



# Securing Blue Seas for Tomorrow

Navigating for Sustainability  
Leading to a Brighter Future

~  : trust from all over the world ~

**“K” LINE**  
Environmental Vision  
**2050**



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Turning our eyes to the sea on a sunny day, we see the blue ocean stretching beyond the horizon.

A large number of offshore ships carry food, clothing, oil, natural gas, coal, iron ore and other commodities. “K” LINE is a company that operates numerous ships around the world, transporting a wide variety of freight.

We carry goods beyond the sea under the management system for safety in navigation and cargo operation at the heart of our business, contributing to fulfillment of the well-being and prosperous lives of many people. Further we have made it our mission to contribute to a sustainable future in order to hand on this blue and beautiful ocean to the next generation.



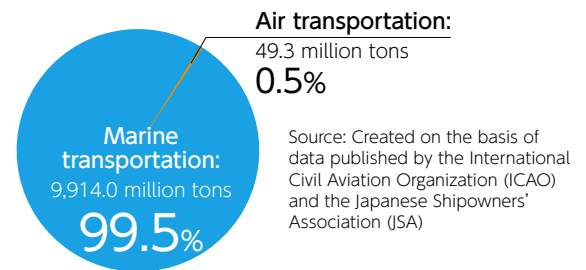


As an integrated logistics company grown from shipping business, we have the responsibilities of fulfilling our social mission of contributing to the well-being and prosperous lifestyles of people around the world and minimizing the impact of our business activities on global environment.

## 1. Marine transportation indispensable to people's life

Our daily lives are surrounded by many different kinds of clothing, food, oil, natural gas, other energy resources and industrial products such as cars and home electric appliances. Most of them are transported by ship. Marine transportation is a social infrastructure essential to the development of the world economy, and economic growth leads to the increase and diversification of transport needs. We serve society as a key industry that supports the continued growth of the world economy and people's well-being and prosperous lifestyles.

■ The ratio between marine transportation and air transportation in international cargo transport (2013, based on weight)



## 2. The mission of a key industry operator supporting the well-being and prosperous lifestyles of people around the world

Ocean-going marine transportation market stretches across the globe, including into developed and emerging countries. This means that our business is closely linked to changes in political, economic and social circumstances and environmental issues in different countries and regions throughout the world and that our business activities impact many people all over the world. The basics of our business are to provide marine transportation services in a safe, reliable and steady manner.

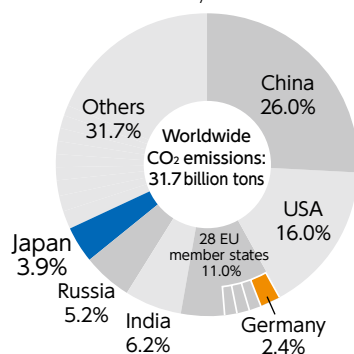


## 3. Marine transportation as a mode of transport eco-friendly to humans and to the planet

Transportation by ship is an environmentally-friendly mode of transport with smaller CO<sub>2</sub> emissions than other modes. To maintain this efficient mode of transport, which will be important for society in the future, we need to carry cargo received from customers safely, without fail and in consideration of further conservation of the global environment.

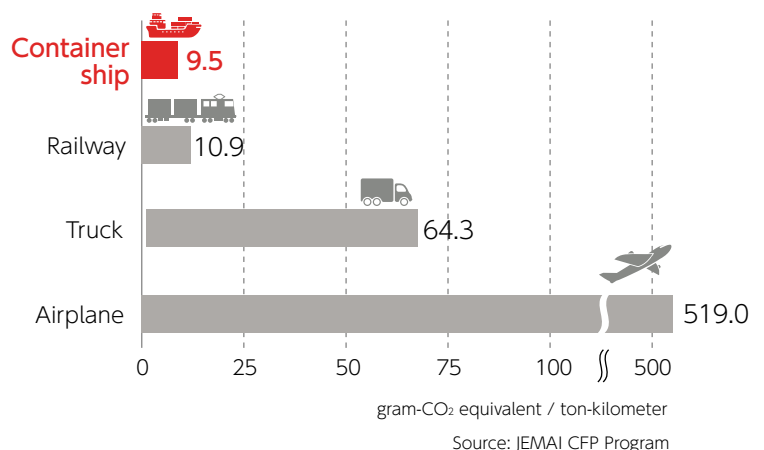
### ■ Worldwide Energy-Derived CO<sub>2</sub> Emissions (2012)

CO<sub>2</sub> emissions from international marine transportation is approximately 800 million tons, which is equivalent to the CO<sub>2</sub> emissions of Germany.



