

The world's first carbon-neutral fuel plant kicked off in Strait of Magellan, Chile

Carbon-neutral fuel, commonly known as e-fuel or **green hydrogen**, is the new sustainable transportation gasoline made from renewable energy sources, seawater and wind. With the help of electricity, this energy source does not release additional carbon dioxide but is zero-carbon. This breakthrough, according to eFuel Alliance, has made it compatible to be used for power vehicles, airplanes, ships, to all heating systems that use liquid fuels in addition to the land transportation mode.

To generate green hydrogen, the water is separated into its two components—oxygen and hydrogen—with the wind-power electrolyzes. The wind, likewise, is filtered with direct air capture (DAC) technology to strip the CO₂ from the ambient air. The last step of producing carbon-neutral fuel would be combining them to form synthetic methanol.

In the last quarter of 2020, Siemens Energy and Porsche collaborated with Italian energy company Enel, Chinese energy firm AME, and Chilean petroleum company ENAP to build a mill of e-fuel in Cabo Negro, Strait of Magellan, southern Chile. This region was chosen due to its strong wind conditions, which also resulted in a low cost of electricity for the production as well as export and distribution of the e-fuel.

A year after, the world's first carbon-neutral plant named Haru Oni project has finally begun to operate. This groundbreaking project is planned to produce around 130,000 liters of e-fuels per year by the end of 2022. This number, as reported by Global Construction Review, would be increased sharply to about 55 million liters per year by 2024 and around 550 million liters per year by 2026. Siemens Energy claimed that this figure is enough fuel for over one million people to drive their cars with climate-neutral petrol for nearly a year.

As a matter of fact, carbon-neutral fuel has been one of the plans of the Ministry of Energy of the Government of Chile to reduce carbon emission and create a clean industry. With the Green Hydrogen Strategy, the Ministry of Energy expects Chile to be the leader in the production of green hydrogen by 2030 and phase out all coal capacity before 2040.