol and diesel. This hydrogen presently is produced from fossil fuels such as natural gas or naphtha and results in carbon emissions.

IOC plans to replace this 'grey hydrogen' with 'green hydrogen' – also referred to as 'clean hydrogen' – by using electricity from renewable energy sources, such as solar or wind power, to split water into two hydrogen atoms and one oxygen atom through a process called electrolysis.

"The headline cost of renewable electricity at ₹ 2 per kWh (or per unit) is actually the price at the generation site (say solar farm in Rajasthan or Ladakh). This becomes ₹ 4 to 7 per unit after adding different levies during its transit through transmission lines in different states," he said.

At a factory-gate cost of ₹ 4 to 7 per unit, green hydrogen production costs come to ₹ 500 per kg. This cost compares with the current grey hydrogen cost of ₹ 150 per kg.

Under the green hydrogen policy announced on February 17, the renewable energy used for green hydrogen production will get open access without central surcharge and zero inter-state transmission charges for 25 years for projects commissioned before June 30, 2025.

"This will essentially bring the cost of green hydrogen production down by 40 to 50 per cent," he said.

The cost will go down further if electrolyzers, used to split water into two hydrogen atoms and one oxygen atom, are indigenously manufactured instead of the present practice of importing them, he pointed out.

IOC plans to set up a 40 MW electrolyzer at Mathura refinery and a 15 MW unit at Panipat unit in Haryana, he said, adding the firm is targeting to produce 70,000 tonnes a year of green hydrogen by 2030, accounting for 10 per cent of its overall consumption by that time.

The government on February 17 announced the first stage of policies to encourage green hydrogen and ammonia development in the country, with plans to reach 5 million tonnes per annum of output by 2030.

Comments