

Part I Growth Strategies

The NYK Group has been constantly growing and recreating itself by continually evolving with society and the economy since the company's founding in 1885. We have overcome innumerable challenges during that time as we persevered to fulfill our mission to provide high-quality cargo transport. Through challenging and prosperous times, we remained forward-looking and in 1986 established NYK21, the Group's first long-term management plan for business growth. That plan steered a course through increasing diversification and globalization of operations to grow beyond shipping and cargo transport. We are determined to stay ahead as we endeavor to create and provide new social and economic value.

Medium-Term Management Plans

NYK21

New Horizon

FY1986

NYK21

Become a diverse, integrated logistics company

FY2000

NYK21 New Millennium Declaration

Strengthen business management through strategies of synergy and scale

FY2003

NYK21 Forward 120

Mobilize to become a truly global company

Becoming even more global, seeking even more on-site activity

FY2005

New Horizon 2007

Seek dynamic growth and the enhancement of corporate fundamentals

FY2008

New Horizon 2010

Pursue growth, stability, and protection of the environment

Worldwide Developments

- Plaza Accord (1985): Yen value skyrockets
- Black Monday (1987)
- Birth of the European Union (1993)
- Terrorist strikes in the US (2001)

- Shipping bubble (2003–2008)
- Once-in-a-century economic boom
- Global financial crisis (2008)

FPSO Units

FPSO (floating production, storage and offloading) units are vessels that separate crude oil from solid matter, water, and gas lifted from offshore oil fields, store the oil, and load it onto tanker ships for transport. The NYK Group is engaged with an FPSO working oil fields over 2,000 meters deep in the Santos Basin of Brazil.



More Than Shipping

Staying Ahead 2022 with Digitalization and Green

FY2011

More Than Shipping 2013

Expand beyond traditional shipping

FY2014

More Than Shipping 2018

— Leveraged by Creative Solutions

Differentiate through technological capabilities

FY2018

Staying Ahead 2022 with Digitalization and Green

Develop a well-balanced, stable profit structure
Pave the way for future growth

- Japan adopts standard tonnage tax system for oceangoing shipping companies (2009)
- Great East Japan Earthquake (2011)
- Suez Canal expanded (2015)
- Baltic Dry Index reaches historical low of 290 points (2016)
- Panama Canal expansion enables passage of LNG carriers and larger vessels (2016)



Message from the President

The Group will continue bringing value to stakeholders while laying a stable business foundation during challenging and uncertain times.



Hitoshi Nagasawa

President, Representative Director
President Corporate Officer

Career at NYK

After joining the Company in 1980, Mr. Nagasawa was assigned as the general manager of the LNG Group in 2004, a corporate officer in 2007, and a managing corporate officer in 2009. He has been in charge of the Energy Division since becoming a director in 2011 and has chaired a committee overseeing the strategies of the Dry Bulk Division since being appointed as an executive vice-president corporate officer in 2018. Mr. Nagasawa was involved in the Company's acquisition of upstream interests in the LNG business and development of the offshore business.

The NYK Group's Mission and Commitment

Q Please tell us about how you view the Group's mission statement, "Bringing value to life."

A **The statement expresses our deep commitment to bringing new value to people around the world.**

The NYK Group's basic philosophy has been to support people's livelihoods by safely and dependably transporting goods as a comprehensive global logistics enterprise offering maritime, land, and air transport services. At the same time, we are also differentiating and expanding our businesses beyond conventional cargo transport services to meet the diversifying needs of society as globalization advances. Accordingly, in addition to shipping and logistics services, the Group has become active in offshore oil and gas development projects as well as renewable energy projects. Aiming to change with the times and broaden our business portfolio in that way, we redefined our mission statement in conjunction with the launch of our medium-term management plan in 2018.

Over the course of re-examining our corporate philosophy, I was struck by the words of the Company's founder, Yataro Iwasaki: "If we launch a ship, the benefits will be widespread, and the resulting prosperity will be felt by many." That sentence encapsulates the purpose and social mission of the NYK Group, and its essential meaning is simply expressed in our mission statement of bringing value to life.

"Life" not only refers to the livelihoods of people, but also the vitality of our communities and the natural environment. We are committed to bringing value to life through the NYK Group's wide-spanning business activities.

As a matter of course, the NYK Group pursues profit as a private-sector enterprise. At the same time, however, it has a duty to provide the social infrastructure that underpins people's livelihoods and industrial activities. While our mission of adding value to people's lives by transporting goods has never wavered, we also have a commitment to keep creating new value in step with the changing times. I believe that bringing value to life captures this approach.

Our mission statement provides a guiding light for discerning how our activities are beneficial for society and why we can take pride in our work. In this sense, our purpose becomes very clear through this phrase. By expressing it as a simple English slogan, I believe we redefined our foundational principle in a way that all members of the NYK Group can identify with, including employees and seafarers of group companies in every corner of the world.

The NYK Group's Corporate Culture

Q What do you think is necessary to actually create new value?

A **It is essential to respect people, listen to their ideas, and continue having sincere dialogues. With that kind of corporate culture, we can foster a sense of solidarity and work towards creating value.**

Over its long history, the NYK Group has confronted crisis situations on numerous occasions. I think the Group surmounted those challenges because its corporate culture of respecting people always persevered.

Personally speaking, I was able to pursue my career very much in my own way. Immediately after joining NYK, I observed dynamic discussions all over my workplace, and came to appreciate that frankly exchanging opinions with

others, whether they are supervisors or co-workers, is deeply ingrained in our corporate culture. Because everyone is respected, we can have sincere dialogue and initiate constructive discussions, which tend to stimulate ideas for making the Company even better. Some of those ideas fail, of course, but when they succeed, we gain a sense of accomplishment and solidarity. If that spreads from within the Company to the Group as a whole, we will be able to

Message from the President

accomplish practically anything.

Mutually respecting one another also applies to our relationships with customers and business partners. While engaging in constructive dialogue with them, we can discover ways to work more effectively, explore innovations, and create better services. The new value created through that process can be a major factor in differentiating us from

our competitors. Having engaged in dialogue with countless employees, customers, and other stakeholders, I have directly experienced the possibilities that can arise. Although I have served as president and representative director only from June 2019, I recognize that one of my duties is to proactively create opportunities for such dialogues and facilitate the formation of networks.

Operating Environment and Medium-Term Management Plan

Q How do you view the operating environment at present, and what are your business strategies going forward?

A Amid a volatile operating environment, we are working to establish a stable revenue base and promote innovations through “digitalization and green” initiatives.

On the whole, the maritime shipping market has been steadily recovering from a slump, but market conditions remain volatile. Driven by excess liquidity in capital markets, speculative investment in vessels has led to overcapacity in the shipping industry. Outside the industry, social structures are diversifying and changing, protectionist policies have gained ground, the concept of local production for local consumption has become the mainstream, and geopolitical risks continue to raise concerns. In addition, digital technologies are advancing and spreading throughout society, and environmental regulations are quickly becoming more stringent. Meanwhile, the global population continues to rise rapidly towards the 10 billion mark. Taking that into consideration, I believe there will be many opportunities for our businesses to thrive.

