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# GREEN IS FOR GO

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**T**amil Nadu is riding high on green investments. It launched an electric vehicle policy earlier this year and will unveil its green hydrogen policy in a couple of weeks. While Gujarat, Himachal Pradesh, Uttar Pradesh and Rajasthan are also drafting or launching green hydrogen policies, Tamil Nadu has actually green-lit three big projects by ACME, Petronas and Greenko. All three are acquiring financing, and land around Tuticorin.

“Our green hydrogen policy should be out in a matter of weeks,” says S Krishnan, additional chief secretary, industries. Tamil Nadu, he adds, is the only state to “actually clear commercial proposals in green hydrogen. Following the three big proposals, the state has received expressions of interest from 7-8 other companies.”

But what is green hydrogen and why is it the flavour of the season? Green hydrogen is produced through electrolysis of water with electricity generated from renewable sources such as solar and wind. Hence, carbon emission is low. According to the National Green Hydrogen Mission, India has set a target of 5 million tonnes of green hydrogen by 2030 and ₹8 lakh crore in total investments. Tamil Nadu is one of 10 states identified by the Union government as a potential hub.

“The majority of existing hydrogen industries are concentrated in Tamil Nadu, Gujarat, Maharashtra, Karnataka, Madhya Pradesh, West Bengal, and Odisha,” says Manish Dabkara, CMD of EKI Energy Services, and president, Carbon Markets Association of India

(CMAI). “These states will be the primary beneficiaries and adopters of green hydrogen, particularly within sectors such as refineries, fertilizer plants, and steel plants,” he adds.

For Tamil Nadu, what makes green hydrogen attractive is the typically large project size. The state has “drawn investments of more than ₹86,000 crore, in line with the state’s goal of becoming carbon neutral by 2050,” says Ar Rm Arun, president, Southern India Chamber of Commerce & Industry. This includes the top two investments in FY22-23 – ACME Group’s ₹52,474 crore green hydrogen and ammonia project and Malaysian MNC Petronas’ ₹30,000 crore investment in a green hydrogen plant. ACME is buying land for solar installations while Petronas is scouting for 10,000 acres in Tamil Nadu.

The third big green hydrogen proposal is from Greenko.

For Tamil Nadu, this is an inflection point since green hydrogen fits its natural advantages. “Tamil Nadu has some of the best wind power, which reduces the cost of green hydrogen as it means longer duration of renewable energy. A combination of solar and wind energy can achieve 70%-80% utilization of electrolyser plant. Ease of doing business is another big positive. Its combination of projects and policy will give it an edge,” says Hemant Mallya, fellow, Council on Energy, Environment and Water (CEEW). More importantly, the state is located on the east coast, which is a key shipping route for global trade. “This could help make Tamil Nadu a hub for the export of green hydrogen,” says Arun. Till domestic demand picks up, most of the green-lit projects will be export oriented and, despite the huge investments, labour light.

“We need to see if green hydrogen can be used in local markets as well,” says Krishnan. “Given that most of the steel and fertilizer production happens upcountry, the uses for green hydrogen in Tamil Nadu are limited. So most of the capacity will be for export,” he says.

TN’s ambitions will face challenges. For one, supplying renewable power, says Krishnan. Typically, he explains, renewable sources produce three to four times more power in off-peak hours, which the grid needs to evacuate, absorb and then transmit at a viable rate. This requires grid upgradation. What will be the extent of the infrastructure upgrade and who will pay for it? The state will have to find answers.

Another challenge will be competition from other states. “There are a lot of conversations happening in Rajasthan and Gujarat,” says Mallya. Players such as L&T, Reliance, NTPC, Greenko, and ACME are all looking at green hydrogen plans. “The generation cost of green hydrogen is 6-7 times the cost of coal and 2-3 times the cost of natural gas. So, to begin with, projects will be export oriented,” says Mallya. Also, early projects will most likely hard couple captive renewable power with green hydrogen projects. So, existing renewable energy sources may not be critical to swing investments. For Tamil Nadu, the trick will be to not take the foot off the accelerator:

### TN’s GREEN EDGE

- Green-lit investments worth more than ₹86,000 crore
- Green hydrogen policy to be announced in a couple of weeks
- Home to industries that could benefit from using green hydrogen, such as automotive, electronics, chemical and steel sectors
- Strategic location on the east coast, a key shipping route, which could make state a hub for export of green hydrogen
- Resources, workforce and government support to attract and retain green hydrogen investments
- Renewable power hub particularly in wind energy