Source: Created by the Ministry of the Environment on the basis of the International Energy Agency (IEA): CO<sub>2</sub> EMISSIONS FROM FUEL COMBUSTION 2014 EDITION

### ■ CO<sub>2</sub> emissions from cargo transport per ton-kilometer



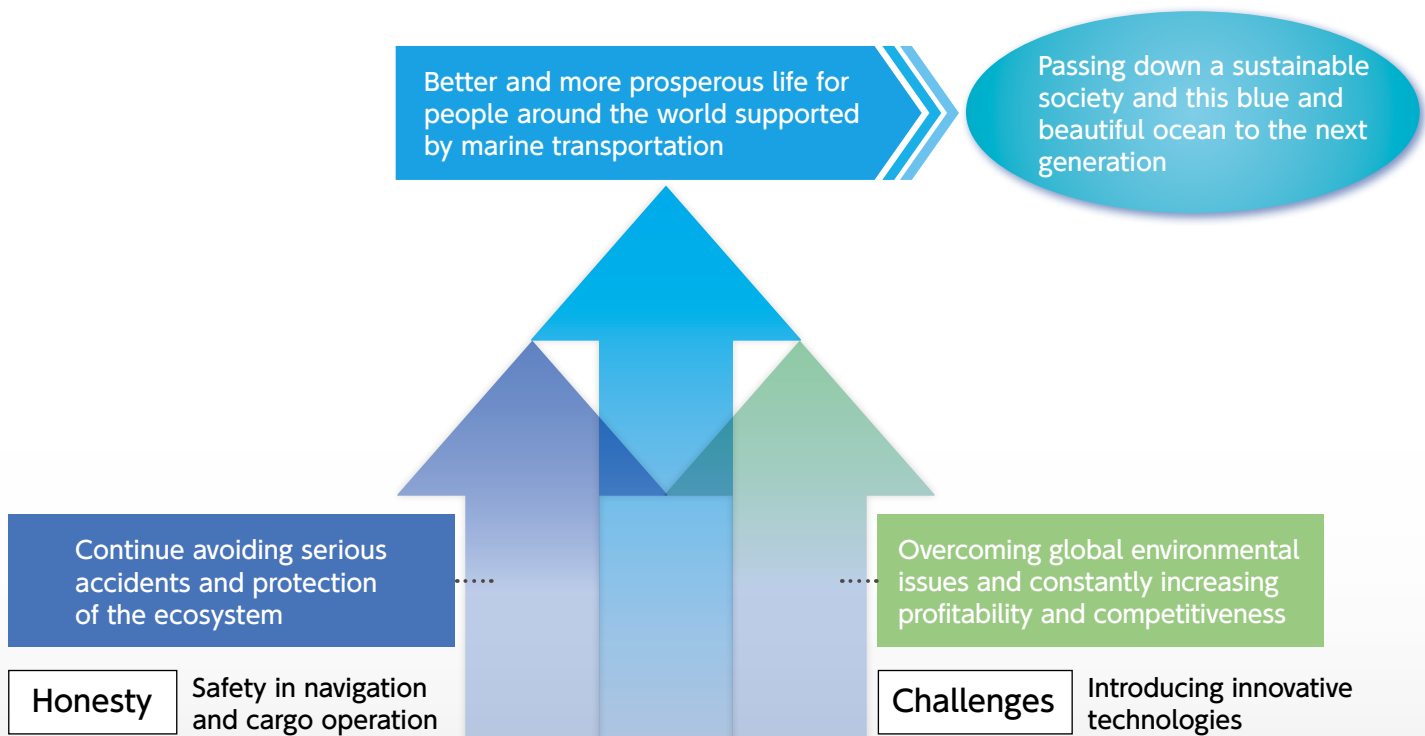
#### 4. However, growing concern about environmental issues are increasing rapidly

As the population and economic activities grow, so too will the demand for marine transportation. Meanwhile, we face a number of issues amid the trend towards mounting interests in conservation of the global environment.