Undoubtedly, the world will continue to grow more complex and the future will remain uncertain. Because of that uncertainty, we will need to assess risks on the assumption that the future cannot be accurately predicted, but without having a biased outlook. That makes it essential to carry out the best plans and strategies. To ensure that the NYK Group can be passed on to the next generation, we must create an organization that can continually move forward regardless of the headwinds that come our way. Applying this approach, I led our efforts to bolster the revenue base of the Energy Division and restructure the Dry Bulk Division in past years. In the same way, I intend to take all necessary steps to create an organization that can dependably generate profits from a solid operational foundation.

Under our medium-term management plan, Staying

Ahead 2022 with Digitalization and Green, the Group is carrying out three main strategies: optimize the business portfolio, expand businesses that secure stable freight rates, and increase efficiency and create new value (see pages 16 to 23 for details).

First, to optimize the business portfolio, we are completely overhauling the dry bulk business and working to create synergies from Ocean Network Express (ONE), our joint venture in the liner trade business. Through these measures, we intend to establish a business portfolio that can fully withstand fluctuating market conditions. With respect to the second strategy of expanding businesses that secure stable freight rates, we are continuously bolstering businesses that have good growth potential, specifically the logistics, car carrier, and automotive logistics businesses, as well as priority investment businesses, namely the LNG and offshore businesses. Instead of aiming to be at the top of the global industry, we will strive to accumulate favorable contracts to boost earnings as the first choice of customers. Finally, to implement our third strategy of increasing efficiency and creating new value, we have put in place a number of digitalization and green initiatives.

At the forefront of our digitalization initiatives are the Group’s four specialized R&D companies,* one of them being the Monohakobi Technology Institute. Pursuing projects with a mid- to long-term outlook, these companies form a highly capable R&D network that is completely unique in the shipping industry (see page 22 for details). With a vision of the Group’s future and a solid understanding of customers’ needs, they are equipping the Group with high-added-value

shipping technologies. By making the most of our technological resources, we are aiming to become an unrivaled shipping conglomerate. Various initiatives have already been launched under my predecessor, former President Tadaaki Naito, and we can anticipate a new wave of growth by successfully accomplishing them.

For example, we have developed and adopted a ship information management system, or SIMS, that utilizes the Internet of Things (IoT). This system allows us to optimize the assignment of vessels and operate them safely and efficiently. We have also created a shared platform for managing duties on board ships. Named NiBiKi, the platform digitalizes workflows, allows all companies operating ships to share information, and helps them reduce workloads and ensure safety by utilizing data. In addition, we are shifting to a cashless system for remunerating seafarers with e-money on board ships. Many of the Group's seafarers from the Philippines have difficulty obtaining loans because of restrictions set by banks. We plan to contribute to assist them in the future.

We must embrace digitalization without delay, as it can be expected to bring major changes going forward. In this regard, the Group is currently ahead of its rivals, but it will need demonstrate its capabilities even more in the future by further integrating the technologies of its four specialized R&D companies. With the ongoing advancements in digital technologies, which are of great interest to our younger employees, we can look forward to new possibilities

in our businesses.

Turning to our green initiatives, the Group has been developing and commissioning ships that are powered by LNG, and operating vessels and businesses that supply LNG as fuel. We have also been working to launch environmental businesses with a focus on renewable energy, including the startup of offshore wind and biomass power generation facilities, and the development of hydrogen supply chains. We are very open to exploring all kinds of possibilities for utilizing renewable energy sources in our businesses and making positive contributions through their usage.

* The four R&D companies are Monohakobi Technology Institute Co. Ltd., Japan Marine Science Inc., Symphony Creative Solutions Pte. Ltd., and NYK Business Systems Co. Ltd.



Material Issues Concerning Business Strategies

Q Could you explain how the NYK Group places importance on the environment, safety, and human resources?

A We regard them as material issues that impact the sustainability of the Group. At the same time, they create business opportunities and enable us to gain a competitive advantage.

While launching green businesses can open up new possibilities for growth, we must seriously deal with the environment as a material issue in consideration of the Group's sustainability as a corporate enterprise (see pages 34 to 35 for details).

Recently, our most pressing task has been to ensure compliance with tightened regulations for vessel emissions of sulfur oxides (SOx) that are set to go into effect from January 2020. Enacted by the International Maritime Organization

(IMO), the regulations limit the concentration of sulfur in vessel fuel oil to 0.5%. Accordingly, we have three options: switch to low-sulfur fuel oil that complies with the regulations, install SOx scrubbers if conventional fuel is used, or switch to alternative fuels like LNG or LPG. The options we choose will be on a ship by ship basis, with full consideration given to the structure of the vessels, shipping routes, and other factors. Recognizing that the supply of compliant fuel may be insufficient when the regulations go into effect, we have taken

Message from the President



steps to arrange for and secure sources of compliant fuel through an in-house project called IMO 2020. Indeed, we are putting a comprehensive system in place and sharing information with all group companies to make absolutely sure that our shipping services continue without interruption so our customers are not inconvenienced. Because a high concentration of SO_x in the atmosphere is a major cause of acid rain, which seriously damages forests, reducing SO_x emissions is a global-scale challenge. The total cost of the shipping industry's compliance with the IMO's stricter SO_x regulations is estimated at about 3.4 trillion yen. We are explaining to our customers that a fuel surcharge will be necessary in order to evenly share the burden of this cost throughout society as a whole.

In 2018, we announced the NYK Super Eco Ship, a concept vessel used for research aimed at realizing a carbon-free vessel by 2050 (see pages 22 to 23 for details). In addition to reducing our carbon footprint, we must also deal with various environmental problems, including climate change and ocean plastic pollution. All members of the NYK Group are highly conscious of protecting the global environment and committed to taking actions. We especially look forward to new ideas and innovations from our younger employees going forward.

Safety is a perennial issue for the maritime shipping and logistics industry, and safety requirements can be expected to grow more and more stringent in the future (see

pages 32 to 33 for details). With a long history of safety initiatives passed down from the Company's founders, the NYK Group has forged a firm commitment to safety and established comprehensive systems for ensuring the safe operations of its shipping fleet. In fact, the Group has established a college to recruit and educate seafarers, a company to manage training and staffing on board ships, and a training center for seafarers. We also make sure to continually refine the essential skills of members of divisions in charge of technology and operations at sea. In addition, we make use of big data to navigate ships safely and determine the risks of ship collisions, conduct research on autonomous navigation systems, and undertake preventive maintenance to minimize equipment breakdowns. Through comprehensive and wide-ranging activities like these, the Group is maintaining safety across all its operations.

Many techniques and innovations have been applied to ensure maritime shipping safety, and we intend to extend them to the Group's air transportation and logistics businesses while working together with all group companies to promote a culture of safety as a comprehensive logistics enterprise.

Along with the environment and safety, human resources are assets that underpin all the Group's business activities (see pages 36 to 37 for details). It goes without saying that human resources are involved in every aspect of the Group, whether realizing its potential or taking on challenges. I believe we are approaching a time in which the Company's personnel systems should be reviewed in light of recent trends in Japan, such as measures by companies to raise the retirement age past 60, calls for changing the simultaneous recruiting of college graduates, and issues surrounding the social security system.

