Part III Business Overview

The NYK Group provides a broad range of transportation services spanning sea, land and air, and comprising one of the world's largest marine transport fleets together with semitrailers and cargo aircraft. We also utilize our long-standing transport technologies and global network to deliver solutions tailored to client needs, including the operation of terminals and warehouses, and pre-delivery inspections, repairs, and parts-supply services for new vehicles. At the same time, we are expanding into the clean energy field, such as LNG bunkering for ships and wind-power generation. We stand committed to continually creating new value for society while building the competitiveness of these new segments.

Global Logistics

Liner Trade

Delivering a full range of services globally using one of the world's largest route networks.

Foods, daily essentials, electronics, auto parts

Air Cargo Transportation

Offering international air cargo transportation services connecting Japan with North America, Europe and Asia.

Semiconductors, precision instruments, auto parts

Logistics

Meeting globally diversified logistics needs using our 590 bases around the world.

Foods, daily essentials, electronics, auto parts

Bulk Shipping

Car Transportation Division

Operating one of the world's largest car carrier fleets (110 vessels) and providing inland transport and terminal operation services.

Passenger cars, trucks, construction machinery, railcars

Dry Bulk Division

Engaging in safe and stable transport services through long-term contracts with multinational resource companies and others.

Iron ore, coal, wood chips, grain

Energy Division

Covering the entire energy value chain with optimized and safe transport services.

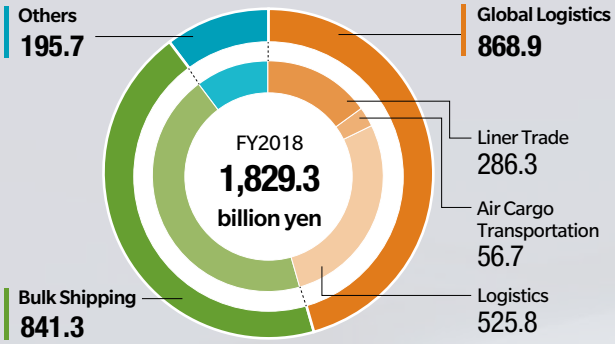
Crude oil, oil products, chemicals, LNG, LPG, offshore business, green business

Navigation Bridge

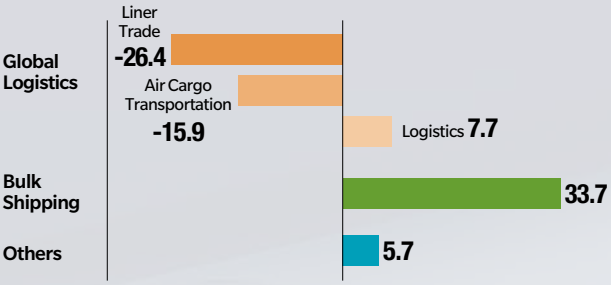
The bridge is where the captain, navigation officers and other crew operate a ship. Despite the growing prevalence of automation, people's skills are still paramount to safety at sea. The crew ensures a ship arrives at its destination safely, keeping vigilant watch of conditions and dealing with changes in a flexible manner.

At a Glance

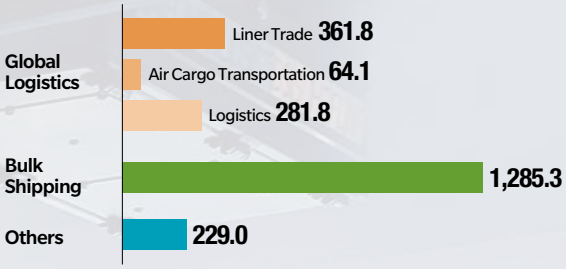
Revenues by Segment*1 (billions of yen)



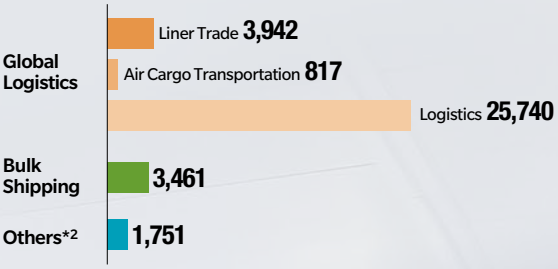
Recurring Profit and Loss by Segment*1 (billions of yen)



Total Assets by Segment*1 (billions of yen)



Employees by Segment (people)



*1 Prior to eliminations *2 Includes administrative divisions

We are working to increase profitability and improve capital efficiency in an effort to achieve the targets of our medium-term management plan.

Eiichi Takahashi

Representative Director, Senior Managing Corporate Officer, Chief Financial Officer, and Chief Executive in charge of the Management Planning Headquarters

Overview of Financial Results in Fiscal 2018

Fiscal 2018 was a year of laying the groundwork for a recovery amid major losses resulting from temporary problems at ONE and NCA.

In fiscal 2018, the Group posted revenues of ¥1,829.3 billion, operating income of ¥11.0 billion, a recurring loss of ¥2.0 billion, and a net loss attributable to owners of the parent company of ¥44.5 billion. While revenues and income were down compared with the previous fiscal year, the decrease in revenues was primarily due to the transfer of the liner trade business to Ocean Network Express Pte. Ltd. (ONE), and was not the result of a reduction in the scale of operations or poor performance of the Group as a whole. The recurring loss was mainly the result of two factors. Firstly, profits substantially decreased in the liner trade business due to disrupted operations, specifically delays during the startup of ONE. Secondly, losses were posted in the Air Cargo Transportation segment due to the decision by Nippon Cargo Airlines Co. Ltd. (NCA) to voluntarily ground all of its aircraft in response to errors in maintenance records discovered through inspections by the Japanese government. As a result of these problems, the Group's financial performance seriously suffered, even though the Group had hit the ground running at the beginning of fiscal 2018, the first year of our medium-term management plan.

