



2024

Disclosure Report Based on Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)

Nippon Yusen Kabushiki Kaisha

1. Introduction

2. Governance

3. Strategy

4. Risk Management

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Revision Log

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About this report

[Promotion of Disclosure in Line with TCFD's Recommendations]

We view climate change as one of our important management issues. In December 2018, we expressed our support for the TCFD's Final Recommendations, and we are currently working to promote appropriate information disclosure in line with said recommendations. This report explains our analyses, strategies, and initiatives related to climate change in the four basic categories of "Governance," "Risk Management," "Strategy," and "Metrics and Targets."

The contents disclosed in this report reflect the contents of the NYK Report (Integrated Report), the NYK Group ESG Story, the CDP response, etc., as well as the long-term future forecast scenario, which will serve as a compass for management. That material was discussed and formulated through the preparation of the medium-term management plan "Sail Green, Drive Transformations 2026," disclosed in March 2023.

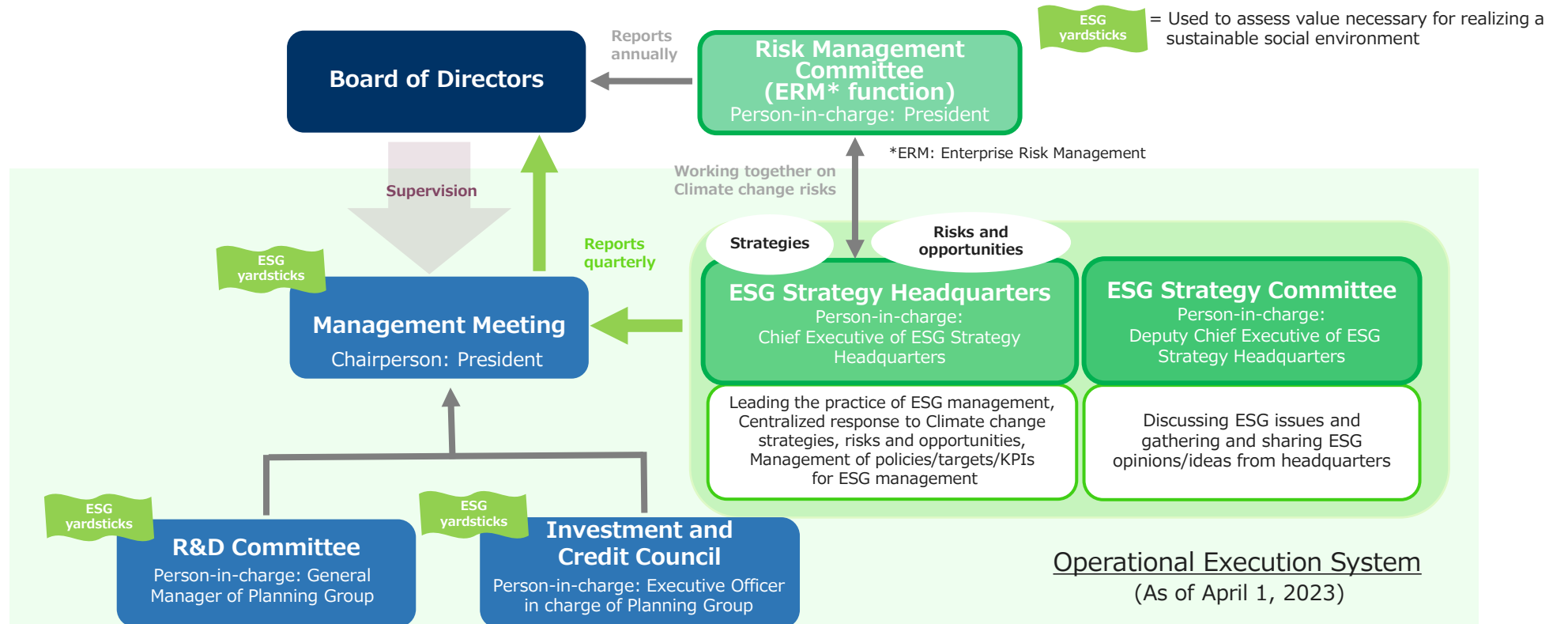
June 2022 First Edition

April 2023 Second Edition

April 2024 Third Edition

Disclosure Report Based on TCFD Recommendations

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- ✓ Established ESG Strategy Headquarters and ESG Strategy Committee in April 2023, with executive vice-president executive officer serving as head of the headquarters and promoting the execution of ESG-related operations (including climate change measures) as the chief executive of ESG strategy
- ✓ ESG-related matters, including climate change measures, are discussed at the ESG Strategy Committee. The ESG strategy discussed by this committee is summarized by the ESG Strategy Headquarters, reported to the Management Committee quarterly, and approved by the president
 - (The ESG Strategy Headquarters and Risk Management Committee work together to manage climate change risks. These risks are reported to the Board of Directors once a year, after being integrated into company-wide risks)
- ✓ The executive officer in charge of the ESG Strategy Headquarters or the general manager of the ESG Strategy Headquarters participates in important meeting bodies (Management Meeting, Investment and Credit Council, R&D Committee). ESG yardsticks are reflected in decision-making and judgments for individual projects