Every person has potential. Machines can only produce specified items, but people can make practically anything. A person might demonstrate only 10% of his or her abilities, but is capable of realizing 200% or 300% of those abilities. To ensure that our personnel have opportunities to do that, we are rapidly making changes to the Company and its employee supervision, organizations, and systems. Within the Company, we are providing opportunities for rotating jobs and gaining experience in various departments, and grooming personnel with untapped potential. Since most of our customers are professional, however, we also understand the need for optimally balancing job assignment terms and training programs to refine our overall organizational expertise.

As the Group's operations continue to expand globally,

it is also essential to consider diversity and inclusion when hiring and assigning personnel. That means assigning the right people in the right place from a diverse group of human resources, regardless of their gender, nationality, or other characteristics. I would like NYK to be a company that enables the personnel it has trained and developed to find success, and allow all employees to thrive in their own ways according to their individual abilities and motivation.

Everyone has strong points and weak points. I want to support the development of all employees and work together

with them to make the Group even more successful in the future. To do that, it will be important to create a positive atmosphere within the Group and promote constructive communication. A company can always stay ahead if talented, motivated and diverse employees interact positively and enthusiastically with each other. Such a healthy organization will undoubtedly offer good products and services. Personally, I enjoy talking with people, so I hope to discuss a wide range of views as we pursue human resources initiatives going forward.

Future Outlook

Q In closing, what message would you like to give to the Group's stakeholders?

A We intend to help solve issues with a view to bring benefits to stakeholders.

For the NYK Group, fiscal 2018 was a year of confronting various challenges. Nevertheless, we have charted a clear course going forward. Guided by our mission of bringing value to life, we intend to steadily execute the key strategies of our medium-term management plan, Staying Ahead 2022 with Digitalization and Green. Our operating environment remains tough, giving us no grounds for optimism. Nevertheless, the Group's stakeholders can rest assured that management will do its utmost to solidify the Group's business foundations while giving priority to maintaining a profit-generating enterprise.

Moreover, to ensure that the NYK Group grows sustainably, we are incorporating environmental, social, and governance (ESG) criteria in our business strategies, recognizing that it is essential to continuously create value for

both the Group and the communities it serves through our business activities. At the same time, the Group will strive to help achieve the United Nations' Sustainable Development Goals (SDGs) as it sincerely addresses the concerns and expectations of its many customers and stakeholders while responding to needs of society.

As president, my task is to establish the means of bringing benefits to the Group's stakeholders. To accomplish that, I will have even more attention paid to the environment, safety, and human rights in our mainstay businesses of maritime shipping and logistics, while promoting creative solutions and technical innovations that create new value. I am confident that stakeholders can look forward to the Group's progress in the future.



Hitoshi Nagasawa

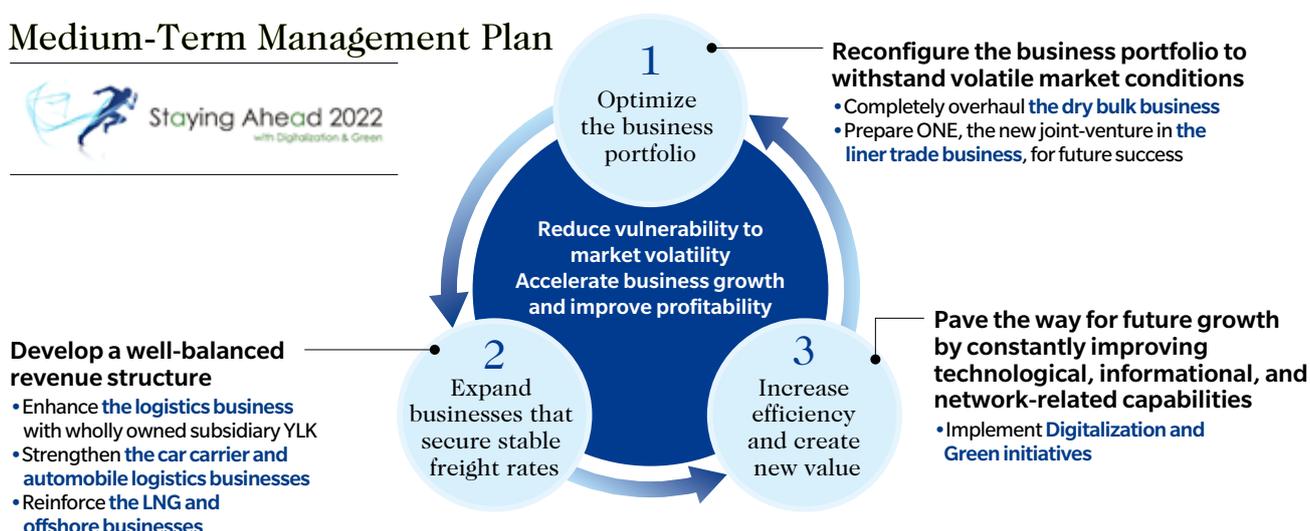
President, Representative Director,
President Corporate Officer

Medium-Term Management Plan Progress

We launched the five-year medium-term management plan called “Staying Ahead 2022 with Digitalization and Green” in fiscal 2018.

Each business division is now implementing measures following the three basic strategies and achieving steady results. Here, we will look back on the main initiatives and progress in the first fiscal year of the medium-term management plan.

Medium-Term Management Plan



Progress in Fiscal 2018

	Plan	Fiscal 2018 results
Step 1 Optimize the business portfolio (→ p.17)	Dry Bulk Strictly control market risk exposure Reform our fleet portfolio Strengthen medium-/long-term relationships with customers	Decided to return seven high-cost chartered vessels early Increased medium-/long-term contracts by 13% Reduced market exposure
	Container Merge our liner business together with those of MOL and “K” Line (ONE) Pursue efficiencies and economies of scale and generate 110 billion yen of synergy	Recorded loss due to a service disruption that occurred immediately after the start of the business 82% of the synergistic effects have emerged Overcoming teething problems; moving toward profit improvement
	Others —	NCA: All aircraft operated were temporarily grounded due to improper maintenance (successively returned to service in January 2019). Implemented response to business improvement order Cruise: Transferred 50% shares of NYK Cruises Co. Ltd. Terminal: Transferred our group company that provides stevedoring operations in North America
Step 2 Expand businesses that secure stable freight rates (→ p.19)	Promote Growth Leverage group business infrastructure for sales	Cooperation with YLK results in securing project cargo
	Enhance Investment LNG fleet plan: around 100 vessels (end of FY2022) Developing business at every stage of the energy value chain, from upstream to downstream	Five new LNG vessels delivered Signed medium-/long-term agreements for six LNG vessels and two shuttle tankers
Step 3 Increase efficiency and create new value (→ p.20)	Digitalization Make the entire supply chain more sustainable with the application of the latest digital technology	Onboard tests have been conducted to realize cashless systems Launched shipmanagement platform named “NiBiKi” Provided ship data for use in the IoT open platform
	Green Initiatives Create new value for the next generation under the themes of carbon-free, clean energy, and renewable energy	Advanced LNG fuel supply/sales business Contributed to 150% increase in renewable energy generation vs. previous year (biomass transport) Implemented green financing Announced NYK SUPER ECO SHIP 2050

Step 1 Optimize the Business Portfolio

Aimed at establishing a business portfolio highly resilient to market conditions, we are completely overhauling our dry bulk business, reducing the long-term chartered vessel ratio and strictly controlling market risk exposure. At the same time, we are promoting increased efficiency of vessel assignment and operations utilizing ICT in an effort to increase profitability.

