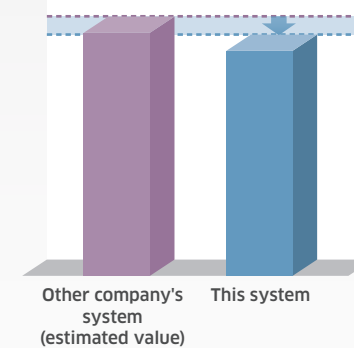


# Hydrogen Liquefaction System

The hydrogen liquefaction system achieves industry-leading liquefaction efficiency(\*).

The hydrogen liquefaction system has achieved industry-leading efficiency by repeatedly optimizing the components based on the liquefaction process developed independently. The expansion turbine, which has been developed in-house, works by hydrogen gas bearings. The hydrogen gas bearings can prevent the liquefaction process from contaminations, and provide easy maintenance because of non-contact bearing.

\* Liquefaction efficiency means necessary electric power consumption to produce 1 kilogram of liquefied hydrogen



By optimizing all the system, liquefaction efficiency has been improved in approximately 8%.

Liquefaction efficiency [kWh/kg-H<sub>2</sub>]



**2021**

**Kawasaki  
Ecological Frontiers  
S class**



Hydrogen liquefier

### Product Description

The hydrogen liquefaction system is a necessary technology in order to build a hydrogen supply chain. Hydrogen is shrunk to 1/800th than its original gas volume by hydrogen liquefaction. It achieves mass storage and effective transportation of hydrogen. Rated production of this system is 5 tons of liquefied hydrogen per day (equivalent to the fuels for 1000 of FCVs)

### Features

- Japan's first industrial hydrogen liquefaction system
- The expansion turbine, which is a key component of the liquefier, works by hydrogen gas bearings. The hydrogen gas bearings can prevent the liquefaction process from contaminations, and provide easy maintenance because of non-contact bearing
- The total weight of the liquefier has been reduced from that of the prototype because of the improvement of the internal equipment layout