

January 9, 2025
Sojitz Corporation

Sojitz Supports Turquoise Hydrogen Production Technology Development with Additional Investment in Hycamite TCD Technologies in Finland

- Starting Industrial-Scale Plant Operations at the Beginning of 2025 to Accelerate Commercialization -

Sojitz Corporation ("Sojitz") has undertaken part of a capital increase in Hycamite TCD Technologies Oy ("Hycamite") in Finland, a developer of turquoise hydrogen*¹ and high value-added solid carbon (C) production technology, through a third-party allotment of shares. Following Sojitz's initial investment in Hycamite in July 2023, Sojitz has now become the largest shareholder in Hycamite after this most recent additional investment in the company. Hycamite has raised a total of EUR 44 million in Series A funding, including the capital increase carried out last year. Funds raised will be allocated to an industrial-scale plant in Kokkola Industrial Park in western Finland for operational and demonstration testing. This industrial-scale plant will be capable of producing 2,000 tons of turquoise hydrogen annually (approximately 2,880Nm³/h),*² which is the largest production volume in Europe, and the plant is expected to begin operations at the beginning of 2025.



[Exterior of industrial-scale plant (left) and plant interior (right)

at Kokkola Industrial Park in western Finland completed in September 2024]

Hycamite is a Finnish startup company founded in 2020 and a developer of a technology that produces hydrogen (H₂) and solid carbon (C) through thermo-catalytic decomposition of methane (CH₄), which is the main constituent of natural gas and biogas. Hydrogen produced through this method of methane splitting is known as "turquoise hydrogen"* and is garnering attention as the next-generation hydrogen production method due to the fact that carbon dioxide (CO₂) is not released in the process. Hycamite has developed revolutionary proprietary catalytic technology that requires less energy (only 13% of the energy that is used to produce hydrogen through standard electrolysis), which is one of the company's

strengths. Additionally, Hycamite is capable of joint production of graphite, carbon nanofibers, and other high value-added solid carbon products. These solid carbon products are produced without emitting carbon dioxide (CO₂) and meet demand for sustainable materials with a wide range of applications such as lithium-ion batteries, cement, and tires.

Through this additional investment, Sojitz will strengthen its partnership with Hycamite to accelerate the formation of projects that use Hycamite's technology in Japan and overseas. Sojitz aims to realize commercialization of turquoise hydrogen production by the second half of the 2020s, and Sojitz is currently engaged in discussions with potential partners such as electricity and gas companies, chemical manufacturers, and other manufacturing companies. Solid carbon products manufactured through joint production will be marketed to battery manufacturers, construction companies, and tire companies by leveraging Sojitz's customer networks both in Japan and overseas.

Sojitz has defined green transformation (GX) fields as a strategic area of focus under Medium-term Management Plan 2026. By establishing a specialized in-house organization dedicated to GX, Sojitz is working to actively allocate resources to GX-related businesses in order to contribute to the realization of a carbon neutral society and to increase both Sojitz's earnings and corporate value. Sojitz will strengthen its partnership with Hycamite to advance commercialization of turquoise hydrogen production with the aim of contributing to decarbonization efforts across multiple industries worldwide.

*1: Hydrogen color codes

Grey Hydrogen	$\text{CH}_4 + 2\text{H}_2\text{O} \rightarrow 4\text{H}_2 + \text{CO}_2$
Blue Hydrogen ^{*2}	$\text{CH}_4 + 2\text{H}_2\text{O} \rightarrow 4\text{H}_2 + \text{CO}_2$
Green Hydrogen ^{*2}	$2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$
Turquoise Hydrogen ^{*2}	$\text{CH}_4 \rightarrow 2\text{H}_2 + \text{C}$

Hydrogen is color coded based on the type of production method used. At present, grey hydrogen derived from fossil fuels is most common. Blue hydrogen is produced from fossil fuels but includes storage of CO₂ underground to reduce emissions into the atmosphere. Green hydrogen is produced using renewable energy to electrolyze water. Turquoise hydrogen refers to the production of hydrogen through thermal decomposition of methane, which is the main component of natural gas.

*2: Hycamite research

[Related Information]

[Company Overview – Hycamite TCD Technologies Oy]

Hycamite is a Finnish startup founded in 2020. Hycamite developed its technology leveraging the University of Oulu's more than 20 years of catalytic technology research. Finland has abundant natural mineral resources, and the country has a long history of developing metallurgical technology. Hycamite carries on this tradition of metallurgical prowess, and the company strives to develop its turquoise hydrogen and high value-added solid carbon production technology for commercialization.

Head Office	Kemirantie 15, 67900 Kokkola, Finland
CEO	Laura Rahikka
Website	https://hycamite.com/

[Related News]

July 18, 2023

[Sojitz Invests in Hycamite TCD Technologies Oy in Finland, a Developer of Turquoise Hydrogen Production Technology](#)