Preparing from scratch over a short period of time for the startup of ONE, which has about 8,000 employees, was very challenging, and problems after operations started dragged on longer than initially expected. Nevertheless, we recorded a provision for losses related to contracts associated with chartered container ships as an extraordinary loss, and believe that the Group will not incur further startup-related losses. With respect to NCA, while its oversight was serious, we streamlined the freighter aircraft fleet to eight Boeing 747-8F models and incurred losses from the remaining older aircraft that were removed from the fleet. We have laid a path for ONE and NCA to make a fresh start in fiscal 2019, and prospects for both companies to improve their bottom lines appear bright.

Besides ONE and NCA, we have been executing the basic strategies of our medium-term management plan largely as expected in the Group's other businesses. In the bulk shipping business and logistics business, recurring profit increased year on year following a recovery in performance, and we will work to maintain this trend going forward.

Outlook for Fiscal 2019

We forecast higher profits based on ONE becoming profitable, NCA improving its results, and other businesses performing solidly.

We expect ONE to become profitable in fiscal 2019, and our forecast of net profit is around $85.0 million (approximately ¥9.0 billion). ONE is currently in the process of optimizing its cargo portfolio, services, and organization with the goal of improving profitability. As a major shareholder, NYK is closely monitoring the progress of these efforts. Meanwhile, the utilization rate of NCA's fleet and its maintenance costs remain unsatisfactory, so we do not forecast profits in fiscal 2019. We will aim, however, to increase cargo volume by increasingly utilizing the eight Boeing 747-8F aircraft that are back in service, while making use of the three aircraft removed from the fleet by leasing them to Atlas Air Inc. As a result of these initiatives, we expect the performance of the Liner Trade segment and the Air Cargo Transportation segment to improve markedly. We also anticipate further growth in the Logistics segment.

In the Bulk Shipping segment, we will continue to upgrade the dry bulker fleet portfolio, which includes returning chartered dry bulkers before their contract dates, specifically those incurring high costs. In the liquid transport market, many new opportunities are appearing for liquefied natural gas (LNG) and offshore projects, an important area of investment for the Group. Since such projects require substantial outlays, however, we place importance on closely examining the prospects for profitability while building up investments. Meanwhile, competition with our rivals in the automobile transport market has been heating up. Nevertheless, we have comparatively advanced expertise in this business, so we expect it to continue generating steady earnings. Taking into account all these factors, we forecast profit growth for the Bulk Shipping segment in fiscal 2019.

A major topic this year in the shipping industry was the International Maritime Organization's regulations on vessel emissions of sulfur oxide (SOx), which will take effect from January 2020. The amount of compliant fuel available on the market is expected to fall short of demand. Nevertheless, we will make sure to secure enough fuel so vessels are not forced to stop operating, and deal with the related costs for meeting the new standards. The Group has been making full preparations for the regulations while explaining to customers that this is an industrywide initiative for protecting the environment.

Progress under the Medium-Term Management Plan

We are aiming to improve the shareholders' equity and debt-to-equity ratios to new levels now that targets for recurring profit and ROE are within reach.

Under the medium-term management plan, we are aiming for return on equity (ROE) of at least 8% and recurring profit of between ¥70.0 and ¥100.0 billion. In fiscal 2019, we forecast ROE of 5.3% and recurring profit of ¥37.0 billion. To

FY2018 Results and FY2019 Forecast

(Billions of yen)

	FY2017	FY2018	YoY difference	FY2019 (Forecast)	YoY difference
Revenues	2,183.2	1,829.3	-353.9	1,730.0	-99.3
Operating income	27.8	11.0	-16.7	38.0	+27.0
Recurring profit (loss)	28.0	(2.0)	-30.0	37.0	+39.0
Profit (loss) attributable to owners of the parent	20.1	(44.5)	-64.6	26.0	+70.5
Average exchange rate	¥111.19/US$	¥110.67/US$		¥105/US$	
Year-end exchange rate	¥106.24/US$	¥110.99/US$		–	
Average bunker oil price per metric ton	US$341.41	US$442.49		US$430	

drive up recurring profit, we are working to make NCA profitable by fiscal 2020. Steady profits from new LNG projects are also expected to contribute by fiscal 2019 or 2020. Given those factors, we believe the Group will be well positioned to reach the targets. Our forecast of 5.3% for ROE indicates we are already on course to achieving 8%. In fiscal 2018, as part of measures to liquidized assets, the Group posted about ¥22.0 billion in extraordinary income from gains on sales of cross-shareholdings and real estate. To raise ROE further, we will step up efforts to boost earnings, cut costs and improve capital efficiency.

The shareholders' equity ratio was slightly short of 25% in fiscal 2018, but a higher ratio is needed in the maritime shipping industry given its relatively high volatility. Therefore, while 25% is an absolute minimum, we recognize the need to ensure a ratio of at least 30%. Our debt-to-equity ratio target is 1.5 or less, but we will aim to bring it down as close as possible to 1.0.

We have been making progress toward achieving these targets by implementing the basic strategies of the medium-term management plan. Our first strategy is to improve the NYK Group's ability to deal with market fluctuations. Toward that end, we have been upgrading the Group's fleet of dry bulkers and returning previously chartered vessels before their contract dates. We decided to return seven such vessels in fiscal 2018 under difficult operating conditions, so we are well on track to reaching our goal of returning around 20 vessels over three years. Although returning previously chartered ships comes with a penalty under contract conditions, we must decisively carry out these measures for the sake of a better future.