Strategy

[Core Strategies and Response to Climate Change]

The Company has integrated ESG into the management strategy and aims to contribute to the resolution of social and environmental issues from a long-term perspective. In formulating our medium-term management plan "Sail Green, Drive Transformations 2026," we discussed scenarios and strategies from a long-term perspective, looking ahead to the business environment approaching 2050. With the core strategy of "Ambidexterity" which engages in further development of existing core businesses and exploration of new growth businesses, we aim to increase the profitability of each business. Furthermore, in November 2023, we announced the NYK Group Decarbonization Story. This story analyzes the risks and opportunities related to climate change and details the strategies for sustainable growth and the newly demanded environmental values.

(Link: [NYK Group Decarbonization Story | NYK Line](#))

Medium-term management plan

Further development of existing core businesses

We will promote low-carbon and decarbonized investment in our own vessels ahead of other companies to enhance our environmental advantage and competitiveness.

Exploration of new growth businesses

In growth fields where the impact of climate change is neutral, and in fields where growth is expected due to climate change responses, etc., we will actively develop and invest in businesses based on the knowledge we have cultivated through existing core businesses and develop them into pillars of earnings.

NYK Group Decarbonization Story

Under the resolve to lead the world's decarbonization efforts towards the realization of a sustainable society, we have explicitly demonstrated, both internally and externally, a strong commitment and proactive stance in pursuing high aspirations and initiatives for decarbonization.

We have formulated a series of measures aimed at reducing GHG emissions, including the direction of these efforts, goal setting, and transition plans, in addition to developing a concept for sustainable growth.

[Resilience of the Strategies]

We incorporated the core strategies into our business and investment plans on a timeline up to 2050 and estimated the impact in terms of the financial aspect using multiple scenarios. As a result, even under the 1.5°C scenario, it is expected that the decline in earnings in existing businesses due to climate change can be covered by an increase in earnings in new growth businesses. Therefore, we have judged that our strategy has a certain degree of resilience at this stage. Going forward, we will continue to review the scenarios that form the prerequisites as appropriate and strive to improve the resilience of our strategies.

[Risks and Opportunities Related to Climate Change]

We are striving to ascertain the various risks and opportunities expected to be brought about by climate change and are working to strengthen our competitiveness while confirming the impact on our business from a long-term perspective. Including responses to the tightening of regulations by the government, the Company expects that it will become even more necessary to take measures in various areas, such as the adoption of new technologies. In addition, as climate change progresses, natural disasters such as rising temperatures, typhoons, and floods are expected to intensify. Although there is a possibility that these disasters may affect our business domains and pose risks, we recognize that if we respond appropriately, we can strengthen our competitiveness and create new growth opportunities. Based on this recognition, we have organized the risks and opportunities related to climate change, and identified risks of particularly high importance, taking into account the degree of impact and importance, as well as interest from stakeholders.

[Risks and Opportunities of High Importance]

We identify and analyze the risks and opportunities related to climate change of high importance that may have a financial or strategic impact on our business. We formulate and implement appropriate strategies not only to reduce the impact of risks, but also to expand competitiveness and business opportunities. (*)

| Transition risks and opportunities related to climate change | | Impact on the Company and strategies to counteract the impact |
|--|---|--|
| Regulations | Introduction of carbon pricing | Regulations and taxes on greenhouse gas (GHG) emissions imposed by the IMO and each country's authorities may increase the burden of investment in low-carbon technologies and operating costs. The Company will work to improve operational efficiency through DX and reduce GHG emissions by introducing LNG-fueled and ammonia-fueled vessels, while appropriately reflecting these investment costs and the remaining carbon costs in some vessels in the ocean freight rates. |
| Technology | Securing seafarers for LNG-fueled and next-generation fuel vessels | While there may be a shortage in the future of highly-skilled seafarers who can operate LNG-fueled and next-generation fuel vessels, this could be a new business opportunity for ship management companies with such personnel. In addition to its core Japanese seafarers, the Company strives to secure high-quality seafarers through a merchant ship school in the Philippines and its own ship management company in Singapore. |

