NEWS RELEASE

MORIMURA SOFC TECHNOLOGY Co., Ltd.

Development of a Compact, High-Efficiency Mono-Generation SOFC System

-A Next-Generation Power Generation System for the Coming Hydrogen Society-

Komaki, Japan, Mar. 27, 2025 – MORIMURA SOFC TECHNOLOGY Co., Ltd. (President: Yoshikuni Sato; Headquarters: Komaki City, Aichi Prefecture; hereinafter "MORIMURA SOFC TECHNOLOGY ") announced today the development of a compact, high-efficiency mono-generation *1 SOFC (solid oxide fuel cell)*2 system. In anticipation of the coming hydrogen society, the system will also be compatible with mixed hydrogen operations, with which the company will conduct demonstrations in the future.

*1. About Mono-Generation Systems: While cogeneration systems use fuels such as natural gas, petroleum, and LP gas to generate electricity using engines, turbines, fuel cells, etc., and simultaneously utilize the exhaust heat generated, mono-generation systems do not utilize the exhaust heat.

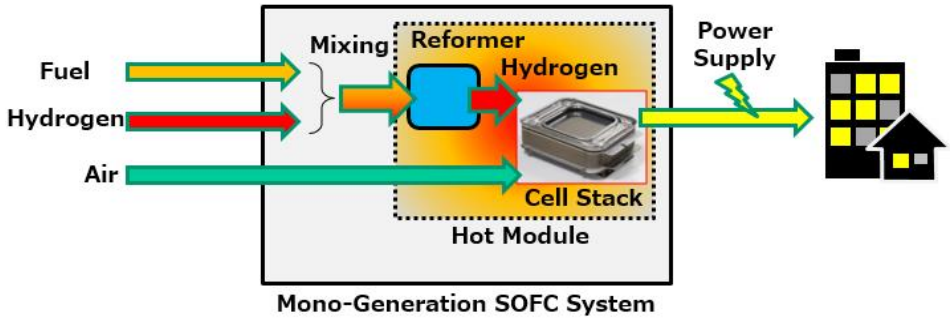
*2. About SOFCs: SOFC power generation systems are fuel cells that generate electricity using oxygen (O2) from the air and hydrogen (H2) or carbon monoxide (CO) extracted from reformed city gas, etc. The cell stack, which is the core component of power generation, is mainly composed of ceramics.

●Background of Development

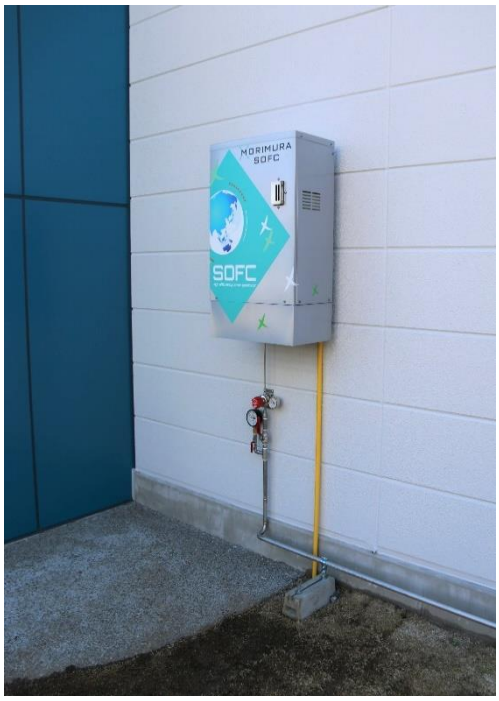
Focusing on SOFCs for their high power generation efficiency among fuel cells, MORIMURA SOFC TECHNOLOGY has been developing planar cell stacks for residential, commercial, and industrial use. Mass production of fuel cell systems for commercial and industrial applications began in 2021. Building on this experience, a module to house the cell stack and a complete system as the final product have been developed. This development aims to expand into other markets such as the residential and portable fuel cell markets, leveraging cost-reduction technology achieved by balancing lightweight and compact design with high power density in cell stacks initially cultivated for commercial and industrial use. Compatible with various fuels, such, as propane gas, the system is also expected to be utilized for off-grid power, disaster relief, and emergency response applications.

●System Features

Unlike conventional residential fuel cells, this system has been developed as a mono-generation fuel cell system. It is an energy-saving device that contributes to CO2 reduction by achieving high power generation efficiency (industry-leading 65%). The system can be made significantly smaller and lighter by specializing in mono-generation operation. The wall-mounted installation allows for greater flexibility in houses with limited space, such as small lots and apartment buildings, and is expected to reduce costs through simplified construction. Furthermore, with an eye toward compatibility with the coming hydrogen society, this system is compatible with existing fuels like city gas and mixed hydrogen operations. The company will confirm its potential as a power generator that contributes to preserving the global environment through future demonstrations.



Mono-Generation SOFC System



<System Overview>



	Mono-Generation
Rated Power	DC600W
Electrical Efficiency	DC65%
Size (W×H×D)	500mm×650mm×290mm
Weight	48kg
Fuel	City Gas 13A, etc. (Hydrogen blend possible)

<System Specifications>

●Future Outlook

The prototype unit has been installed in a building within the "SUISO no MORI hub" facility at Niterra Co., Ltd.'s Komaki Plant. It has begun operation and will continue to expand the demonstration of the unit, aiming for commercialization in fiscal year 2027. The company will also promote business development that contributes to the global environment by considering connecting it with existing water heaters, linking it with storage batteries, and various other devices as portable fuel cell for BCP applications and further energy savings.

MORIMURA SOFC TECHNOLOGY will contribute to realizing a sustainable society by stabilizing the supply and widespread adoption of cell stacks for clean and highly efficient SOFC power generation systems and developing and demonstrating compact and highly efficient power generation systems.

About MORIMURA SOFC TECHNOLOGY Co., Ltd.

MORIMURA SOFC TECHNOLOGY Co., Ltd. is a joint venture established in 2019 by four Morimura Group companies: NORITAKE CO., LIMITED, TOTO LTD., NGK INSULATORS, LTD., and Niterra Co., Ltd. In 2021, with the investment of MORIMURA BROS., INC., it became a joint venture of five Morimura Group companies. The company aims to expand the use of energy systems that can contribute to a decarbonized society through research, development, manufacturing, and sales of cell stacks, modules, and systems for residential, commercial, and industrial SOFCs (solid oxide fuel cells).