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Nippon Yusen Kabushiki Kaisha
Asahi Shipping Co., Ltd.
Kobe Steel, Ltd.

Sunrise Serenity Conducts Successful Biodiesel Test Voyage
-- Jointly Implemented by Three Companies Toward a Decarbonized Society --

On July 28, Nippon Yusen Kabushiki Kaisha ("NYK"), the NYK Group's Asahi Shipping Co., Ltd. ("Asahi Shipping"), and Kobe Steel, Ltd. ("Kobe Steel") supplied biodiesel fuel* ("biofuel") using ship-to-ship transfer** to the bulk carrier Sunrise Serenity at the port of Kobe in Hyogo Prefecture. The vessel was supplied with biofuel by Toyota Tsusho Marine Fuels Corporation and consumed biofuel on its route to the port of Newcastle, Australia.

Sunrise Serenity carries cargoes for Kobe Steel. The vessel is operated and managed by Asahi Shipping and jointly owned by NYK and Asahi Shipping. This test voyage was a joint effort by the three companies, each with its own aim.

- NYK has a long-term goal to reduce GHG emissions in its oceangoing businesses to "achieve net zero emissions by 2050."
- Asahi Shipping aims to decarbonize marine transport in its supply chain.
- Kobe Steel aims for a sustainable society through integrated efforts to promote a low-carbon, recycling-based society.

The three companies expect the test voyage will contribute to spreading the biofuel supply chain in the Kansai and Setouchi areas.

Biofuels can be used in marine engines as an alternative to heavy oil. Biofuels are made from organic resources (biomass) derived from living organisms and are considered to have virtually zero CO2 emissions when burned.***

NYK, Asahi Shipping, and Kobe Steel will share the knowledge from this test voyage to promote decarbonization initiatives.

* Biodiesel fuel

The fuel is refined by methyl esterification of vegetable oils and is expected to be an alternative fuel



to petroleum-derived heavy crude and light oil.

**** Ship-to-ship transfer**

A method in which a fuel-supply vessel lays alongside a vessel moored or anchored at a wharf or pier and supplies fuel to the vessel.

***** Virtually zero CO2 emissions when burned**

Biofuels emit CO2 during combustion, but since plants, the raw material, absorb CO2 and reproduce biomass, CO2 emissions from direct combustion are considered virtually zero. Biofuels are attracting attention as an alternative to fossil fuels that can be "carbon neutral."



Locations (Source: OpenStreetMap)



Biofuel refueling

Vessel particulars

LOA: 224.94 meters

Breadth: 32.26 meters

Gross Tons: 39,760 tons

Deadweight Tonnage: 76,544 tons

Year Built: 2010

Shipyard: Shin Kasado Dockyard Co., Ltd.



Company Overviews

Nippon Yusen Kabushiki Kaisha

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Asahi Shipping Co., Ltd.

Head Office: Tokyo, Japan

President: Satoshi Nemoto

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Kobe Steel, Ltd.

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