Our second basic strategy is to strengthen businesses for which stable freight rates can be secured. Among them, we have designated LNG and offshore businesses as important investment targets, and seek to become actively involved in projects. There is no guarantee that LNG and offshore projects will be highly profitable every time, so it is extremely important to be very selective. Certain aspects of these projects are out of the Group's control, but we can increase the accuracy of the selection process by classifying large-scale projects that should be targeted. While collaborating with international partners and applying a combination of investment methods that increase leverage, we are working to ensure that investments generate high returns without inflating the balance sheets. In these ways, we are fully considering capital efficiency while pursuing investments from the standpoints of both project selection and investment methods.

Financial Strategies

We are striving to raise capital efficiency while circumventing the shipping industry's need for large-scale investments.

In the maritime shipping industry, unlike other industries, vast amounts of long-term investments are regarded as unavoidable. Consequently, shipping companies have comparatively high debt ratios, and, therefore, aim to generate stable low-risk returns on investments in order to maintain the transport infrastructure that is so vital for peoples' livelihoods. The high debt ratios in the shipping industry have also been recognized as a special case by rating agencies. Despite this conventional wisdom, however, the industry is now regarded as being overly dependent on debt.

To control risks and costs associated with debt, the Group carefully manages its loans payable while giving due consideration to revenues from assets denominated in foreign currencies, interest rate risks, loan periods, and so on. We have been keeping the total amount of interest-bearing

Financial Targets of the Medium-Term Management Plan (Fiscal 2018 to 2022)

	FY2017 results		Medium-term targets
Recurring profit	¥28.0 billion	▶	¥70.0–100.0 billion
Return on equity	3.8%	▶	Minimum 8.0%
Shareholders' equity ratio	27%	▶	Minimum 30%
Debt-to-equity ratio	1.78	▶	Under 1.5
Average exchange rate	¥111.19/US$		¥105/US$
Average bunker oil price per metric ton	US$341.41		HSFO*1: US$320; LSGO*2: $620

*1 HSFO: high sulfur fuel oil
*2 LSGO: low sulfur gas oil

debt under control by limiting it to around ¥1.0 trillion. We have also reduced cash and cash equivalents from previous amounts of over ¥100.0 billion to about ¥80.0 billion by making effective use of capital available in the Group, based on a policy of using up surplus cash on hand. While some may argue that reducing cash and cash equivalents can lead to problems related to liquidity on hand, the Group has sufficiently established commitment lines of credit, so we foresee no problems in this respect.

To procure funds, we intend to continue acquiring a certain amount through direct financing as a matter of policy, as well as issue corporate bonds for a certain portion to meet the expectations of bond investors. Among these measures, the Company's 40th unsecured corporate bond was issued as a green bond in May 2018. As the first green bond in the global maritime shipping industry, the issuance drew attention as a pioneering initiative and attracted the interest of investors who had never purchased NYK's bonds. On the momentum of that success, we intend to make the most of such effective methods for procuring funds in the future.

Investment Plans

The Investment and Credit Committee makes objective decisions using our own WACC-based hurdle rates.

We forecast operating cash flow over the next few years, and having taken into account the investment plans of every business segment, we expect positive free cash flow going forward. On that basis, investment projects will be examined by the Group's Investment and Credit Committee, which is comprised of directors and corporate officers in charge of planning and finance. As the criteria for its decisions, the committee uses the Group's own hurdle rates, which are calculated from the weighted average cost of capital (WACC).

It is possible that an investment project approved by the Investment and Credit Committee might not proceed as planned from the start. In such a case, we will conduct a serious investigation to analyze the causes if necessary. Indeed, we intend to pay extremely close attention to the process of objectively assessing investment projects in the future.

Dividend Policy

Giving priority to stable dividends, we set a minimum dividend amount to offer assurance to long-time shareholders.

Management has been targeting a consolidated dividend payout ratio of 25% as a guideline for returning profits to shareholders. Our basic policy at present, however, is to ensure that dividends are paid in a stable manner, stemming from the importance of offering assurance to long-time shareholders. Accordingly, the Board of Directors has decided to set a minimum dividend amount with a view to uphold this commitment to paying a certain amount of dividends to shareholders regardless of the Group's performance. Although the Group posted losses in fiscal 2018, an annual dividend of ¥20 per share has been set, and represents the minimum dividend amount for the time being.

Looking ahead, while taking into account the Group's progress under our medium-term management plan, as well as investment plans and forecasts of financial results, we plan to establish an appropriate dividend policy incorporating the concept of dividends on equity. Following substantial losses in fiscal 2018, we are buckling down and giving top priority to getting the Group's performance back on track in fiscal 2019.

As we work toward this goal, we sincerely ask for the ongoing support and understanding of the Company's shareholders and investors going forward.

Global Logistics

Generating a rapid earnings recovery and fulfilling our responsibility as part of the social infrastructure

Thoughts on the NYK Group's Culture and Philosophy

The Global Logistics business transports products and intermediate goods that support people's lives. Our basic philosophy of "Bringing value to life," which means being conscious of the final users who need and use the products and goods. One of my objectives is to maintain our open and vibrant corporate culture that values and appreciates the variety of nationalities and cultures of the people who make up the NYK Group and that encourages employees to embrace change and feel empowered to act of their own volition.

Hiroki Harada
Director, Senior Managing Corporate Officer
Chief Executive of Global Logistics Services Headquarters

Liner Trade

Business Overview

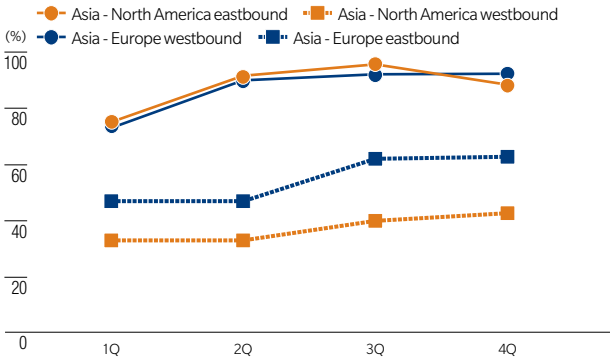
The container shipping business was transferred to the newly formed Ocean Network Express Pte. Ltd. (ONE), which was created by integrating the liner divisions of NYK, MOL and "K" Line. Operations launched in April 2018, and preparations are currently under way to transfer the overseas container terminal business to ONE. We have also created a joint holding company with Mitsubishi Logistics Corporation to boost the competitiveness of our domestic terminal business.