Moreover, we are working to improve our profit structure through management integration of four terminal operation domestic group companies and the divestment of cargo handling overseas group companies, among other measures.

Improving the Dry Bulk Business with the Early Redelivery of High Cost Chartered Ships and Other Measures

We are promoting the early redelivery of high cost chartered vessels procured while the shipping market was soaring. In fiscal 2018, we decided to return seven vessels, and we plan to return around 20 vessels over the next three years up to fiscal 2020.

At the same time, we have put into place a system for centralized management of market exposure* and flexible freight space procurement based on the timing and length of a contract.

* Market exposure refers to vessels not engaged in long-term contracts.

Early Redelivery (Result)

7 vessels / around **20** vessels

Securing Medium- to Long-Term Contracts (Result)

Contract **13% increase** ↗

Vessel **11% increase** ↗

Volume **5% increase** ↗

* Fiscal 2017 vs fiscal 2018 on a consolidated basis

* Figures refer to the number of CVC and COA contracts of more than two years signed in FY2018. Some vessels under these contracts will be deployed in FY2019 or afterward.

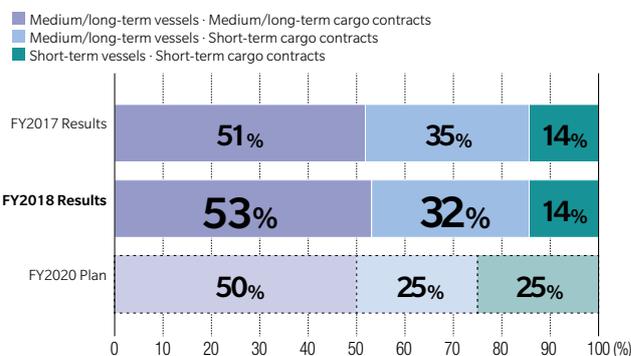
Reforming out Fleet Portfolio to Withstand Volatile Market Conditions (Capesize and Panamax)

Early redelivery contributes to the decrease in exposure

fleet rate to **32%**

Securing medium- to long-term contracts contributes to

the increase in non-exposure fleet rate up to **53%**



* Medium/long-term: More than 2 years Short-term: Less than 2 years

* All figures are approximates.

* The total percentage does not always add up to 100.

Strengthening the Competitiveness of the Terminal Business through the Management Integration of Four Group Companies in Japan

In December 2018, NYK together with Mitsubishi Logistics Corporation established a holding company called MY Terminals Holdings Limited. UNI-X Corporation, Nippon Container Terminals Co. Ltd., Asahi Unyu Kaisya Ltd., and Yusen Koun Co. Ltd. became the wholly owned subsidiaries of this holding company. In addition, UNI-X Corporation and Nippon Container Terminals Co. Ltd. merged in April 2019.

Through this integration of management, we will increase the quality of our port and harbor transportation business in Japan and deliver stable services into the future. Furthermore, we will aim to increase competitiveness by harnessing the terminal operation know-how of Mitsubishi Logistics Corporation.

Medium-Term Management Plan Progress

Joint Operation of Cruise Business through Divestment of a 50% Share in NYK Cruises Co. Ltd.

NYK sold a 50% share in NYK Cruises Co. Ltd., which engages in the cruise business, to Anchor Ship Partners Co. Ltd. (Anchor ship), which is a Japanese principal investment firm focused on the shipping industry. The cruise business is now being jointly operated with Anchor Ship, as of April 2019.

We believe the domestic cruise market has a bright future once the cruise culture becomes a greater fixture in Japan. In 2020, we will complete renovation of the cruise ship *Asuka II* and work to further strengthen the *Asuka* brand we have built up to date.

Conceptual image after renovating the *Asuka II* cruise ship

* Plan as of May 2019; the details and conceptual image are subject to change or cancellation.



Entrance hall



Open-air hot spring bath

Response to the Business Improvement Order Issued to NCA

Nippon Cargo Airlines Co. Ltd. (NCA), an NYK Group company that engages in the air transport business, received a business improvement order from the Minister of Land, Infrastructure, Transport and Tourism in July 2018 for improper maintenance practices spanning multiple years. Following this order, NCA submitted a report in August 2018 covering its analysis of the causes and improvement measures. In this report, NCA presented a total of 69 items for improvement that focused on the three main areas of operations, the functions of the safety management system discussed both in the business improvement order and in the operation improvement order, and main individual issues. As of the end of June 2019, NCA had completed or implemented all 69 items. Going forward, we will continue to check the progress of NCA's improvement measures.

In addition, the NCA Investigative Committee, chaired by the president of NCA and including outside experts as members, released a report in January 2019 on the committee's investigation concerning recurrence prevention measures. This report contained a total of 43 items focused on three areas: elimination of direct causes of

improper practices following the business improvement order, strengthening of control and supervision functions, and improved decision-making progress in future business administration. Of these, 25 items overlap with the improvement measures above, and as a result efforts are already underway as part of the improvement measures. In addition, the remaining 18 items are being reviewed and addressed using an action plan and other means.

Safety Talks (Direct Dialogue with the President)

NCA has established Safety Talks as an opportunity for direct dialogue between the president, safety managers, and employees at all 43 of the company's departments in Japan. These talks are held to discuss employees' thoughts about safety and to address any requests the president may have of employees in terms of safety. The goal of these talks is to find out what employees are really thinking, including differences in commitment between departments and true voices in the field, for use in the rebuilding of NCA's internal systems.

Step 2 Expand Businesses That Secure Stable Freight Rates

NYK considers businesses with a potential for growth (logistics, car carriers, and automobile logistics) as well as priority investment businesses (LNG and offshore) to be businesses that secure stable freight rates.

In businesses with a potential for growth, we pursue synergies within the Group and strive to enhance the added value nature of services using digital technologies. As for priority investment businesses, we engage in a broad range of businesses in the energy value chain, from upstream to downstream.

Realizing Medium- to Long-term LNG Projects

As a major carrier of LNG, the Group takes part in various LNG transport businesses throughout the world. While we are constantly exploring new challenges and opportunities, our focus remains on medium- and long-term contracts, with a fleet expansion plan of about 100 vessels by fiscal 2022. Furthermore, the Cameron Project (U.S.), in which we have

successfully gained access to a considerable portion of the LNG value chain, has reached a remarkable milestone with the production of LNG commencing from May 2019. By taking part in this project, we are now involved in a broad range of the LNG value chain. In the offshore business, we are participating in the 3D geophysical survey business.