We, “K” LINE, cannot achieve growth together with society without the will and solid foundation to unflinchingly tackle these issues and without maintaining and enhancing our efforts to do so on the basis of long-term considerations.

As a world-leading marine transport operator, “K” LINE will endeavor to establish a business that allows more people around the world to enjoy the advantage of marine transportation characterized by a lower load and higher efficiency.

With a view towards sustainable growth together with society, towards continuing to make contributions to society and towards passing on a blue and beautiful ocean to the next generation, we have formulated our Environmental Vision for 2050.



~ **K** : trust from all over the world ~

- ◆ Providing reliable and excellent services .... Contributing to society
- ◆ A fair way of business ..... Fostering trust from society
- ◆ Relentless efforts to achieve innovation ..... Generating new values
- ◆ Respecting humanity ..... Corporate culture that respects individuality and diversity

# The Global Environment and the Future of “K” LINE

In the process of drawing up our environmental vision, we sought a course of action towards reaching our Goals for 2050 in consideration of what issues we will face and will need to overcome regarding future society as well as the relationship between our business activities and the global environment.

## 1. An outlook on future society (according to an outsider’s analysis)

The worldwide population growth seen mainly in emerging countries will lead to faster economic expansion with greater demand for natural resources and growth in marine transportation in 2050. We have explored the issues in the environmental sector that are closely associated with our business in consideration of the social viewpoint to continue sustainable economic growth together with society.

### Future circumstances surrounding our business

#### Growing global population



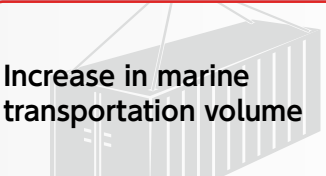
The current global population is around 7.2 billion. It will expand mainly in India, China, Africa and other emerging countries and is expected to surpass 9 billion in 2050.

#### Economic growth and demand hikes chiefly in emerging countries

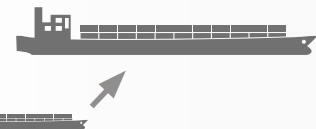


Following growth in populations and in economies, the global economy will grow to nearly four times\*1 its current size by 2050. It is anticipated that, as a result, demand for energy and many other resources will increase further.

#### Increase in marine transportation volume



The marine transportation volume will be more than double\*2 the current level by 2050.



### Issues in the environmental sector

#### Mounting needs for environmental actions

New conditions for competition, including tougher regulations, will be introduced to suppress the impact, resulting from the growth in marine transportation volume and the massive consumption of energy resources, on the atmosphere and the ocean.

#### Energy diversification

Global warming, shortage of resources and other issues will urge today’s society to swiftly change from a high dependency on fossil fuels to diversified energy sources.



#### Actualizing global warming

Without a considerable reduction of worldwide CO<sub>2</sub> emissions, global warming will have a more serious adverse impact on the foundations of people’s lives. There is also concern about its impact on port and harbor facilities, as it may damage them, and on the safety of operations.