Formulating the ONE Business Model for a V-Shaped Earnings Recovery

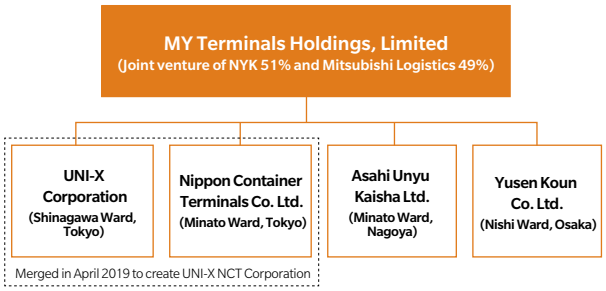
The newly combined ONE container shipping operation that launched in April had some teething problems and needed more time than anticipated to secure a full workforce and convert the various business processes, but its business operations reached an even keel in July. The teamwork ONE is creating by combining the best practices of the former three companies has resulted in the company achieving roughly 80% of its initial target for an annual synergy effect of ¥110.0 billion. The focus from this point will be on formulating a first-rate business model by eliminating the 3Ms (muda, muri, and mura; or non-value adding activities, unevenness in production or work activities, and excessive burdens) and establishing an optimal round-voyage portfolio that will maximize gross profit. We expect these efforts to generate a V-shaped recovery in earnings for the combined operations and put ONE on course to reach its medium-term target for recurring profit of $500–600 million earlier than initially planned.

We are continuing to discuss and coordinate the merging of the three companies' overseas container terminal operations with the aim of bringing them on board at ONE during fiscal 2019. In the domestic terminal business, we established a joint-venture holding company with Mitsubishi Logistics, a highly competitive terminal operator with leading-edge expertise. The holding company will manage operations of our terminals at Tokyo, Yokohama, Nagoya, Osaka, and Kobe to enhance their competitiveness.

Utilization by Trades (FY2018)



The Reorganization of Domestic Terminal Operations



Air Cargo Transportation

Business Overview

Nippon Cargo Airlines Co. Ltd. (NCA) provides international air cargo services linking Japan, North America, Europe, and Asia. In July 2018, Japan's Ministry of Land, Infrastructure, Transportation and Tourism issued a business improvement order concerning inadequate maintenance at NCA. The company promptly responded in August by submitting a 69-point plan of improvements, and as of the end of June 2019 NCA had implemented all initiatives.

Enhancing Operational Safety and Stability with a Streamlined Fleet

NCA followed the administrative action by reaffirming its commitment to safety and by voluntarily immediately grounding its full fleet of 11 aircraft for maintenance and thorough inspections. The company also changed its operating system from 11 aircraft of two model types to eight aircraft of a single model type to enable more efficient and thorough maintenance. NCA leased the three remaining aircraft to U.S.-based Atlas Air Inc. (Atlas), expanded airfreight volume through an agreement with Atlas, and plans to use the additional space to increase the flexibility of its air cargo transport services.

NCA does not expect to return to profitability in the coming year. However, the company has established an effective balance between aircraft usage and maintenance, thus ensuring extremely safe and stable operations, and expects the flexibility gained from the additional space provided by Atlas-operated aircraft to improve profitability.

747-8F Flight Operation Resumption Schedule

	June 2018 Suspension of Operations	End of 2Q	End of 3Q	4Q		
				End of Jan	End of Feb	End of Mar
No. of Aircraft in Operation	0	3	6	8	→	

Logistics

Business Overview

In February 2018, NYK made Yusen Logistics Co. Ltd. (YLK) a wholly owned subsidiary, thus strengthening group collaboration. YLK has a well-balanced portfolio by region and business, and the NYK Group now offers a full menu of logistics solutions through 590 logistics centers in 45 countries to meet needs that are increasingly global and diverse.

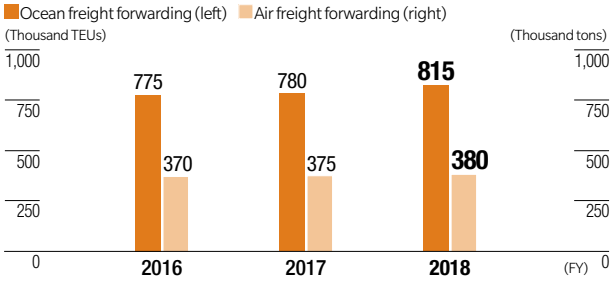
Expanding Synergies and Increasing the Added Value in Our Services

The logistics business is the NYK Group's solid and stable earnings foundation. Nevertheless, further developing the business's potential is essential to achieving the targets in YLK's medium- to long-term management plan TRANSFORM 2025. We are seeking to maximize Group synergies by linking the automotive logistics business and operations at NYK Bulk & Projects Carriers Ltd., in addition to integrating IT departments. We are also applying our experience in the container shipping business to increase operating efficiency, including outsourcing the voluminous documentation work required in the freight-forwarding business.

