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News Release

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Nittobo

Nittobo to Start Hydrogen Combustion Test at Its Fukushima Factory

In February 2024, we will start a demonstration test to use hydrogen–oxygen as a combustion energy source for a glass melting furnace in the Fukushima Factory (Fukushima City, Fukushima Prefecture) of our Glass Fiber Division. Currently, the furnace runs on city gas–oxygen. The test will initially start for a 10% equivalent substitution. We aim for full conversion to hydrogen–oxygen combustion eventually.

The Nittobo Group has continually promoted the use of new technologies and fuel conversion to reduce CO₂ emissions from the glass melting furnaces and to improve the energy efficiency. We have decided to move forward with the studies aiming to establish a novel glass fiber manufacturing process based on the use of green hydrogen and other next-generation energies to help realize carbon neutrality.

In the planned hydrogen combustion test, some city gas burners in the glass melting furnace will be replaced with hydrogen burners. Hydrogen will be delivered using a self-loader truck. The combustion energy of hydrogen–oxygen will be introduced in combination with that of city gas–oxygen to melt the glass. In this first test of a relatively short duration, various data will be collected for the analysis and verification necessary for the planning of more extensive hydrogen combustion tests in the future.

This test will be carried out in collaboration with the Fukushima Prefecture and Fukushima City, with part of the expenses subsidized under the Fukushima Prefecture Decarbonization Technology Development Feasibility Study Program (FY2023). The hydrogen required for the test will be partially met by the hydrogen generated in the Fukushima Hydrogen Energy Research Field.

* The Nittobo Group relied on heavy oil as a combustion energy source during the early stages of glass fiber production. Subsequently, we switched to LNG and then natural gas when the natural gas pipeline was extended. Starting in FY2011, we introduced the natural gas–pure oxygen combustion system to all furnaces successively because it significantly reduces the exhaust gas while achieving higher efficiency. As a result, we succeeded in reducing CO₂ emissions by more than 40% compared with natural gas–air combustion.

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