

Bio-Diesel Fuel Supplied for Marine Vessels in the Port of Nagoya — Contributing to Carbon-neutral through the Reduction of Greenhouse Gas Emissions from Marine Fuel —

Daiseki Eco. Solution Co., Ltd. (“the Company”) has sold bio-diesel fuel*¹ manufactured by the Company to Toyota Tsusho Corporation (“Toyota Tsusho”), a company engaged in the marine fuels supply business. This bio-diesel fuel was supplied to tugboats*² operated by SANYO KAIJI CO., LTD. (“Sanyo Kaiji”), an affiliate of Nippon Yusen Kabushiki Kaisha. This was the first time that bio-diesel manufactured by the Company was used as marine fuel.

The ship-to-ship method*³ was used to supply fuel to the tugboats, the first time that this method was used to supply biofuel in Japan.

The biofuel supplied to the tugboats operated by Sanyo Kaiji on this occasion was manufactured partly from waste cooking oils recovered from companies in the Toyota Group and Toyota Tsusho Group in Japan. This initiative, a collaboration between Toyota Tsusho and the Company, contributes to the circular economy by building a supply chain for local production and local consumption.

Bio-diesel fuel is a post-carbon fuel for marine vessels that can be used in existing internal-combustion engines without modification. If a biofuel supply chain and regular usage can be established within Japan, then it will help the marine transport industry, including coastal vessel operators, achieve carbon-neutral status.

1. Background

The marine transport industry accounts for approximately 2% of global greenhouse gas (GHG) emissions. In 2018, the International Maritime Organization (IMO) adopted an initial strategy on the reduction of GHG emissions, envisaging that total annual GHG emissions from international shipping be reduced by at least 50% by 2050 compared to 2008. The Japanese government has also declared its goal of cutting GHG emissions by 46% by 2030 compared to 2013 and achieving carbon-neutral status by 2050. Under its Green Growth Strategy, the government is promoting the transition from heavy oil and diesel shipping fuel sourced from petrol oil to substitute fuels. While there are high hopes for hydrogen and ammonia shipping fuels in the medium to long term, these involve substantial investment and technological development. Biofuels are regarded as promising post-carbon fuels in the shorter term.

2. The Company’s initiatives in this business

- In 2012, the Company commenced manufacturing and selling biofuel sourced from waste cooking oil recovered from restaurants and other users.
- In 2015, upon the request of the Nagoya Municipal Government, the Company began manufacturing biofuel from waste cooking oil recovered from residents at supermarkets and other facilities in approximately 80 locations in 16 wards across the City of Nagoya, and supplied the fuel to the City’s passenger buses and garbage trucks.
- In 2021, the Company supplied biofuel to TOYOTA TRANSPORTATION CO., LTD. through Toyota Tsusho.
- This time, the Company plans to engage in the trial supply of biofuel to tugboats operated by Sanyo Kaiji on a total of three occasions, in the Port of Nagoya, which boasts the largest cargo volumes of any port in Japan. Through this initiative, the Company seeks to verify that biofuel sourced from waste cooking oil is effective for use in other coastal vessels as well.

The Company’s mission is “to contribute to society with solutions to environmental issues,” as can be conceived from its trade name. In addition to solving environmental issues through the “ingenious creation of new mechanisms (environmental revaluation structures) to add new value to things that society no

longer needs, and that have a negative environmental impact,” the Company will contribute to the transition to a decarbonized society by promoting initiatives to achieve carbon-neutral status.



[A tugboat operated by Sanyo Kaiji]

*1 Bio-diesel fuel (BDF)

BDF is a substitute diesel fuel, refined through the methyl esterification of vegetable fats. It is expected to provide a substitute for heavy oil and diesel fuel sourced from petrol oil. It has been designated a carbon-neutral fuel by the Intergovernmental Panel on Climate Change (IPCC) over its lifecycle because the plants from which it is sourced absorb CO₂ as they grow.

*2 Tugboat

Tugboats are used as support boats to help large vessels to dock or undock safely. Large vessels are unable to maneuver freely and precisely in the narrow confines of a port, and tugboats use ropes or their prows to guide and assist these vessels.

*3 Ship-to-ship method

The ship-to-ship method is where a fuel supply vessel comes alongside a ship docked at a wharf or pier, or at anchor, to refuel it.

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