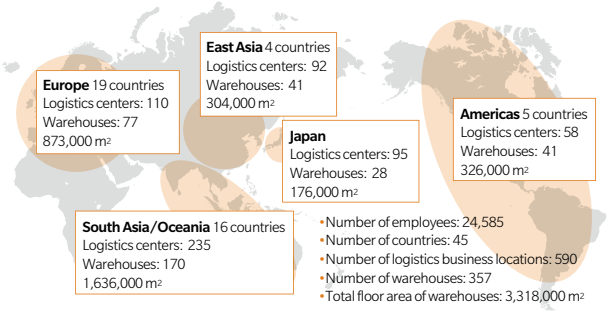
Strategies to improve profitability include continuing to enhance our sales force and space-purchasing capabilities, strengthening our origin cargo management (OCM)* and other value-added services, and advancing innovation in our services, such as digital forwarding.

* Origin cargo management (OCM) provides complete visibility of the logistics and supply chain from the order of the product to its status at the manufacturing site and then the domestic or international delivery to the product's final destination.

Cargo Volume in Ocean Forwarding and Air Forwarding



Logistics Center Locations (As of March 31, 2019)



Applying our tireless ingenuity and technical abilities to meet the challenges of a transforming automobile industry

Thoughts on the NYK Group's Culture and Philosophy

Automobiles have become an important part of our lives, and the Car Transportation Division is "Bringing value to life" and supporting the development of society by transporting automobiles all over the world. In our division, words we use to describe the outlook we desire in our employees when we conduct our business include bright, calm, nimble, and resilient. Our mission is to be skillful, flexible, and passionate, to have inherent teamwork, and to anticipate customer needs.

Takaya Soga
Managing Corporate Officer
Chief Executive of Automotive Transportation Headquarters

Business Overview

NYK is a major transporter of finished vehicles in Japan and worldwide with the world's largest fleet of pure car and truck carriers (110 vessels). In addition to long-haul ocean transport, the Group provides high value-added services ranging from short-sea transport within Europe and Southeast Asia and inland transport via railway and semitrailers to the management of car and truck carrier terminals and facilities for pre-delivery inspection (PDI), including inspection, repair, and component attachment.

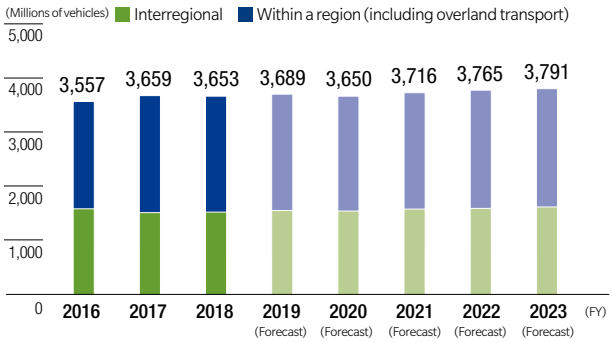
Recognizing Market Conditions

Improving Logistics with Advances in Mobility Services

The advances in connected, autonomous, shared, and electric (CASE) automotive technologies are revolutionizing the automobile industry. And connected cars are already having an impact. Cars equipped with data communication modules (DCMs) are making it possible to collect information not just on driving conditions but also on a wide variety of social activities. Data collected from cars not only helps with prediction and early detection of trouble related to automobiles but also can be used to gather information about society. The different levels of social infrastructure maintenance and development depending on the country, local region, and city mean that it will take time for CASE to be fully achieved around the world. However, the arrival and proliferation of connected cars should speed up the technical development of autonomous cars and the social infrastructure for shared vehicles.

We expect demand for automobiles to continue growing by at least 1–2% annually, which is a little slower than the 2–3% growth in the past 10 years. While the automobile markets in some countries are already saturated, car culture is rapidly developing in others. At the same time, many countries are considering switching to railway and sea transport because of the environmental advantages of overland infrastructure. NYK will be ideally equipped to meet the emerging needs with its unmatched ability to combine an accurate reading of demand trends and the optimal mode of transport so it is always prepared to handle the right amount of cargo volume at the right time.

Worldwide Car Transport Volume (intercontinental, interregional)



Source: Created by NYK (including estimates)

Fundamental Strategies and Key Initiatives

Improving Our Environmental Performance with Supply Chain Efficiency and LNG-fueled vessels

Progress in CASE also helps us improve the efficiency of finished vehicle logistics. Autonomous driving technology has the potential to reduce stevedoring work, alleviate issues caused by labor shortages, and reduce accidents. DCMs also offer advantages, including providing detailed processing data for post-port delivery logistics for individual vehicles while they are still in ocean transport, which could shorten delivery periods and improve supply chain efficiency.

CO_2 emissions will almost certainly come down as we eliminate excess in transport operations and make the supply chain more efficient. But on top of that, we are working to decrease the environmental footprint of our car and truck carriers from a long-term perspective.
The International Maritime Organization's sulfur oxide emissions regulations that will come into effect in January 2020 are just the start of an incremental tightening of global environmental regulations followed by reducing nitrogen oxide and CO_2 greenhouse gas emissions. Since car and truck carriers generally have working lifespans of 30 years, new ships must be built to conform to future environmental regulations. The Car Transportation Business expects LNG to be the main energy source for ships going forward, and we are already in discussions with clients and shipyards about the practical realization in 20 to 30 years of a new type of car and truck carrier that runs on hybrid LNG-battery power.

The group company International Car Operators N.V. (ICO) in Belgium is constructing 11 wind turbines at its car and truck carrier terminals with the plan to begin power generation in fiscal 2020. ICO also has water recycling facilities and EV charging stations at its PDI facilities. The NYK Group considers the ICO terminals as the standard for its development of green terminal operations.

Strengths and Issues to Address

Engaging Sophisticated Logistics Technology to Preserve the Freshness of New Cars for Delivery

A country's economic conditions can force our clients to suddenly change their plans for production, sales, and vehicle shipments. Our car carrier fleet, the world's largest, gives us a substantial advantage in our ability to flexibly meet and accommodate changing needs.