(*) Please refer to the Appendix for details on appropriate responses to each risk item and strategies based on opportunities.

| Transition risks and opportunities related to climate change | | Impact on the Company and strategies to counteract the impact |
|--|--|--|
| Market | Changes in shipment and transportation demand | Along with the decrease in demand for existing energy resources, while there is a possibility of a decrease in revenue opportunities in the dry bulk and energy transportation businesses, the expansion of new freight transportation business is expected in light of the increase in demand for renewable energy. In addition to our existing core businesses with a diversified cargo portfolio, we will strengthen our resilience by developing new growth businesses. |
| | Rapid changes in customer trends | While delays in efforts to reduce GHG emissions lead to customer attrition, demand for low-carbon and decarbonized marine transportation services will increase. The Company will promote investment in low-carbon and decarbonized vessels ahead of other companies and aim to become the shipping company of choice for customers by securing an environmental advantage. |
| | Stranded assets due to delays in decarbonization of our fleet | Due to delays in the decarbonization of our fleet and an earlier-than-expected popularization of zero-emission vessels, there is a risk that existing fuel vessels and LNG-fueled vessels may become stranded assets. The Company is proactively working to mitigate such risks by promoting the development and usage design of “ammonia ready LNG-fueled vessels,” which enables the remodeling and conversion of LNG-fueled vessels to ammonia-fueled vessels, in collaboration with a Finnish maritime consulting and engineering firm. While leveraging existing assets, NYK has initiated the identification of challenges and impact assessments for the use of drop-in fuels, such as biofuels in existing vessels and bio-LNG in LNG-fueled vessels, in the pursuit of gradual decarbonization. |
| | Cost of funding activities | There is a possibility that funding activities will be carried out under conditions that are less competitive due to the Company’s inability to utilize green financing, etc. However, at the same time, there is an opportunity to reduce the cost of funding activities by securing an environmental advantage. We have already raised funds through green financing on a scale of tens of billions of yen, and we will continue seeking to utilize such funding channels. |

(*) Please refer to the Appendix for details on appropriate responses to each risk item and strategies based on opportunities.

| Transition risks and opportunities related to climate change | | Impact on the Company and strategies to counteract the impact |
|--|---|---|
| Acute | Frequent occurrences and intensification of abnormal weather and marine phenomena | <p>The vessels we operate are constantly exposed to the risk of encountering stormy weather. The impact of typhoons, monsoons and giant cyclones that are increasing in size is significant, and additional fuel costs may be incurred to change the ship's route or to maintain the operation schedule. The Company strives to minimize risks and costs by providing support for route change decisions using its own system and providing detailed operational support from vessel operators and seafarers working on land.</p> <p>Upon conducting scenario-based simulations on the impact of severe weather on our operational vessels, we have determined that the future increase in the risk of encountering rough weather conditions is expected to be minimal.</p> |
| Chronic | Rising sea levels | <p>Among the assets held by the Company, real estate, warehouses, terminals, and port facilities located in low-lying areas may become unusable due to rising sea levels as a result of climate change. These assets represent a very small proportion of our company's total asset size, and their financial impact is limited. However, as we engage in a quantitative assessment of increasing risks, we will implement flexible measures such as the utilization of leasing.</p> |

(*) Please refer to the Appendix for details on appropriate responses to each risk item and strategies based on opportunities.

[Scenario Analysis (By major business)]

Due to climate change and the accompanying regulations and policies, etc. of each country, the shipping industry, which is deeply involved in the economic activities of society as a whole, is highly likely to be exposed to major changes. These represent risks and opportunities for the Company. We select business fields that we believe will have a particularly large impact or a high degree of importance and use climate change scenarios of different increases in temperature, namely the 1.5°C and 2-3°C scenarios, to organize our business environment awareness and strategies for 2050.^(*)

<Business environment recognition (by type) ● **Red:** Decrease of more than 50% ● **Orange:** 10-50% decrease ● **Green:** More than 10% increase >
● **Gray:** Largely unchanged (10% decrease – 10% increase)

