

Others

Supply Chain

Governance

Strategies and Risk Management

- Strategy
- Risk Management

Initiatives

- Joint development of ammonia-fueled ships for decarbonization of ships
 - A challenge to design new ships using 3D models
 - Establishment of evaluation methods for the “performance in real sea conditions” of ships agreed upon in shipbuilding contracts

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In accordance with the “NYK Group Environmental Policy,” our group is working to minimize the environmental impact of the procurement of transportation equipment, including ships, and is also working to implement new technologies and other innovations in society through co-creation with suppliers.

In addition, the “NYK Code of Conduct” stipulates that we will not engage in any business practices that hinder free competition, such as unfair business practices, and that we will not abuse our dominant position in transactions with partner companies, and we are thoroughly ensuring compliance with competition and anti-monopoly laws.

Strategies and Risk Management

Strategy

In our shipping business, which has a fleet of approximately 800 vessels (as of the end of March 2024), ships are the main item procured. A ship comprises tens of thousands of components, including engines, propellers and other propulsion equipment, cranes and other cargo handling machinery, and radar and other navigation equipment.

We recognize that enhancing the value of the broad-based ship supply chain and strengthening competitiveness is an important strategy not only for securing ships, which are essential for stable international marine transport, but also from the perspective of securing regional economies and employment and contributing to economic security.

The NYK Group is taking the opportunity of fuel conversion to achieve zero emissions and, together with its many stakeholders, including suppliers, is aiming to be the first in the world to supply

ships with high environmental performance and safety, using the technological capabilities of the Japanese maritime industry.

Risk Management

Based on international norms such as the United Nations’ “Guiding Principles on Business and Human Rights,” our group has established “CSR Guidelines for Partners and Suppliers” that cover items such as human rights, labor, legal compliance, safety, and environmental conservation. We request that our suppliers understand the purpose and content of these guidelines and promote and comply with CSR activities.

In addition, our group conducts human rights due diligence to identify potential human rights violations in the supply chain, identify and assess the impact, and implement the PDCA cycle to prevent or mitigate negative impacts.

For more information, click on the link below.

P.069 [Human Rights](#)

Initiatives

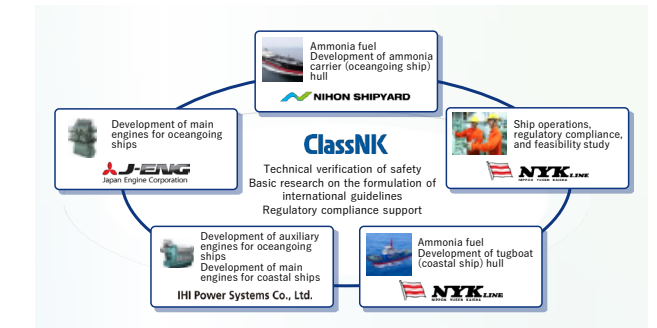
Joint development of ammonia-fueled ships for decarbonization of ships

As part of the Green Innovation Fund Project, a grant from the New Energy and Industrial Technology Development Organization (NEDO), five parties including Japanese shipbuilders, engine manufacturers and classification societies are working together to develop ammonia-fueled ships, with development beginning in 2022.

For more information, click on the link below.

P.032 [Decarbonization](#)

Co-creating organizations



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A challenge to design new ships using 3D models

In March 2024, we obtained 3D certification from Nippon Kaiji Kyokai for the basic design drawings of a new multipurpose container ship. This is the first case in the world* of an ocean-going vessel being completed from the initial stage of basic design to class approval using only 3D (three-dimensional) drawings.

Taking the opportunity of acquiring this certification, which solves the various information sharing issues that had arisen in the existing process using 2D drawings, our company will effectively utilize 3D drawings, contribute to shortening the certification period and promoting communication between related parties, and aim to procure ships with higher safety and environmental performance.

* As of March 28, 2024, according to a survey by our company and Nippon Kaiji Kyokai

Establishment of evaluation methods for the “performance in real sea conditions” of ships agreed upon in shipbuilding contracts

Our company and Japan Marine United Corporation have been working to estimate performance in real sea conditions* before shipbuilding. In March 2024, after a year of verification of performance in real sea conditions on crude oil tankers operated by our company, the two companies agreed on and established a method for evaluating performance in real sea conditions that is both technical and objective.

In the future, we will promote similar initiatives for various types of ships, aiming to create a system that can estimate and evaluate

the performance of ships in real sea conditions when building contracts for new ships, and we will procure ships with high fuel efficiency in collaboration with our partner shipyards.

* In the past, it was common for shipbuilding contracts to set and agree on guaranteed speeds based on the relationship between ship speed and horsepower in calm weather and sea conditions (in still water performance), and for shipyards and shipping companies to mutually confirm the guaranteed speed during sea trials during construction. However, since actual voyages after the ship's launch are strongly affected by waves and wind, there was a problem of a large discrepancy between the guaranteed performance in calm water and the propulsion performance (performance in real sea conditions) in weather and sea conditions with waves and wind.

Overview of Performance Guarantee in Real Sea Conditions

