HYDROGEN POWER

# OCI to produce green ammonia and methanol in Texas

## Ammonia production will use hydrogen from a new electrolysis plant

*by Alexander H. Tullo*

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Credit: Port of Rotterdam
Maersk recently fueled a container ship with green methanol.

The Dutch chemical firm OCI has secured the feedstocks it will need to significantly ramp up production of both green ammonia and green methanol in Beaumont, Texas.

OCI will buy green hydrogen from New Fortress Energy, which is developing a 100 MW water electrolysis plant based on proton exchange membrane technology. That unit will run on renewable energy to produce about 17,000 metric tons (t) of hydrogen per year by 2025. OCI will use the hydrogen to produce 80,000 t of ammonia per year. OCI plans to double capacity to 160,000 t per year in 2026.

Like other nitrogen fertilizer makers, OCI has been pushing into low-carbon ammonia production. It is also collaborating with the industrial gas supplier Linde on a blue ammonia project in Beaumont. Linde is building an autothermal reformer to make hydrogen from natural gas; by-product carbon dioxide will be captured for storage. OCI is building the project's ammonia plant, which will start up in 2025.

OCI also plans to double green methanol production at an existing facility in Beaumont to 400,000 t per year. The additional production will be based partly on renewable natural gas, which is derived from sources such as landfill emissions. The company says it will also use electrolysis-derived green hydrogen to make methanol.

OCI has been promoting low-carbon methanol as an alternative ship fuel. The firm recently fueled a new Maersk container ship in Rotterdam with green methanol.

Ian Hayton, lead analyst for materials and chemicals research at the Cleantech Group, a consulting firm, says green hydrogen and downstream chemicals may get more competitive over time as renewable energy costs decline and electrolysis units become more efficient and achieve greater economies of scale.

But the competitiveness of such projects will depend on the region, Hayton says. Areas rich in alternative energy potential, like Western Australia, will have an edge. Likewise, Texas is “highly attractive in terms of renewable energy availability,” he says. The state also benefits from strong US government incentives for low-carbon hydrogen such as those in the Inflation Reduction Act.

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