

Tokyu Construction and Teijin Complete Successful Trial of Hydrogen Fuel Cell Generators to Supply Power at Shibuya Construction Site

Tokyo, Japan, August 9, 2023 --- [Tokyu Construction Co., Ltd.](#) and [Teijin Limited](#) today announced completion of a trial of hydrogen fuel cell generators as power sources at a construction site around Tokyo's Shibuya Station.

The successful trial, which ran from late June to mid-July 2023, evaluated reductions of noise and carbon dioxide (CO₂) emissions achieved by using hydrogen fuel cell generators instead of conventional gasoline generators. It revealed that the hydrogen fuel cell generators reduced noise from approximately 80 decibels to 60 decibels (*) compared to gasoline generators. It also cut CO₂ emissions approximately 6kg (reference range) in ten hours, or more than 1,000 kg per year.

(*) According to a study regarding "the Results of a Survey for Establishing Guidelines for Noise Levels in cities and suburbs in Tokyo" by the Noise Research Subcommittee of the National Environmental Research Council Japan, published in 2009 in the Journal of Environmental Laboratories Association (Vol. 34, No. 4, pp. 254-261), the noise level inside a game arcade is approximately 80 decibels, while the noise level inside a museum is approximately 60 decibels. The measurement and evaluation methods used in the trial by Tokyu Construction and Teijin is not the same as the one used by the National Environmental Research Council Japan.

In addition to testing noise and emissions, Tokyu Construction and Teijin verified the workability and portability of the fuel cell and pressure vessel units. No special equipment was required to load and unload the fuel cell and pressure vessel units onto a vehicle for transport to the Shibuya construction office. In addition, one worker was able to carry the individual units approximately 300 meters from the office to the construction site.



Hydrogen fuel cell generator can be easily carried



Hydrogen fuel cell generator in use as power source

The hydrogen fuel cell generators are comprised of a fuel cell unit, which features the new *IE-LIFT*TM 1T fuel cell developed by British manufacturer [Intelligent Energy Limited](#),

and a companion pressure vessel unit, which supplies hydrogen fuel. This fuel, *Green Hydrogen*, is produced at Tokyu Construction's Technical Research Institute by electrolyzing water using renewable energy. It does not emit CO₂ during production, and does not emit gas or CO₂ during combustion. The pressure vessel unit is a portable hydrogen fuel supply device equipped with three *Ultressa*[®] lightweight, corrosion-resistant, composite pressure cylinders developed by [Teijin Engineering Limited](#), a subsidiary of Teijin.

The generators were used at the construction site located in Shibuya's west exit basement underground taxi pool drive to supply electricity for lighting and warning signs during nighttime construction work. They help avoid the issues caused by existing gasoline power generators, which can disturb local residents with unwanted noise, odors and ground vibrations.

According to the construction operators, the fuel cell unit and companion pressure vessel unit were excellent in portability at construction sites and that it can be carried safely. In addition, the unit is very quiet compared to conventional gasoline generators so it can be used for construction work in residential areas. They were sure about the potential of hydrogen energy in the midst of the demand for environmental measures at construction sites.

Based on the trial results, Tokyu Construction and Teijin plan to determine whether the fuel cell and pressure vessel units can be used in cold environments. Tokyu Construction will promote the feasibility and benefits of using hydrogen fuel cell power generators at construction sites to reduce environmental impacts. Teijin aims to begin marketing the fuel cell and pressure vessel units to various industries, including building and construction, in the spring of 2024.

Hydrogen is featured prominently in the Green Growth Strategy, as an industry-wide policy drafted by Ministry of Economy, Trade and Industry (METI) that seeks to realize the target of carbon neutrality (net zero emissions) by 2050 stated by the Government of Japan (GOJ).

About Intelligent Energy

Intelligent Energy is focused on the development and manufacture of its Proton Exchange Membrane (PEM) fuel cell products for customers in the automotive, aerospace, generator, telecoms, materials handling and unmanned aerial vehicle (UAV) sectors. The company is headquartered and manufactures in Loughborough in the UK, with additional offices and representation in the US, Japan, China and South Korea.

www.intelligent-energy.com

About Tokyu Construction

Since founded in 1959, as a member of the Tokyu Group pursuing a wide array of businesses that serve everyday needs, Tokyu Construction has been committed to providing residents with comfortable living environments that allow peace of mind.

About the Teijin Group

Teijin (TSE: 3401) is a technology-driven global group with two core businesses: high-performance materials and healthcare solutions. Established in 1918 as Japan's first rayon manufacturer, Teijin today comprises some 170 companies employing 20,000 people in 20 countries. Through "Human Chemistry, Human Solutions," Teijin relentlessly strives to aims to be a company that supports the society of the future by protecting the global environment and addressing the needs of people and communities. Teijin posted consolidated sales of JPY 1,018.8 billion (USD 7.6 billion) and total assets of JPY 1,242.4 billion (USD 9.2 billion) in the fiscal year ending March 31, 2023.

Press Contact

Corporate Communications Group,
Corporate Planning Department, Corporate Strategy Division
Nishida
TOKYU CONSTRUCTION CO., LTD.
webmaster@tokyu-cnst.co.jp

Investor and Public Relations Department
Teijin Limited
pr@teijin.co.jp