| Scenario | 1.5°C Scenario | 2-3°C Scenario |
|--------------------------------|---|--|
| Dry bulk transportation | The Company transports a wide range of dry bulk cargo, including cargo for which cargo movement is expected to increase due to climate change (minor bulk such as copper, etc., biomass), cargo for which movement is expected to decrease (coal), and cargo for which demand is expected to increase due to the increase in population and middle class in emerging countries (grain). With this business portfolio as our strength, we aim to achieve sustainable growth in the dry bulk business, which accounts for half of the world's ocean cargo movements, by securing the environmental advantage of our dedicated fleet and building a business model suitable for incorporating cargo with increasing cargo movement, while flexibly responding to changes in the medium- to long-term business environment. | |
| Basic Policy | | |
| Coal transportation | <div style="display: flex; justify-content: space-between; border: 1px solid black; border-radius: 15px; padding: 5px;"> Decrease Unchanged Increase </div> <p>Marine transportation of coal fuel will be significantly reduced due to replacement with natural gas and renewable energy with low GHG emissions.</p> <p>Demand for coking coal is also expected to decrease due to the progress of electric furnaces for steelmaking and the introduction of the hydrogen reduction method.</p> | <div style="display: flex; justify-content: space-between; border: 1px solid black; border-radius: 15px; padding: 5px;"> Decrease Unchanged Increase </div> <p>Compared with the 1.5°C scenario, the rate of decline is expected to be smaller, but demand is still expected to decrease by at least 50%.</p> |
| Business Environment | | |
| Strategy | While promoting the low-carbonization and decarbonization of our own ships, we will maintain an appropriate fleet size that meets demand. Meanwhile, we will incorporate biomass, which is renewable energy, and grain, for which demand is expected to increase due to economic development and population growth in Asia and Africa, as alternative dry bulk cargo. | |

^(*) For each climate change scenario, we referred to a virtual model based on current estimates of possible developments made by a third-party organization.
 1.5°C scenario: A scenario where net-zero emissions are achieved globally by 2050, and the temperature rise (compared to pre-industrial levels) is kept to 1.5°C
 2-3°C scenario: A scenario where the range of the temperature rise (same as above) is kept to 2-3°C in 2050

<Business environment recognition (by type) ● Red: Decrease of more than 50% ● Orange: 10-50% decrease ● Green: More than 10% increase>
● Gray: Largely unchanged (10% decrease – 10% increase)

| Scenario | 1.5°C Scenario | 2-3°C Scenario |
|------------------------------|---|---|
| Energy Transportation | In our energy-related businesses, we aim to maintain and expand our business presence by promoting low-carbonization and decarbonization while supporting the entire value chain. Specifically, we will focus on capturing growth opportunities for renewable energies, such as the hydrogen and ammonia businesses, and on capturing demand for new fuel transportation (such as biofuels and hydrogen carrier transportation) in line with the progress of energy transitions. At the same time, we will appropriately respond to the risk that fossil fuel transport vessels may become stranded assets. | |
| Oil transportation | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: flex; gap: 10px;"> Decrease ● Unchanged ● Increase </div> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: flex; gap: 10px;"> Decrease ● Unchanged ● Increase </div> </div> | |
| Business Environment | Oil demand as a whole is expected to decline significantly due to the progress of electrification in the land transportation sector, etc., but a certain amount of demand for petrochemicals, etc. is expected to remain. | Although the decline in demand on the whole is no different from the 1.5°C scenario, the overall rate of decline is expected to be smaller as demand is expected to be more robust, particularly in developing countries. |
| Strategy | While enhancing competitiveness by promoting the low-carbonization and decarbonization of our fleet, we will transport crude oil with thorough consideration for the environment through safe operations. Also, in order to maintain an appropriate fleet size according to the market size, we will continue to pay close attention to see which scenario plays out. | |
| LNG transportation | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: flex; gap: 10px;"> Decrease ● Unchanged ● Increase </div> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: flex; gap: 10px;"> Decrease ● Unchanged ● Increase </div> </div> | |
| Business Environment | Introduction of renewable energy, which has low GHG emissions, is expanding, and LNG transportation demand is expected to decline from the second half of the 2030s onwards. | As a "bridge" solution with low GHG emissions, LNG transportation demand is expected to expand until around 2050. |
| Strategy | As an important low-carbonization energy source during the transition period to a decarbonized society, demand for LNG is expected to expand until the second half of the 2030s, even in the 1.5°C scenario. We will support the LNG value chain, pay close attention to trends in transportation demand around the world that fluctuate depending on the scenarios, and proceed with investment while balancing the continued accumulation of stable profits and the risk of stranded assets. | |