(\*1) OECD (2012): OECD Environmental Outlook to 2050

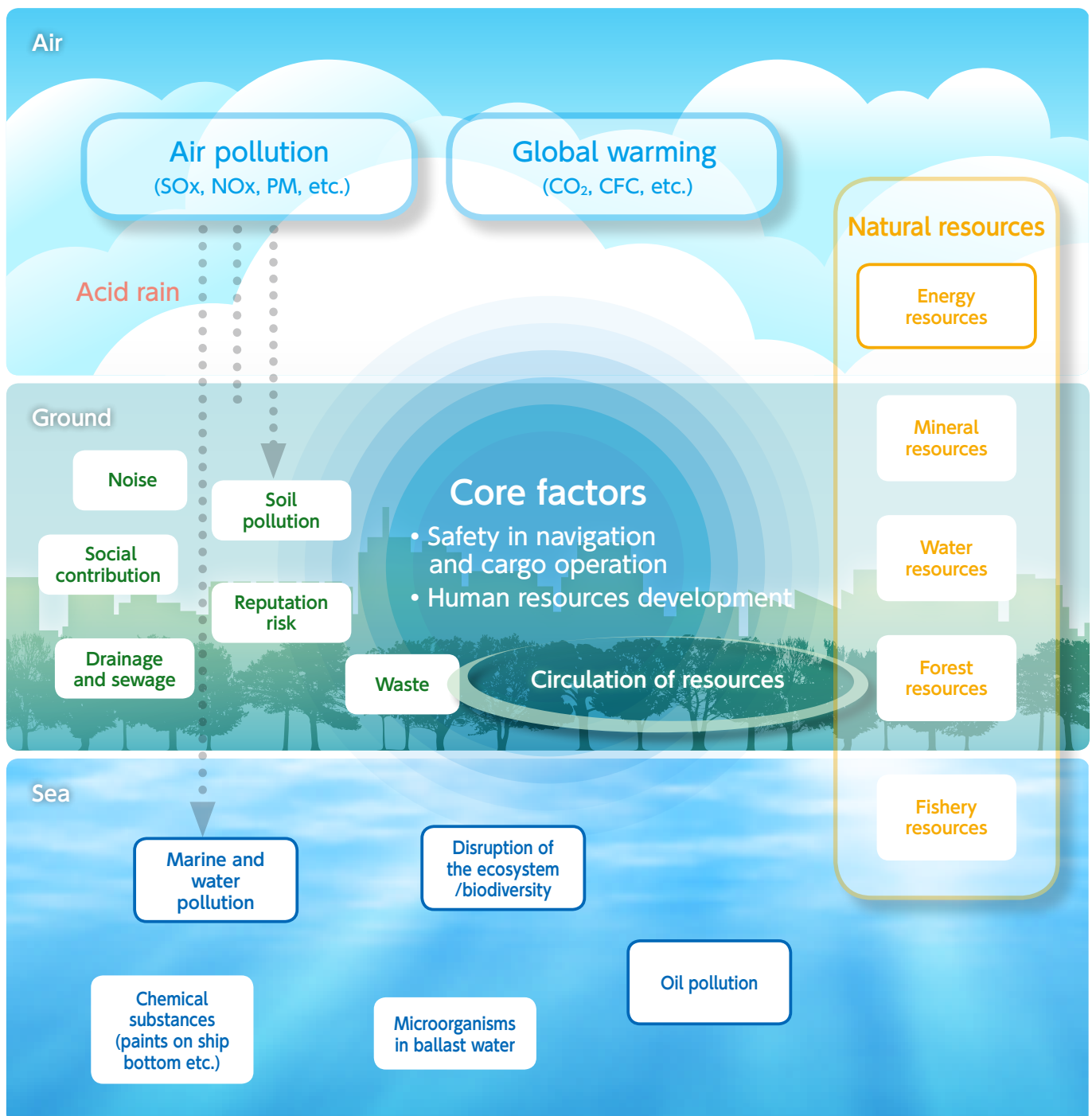
(\*2) Estimation of Global Insight Corporation with “K” LINE’s forecast



## 2. The relationship between our business activities and the global environment

(according to “K” LINE’s analysis)

Our business activities broadly have some impact on the ground, marine and atmospheric environment. We have pondered what issues we should address in order to ensure that we and future generations will constantly and forever live in a comfortable environment, enjoy the views of the beautiful ocean and be able to have a nice time on the beach and that the sea, dubbed the origin of all life, will retain its great vitality and self-purification effect.







## 3. Our priority issues and our Goals for 2050

In view of the outlook of future society and business characteristics, we have identified the priority issues that we will face and need to overcome from two perspectives: the level of interest that stakeholders have and the influence on “K” LINE’s business.

The key issues include marine pollution and disruption of the ecosystem caused by oil pollution accidents, energy consumption indispensable to ship navigation and resulting problems concerning carbon dioxide and air pollution.