LNG Fleet

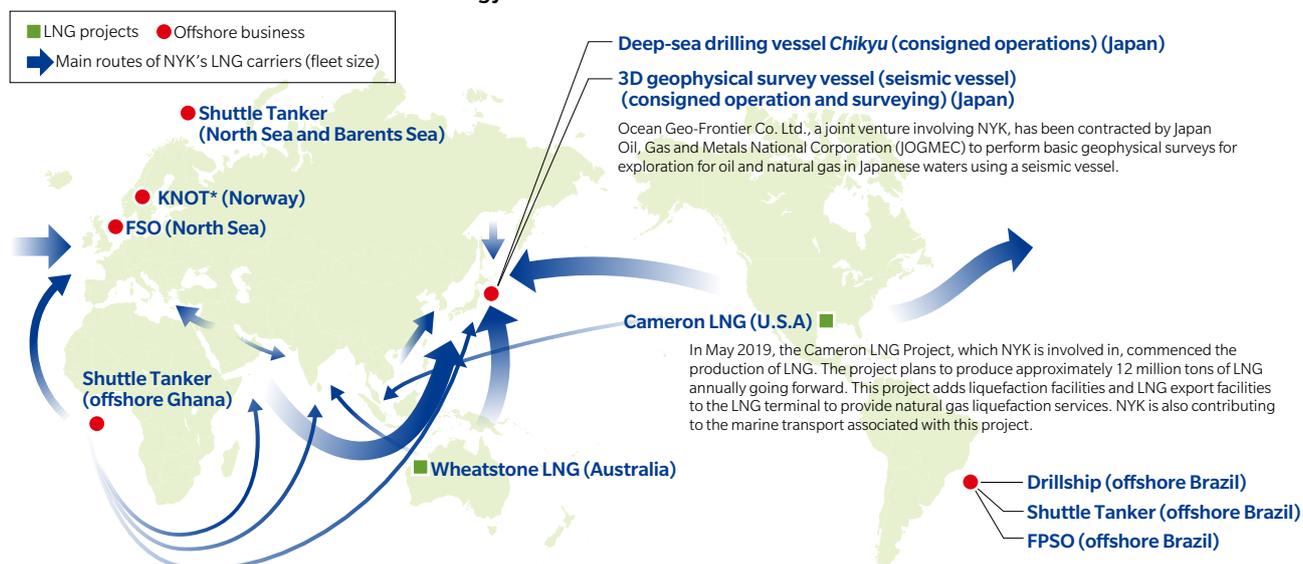
FY2019 or afterward On Order **12** vessels As of end of FY2018 Fleet in Operation **75** vessels → about **100** vessels (planned in FY2022)

Charterer	Vessel Name / Shipyard	Project	FY2019	FY2020	FY2021	FY2022
1 Tokyo Gas	<i>Energy Glory</i>	U.S.				
2 Mitsubishi Corporation	<i>Diamond Gas Sakura</i>	U.S.				
3 JERA	<i>Bushu Maru</i>	U.S.				
4 Iberdrola	HHI	U.S.				
5 EDF	HHI	U.S.				
6 Mitsubishi Corporation	HHI	U.S.				
7 TOTAL	SHI	Worldwide				
8 Mitsubishi Corporation	HHI	Canada				
9 Mitsubishi Corporation	HHI	Canada				
10 TOTAL	SHI	Worldwide				
11 TOTAL	SHI	Worldwide				
12 EDISON	HHI	Worldwide				

Natural Gas Liquefaction Business

Project	Area	Production	FY2019	FY2020	FY2021	FY2022
1 Cameron LNG	Louisiana, U.S.	12mil ton (LNG)				

Presence in LNG and Offshore Business — Energy Value Chain



* KNOT stands for Knutsen NYK Offshore Tankers AS, a joint venture company involving NYK headquartered in Haugesund, Norway that engages in the shuttle tanker business globally. NYK acquired a 50% stake in Knutsen Offshore Tankers in December 2010 with the goal of expanding offshore oil field development. The company later changed its name to KNOT.

Step 3 Increase Efficiency and Create New Value

We are developing various technologies for raising the efficiencies of ship operations and maintenance work, improving safety and reducing environmental impacts. In addition, we are tackling the challenge of new value creation by engaging in businesses related to next-generation energy, such as carbon-free, clean technologies, and renewable energy.

New Initiatives Using Digitalization

NYK launches shipmanagement platform called “NiBiKi” for sharing data between vessels and land operators

The NYK Group developed the shipmanagement platform for data sharing called “NiBiKi” and launched services in December 2018.

In accordance with the Safety Management System (SMS) manual, onboard crew are required to file reports about safety management to the shipmanagement company. However, the conventional operation flow had some inefficiencies. Crews would have to draft various reports and applications, and then send emails with attachments to the shipmanagement company to obtain approval. Afterward, crews would need to file printouts of the reports to retain on board. Moreover, the information reported by the ship was not being used efficiently to analyze this data, etc., because each vessel and shipmanagement company would file the

data independently.

Given this issue, the NYK Group developed the NiBiKi system, which digitalizes SMS manual documents and the application and approval workflow, thereby making it possible for crews to report and request approval accurately in a short period of time by simply completing the prescribed forms following the instructions. Furthermore, the data accumulated in the NiBiKi system will be shared with ship operators and shipmanagement companies for high-quality big data analyses, enabling linkages with conventional safety and crew health activities.

Going forward, we plan to build a more comprehensive system and further utilize data for crew training and drills.

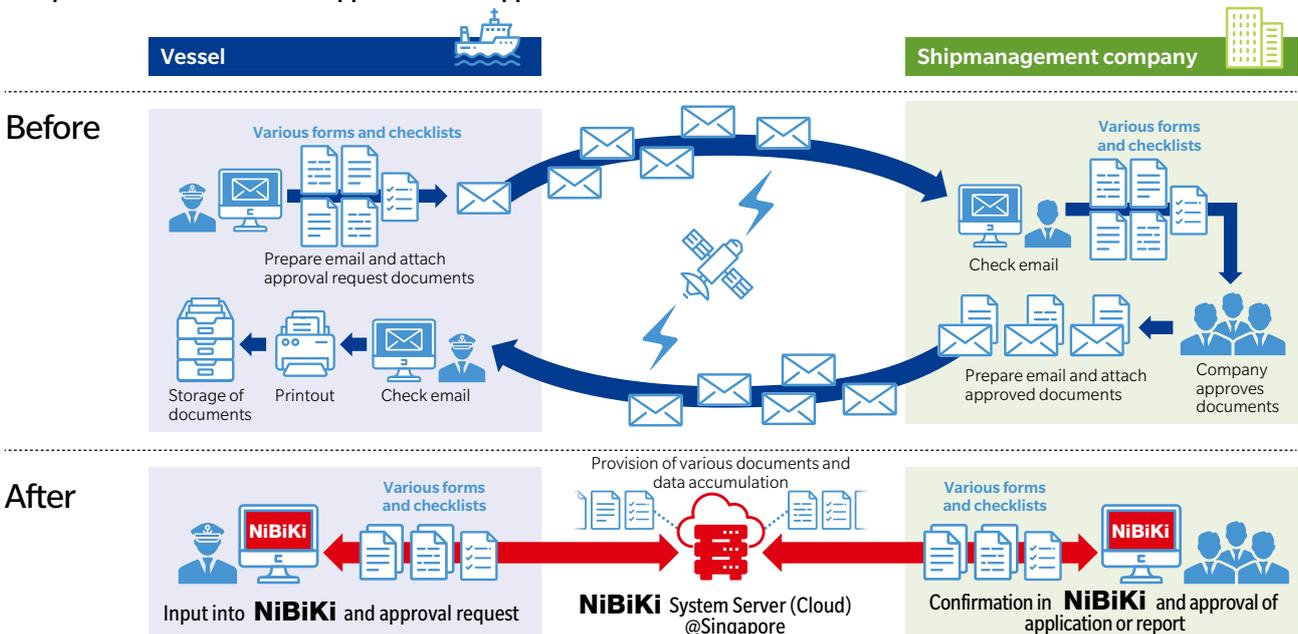
Issues in Shipmanagement Operations

- Crew workload from daily reporting and approval requests and the storage and filing of documents
- Difficult to effectively utilize data because it is managed independently