<Business environment recognition (by type) ● Red: Decrease of more than 50% ● Orange: 10-50% decrease ● Green: More than 10% increase>
● Gray: Largely unchanged (10% decrease – 10% increase)

| Scenario | 1.5°C Scenario | 2-3°C Scenario |
|----------------------------------|--|--|
| Automobile transportation | <p>Decrease ● Unchanged Increase</p> <p>Business Environment</p> <p>Due to the tightening of decarbonization regulations and the saturation of consumption in major markets (Europe, the United States, Japan and China), global new automobile sales are expected to decrease by at least 10% from the current level. With the advancement of electrification in automobiles, production areas will become more diversified, and there is a possibility that the distance of marine transportation will also change.</p> | <p>Decrease ● Unchanged Increase</p> <p>Compared to the 1.5°C scenario, the decline in global new automobile sales is expected to be smaller, but demand is expected to decline by almost 10%.</p> |
| | <p>Strategy</p> <p>As the movement to conduct a life cycle assessment on GHG emissions in the automotive industry progresses, we aim to evolve into a shipping company of choice by promoting the low-carbonization and decarbonization of our automobile transport fleet and securing an environmental advantage.</p> | |
| | General consumer goods transportation | <p>Decrease Unchanged ● Increase</p> <p>Business Environment</p> <p>The growth rate is expected to slow down even though cargo movement is expected to continue increasing due to economic growth and population growth in emerging countries. The impact of climate change on demand is expected to be neutral.</p> |
| | <p>Strategy</p> <p>We will provide logistics solutions that contribute to the decarbonization of our customers' supply chains and aim for sustainable growth of our business.</p> | |

Risk Management

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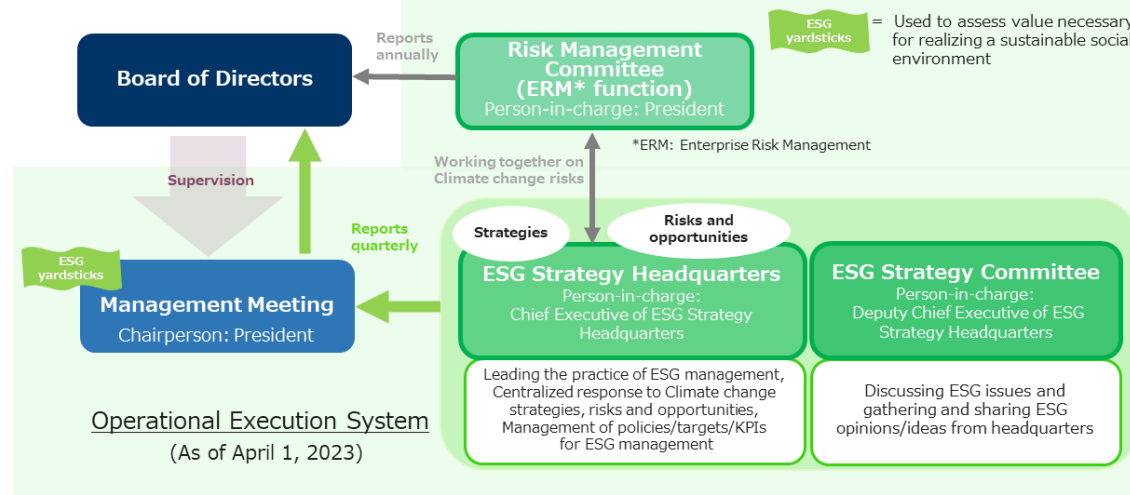
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Companywide Management of Climate Change Risks



✓ Management of Climate Change Risks

At the Company, the status of management of material risks on a companywide basis is evaluated at meetings of the Risk Management Committee, which are attended by the President, Chairman, Executive Officers who are Chief Executives, full-time Audit and Supervisory Board Members, etc.

Climate change risks are discussed at the ESG Strategy Committee and concluded by the ESG Strategy Headquarters. The risks are integrated into companywide risks and reported to the Board of Directors once a year.

Selection of Risks and Opportunities

Risks and opportunities related to climate change are discussed and selected by the ESG Strategy Headquarters. Based on the selected risks and opportunities, strategies are formulated from a medium- to long-term perspective and are discussed more deeply at the ESG Strategy Committee.

Risk Assessment of Individual Investments



✓ Introduction of ESG yardsticks for individual investment and lending projects

Decisions are made after comprehensive deliberation, not only based on traditional economic yardsticks that measure economic efficiency and business scale, but also in accordance with ESG yardsticks that measure contributions to the resolution of social and environmental issues from a long-term perspective.

In fiscal 2020, we introduced internal carbon pricing (ICP). The Investment and Credit Council and Management Meeting currently use ICP as reference information when making investment decisions. ICP is determined through in-house discussions to ensure it is appropriate for achieving GHG reduction targets. ICP is reviewed annually, taking into account the latest social circumstances and external carbon prices.