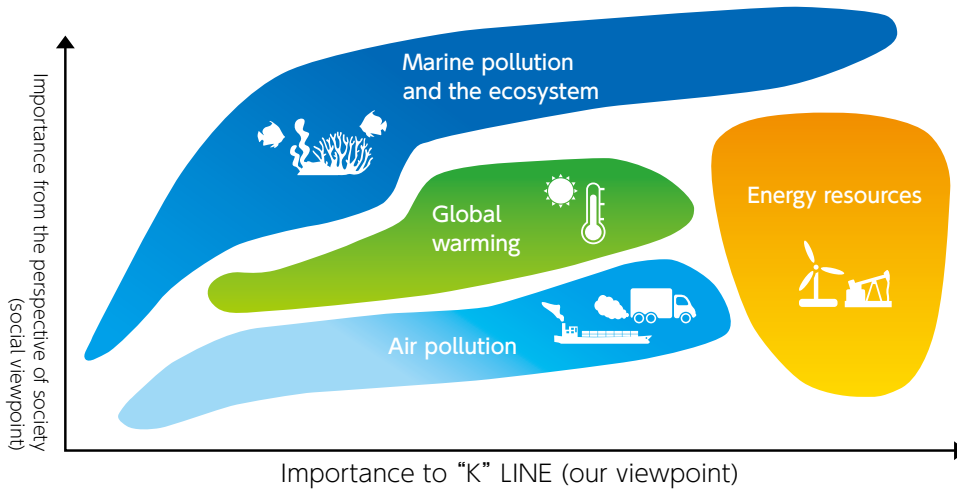
We are setting our goals toward 2050 for priority environmental issues to turn the risks against the key environmental challenges to opportunities.

Four priority issues identified	Risks	Key challenges from risks to opportunities	Opportunities
 <p><b>Marine pollution and the ecosystem</b></p>	<ul style="list-style-type: none"> <li>Oil pollution accidents have serious impacts on the ecosystem.</li> <li>Loss of confidence in safety means a loss of confidence in us as a business operator.</li> </ul>	<p><b>Prevent marine pollution and protect the ecosystem</b></p>	<ul style="list-style-type: none"> <li>Continuing to avoid causing serious accidents will help increase our customers’ confidence in us.</li> <li>By fulfilling our duty as a marine business operator, we will be able to hand down the ocean to the next generation by keeping it clean.</li> </ul>
 <p><b>Energy resources</b></p>	<ul style="list-style-type: none"> <li>Exhaustion of resources and a fuel price surge would affect business profitability.</li> <li>Delay in action for stable energy procurement and for diversification means a loss of competitiveness.</li> </ul>	<p><b>Diversify energy sources</b></p>	<ul style="list-style-type: none"> <li>It ensures stable business continuity and increases reliability as a business operator.</li> <li>It will enable us to take opportunities to enter new business fields including resources exploitation.</li> </ul>
 <p><b>Global warming</b></p>	<ul style="list-style-type: none"> <li>Frequent disasters caused by unsettled weather conditions undermine safety in ship operations.</li> <li>The sea level rise will lead to the destruction of port and harbor facilities and coastal districts.</li> </ul>	<p><b>Suppress greenhouse gas emissions</b></p>	<ul style="list-style-type: none"> <li>Stabilization of weather conditions leads to safety and efficiency in operation.</li> <li>It will generate new transport demand, such as the transport of hydrogen.</li> </ul>
 <p><b>Air pollution</b></p>	<ul style="list-style-type: none"> <li>Regulations on exhaust gas from ships, containing SOx, NOx, PM and other pollutants regarded as hampering growth of humans, animals and plants, will be stricter and the cost incurred for compliance will soar.</li> </ul>	<p><b>Reduce air pollution to as close to zero as possible</b></p>	<ul style="list-style-type: none"> <li>By taking the lead in introducing equipment that complies with tough regulations, we will gain trust as a business operator and advanced competitiveness.</li> </ul>





■ Overall evaluation based on the outsider's analysis and our own analysis



## Goal for 2050

**Continue avoiding serious marine accidents and be the industry's leader in protection of the ecosystem**

For handing on the fertile sea to the next generation, we, as a marine transport operator, have a duty to conserve ecosystem in each area.

