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NYK and Nippon Oil Corporation Joint Project
Auriga Leader Completes Seven Months of Voyages Using Solar Power

The solar-power-assisted vessel Auriga Leader (gross tonnage: 60,213 tons), which was jointly developed by NYK (head office: Chiyoda-ku Tokyo; president: Yasumi Kudo) and Nippon Oil Corporation (head office: Minato-ku Tokyo; president: Shinji Nishio), has completed seven months of voyages in its scheduled two-year experiment into how solar power can be used to assist with powering a vessel.

Auriga Leader set out on its maiden voyage on December 19, 2008, and completed its fourth voyage on July 13, 2009, a total of 207 days. By the end of the fourth voyage, the solar-panel system had been operated for a total of 2,600 hours and had generated 32,300 kilowatt-hours of electricity, equivalent to seven months of electricity use by 17 households in Japan. The amount generated surprisingly turned out to be about 1.4 times more than that generated on land in Tokyo. Further research is needed to determine the exact reason, but the stronger sunlight caused by the high sun altitude and more daylight are thought to have played a part. Moreover, the wind the vessel encountered cooled the system, thus improving generating efficiency.

As initially anticipated, solar power was able to provide 0.05 percent of the ship's propulsion power and 1 percent of the electricity used on the vessel, such as for pumps and lights. This change will reduce fuel per year by an estimated 13 tons (14 kiloliters) and the CO_2 resultantly produced by approximately 40 tons.

Another purpose of this project is to verify the endurance of solar panels in the harsh conditions of actual navigation. Through the four voyages, the vessel encountered rough conditions-such as three straight hours of rain and lightning, 20 straight hours of strong wind (about 20 meters/second), and 48 straight hours of waves 3-4 meters high-but the system continued to operate well.

NYK and Nippon Oil Corporation plan to continue this experiment so that the use of clean solar power can be practically applied to powering seagoing vessels and thus help to reduce the carbon footprint of this efficient form of transport.