Metrics and Targets

[Medium- to Long-term Targets for Climate Change Response]

| Target year | Applicable items | Target |
|-------------|-----------------------------|--|
| 2030 | Scope 1 · Scope 2 | -45% [Base year: 2021] ^(*1) |
| 2050 | Scope 1 · Scope 2 · Scope 3 | Net zero emissions |

[Metrics]

Absolute corporate emissions has been monitored to ascertain our GHG emissions and manage reduction targets. The progress towards achieving the medium-term targets based on this indicator is shown in the table below.

| Indicator (ton-CO ₂ eq) | | | Rate of change |
|------------------------------------|------------|------------|-------------------|
| Fiscal Year | 2021 | 2022 | (Base Year: 2021) |
| Scope 1 + Scope 2 | 12,724,086 | 11,331,299 | -10.9% |

(*1) Absolute corporate emissions. Align with 1.5 °C Paris Agreement goal.

For more information, please refer to the NYK Group Decarbonization Story (Link: [NYK Group Decarbonization Story | NYK Line](#))

Appendix [Risks and Opportunities of High Importance, and the Company's Strategies]

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| Risks/Opportunities | | Impact on the Company | Level of impact | | Strategies of the Company |
|---------------------|---|--|-----------------|----------------|---|
| | | | 1.5°C Scenario | 2-3°C Scenario | |
| Transition risk | Introduction of carbon pricing | <p>Risk</p> <p>Tighter GHG emission regulations by the IMO and each country's authorities may increase the burden of investment in low-carbon technologies. In addition, there is a possibility that operating costs will increase due to the taxation of GHG emissions from vessels operated by the Company.</p> | S | S | <p>In anticipation of the tightening of regulations and introduction of carbon pricing in the future, with the aim of securing an environmental advantage, the Company will (1) reduce GHG emissions from ships by improving operational efficiency through DX and promoting the introduction of LNG-fueled vessels, (2) reduce GHG emissions by more than 80% via investing in ammonia-fueled vessels, and (3) progressively proceed with the switch to biogas, synthetic methane, biofuels or synthetic fuels for some types of vessels. By 2050, investment in low-carbon and decarbonized vessels is expected to be on the scale of approximately 2.1 trillion yen (as of 2021). Meanwhile, regarding a portion of the carbon costs corresponding to GHG emissions that are expected to remain, and the costs of investing in and using low-carbon and decarbonized fuels on vessels, we shall proceed with the transfer of such costs into ocean freight rates in an appropriate manner.</p> |
| Transition risk | Securing seafarers for LNG-fueled and next-generation fuel vessels | <p>Risk</p> <p>The number of highly-skilled seafarers who can operate LNG-fueled and next-generation fuel vessels is currently limited, and there is a possibility that there will be a shortage of seafarers in the future.</p> | M | S | <p>In addition to securing core Japanese seafarers, the Company strives to secure a high quantity of high-quality seafarers by training seafarers in-house at the merchant ship university in the Philippines (NYK-TDG MARITIME ACADEMY) and promotes an optimal manning system through its own ship management company in Singapore.</p> |
| Opportunity | | <p>Opportunity</p> <p>The demand for highly-skilled seafarers will increase, which could create new business opportunities for ship management companies with these personnel.</p> | L | M | |

| Risks/Opportunities | | Impact on the Company | Level of impact | | Strategies of the Company |
|---------------------|---|---|-----------------|----------------|--|
| | | | 1.5°C Scenario | 2-3°C Scenario | |
| Transition risk | Changes in shipment and transportation demand | Risk Demand for existing energy resources with high GHG emissions is expected to decrease, and there is a risk of a decrease in revenue opportunities in the dry bulk energy transportation business. | L | M | The Company transports a wide range of cargo, including general consumer goods, automobiles, energy resources, mineral resources, agricultural, forestry, and fishery products. These items currently constitute a well-balanced business portfolio. However, based on forecasts of future changes in cargo movements, we are striving to strengthen our management resilience by not only strengthening existing core businesses, but also exploring new growth businesses. (By 2050, we plan to make strategic investments of 3.6 trillion yen to further develop existing core businesses and 1.2 trillion yen to explore new growth businesses (as of 2021).) |
| | | Opportunity In light of the increase in demand for renewable energy, the offshore wind power value chain, and the transportation business of hydrogen, ammonia, biofuel, etc. is expected to expand. | L | M | |
| Transition risk | Rapid changes in customer trends | Risk There is a risk of customer attrition due to delays in efforts to reduce GHG emissions. | L | M | The Company is actively promoting investment in low-carbon and decarbonized vessels ahead of other companies. The number of vessels announced so far has reached a total of 45. (As of March 2023, this includes 31 LNG-fueled vessels, eight LPG-fueled vessels, three methanol-fueled vessels, and two ammonia-fueled vessels) As of 2021, we expect a total of 2.1 trillion yen in ship decarbonization investment by 2050, but we plan to review the scenarios and investment plans as appropriate in light of social trends, advances in decarbonization technology, etc. |
| | | Opportunity Growing demand for marine transportation services that have low GHG emissions could favor companies that are ahead of the curve in related investments. | L | M | |