- We will recognize the impact of our business activities on the ecosystem and take all possible measures to minimize them.
- We will upgrade our safe navigation system and conduct human resources education and development to hand on the fertile marine environment, where humans coexist with nature, to the next generation.
- We will strive to properly dispose of waste, waste oil, drainage and others, and also procure goods and services with smaller environmental impacts.
- We will engage in tree-planting volunteer activities and environmental beautification activities in an effort to enhance the environment in local communities and to preserve the ecosystem.

**Replacing majority of energy currently consumed with new energy sources**

For passing on limited resources to the next generation, it is essential we encourage energy-efficient operations and shift to alternative energy. These efforts are also effective for reducing CO<sub>2</sub> emissions and air pollutants.

- We will establish a system ready for new energy sources, including LNG, hydrogen, fuel cells and renewable energy to press ahead with the diversification of energy, which is requisite to business activities.
- We will gain new business opportunities including those for resources exploitation and development and transportation of new, non-conventional energy.

**Reducing CO<sub>2</sub> emissions by half**

To minimize the impact of climate change, it is necessary to considerably and continuously reduce greenhouse gases.

- We will aim to cut CO<sub>2</sub> emissions per freight ton-mile to half of the 2011 level or less by furthering energy efficient operations and by positively introducing advanced technologies.
- We will conduct group-wide activities for CO<sub>2</sub> emissions reduction including ship operation, port and harbor facilities and land transportation.

**Zero emissions**

Marine transportation needs to minimize all environmental impacts generated in the whole life cycle of a ship from building through navigation to demolition in order to continuously coexist in mutual benefit with the global environment and to remain necessary to society.

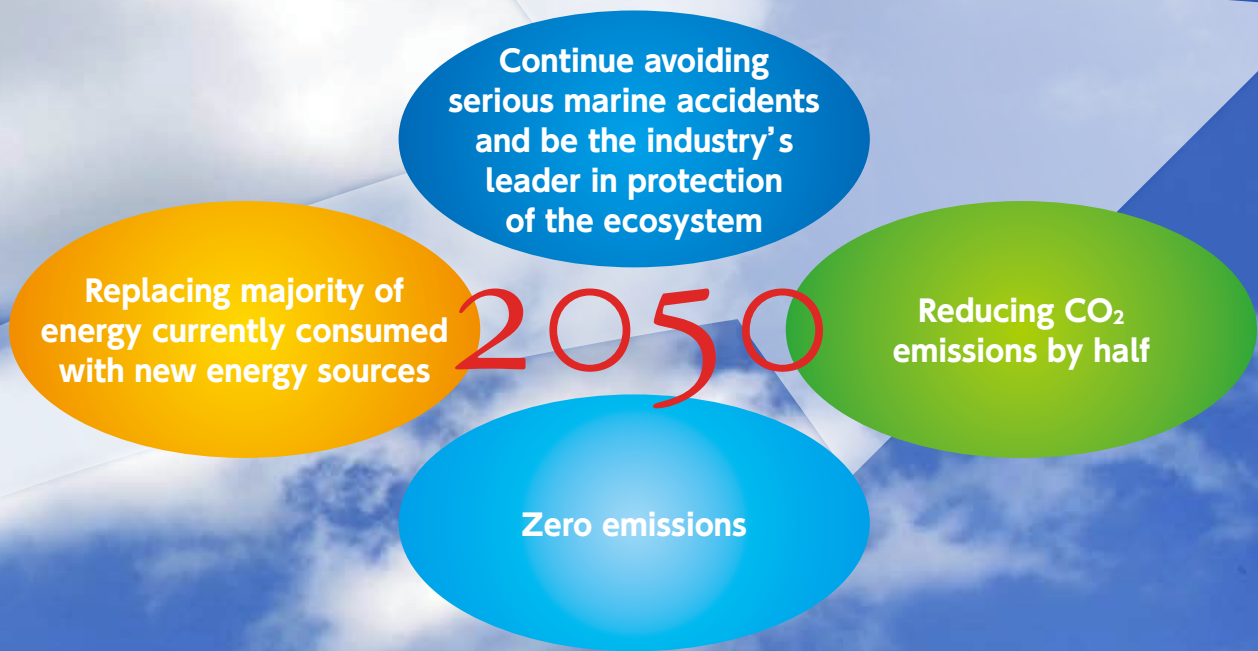
- We will work to minimize environmental impacts arising from business activities and encourage the effective use of resources.
- We will positively introduce new innovative technologies to build an environmentally-friendly fleet that causes no air pollution.
- We will seek and offer responsible, high-quality transportation services to contribute to building a sustainable recycling-based society.