Benefits of NiBiKi

- Reduces the workloads of crews, freeing them up to focus on ship operations
- Allows the sharing of data among NYK, its five shipmanagement companies, and around 260 vessels
- Can be effectively used for safe operations using big data analyses

Comparison with Conventional Application and Approval Workflows



Actively Expand Green Business

LNG Fuel Supply/Sales Business in Japan and Internationally

In 2015, NYK together with Engie SA of France and Mitsubishi Corporation established Marine LNG Zeebrugge NV/SA (MLZ), a joint venture company engaged in the supply and sale of LNG fuel. In 2016, these companies launched the worldwide Gas4Sea brand. In addition, MLZ-owned *Engie Zeebrugge*, the world's first newly built LNG bunkering vessel, has been establishing a track record in ship-to-ship LNG bunkering services in the port of Zeebrugge in Belgium ever since the vessel began operations in 2017. In Japan, we plan to launch a bunkering business starting in 2020 using Japan's first LNG bunkering vessel through a partnership with Kawasaki Kisen Kaisha Ltd., JERA Co. Inc. and Toyota Tsusho Corporation.



Advancements in the LNG Fuel Supply/Sales Business

May 2018	NYK, Kawasaki Kisen Kaisha, Ltd., JERA Co. Inc. (JERA)* and Toyota Tsusho Corporation established two joint venture companies called Central LNG Shipping Japan Corporation (CLS) and Central LNG Marine Fuel Japan Corporation (CLMF) to engage in the LNG fuel sales business in the Chubu region.
July 2018	CLS ordered an LNG bunkering vessel from Kawasaki Heavy Industries Ltd. As the first LNG fuel supply ship in Japan, this vessel will begin operations in 2020 in the Chubu area, where it will be used as part of CLMF's LNG fuel supply/sales business.
August 2018	NYK, Kyushu Electric Power Co. Inc., Seibu Gas Co. Ltd., and The Chugoku Electric Power Co. Inc. concluded a memorandum for the joint review of commercializing the LNG fuel supply/sales business in the Setouchi and Kyushu areas.
February 2019	MLZ concluded an LNG bunkering agreement with Equinor ASA, a multinational energy company headquartered in Norway. MLZ plans to begin supplying fuel to four shuttle tankers in the port of Rotterdam and other locations beginning in 2020.
May 2019	NYK, Kyushu Electric Power Co. Inc., Seibu Gas Co. Ltd., and The Chugoku Electric Power Co. Inc. begin the first LNG bunkering in the Setouchi and Kyushu areas of Western Japan.

* When CLS and CLMF were established in May 2018, the shareholder was Chubu Electric Power Co. Inc.

Participation in Global Hydrogen Supply Chain Demonstration Project

In 2017, NYK along with Chiyoda Corporation, Mitsubishi Corporation, and Mitsui & Co. Ltd. established the Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD) and became the first in the world to launch a global hydrogen supply chain demonstration project.

This demonstration project involves the construction of a hydrogen plant in Brunei Darussalam and a dehydrogenation plant in the Kawasaki waterfront district. Starting from 2020, hydrogen procured in Brunei will be transported by ship to Japan in a liquid state at ambient temperature and ambient pressure, where it will be returned to gas form in Kawasaki and supplied to customers in Japan. With the world looking to reduce greenhouse gas emissions,

this project is working to establish technology for the transport and supply of hydrogen from overseas in huge quantities aimed at the field of large-scale power generation using hydrogen because it does not produce CO₂ during incineration.

Green Finance

NYK is promoting green finance initiatives for funding businesses that effectively reduce environmental impacts. The goal is to expand financing sources and increase domestic and international recognition among stakeholders of the NYK Group's initiatives toward environmental investing.

NYK also participates in the working group of the Climate Bonds Initiative, an international NGO that aims to resolve climate change issues through the bond markets. We are now increasing our presence as a world leader in green finance within the marine shipping industry, including helping to formulate international evaluation standards for green bonds.

Green Bonds

In May 2018, NYK issued 10 billion yen in green bonds. This marked the first ever green bond issuance in the international marine shipping industry, drawing a great deal of interest from investors both inside and outside Japan.

In addition, NYK has received three awards in Japan and abroad for its green bond issuance, including the Ministry of Environment Award at the Japan Green Bond Awards sponsored by Japan's Ministry of the Environment.

NYK Green Bond Investors (as of May 18, 2018; in no particular order)

The Toa Reinsurance Company, Limited	Hiratsuka Shinkin Bank
Sumitomo Mitsui Trust Bank, Limited	Kanagawa Prefectural Credit Federation of Agricultural Cooperatives
Mitsubishi UFJ Trust and Banking Corporation	Azuma Shinyoukumiai
Hokkaido Roudoukinko	Kansai University
Sugamo Shinkin Bank	Nagoya Broadcasting Network Co. Ltd.
Moka Shinyoukumiai	Japan Cargo Tally Corporation
Iwate Prefectural Credit Federation of Agricultural Cooperatives	Fukuchi Town
Shinonome Shinkin Bank	Matsuoka Jisho Co. Ltd.

[PDF](#) [Page 85 of the full report \(Cash Allocation and Environmental Improvement Effects\)](#)

Green Loans

In December 2018, we concluded a 2 billion yen green loan agreement with Taiyo Life Insurance Company. The proceeds from this loan have already been allocated to the construction of a newly built methanol fuel ship. Using methanol as a main fuel source makes it possible to lower emissions of SO_x by about 75%, CO₂ by about 8%, and NO_x by about 45%.

Green Syndicated Loan

In March 2019, we concluded a 9 billion yen syndicated loan agreement to be used for environmental investment. This was the first syndicated loan in Japan to obtain the highest rating of conformity with green loan principles from the Japan Credit Rating Agency, Ltd. (JCR).

[WEB](#) [CSR \(Corporate Social Responsibility\) > Environment > Green Finance](#)

Announcement of Carbon-free NYK SUPER ECO SHIP 2050 (NYK SES 2050)

In November 2018, NYK together with MTI Co. Ltd. and Elomatic, a ship engineering and consulting firm based in Finland, developed a new concept ship called NYK SES 2050, a carbon-free vessel of the future aimed at achieving NYK’s medium- to long-term environmental targets (see table at bottom right). NYK SES 2050 is a concept ship for 2050 modeled after a pure car and truck carrier. Minimal resistance is achieved with a low weight hull and optimized shape, while the use of electricity capitalizing on fuel cells and the adoption of high efficiency systems achieve a 67% reduction in energy derived from fossil fuels (compared to ships built in 2014).

