

Marine and Global Environmental Conservation

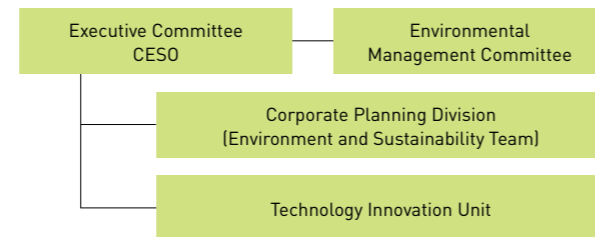
It is the societal mission of the MOL Group to take the lead in resolving common environmental problems of humankind such as climate change, air pollution, and biodiversity disruption as a participant in our world. Not only minimizing the environmental impact of the MOL Group's business activities, we also work on providing solutions to environmental problems as an important business opportunity. Placing "Promotion of environmental strategies and development of the emission-free business into a core business" as one of the core strategies to achieve our management vision, we are actively promoting initiatives in the environmental field.



Environmental Management Structure

The Environmental Management Committee, which is a subordinate organization of the Executive Committee, formulates medium- to long-term environmental goals, and reviews the progress on our goals and how we are pushing forward the environmental and zero emission projects. Furthermore, in April 2020 we established the role of the chief environment and sustainability officer (CESO), who oversees the planning and implementation of environmental strategies, as well as a new specialized team within the Corporate Planning Division to take charge of the hands-on work.

The Technology Innovation Unit conducts environmental initiatives from a technology and ICT perspective.



➡ Please refer to page 38 for details on the chief environment sustainability officer.

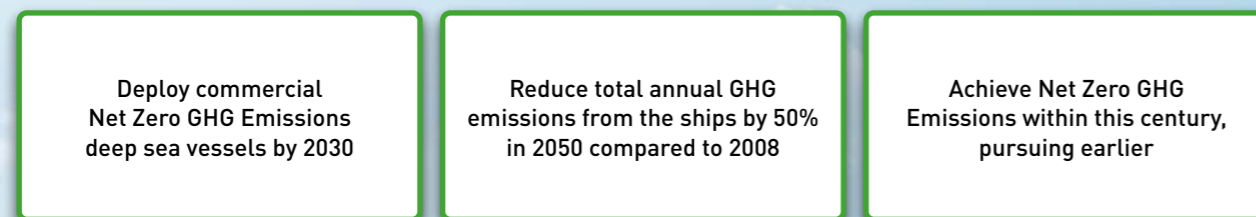
To Curtail Greenhouse Gas (GHG) Emissions: Enactment of MOL Group Environmental Vision 2.0

With the ever-increasing momentum to prevent climate change since the Paris Agreement came into force, in April 2018 the IMO (International Maritime Organization) adopted "IMO strategy on reduction of GHG emissions from ships," which comprehensively set out international shipping GHG reduction targets and measures to achieve them. This strategy is the

first in the world to commit to achieving zero GHG emissions during this century in a single internationally spanning sector. In response, we also reviewed our Environmental Vision 2030, formulated in April 2017, and have newly enacted MOL Group Environmental Vision 2.0, which makes clearer commitments, including the attainment of IMO objectives.

MOL Group Environmental Vision 2.0

The MOL Group is committed to achieve sustainable "Net Zero GHG Emissions" through collective efforts with all capabilities.



Previous reduction targets set out in Environmental Vision 2030 (established in fiscal 2017)

The MOL Group targets reduction of GHG emissions per unit load by 25% by 2030 and by 50% by 2050 compared to fiscal year 2014" (efficiency improvement target).

Initiatives to Achieve the Goals Set Forth in MOL Group Environmental Vision 2.0

Goals	Initiatives
1 Adoption of Clean Alternative Fuels	<ul style="list-style-type: none"> Promoting LNG fuel usage Study and adoption of next-generation zero-emission fuels to succeed LNG fuels
2 Adoption of Energy-Saving Technologies	<ul style="list-style-type: none"> Actual installation of Wind Challenger systems Adoption of other new technologies
3 Enhancement of Operational Efficiency	<ul style="list-style-type: none"> Reduction of fuel consumption via real-time monitoring of vessel operational status
4 Building Business Models to Enable Net Zero GHG Emissions	<ul style="list-style-type: none"> Active involvement in regulation and rule-making through industry associations and related government agencies
5 Expanding Low-Carbon Businesses Using Concentrated MOL Group's Strengths	<ul style="list-style-type: none"> Business development in the area of next-generation fuels such as hydrogen, in addition to FSRU, LNG powerships, and renewable energy

