Nikkiso to Provide Hydrogen-Pump   
Unit for Hydrogen-Fueled Carrier

Kawasaki Heavy Industries, Ltd. will use Nikkiso’s hydrogen-pump unit for the marine market on its hydrogen-fueled vessel

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**Temecula, Calif.** – Nikkiso Clean Energy & Industrial Gases Group (Group), part of Nikkiso Co. Ltd.’s Industrial Division, announced today it will design and manufacture a new hydrogen-pump unit after Nikkiso Co. Ltd. received a first order from Kawasaki Heavy Industries, Ltd. for its hydrogen-fueled ship. The hydrogen carrier is expected to enter service in 2028.

Kawasaki’s hydrogen-fueled marine vessel is part of the "Development of marine hydrogen engines and marine hydrogen fuel systems” project and was approved as part of the “Green Innovation (GI) Fund Next-generation Ship Development” led by Japan’s largest public R&D management organization, the New Energy and Industrial Technology Development Organization (NEDO).

Nikkiso’s CE&IG Group is already a leading provider of LNG pumps and fueling systems for LNG-fueled vessels and has a long history of innovation with liquid hydrogen cryogenics technology, equipment and systems for transportation, energy, and industrial gas markets.

*“Nikkiso has long been a market leader in supplying the marine industry with cryogenic pumps and fueling systems for LNG-powered vessels,” said* ***Adrian Ridge, President and CEO, Nikkiso CE&IG Group.*** *“Now we are designing and manufacturing the first-of-their-kind hydrogen and ammonia pumps for the marine market.”*

*“Our history and commitment of working with customers to deliver innovative solutions means we are perfectly positioned in the marine market to apply the technology of high-pressure pump units for LNG-fueled ships to the design and manufacture of units for hydrogen-fueled ships.”*

Nikkiso’s new hydrogen-pump unit will supply high-pressure hydrogen to a low speed, two-stroke hydrogen dual-fueled engine as the main propulsion engine. By combining its technologies and products for LNG-fueled ships and hydrogen stations, multiple types of pumps will boost the pressure required by the engine in the process of supplying liquefied hydrogen from the hydrogen fuel tank to the evaporator.

**About Nikkiso Clean Energy & Industrial Gases Group**

The Nikkiso Clean Energy & Industrial Gases Group is a leading provider of cryogenic equipment, technologies and applications for clean energy and industrial gas market segments. The Group employs more than 1,900 people globally and is headed by Cryogenic Industries, Inc. in Southern California, U.S., which is a wholly owned subsidiary of Nikkiso Co., Ltd. (TSE: 6376).

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About Nikkiso Co. Ltd.

Since its establishment in 1953, Nikkiso has contributed to solving social issues by anticipating the changing times with world-first and Japan-first technologies and products. In the industrial business, Nikkiso has created new markets by developing products in the energy field, hemodialysis-related products in the medical business, and CFRP (carbon fiber reinforced plastic) aerostructures in the aerospace business.