Another major area that sets the NYK Group clearly apart from other shipping companies is our logistics technology. Our mission is to transport a vehicle from the factory and deliver it to the final purchaser in fresh condition. We have always used leading technologies to accomplish that goal, and currently are harnessing new capabilities enabled by big data. For example, a ship's crew uses real-time data for organizational preparations while the ship is en route. That data is also monitored on shore to anticipate potential ship problems, such as engine troubles, and for accident prevention. Data about weather conditions, which change constantly, can be closely monitored both on ship and on shore allowing running discussion and decisions about sea routes for maximum fuel efficiency and the safest and most secure transport service, all of which help avoid delivery delays or cargo damage due to issues that affect the ship. The data can be used to reproduce a ship's vibrations at sea on a vibration table on shore, allowing us to find the best method and tightness for securing vehicles in place suited to the specific real-time conditions, which not only protects against cargo damage but also reduces delivery cost.

We have also created the new position of chief cargo officer (CCO) at each of our shipmanagement companies to oversee ship maintenance and the labor management and training of ship crews. The CCO is charged with maintaining and improving ship quality and mentoring the crew with the mandate to "protect the cars on our ships from any and all damage." Another measure we have taken to prevent and deal with cargo-related issues that occur at sea is providing more opportunities for onshore operators to visit our ships to give them a better understanding of ship conditions.

All these logistics technologies are the result of the teamwork, curiosity, and passion of our personnel both onshore and aboard our ships. We will continue to improve our technology to continue improving as the world's leading provider of finished car logistics services.

Global Car Transport Fleet Ranking (As of December 31, 2018)

Rank	Operator	Vessels	Share (%)	Capacity (Cars)	Share (%)
1	NYK	103	14.7%	621,059	15.2%
2	MOL	86	12.3%	516,509	12.6%
3	"K"Line	80	11.4%	476,097	11.6%
4	EUKOR	71	10.1%	475,525	11.6%
5	GRIM	62	8.9%	280,837	6.9%
6	GLOVIS	60	8.6%	401,890	9.8%
7	WWO	54	7.7%	367,165	9.0%
8	HAL	46	6.6%	307,425	7.5%
9	NMCC	12	1.7%	67,400	1.6%
	Total	700		4,091,410	

Source: NYK based on Hesnes Shipping AS, *The Car Carrier Market 2018*
Note: Table includes only vessels with a capacity of 2,000 vehicles or more.

Strengthening our resilience to market conditions and steadily advancing structural reform

Thoughts on the NYK Group's Culture and Philosophy

When we turn in a strong earnings performance, we tend to think "the positive result covers up all that is bad," and when earnings are weak we think "a negative result erases all that is good." That is why I am adamant about actively sharing information so everyone has a clear understanding of our department's objectives. I want us to be a company that thrives in any business conditions by correctly understanding and assessing conditions and by encouraging the efforts of young staff members to improve our operating efficiency and advance initiatives to streamline costs.

Koichi Uragami Managing Corporate Officer
Chief Executive of Dry Bulk Division

Business Overview

We have long-term contracts with customers in the steel, electric power, and paper industries for the safe and reliable transport of bulk cargo* such as iron ore, coal, and wood chips—natural resources procured in Japan and around the world that are vital to the world economy. We are strengthening our resilience to market fluctuations by enhancing our ability to respond to market needs and implementing structural reform to establish an optimal fleet composition.

* Bulk cargo is unpackaged cargo transported in bulk quantities.

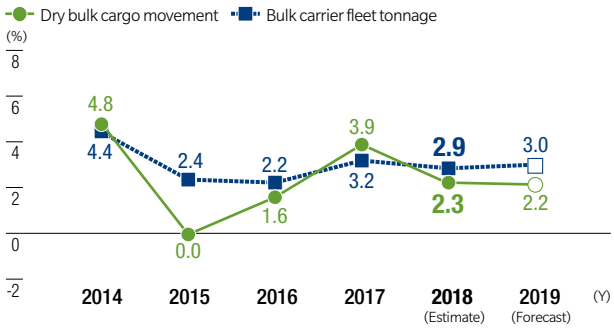
Recognizing Market Conditions

Anticipating Recovery from Weak Market Conditions

Market conditions for dry bulk were strong in the first half of fiscal 2018 but deteriorated in the fourth quarter amid negative factors, including the U.S.-China trade friction, slowing economic expansion in China, and the dam collapse at the iron-ore mine in Brazil. However, these conditions were produced by a combination of the expected rates for the first half and the strong market reaction to these circumstances and events. The balance of shipping tonnage and demand for cargo shipments remained steady throughout the period, which we believe indicates that conditions will improve.

We think environmental movements, such as decarbonization, will have a potentially stronger impact on our business in the medium and long term. One such initiative is commonly referred to as "IMO2020," which is the international sulfur oxide (SOx) emissions regulations scheduled to take effect in 2020. Complying with the regulations will reduce tonnage capacity as ships are taken out of service for the installation of SOx scrubbers (systems for desulfurizing exhaust gas), and older vessels are retired earlier than planned. At the same time, coal is a major cargo for the Dry Bulk Division, so the global move away from fossil fuels will impact our business. Electric power companies will still have to provide a stable supply of electric power, however, so we would not expect a sudden drop in coal shipment tonnage. For now, we expect demand to remain firm in Southeast Asia and other regions experiencing population growth as power companies seek coal to ensure low-cost power generation. We will continue to maintain a fleet of ships that can flexibly respond to various conditions and fluctuations in demand.