MOL is carrying out simultaneous studies on various clean alternative fuels. For example, LNG is a fossil fuel, but it can reduce CO₂ emissions compared to conventional heavy oil, and we therefore consider it an effective alternative fuel that is ready for immediate use. However, since we cannot achieve our goals with LNG fuel alone, we will also consider other next-generation fuels, specifically synthetic methane from methanation, ammonia, and electric ships, among other possibilities. Regarding measures for the use of synthetic methane as vessel fuel, we joined Japan's Carbon Capture & Reuse (CCR) Study Group* in fiscal 2019 and launched a multi-industry-spanning working group.

* The CCR Study Group is a body to solicit CCR technologies from multiple industries for feasibility studies. CCR technologies provide alternative energies by combining CO₂ emitted from industry and hydrogen produced using renewable energy.

➡ Please refer to page 35 for further details on the Wind Challenger Project.

To further promote the measures we have put in place so far to reduce fuel consumption in operating existing vessels, we have established a new Fleet Performance Management Team within the Marine Technical Management Division, which will conduct concentrated monitoring to ascertain the operational status of individual vessels in a timely manner and work to ensure sailings in the most optimal speed.

Discussions on international rules for global shipping are primarily conducted at the IMO. The direction taken in the introduction of new rules, depending on its content, can heavily impact the business environment for shipping companies, but we see it as an opportunity to build new business models, and we will actively participate in discussions through industry associations and related government agencies.

If we only concern ourselves exclusively with GHG emissions from ships, it will be difficult to reach our goal of Net Zero GHG Emissions by early in the 21st century. By developing new businesses in the abovementioned fields, we intend to promote low carbonization for our entire Group business portfolio. Since supply chains have yet to be developed for many next-generation fuels, we aim to participate in a wide range of fields, from upstream (manufacturing) to downstream (transportation and supply), not just using them as vessel fuels.

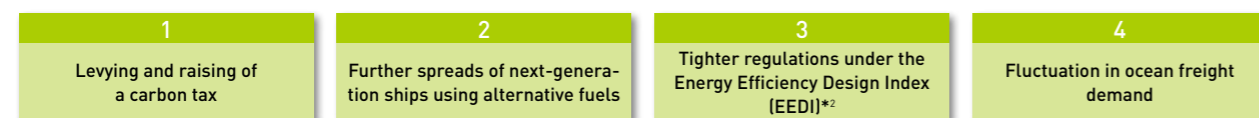
➡ Please refer to page 34 for information on our other endeavors in environmental and emission-free businesses.

➡ Please refer to page 15 for information on our CO₂ emissions volumes.

