



# Toyota Introduces SimpleFuel™ All-In-One Machine To Generate, Store And Supply Hydrogen At Its Motomachi Plant

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Toyota has introduced a new machine to its Motomachi factory in Japan that can generate, store and supply hydrogen fuel.

SimpleFuel™<sup>1</sup> is a compact and simplified hydrogen station that draws electricity from the plant's solar panels for low-carbon hydrogen production using a water electrolysis process. The hydrogen is then compressed, pressurised and supplied to Motomachi's fleet of fuel cell (FC) forklifts.

The station can produce up to 99Nm<sup>3</sup>/day (approx. 8.8kg/day) of hydrogen each day, enough to fuel seven or eight FC forklifts. Its compact dimensions allow it to be installed in small spaces, making it suitable for refuelling the forklifts within the plant.

A hydrogen station has been operating on-site at Motomachi since March 2018, supporting an increasing number of FC forklifts. By introducing the extra fuelling provision, Toyota anticipates rising demand for hydrogen and also aims to reduce the factory's carbon emissions.

## SimpleFuel™ in outline

To reduce CO<sub>2</sub> emissions from its plants, Toyota intends to replace its conventional forklifts with a new generation of machines powered by hydrogen fuel cells. This process began at the Motomachi plant with an initial two FC forklifts in 2017, followed by another 20 in 2018. With carbon-reducing subsidy support from Japan's environment ministry. It has been possible to adopt SimpleFuel™ and 50 further FC forklifts.

Working with local authorities and businesses in Aichi prefecture, Toyota is promoting the low-carbon credentials of the hydrogen supply chain as whole by using renewable resources and following the concept of "production, transportation and use". The hydrogen scheme at Motomachi has been recognised with official certification from Aichi's low carbon initiative.

In line with the goals of the Toyota Environmental Challenge 2050, Toyota has been using hydrogen energy to develop and implement new technologies to make progress towards eliminating CO<sub>2</sub> emissions from its manufacturing plants. The use of SimpleFuel™ and FC forklifts at Motomachi forms part of this strategy.

## Specifications<sup>2</sup>

Hydrogen production capacity (max.)	99Nm <sup>3</sup> /day (8.8 kg/day)
Storage volume	72.18Nm <sup>3</sup>
Hydrogen purity	99.97%
Hydrogen filling pressure	35MPa
Hydrogen generation method	Alkaline water electrolysis method

<sup>1</sup>SimpleFuel™ is a product of and jointly manufactured by IVYS Energy Solutions and PDC Machines in the U.S.

<sup>2</sup>Data provided by TOKYO BOEKI MECHANICS Ltd. (responsible for sales in Japan).

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