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| Risks/Opportunities | | Impact on the Company | Level of impact | | Strategies of the Company |
|------------------------|--|--|---|---|--|
| | | | 1.5°C Scenario | 2-3°C Scenario | |
| Transition risk | Stranded assets due to delays in decarbonization of our fleet | <p>Risk Delays in the decarbonization of the fleet (including the earlier-than-expected popularization of zero-emission vessels) may lead to existing fuel vessels and LNG-fueled vessels becoming stranded assets.</p> |  |  | <p>The Company has positioned LNG-fueled vessels as a realistic solution to reduce GHG emissions in the near future and plans to introduce zero-emission vessels that use next-generation fuels with a lower environmental impact, such as ammonia and hydrogen, in the future. The full-scale popularization of such zero-emission vessels is expected to occur in the mid-2030s, but since there is a possibility that the LNG-fueled vessels under construction by the Company may become stranded assets due to the earlier-than-expected popularization of zero-emission vessels and other factors. Development has commenced on ammonia-ready LNG-fueled vessels that can be efficiently converted from LNG-fueled vessels, enabling a phased approach to decarbonization while utilizing existing assets. This includes the identification of challenges and impact assessments for the use of drop-in fuels, such as biofuels in existing vessels and bio-LNG in LNG-fueled vessels, aiming for a gradual transition to low-carbon alternatives.</p> |
| Transition risk | Cost of funding activities | <p>Risk We may not be able to utilize green financing^(*), etc., and may have to conduct funding activities under conditions that are less competitive compared to our competitors.</p> |  |  | <p>In addition to earnestly addressing environmental issues including climate change, we strive to raise funds through green financing* by disseminating our policies externally through our website and integrated reports (the NYK Report). The scale of funds acquired has reached tens of billions of yen. We will continue to work on strengthening environmental investment, utilizing green financing by disseminating information to a wide range of stakeholders, and aiming to achieve a balance between investments and earnings.</p> |
| Opportunity | | <p>Opportunity By securing our environmental advantage, there is an opportunity to utilize green financing and reduce funding costs.</p> |  |  | |

(*) Financial methods specifically aimed at initiatives to solve environmental problems (green projects)