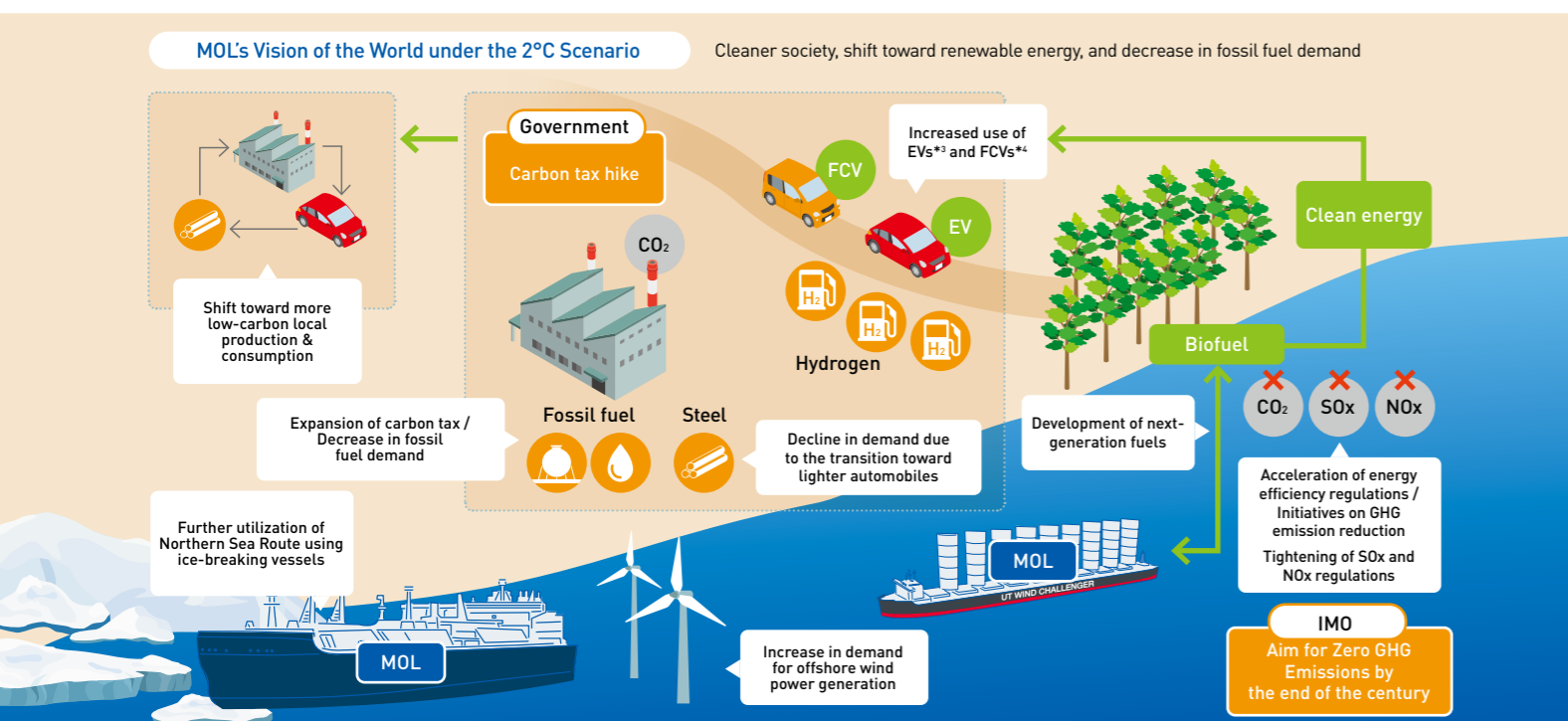
Scenario Analysis

In fiscal 2018, to ascertain the impacts of climate change on our business as well as our business continuity ability given those impacts, with the support of the Ministry of the Environment, we conducted a trial scenario analysis utilizing the framework of TCFD. Furthermore, in fiscal 2019, following in-depth exchange of opinions with our sales divisions, we added our own perspectives to analysis of the long-term outlook for key transportation demand and revised the content of the previous year's analysis in a

way that develops it further. In making these revisions, we picked the following four climate change-related items that we deem both important and likely to impact our business and quantified them in terms of their impact on our profits and losses according to the 2°C and 3°C scenarios*1. We will continue to improve the accuracy of our scenario analyses and use the results to promote individual initiatives to achieve the goals set forth in MOL Group Environmental Vision 2.0.



*1 Ultra-long-term future scenarios of energy demand and climate change. The 2°C Scenario is a scenario in which the necessary measures are implemented to control temperature increases to 2°C or less. The 3°C Scenario is a scenario in which economic initiatives and additional measures to address climate change are not sufficiently implemented. The former is put out by the International Energy Agency (IEA) and the latter is MOL's own scenario based on the IEA's scenario.
*2 The Energy Efficiency Design Index is a measure of a ship's energy efficiency, theoretical CO₂ emission figures calculated when the vessel was designed (g/ton-mile). Under the regulation, rates of EEDI reduction from benchmark values according to individual vessel types are gradually tightened.



*3 Electric Vehicles *4 Fuel Cell Vehicles

Initiatives for Challenges other than Climate Change

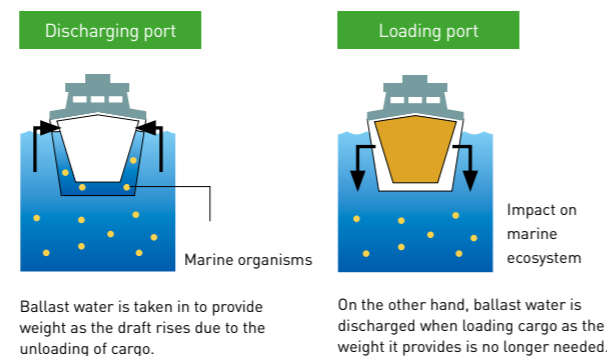
Protection of Biodiversity

Ballast Water Management Convention

Content of the Convention
The Ballast Water Management Convention highlights the negative impact of the cross-border transfer of foreign marine organisms, which occurs when vessels release ballast water, on marine ecosystems. Under the Convention, all vessels are mandated to install ballast water treatment systems by 2024.