Growth in Cargo Movement and Fleet Tonnage



Source: NYK based on Clarksons Research *Dry Bulk Trade Outlook, February 2019*

Fundamental Strategies and Key Initiatives

Meticulously Controlling Exposure to Market Conditions and Maintaining and Expanding Long-term Contracts

The Dry Bulk Division's primary earnings source is our long-term contracts with customers who procure and export large volumes of iron ore, coal, woodchips, and other resources. Our business is to safely and securely transport cargo on specialized carriers. The ever-changing social conditions and global economy, and the evolving needs of our customers, make it inevitable that the length and number of our long-term contracts will gradually decline in the future. However, we remain dedicated to sustaining and expanding our core business as an industrial carrier company transporting resources essential to industry and our daily lives.

In April 2018, we created the Tramper Group as part of initiatives to fulfill the medium-term management plan to make the NYK Group more resilient to market conditions. The Tramper Group provides centralized management of market exposure, which in the shipping industry refers to ships not engaged in long-term contracts and therefore unable to generate stable revenue. The group is also steadily building profits by improving vessel assignment efficiency and chartering vessels that are most suitable for the timing and length of a contract. The group's aim is to establish a structure capable of securing stable revenue even during unfavorable market conditions. One example of the benefits of this group structure is that the Group has a lower percentage of ballast voyages than other companies. In dry bulk cargo operations, keeping down the percentage of ballast voyages (voyages with no cargo) is key to raising profitability.

Creating the new Tramper Group structure enabled us to clarify and prioritize two key initiatives: maintaining and expanding our long-term contracts, and improving our ability to respond to changes in market conditions. In addition, the group is moving forward with the early termination of costly chartered vessel contracts. These have been an issue for several years, and the group is making steady progress toward establishing stable earnings.

Strengths and Issues to Address

Providing Added Value through Our Sales Network, Shipping Operations, and Maritime Expertise

One of the strengths of the NYK Group is its global sales network. Our offices in South Korea, China, Singapore, Belgium, the United States, India, and Brazil maintain close relations with customers and give us access to detailed freight data worldwide. Our sales network is a major strength that further enhances our ability to maintain and expand long-term contracts and improve our response to market conditions.

Our shipping operations and maritime expertise are our other strengths. Many companies with a surplus of funds are using the excess liquidity to enter the dry bulk business. This has increased the number of accidents and lowered the quality of cargo transport. As a result, customers are demanding higher-quality ships, and a movement has surfaced to set international standards for assessing ship quality. We are confident the Group is the industry leader in the quality of our shipping operations and our shipping management.

We believe our Group stands head and shoulders above other shipping firms for our ability to provide safe and secure shipping operations based on the unmatched maritime experience and technological expertise of our Marine Group and Technical Group, our collaboration with our subsidiary and strategic technology specialist firm Monohakobi Technology Institute, and our close alliances with shipmanagement companies. We have struggled in the past to take full advantage of these strengths in our business activities, but we are now starting to leverage them to provide new value-added services to our customers by working as a partner to find business solutions, such as proposing more efficient cargo handling ideas to our major resource clients and converting to biofuels.

We are also using our status as one of the world's few shipping operators with a full fleet of dry bulk carriers to reduce costs through economies of scale.
Current initiatives include centralizing purchasing within the Group and entering contracts that include dockyards in anticipation of increasing demand for installing scrubber and ballast water management systems on ships.

Bulk Carrier Fleet Ranking (As of January 1, 2019)

Rank	Company	Kt (dwt)	Vessels
1	China COSCO Shipping	30,484	292
2	NYK	16,492	179
3	China Merchants	13,696	114
4	"K" Line	13,256	113
5	Fredriksen Group	12,690	105
6	Star Bulk Carriers	11,703	106
7	MOL	11,652	101
8	Berge Bulk	10,965	53
9	Angelicoussis Group	9,168	52
10	Oldendorff Carriers	8,477	83
11	Polaris Shipping Co	8,381	33
12	Pan Ocean	8,359	59
13	Imabari Shipbuilding	8,196	82

Source: Compiled by NYK based on Clarkson Database

Developing a comprehensive energy value chain business

Thoughts on the NYK Group's Culture and Philosophy

The specific mission of the Energy Division is "Bringing energy to life," or transporting energy resources like crude oil and LNG, and petroleum products that are essential to people's lives. In our work, safety is the most important element, and our corporate culture prioritizes safety over everything else. While continuing to provide safe and stable operations, we will continue to generate new value by being open to new ways to respond to the needs of our changing age.

Akira Kono — Managing Corporate Officer, Chief Executive of Energy Division

Business Overview

The Energy Division's operations cover the entire energy value chain with a fleet of some 170 vessels, including very large crude-oil carriers (VLCCs), product tankers for transporting petroleum products (MR/LR), LPG vessels, LNG vessels, and floating production, storage, and offloading (FPSO) units, making us one of the largest energy tanker shipping companies in the world. We are also developing operations in the field of LNG fuel supply and renewable energy such as wind turbine power generation.