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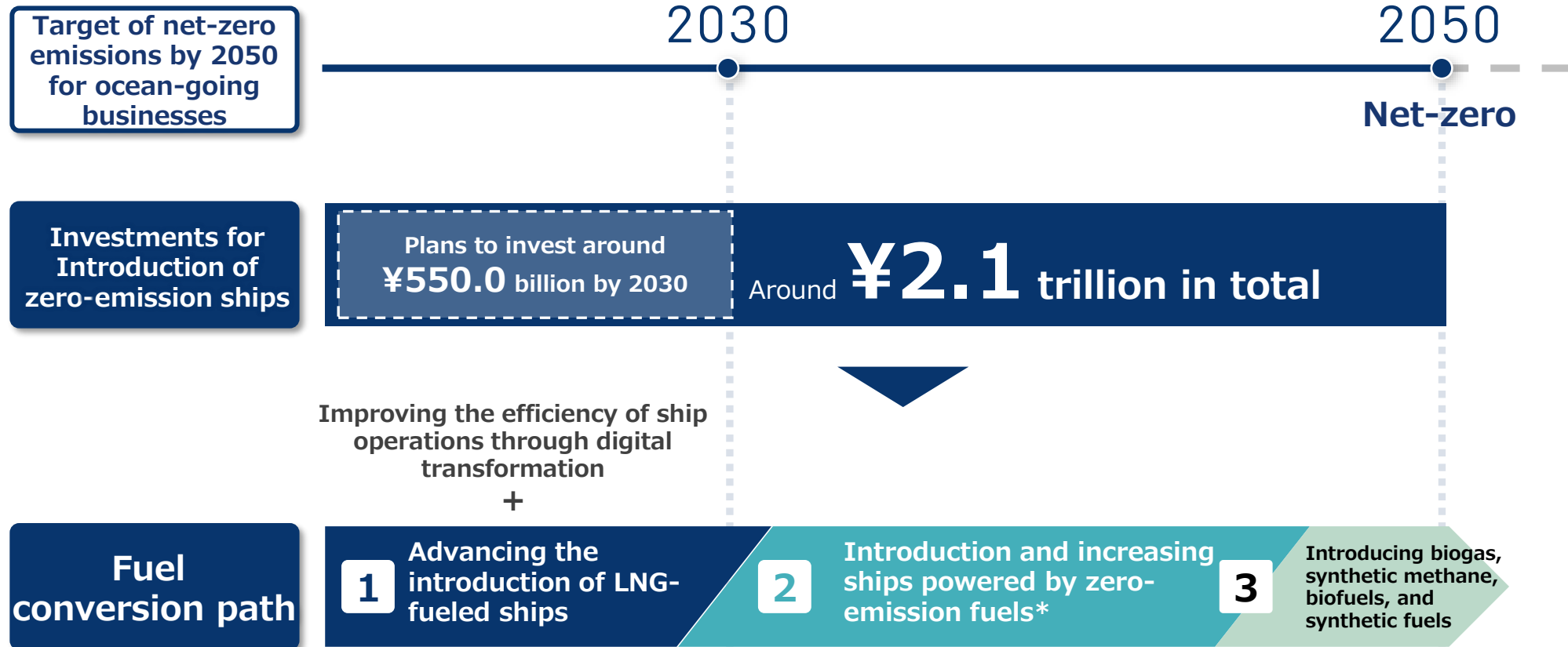
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| Risks/Opportunities | | Impact on the Company | Level of impact | | Strategies of the Company |
|---------------------|--|---|-----------------|----------------|---|
| | | | 1.5°C Scenario | 2-3°C Scenario | |
| Physical risk | Frequent occurrences and intensification of abnormal weather and marine phenomena | The vessels we operate are constantly exposed to the risk of encountering stormy weather in various marine regions of the world. In particular, the impact of typhoons, monsoons, and giant cyclones in high-latitude regions is significant, and in recent years, cases of vessels being affected just by typhoons have been on an increasing trend. If a vessel encounters stormy weather, there may be additional fuel costs associated with route changes to avoid the storm zone, or additional fuel costs associated with increased speeds to maintain the transportation schedule. | S | M | <p>Simulations of various scenarios on the impact to our fleet suggest that the risk of encountering severe weather conditions is expected to increase only marginally in the future. However, prioritizing safe navigation, we will continue to implement measures to minimize delays and fuel consumption due to adverse weather conditions.</p> <p>(Specific Measures)</p> <ul style="list-style-type: none"> • Support for determining the optimal new route using our unique system • Implementation of stormy weather avoidance simulations by vessel operator and seafarers working on land, who will send instructions to the vessel <p>Although the determination of the new route and the final decision on the vessel's speed are made under the captain's authority, risks and costs are minimized by having vessel operator responsible for ship operations on land share with the vessel crew a comprehensive set of information, which includes the impact on revenue and expenses, adjustments to the estimated arrival date, customer requests, etc. We view such measures as part of ESG management put into practice by the reduction of fuel consumption.</p> |
| Physical risk | Rising sea levels | Among the assets held by the Company, real estate, warehouses, terminals, and port facilities located in low-lying areas may become unusable due to rising sea levels as a result of climate change. In addition, as an operational risk, due to the limited number of operating ports, there is a possibility that ships may incur demurrage, etc. | S | M | <p>Many of the terminals and port facilities used by vessels operated by the Company are operated by public entities or third parties in each region. Therefore, the assets that may be affected by a sea level rise can be said to be limited in terms of the scale of the Company's overall assets. A quantitative assessment has been conducted for the risks posed by climate change-induced floods and wind damage to the assets we manage. Furthermore, we have implemented strategies for the properties and warehouses located in low-lying areas, such as advancing their leasehold conversion, to ensure flexible responses to the increasing risks of sea-level rise.</p> |

[Estimates of Investments for Ship Decarbonization]

In order to achieve net-zero emissions by 2050 in the oceangoing business, as of 2021, the Company plans to invest 550 billion yen by 2030 and a total of 2.1 trillion yen by 2050 to convert its existing fleet of vessels to zero-emission ships, in accordance with simulations based on technological development and the timing of implementation.



- Announced in March 2022, this roadmap has been prepared based on the Company’s current projections with respect to technological innovation, economic efficiency, laws, regulations, and policies. The roadmap will be revised in step with changes in these projections.
- GHG emissions reduction targets are for the Company’s operating ships.

*The amount of investment in ships powered by zero-emission fuels is premised on the introduction of ammonia-fueled ships.



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