

April 19, 2022
Nippon Electric Glass Co., Ltd.

Nippon Electric Glass Succeeds in Melting Glass with Combustion Technology Using a Hydrogen-Oxygen Burner

Nippon Electric Glass Co., Ltd. (Head Office: Otsu, Shiga, Japan, President: Motoharu Matsumoto) has succeeded in demonstrating the melting of glass using only hydrogen fuel from a hydrogen-oxygen combustion burner jointly developed with Taiyo Nippon Sanso Corporation.

The newly developed hydrogen-oxygen combustion burner can change the mixing ratio of natural gas and hydrogen as appropriate. In the demonstration experiment, it was confirmed that in either combustion method used, only hydrogen or a mixture of hydrogen and natural gas, a melting capacity equivalent to that from combustion of only natural gas could be obtained by adjusting the flow rate of fuel according to the mixing ratio. This enables oxygen combustion technology* and hydrogen combustion technology to be combined, thereby resulting in zero CO₂ emissions from combustion.

For glass melting, the Company had promoted the switching of fuel from heavy oil to LPG and natural gas, which generate less CO₂, and completed the conversion to natural gas in 2010. In the medium-term business plan “EGP2026,” the Company has set the “promotion of carbon neutrality” as a priority measure and works on the technological development of CO₂-free fuels, such as hydrogen, to achieve carbon neutrality by 2050.

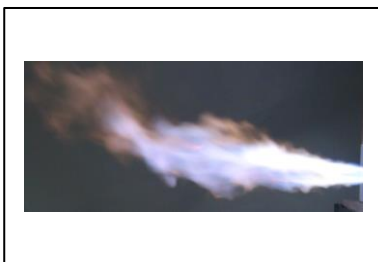
Hydrogen-oxygen combustion technology is expected to contribute significantly to the realization of carbon neutrality by being combined with the enhancement of the power ratio of melting energy, which the Company has been working on for some time. The Company will continue to develop the technology toward application as a mass production process.

* Oxygen combustion technology is a combustion technology that removes more excess nitrogen than air combustion, thereby reducing the amount of exhaust gas (exhaust heat) and consequently lowering fuel and energy consumption and reducing the emissions of CO₂ and thermal nitrogen oxides (NO_x). It has been introduced in almost all melting furnaces of the Company.

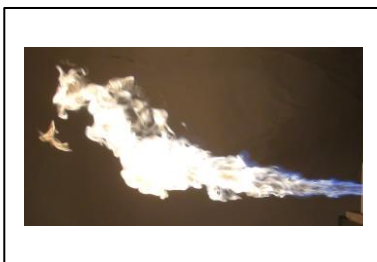
(State of combustion)



100% hydrogen



60% hydrogen / 40% natural gas



100% natural gas

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