Several of the technologies depicted in the concept ship NYK SUPER ECO SHIP 2030 (NYK SES 2030) announced by the NYK Group in 2009 have already been commercialized for use on vessels. In addition, we have made changes to our road map on the elemental technologies of ships to reflect the stricter environmental regulations and rapid technological advancements of recent years in new research domains. Going forward, we will promote collaboration with a broad range of global partners in the marine industry aimed at the R&D, verification, and introduction of elemental technologies proposed for NYK SES 2050.

The NYK Group operates one of the largest fleets in the world, numbering more than 750 vessels. Our advanced operation

know-how and laboratories not found in any other marine shipping company are key in supporting the frontlines of our operations. These laboratories are found at MTI Co. Ltd., which engages in research and technical development; Japan Marine Science Inc., which provides marine consulting services; Symphony Creative Solutions Pte. Ltd., a start-up in Singapore; and NYK Business Systems Co. Ltd., which possesses system development technologies. A team of around 100 engineers working at these four laboratories form the heart of our development. They will be the driving force behind our efforts to achieve our long-term vision for 2050.

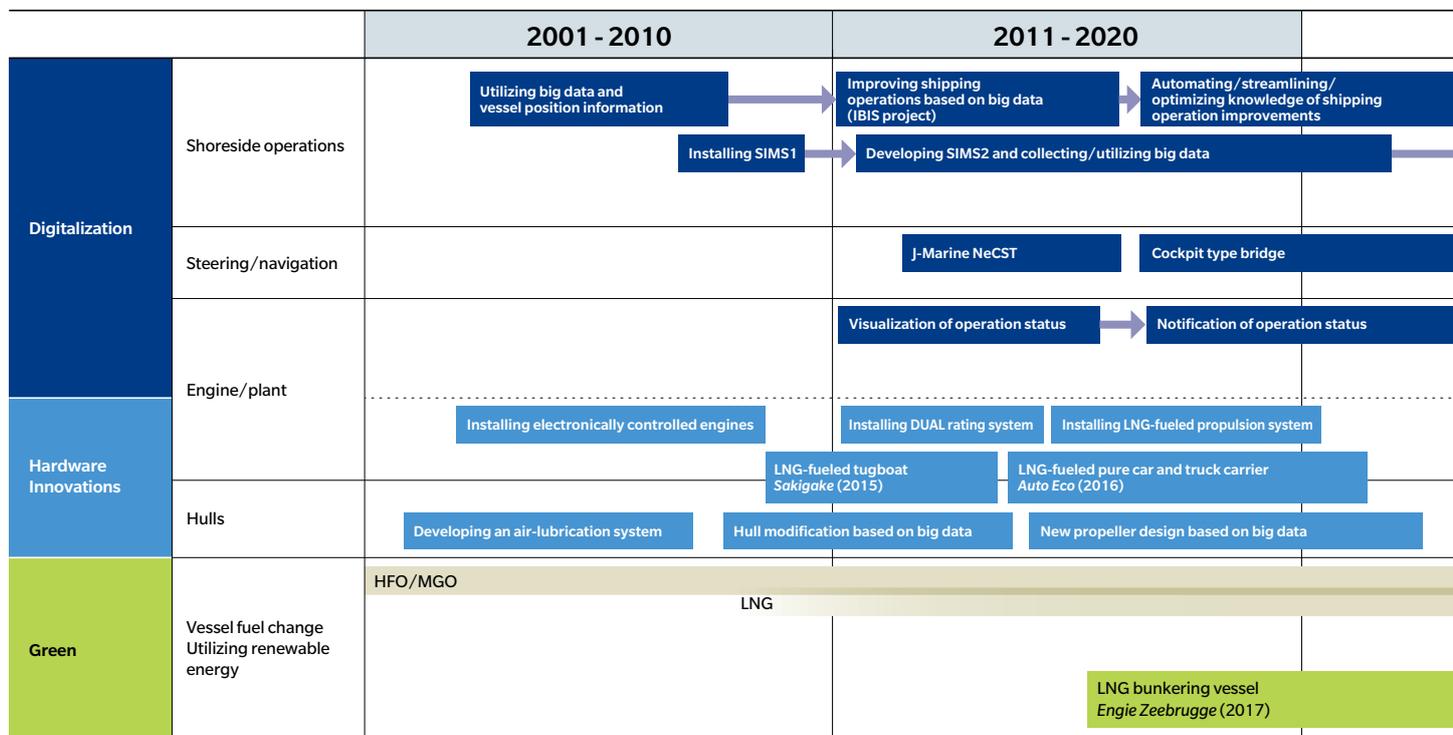
Group Medium to Long-Term Environmental Targets (CO₂ Reduction Targets)

Our medium-term management plan defines medium- to long-term environmental targets. We plan to reduce CO₂ emissions from our vessels and produce a ripple effect down the supply chain.

	2016	2017	2018	2030 (target)	2050 (target)
Vessels and ocean transportation	-0.5%	-1.6%	-2.4%	-30%	-50%

* CO₂ emissions per ton-kilometer of transport (base year is fiscal 2015)

Vessel Technology/Innovation Road Map (Abridged Version*)



* Full version available on pages 24 and 25 of NYK Report 2018

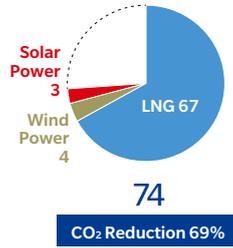


**Comparison:
Required Energy
and
CO₂ Emissions
of NYK SES**

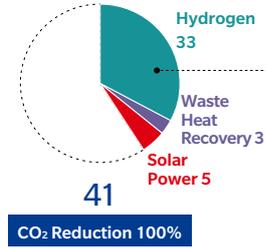
2006/2014 Built Vessel
(Base to compare)



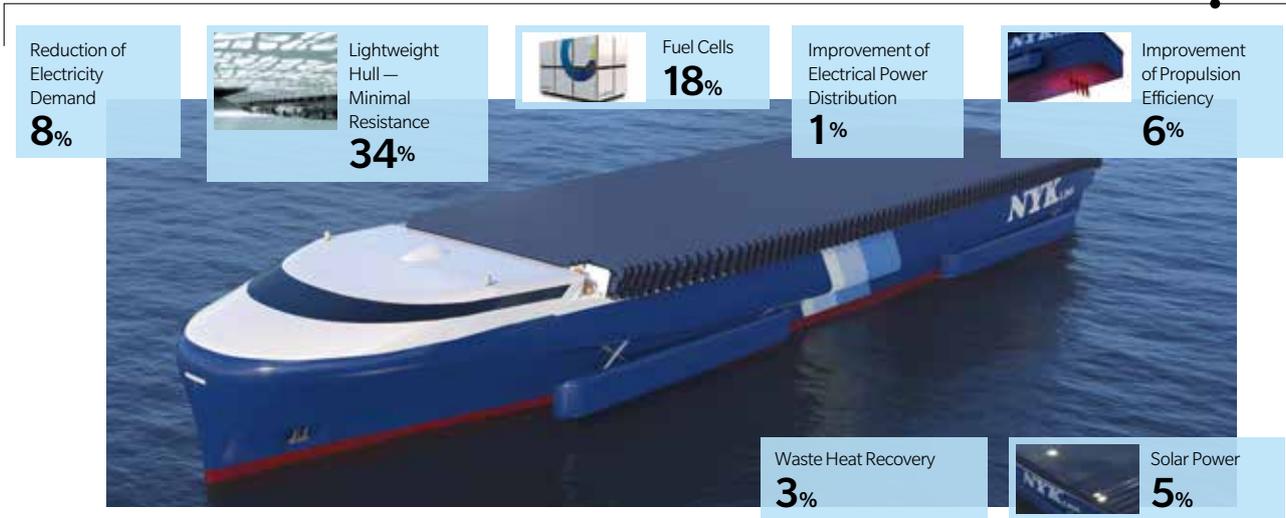
NYK Super Eco Ship 2030



NYK Super Eco Ship 2050



67%
reduction in
energy derived
from fossil fuels
(compared to ships built
in 2014)