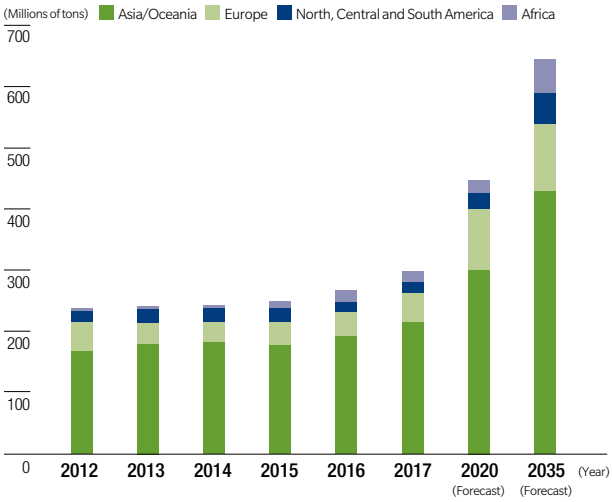
Recognizing Market Conditions

Actively Participating in Emerging Fields of New Energy Demand

NYK uses the International Energy Agency's (IEA) annual World Energy Outlook (WEO), particularly the new policies scenario (NPS) and sustainable development scenario (SDS), as a benchmark for the Company's forecasts of energy demand trends. In its main scenario, the WEO projects demand for primary energy to increase by 27% from 2017 to 2040 as a result of economic growth in developing countries and population growth around the world. Demand for natural gas is expected to grow substantially while demand for coal and crude oil remains flat. Each year, the main scenario changes slightly as the rising demand for renewable energy and improving electric power generation efficiency in recent years have moderately reduced the growth forecast for natural gas demand.

The Energy Division has been developing a business model centered on specializing in long-haul, large-volume transport. While this has served us well in the past, we are examining a new value chain strategy in tune with emerging trends such as supporting local production for local consumption, which is common with renewable energy, and participating in national projects likes Japan's exploration and development of territorial ocean resources. These new activities will enable us to develop new business fields that extend beyond our legacy transport operations.

LNG Transactions and Demand Forecast by Major Market



Source: Compiled by NYK based on *IHS Markit LNG Supply Demand Gap 2019*

Fundamental Strategies and Key Initiatives

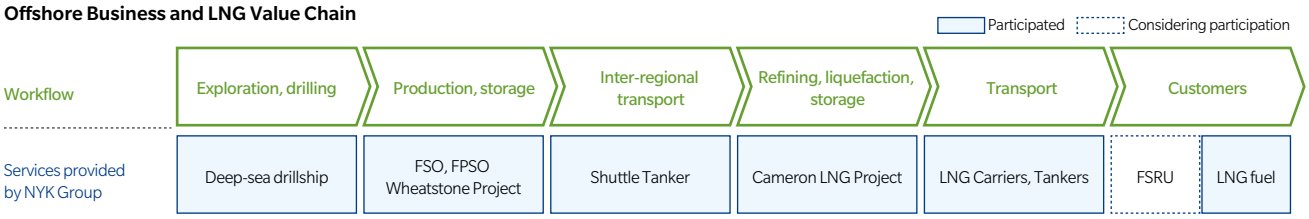
Focusing on LNG and Offshore Operations While We also Develop Green Businesses

The medium-term management plan has LNG as a focus field for investment, and we plan to increase our LNG fleet from 75 vessels currently to about 100 by 2022 centering on medium- to long-term service contracts. Demand for LNG is expected to steadily grow because it burns cleaner than oil or coal, thereby producing less CO_2, nitrogen oxide, and sulfur oxide emissions, and because the gas-producing regions are more evenly distributed around the world. Sales contracts tied to LNG production projects used to be mostly long-term contracts, but medium-term contracts have become common as production has increased and LNG has become more of a commodity, which has even led to the creation of an LNG spot market. A similar trend is occurring for LNG transport ships, with an increasing number of medium-term contracts and emerging spot charter demand. We plan to overhaul our entire LNG fleet operation to establish a balanced fleet composition and reduce asset risk by leveling contract termination dates and upgrading to new ships with superior fuel efficiency.

In our other focus investment field of offshore business, we expect the stabilized crude oil prices to lead to new oil development projects off the coast of Brazil and other countries. We think the reduced environmental burden will lead to increasing use of natural gas and LNG over the long term, particularly in developing countries, and we will seek partnerships for participation in new projects, including floating LNG storage and regasification units and floating liquefied natural gas units.

NYK's green business ventures commenced in 2017 when the company launched its LNG-fueled vessel operation with the commissioning of the world's first LNG bunkering vessel in Belgium. The Company plans to launch a similar service in Japan's Ise Bay in 2020 as NYK continues transitioning to low-carbon marine fuels. We are also pursuing biomass and offshore wind power generation operations and are in a partnership with Japan's Ministry of Land, Infrastructure, Transport and Tourism in a hydrogen research project. In April 2018, NYK established the Green Business Group to examine how the company can respond and develop business opportunities related to renewable energy.

Offshore Business and LNG Value Chain



Strengths and Issues to Address

Using Our Abundant Know-How and Cultivating Personnel Skilled in Project Management

The NYK Group has a long and successful track record of safely transporting energy resources and petrochemical products that has earned it the trust of customers around the world. We have been able to do this because of our highly experienced, highly specialized staff with maritime expertise in ship management and operation management, technological capabilities in vessel design, and business and finance composition.

The Energy Division is also engaged in a value chain strategy that will enable us to apply our expertise in areas beyond the shipping industry. For example, the NYK Group is currently participating in a scientific drilling operation employing the deep-sea drilling vessel *Chikyu*. NYK is also conducting basic geophysical surveys for oil and natural gas in Japan through the Company's participation in Ocean Geo-Frontier (OGF), a three-dimensional physical exploration project that NYK is a vested partner in with Japan Oil, Gas and Metals National Corporation (JOGMEC). Participation in this project opens the potential for the Company to join in foreign oil exploration operations in the future.

Our technical capabilities are also applicable to offshore wind power generation, which requires installation ships, offshore maintenance, and other maritime operations. In the biomass field, the Group's marine consulting company can provide support developing shipping transport technologies and constructing new harbor facilities.

To be successful in these endeavors, the Energy Division will need to be extremely sensitive to trends in the energy businesses, gather together expertise and necessary resources from throughout the Group, and formulate all new businesses. Key to all of these will be cultivating the human resources to manage these projects. I want our younger employees to take a broader view of their current positions and work to build the skills to lead the Company in the next generation.