## *Navigating for Sustainability Leading to a Brighter Future*

We will continue our voyage with a view towards achieving our Goals for 2050 set in consideration of the future circumstances surrounding our business and the various issues in the area of the global environment.

To further confirm our navigation track toward these goals for 2050, we have also set a milestone to be reached by 2019, the year marking the 100th anniversary of our foundation.





We, “K” LINE, will continue to take various actions towards our Goals with a view to maintaining this blue and beautiful ocean through 2050 and for children further in the future and to make contributions that provide well-being and prosperous lives to people around the world.

# Our Initial Steps

## We have already taken initial steps towards our Goals for 2050.

### Wind Challenger Project

Launched in 2009, this project is an industry-academia collaborative research project led by the University of Tokyo. We are taking part in a project developing a next-generation large freight carrier equipped with huge rigid sails to effectively use wind energy as a propulsion force and to attain a substantial reduction in fuel consumption.



### Studying Arctic Sea routes

Arctic Sea routes have attracted attention as new marine transport routes linking Asia and Europe. They provide the advantage of massively curtailing navigation distances. We are carefully studying the possibility of using these routes in the future in consideration of safety of navigating these routes and the impact on the ecosystem.



### Studying LNG-fueled carriers

Set up in 2010, in the LNG-fueled carrier development project we're making various research efforts with a view to commercializing pure car carriers and others powered by liquefied natural gas (LNG), which is one of clean energy.



### Building environmental flagships

Under the Drive Green Project launched by gathering cutting-edge technologies from all over the world in pursuit of the zenith of energy efficiency and environmental conservation, a large-sized car carrier with the capacity of 7,500 vehicles is being constructed as a flagship to address environmental challenges after the order for it was placed with Japan Marine United Corporation. Its completion is due in 2016.



Prevent marine pollution and protect the ecosystem

Diversify energy sources

### Use of renewable energy

In 2014, a new cold storage was constructed in Bangkok, Thailand. Capitalizing on the long daylight hours characteristic to Thailand, it is equipped with solar panels on its roof to consume renewable energy generated from sunlight.



### Shore-based power supply to berthing ships

Supplied all electric power required for berthing ships from shore-based power sources. The onboard diesel generators are turned off and exhaust emissions are eliminated. We can thus achieve improvement of the atmospheric environment in the neighboring areas.



### Liquefied hydrogen carriers

Dubbed the ultimate clean energy, hydrogen has drawn attention as a next-generation energy source. We are engaged in research on liquefied hydrogen for high-capacity marine transportation.



Image offer: Kawasaki Heavy Industries, Ltd.

### Responsible demolition of ships and resource recycling

Metals recovered from ships are valuable resources. By recycling, they are reborn as new products and services, aiding the development of lifestyles and employment in the region. When abandoning any ship we own, we carry out an environmental impact assessment with the use of our original check list to select a ship recycling yard that gives consideration to industrial safety and health as well as the environment.



### Marine resource exploitation

Embarked on the offshore support ship business by K Line Off shore AS, set up in Norway, and drill ship project for Brazil's state-run oil company, Kawasaki Kinkai Kisen Kaisha, Ltd., established an offshore joint venture in 2013 with a view towards participation in future resource exploitation in Japanese territorial waters. We have thus been pushing ahead with efforts for energy diversification and for stable energy procurement.



Suppress greenhouse gas emissions

Reduce air pollution to as close to zero as possible

### Environmental volunteer activities

We continue to engage in activities for conserving biodiversity, creating good view and further raising environmental awareness among employees. They include woodland conservation activities in collaboration with NPO Chiba University Student Committee for Environmental Management Systems and cleaning activities in the areas around our facilities and around coastal areas.



### Rating by third-party agencies

A style of investment recommendations not only based on the rating of corporate financial results, but also non-financial information by rating agencies and research institutions has been spreading mainly in the USA and European countries. We have been selected by major indices.





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