[WEB](#) CSR (Corporate Social Responsibility) > Environment > NYK SUPER ECO SHIP

	2021 - 2030	2031 - 2040	2041 - 2050
	Automating/streamlining/optimizing use of AI, etc.		
	Next-generation vessel ICT platform	Utilizing high-speed communication with low-orbit satellites	
	Assisting onboard work through remote monitoring		
	Lookout assistance utilizing image processing technology	Automatic collision avoidance program	
	Predictive maintenance efforts	Developing advanced automated vessels by utilizing big data	
	Adopting condition-based maintenance		Installing hydrogen fuel cells Adopting innovative propulsion units
		Installing electric propulsion system	
	Developing advanced environmentally-friendly vessels by utilizing big data		
	Weight savings by adopting composite materials	Weight savings by optimal shape design	
		Biomass/solar energy	H ₂

Actively contribute to solving social issues through our business activities

The NYK Group is actively contributing to achieving the United Nation’s 17 Sustainable Development Goals (SDGs). The Group’s medium-term management plan launched in fiscal 2018 identified six specific areas relevant to the Group’s business activities through which it can make a meaningful contribution to achieving the SDGs.

We are working with each relevant department to set specific targets and KPIs and verifying progress using the PDCA cycle to help achieve the SDG objectives. This page introduces some examples of activities related to the SDGs that the Group implemented in fiscal 2018.

NYK Group contributions to achieving the UN SDGs



Activities to Increase Awareness of the SDGs

NYK promotes understanding and seeks to inform all employees about the SDGs at the headquarters and domestic group companies by providing CSR training programs, particularly for new employees, and through its e-Learning programs for all group employees. The Company also surveys employees to measure the extent of employee awareness of the SDGs.

Sustainable Development Goals Awareness Survey



Main Themes	Main Activities	Sustainable Development Goals
Education for ship crew candidates	<ul style="list-style-type: none"> •NTMA •In-house training 	
Training the next generation and workstyle reform	<ul style="list-style-type: none"> •Fostering generalists •NYK Business College •NYK Maritime College •OLIVE (Outdate Long-standing work practice and Increase Vitality of Employees) and M-OLIVE (OLIVE Project for Mariners) workstyle reform projects* •POPEYE (Promotion of Physical & Mental Enrichment of Yusen Group Employees) and POPEYES (Promotion of Physical & Mental Enrichment of Yusen Group Employees and Seafarers) health management projects* 	
Improve onboard cash settlement	<ul style="list-style-type: none"> •Onboard Cashless Systems Project 	
Green business	<ul style="list-style-type: none"> •Offshore wind power and tidal power •Biomass transport 	
Innovation	<ul style="list-style-type: none"> •The concept ship NYK SUPER ECO SHIP 2050 (NYK SES 2050) 	
Safe operation and reducing environmental impact	<ul style="list-style-type: none"> •Employing IoT, big data, AI, and other digital technologies •Forming a base for industrial and technological transformation •Meeting environmental regulations, reducing CO₂ emissions 	
Conversion to next-generation fuels	<ul style="list-style-type: none"> •Low carbonization of marine fuels 	

*OLIVE and POPEYE projects

[WEB](#) CSR (Corporate Social Responsibility) > Human Resources, NYK Report 2018 (pages 40–43)

Helping Resolve Social Issues at Every Level

The Company launched a program in 2015 to raise employee awareness of global social issues by selling fair-trade coffee, chocolate, ice cream, and other items. The in-house coffee shop at the Company headquarters offers Fairtrade certified coffee and is aiming to reach one million cups served.



The FAIRTRADE Mark

[WEB](#) CSR (Corporate Social Responsibility) > Social Contribution > Employee Engagement: Fairtrade

NYK-TDG Maritime Academy

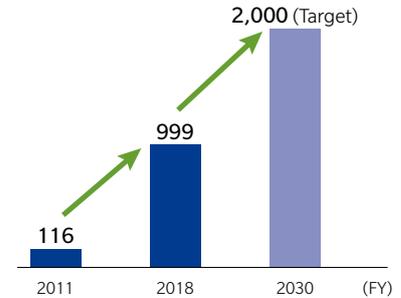
NTMA in the Philippines educates future seafarers in safe operation

We established the NYK-TDG Maritime Academy (NTMA) in the Philippines in 2007 to provide education and training in one of the leading countries for seafarers. NTMA serves as a primary source for the Group for future seafarers by producing outstanding students, instilling a deep sense of safety consciousness, and cultivating loyalty to the Group.

NTMA graduates obtain seafarer licenses after undergoing training aboard NYK cadet training ships, commercial vessels specially equipped with educational facilities and classrooms along with cabins for 20 cadets and private quarters for instructors. The hands-on experience prepares students for careers as navigation officers and engineers. The Academy has graduated about 1,000 seafarers, and several current senior officers in the Group fleet are NTMA graduates.



Total Graduates of the NYK-TDG Maritime Academy



Onboard Cashless Systems Project

Adopting a cashless onboard payment system helps ship seafarers manage money and support their families.

Dealing with money matters while on board a vessel presents various challenges. Seafarers have traditionally received their salaries in cash and use the cash to buy daily goods. But cash requires careful management by all seafarers and brings with it the risks of being lost or stolen. In addition, seafarers wiring funds to family when in port must pay remittance charges.

We are using financial technology (fintech) to create a convenient cashless system on board our vessels using a proprietary network for e-money settlements and money transfers. After exhaustive demonstration tests, this summer we established MarCoPay Inc. (Maritime Community Pay) in the Philippines to provide financial services supporting cashless systems on our vessels.

Seafarers from the Philippines and other locations often face

difficulty when they need to take out loans because, regardless of their contracted salary, financial institutions are wary about lending to seafarers with contracted working periods that may be less than a year, which is common in the shipping industry. Our project has attracted the attention of Philippine governmental agencies and various financial firms because using the data we have accumulated about the financial services seafarers use while aboard ship promises to reconnect financial institutions with seafarers and enable them to offer services for their substantial assets. With some 1.5 million professional seafarers worldwide, our onboard cashless system could vastly improve the financial conditions for seafarers and contribute significantly to improving the lives of seafarers and their families.

Present Difficulties

- Onboard Cash**
US\$1 billion in cash on board ships worldwide
- Overseas Remittance Costs**
Company → Captain
Seafarers → Family
Remittance fee
- Risks, Time Used Managing Cash**
Captain's effort and time for managing cash
Risk of cash being lost or stolen

Cashless Onboard Payment System

