

ENERGY TRANSITION

Ecopetrol advances green hydrogen plant at Cartagena refinery

With the assembly and interconnection phase of all auxiliary and balance-of-plant equipment now under way, the operator said it expects the green hydrogen plant to begin operations sometime during first-half 2026.

Robert Brelsford • Jan. 2, 2026 • 2 min read



Ecopetrol plans to produce green hydrogen at subsidiary Refinería de Cartagena SAS's (Reficar) 210,000-b/d refinery in the Mamonal Industrial Zone on Cartagena Bay, Colombia.

State-owned **Ecopetrol** SA has started implementation of a project to produce green hydrogen at subsidiary Refinería de Cartagena SAS's (Reficar) 210,000-b/d refinery in the Mamonal Industrial Zone on Cartagena Bay, south of Cartagena, on Colombia's northern coast.

Previously estimated at an [overall investment of about \\$28.5 million](#), the new plant aims to produce up to 800 tonnes/year (tpy) of low-carbon green hydrogen using proton exchange membrane (PEM) electrolyzer technology, main equipment for which **Ecopetrol** began formally installing in late 2025, [the operator said](#).

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Manufactured in the US, **Ecopetrol** confirmed the plant's main 5-Mw electrolyzer and accompanying equipment include:

- A water purification system to help guarantee quality specifications required for the production process.
- A power system responsible for adapting 26 Mw of [renewable energy sourced directly from the refinery's 2024-completed on-site solar farm](#).
- A process system in which actual electrolysis occurs, where oxygen and hydrogen molecules are separated from water via use of an electric current.

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Once up and running, the new plant's production of green hydrogen will have a purity of 99.99% and prevent up to 7,700 tpy of carbon dioxide (CO₂) emissions, or the equivalent of removing 1,650 vehicles from the roadway, according to [Ecopetrol](#).

Green hydrogen produced by the plant—which, once online, will employ artificial intelligence in its operational and maintenance phases—specifically will be used to replace gray hydrogen the refinery currently uses in its conversion processes to ensure the site's production of cleaner, higher-quality, lower-carbon fuels for the regional market in line with Colombia's journey to decarbonization of its domestic economy, the company said.

With the assembly and interconnection phase of all auxiliary and balance-of-plant equipment now under way, the operator said it expects the green hydrogen plant to begin operations sometime during first-half 2026.

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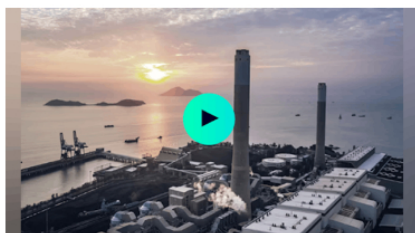
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Petrobras said the deal is a "significant" step into the solar power generation segment, and reinforces its commitment to diversifying its portfolio and building a more sustainable future.

[Mikaila Adams](#) • Dec. 17, 2025 • 2 min read



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