

Jakson Green to execute world's first flue gas CO₂ to 4G ethanol plant

The project at NTPC's Lara super thermal power station will synthesize fourth-generation ethanol from carbon dioxide captured from waste flue gas and green hydrogen generated through electrolysis.

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Bikesh Ogra, managing director and global chief executive officer of Jakson Green

Jakson Green

Jakson Green has secured NTPC order to establish the world's first flue gas CO₂ to 4G ethanol project. The project will come up at NTPC's Lara super thermal power station in the Indian state of Chhattisgarh.

The plant will draw carbon dioxide from waste flue gas to synthesize 4G-Ethanol, reducing greenhouse gas emissions and enabling the transition towards sustainable aviation fuel.

Jakson Green will execute this project as the licensing, engineering, procurement, and construction partner. The project is scheduled to start operation within two years.

The plant has been conceptualized and designed by NETRA (NTPC Energy Technology Research Alliance), the R&D arm of NTPC Ltd.

The project will produce 10 tons of 4G Ethanol from flue gases per day.

“Using the latest Carbon capture technology by Veolia Carbon Clean, the plant will capture 25 tpd CO₂ from the flue gases, significantly reducing greenhouse gas emissions. Additionally, 3 tpd green hydrogen will be generated through 7.5 MW electrolyser. The captured CO₂ and generated H₂ are combined via advanced microbial fermentation technology from LanzaTech Inc., converting these inputs into 4G Ethanol,” stated Jakson Green.

Kannan Krishnan, joint managing director of Jakson Green, said, “Increasing the production of Ethanol is crucial to achieving India’s blending goals, strengthening energy security, and fostering a cleaner future. We are proud to be at the forefront of this transformative project, paving the way for a brighter, more sustainable future.”

Jakson Green has over 8,500 tpa of green hydrogen and its derivatives production capacity under development across six Power-to-X projects.

Jakson Green, a new energy transition platform backed by India headquartered infrastructure and renewable company, Jakson Group, focusses on installation, commissioning, operation and maintenance of new energy assets spanning solar, utility-scale storage, waste-to-energy, fuel cell technologies, gasification-based projects, green hydrogen, and green ammonia projects. Promoted and led by Bikesh Ogra, a renewable sector veteran with over 10GW of experience across 26 countries, the firm has built up an impressive global presence in a short span since its inception and plans to deliver 15 GW by 2030.

The firm has recently set up an electrolyser manufacturing unit, besides building and operating green hydrogen assets globally, in line with its vision of being a power-to-X player cumulatively producing over 0.5 million tons per annum of green hydrogen/ammonia by 2030.