In anticipation of the enactment of the Ballast Water Management Convention, adopted by the IMO, we decided to make the installation of ballast water management systems a Companywide policy in fiscal 2014. As of April 2020, we have completed installation of these management systems on 167 vessels. Our policy is to complete installation on all of our owned vessels by the time limit set by the Convention.

Ballast Water Mechanism



Air Pollution Prevention

SOx Regulations

Content of the Regulations
The SOx regulations limit the percentage of sulfur content in fuel in order to curtail the amount of sulfur in gas emissions. In January 2020, the IMO tightened the limit from 3.5% or less to 0.5% or less.

Our management plan for fiscal 2019 set "Strategic actions for compliance with SOx regulations" as a focus area, and under our SOx 2020 Regulation Response

Committee (which reports to the Executive Committee), we have taken Companywide measures to ensure that we are fully prepared for the tightening of regulations in January 2020.

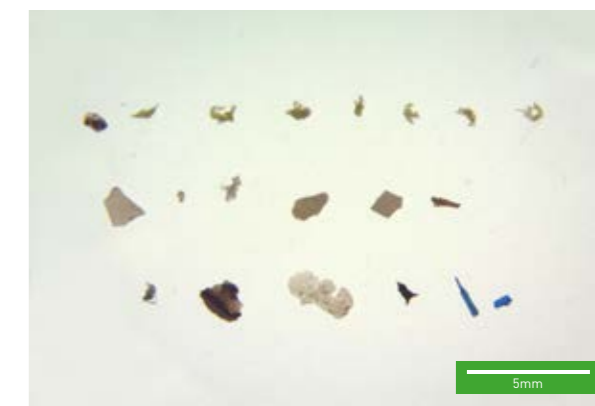
Of the three methods of compliance with the regulations, (compliant fuel, SOx scrubbers, and the use of LNG and other alternative fuels), we take compliant fuel usage as our main measure, and use the other two methods on a ship by ship basis.

Compliant Fuel	Compliant fuel complies with the new standards by limiting sulfur content to 0.5% or less. As a result of our early efforts to test the quality of compliant fuel supplied by various oil companies and secure the necessary quantities, we have completed the smooth transition of our fuel without causing any major engine trouble or downtime for our operating vessels.
SOx Scrubbers	SOx scrubbers use water to filter sulfur out of exhaust smoke. By installing them we are able to continue to use conventional fuel. We have been installing SOx scrubbers primarily in larger vessels such as Very Large Crude Carriers (VLCCs) and Capesize bulkers, and as of May 2020 we had completed installation on 41 vessels, including those at the request of our customers. On a Groupwide basis, we plan to have them installed on 100 vessels by 2022.
LNG and Other Alternative Fuels	LNG fuel can reduce SOx emissions to zero, but since it requires installation of special LNG engines, it is mostly adopted in new ships. In addition, we are making efforts in the areas of electric ships and the Wind Challenger Project (see pages 34 to 37) as well as synthetic methane (see page 47).

Marine Environment Protection

Reduction of Ocean Plastic

Ocean plastic has a profound effect on marine ecosystems. As part of our efforts to reduce ocean plastic, we plan to install a dedicated collection system on new ships scheduled to be delivered in fiscal 2020. When the ship takes in seawater, the system's filters collect microplastics in the ocean that have been finely crushed to 5mm or less under the force of waves and ultraviolet rays, and we expect it to collect several hundred grams per ship (a few hundred thousand pieces of microplastic) annually. Land-based tests conducted in autumn 2019 confirmed the system's ability to collect microplastics. We will consider expanding the system to additional vessels following the verification trial on the first one.



Microplastic collected in land-based tests

Ship Recycling

Please refer to page 69 for MOL's efforts in this regard.

Issuance of Green Bonds and Sustainability Bonds

As initiatives to apply the world's increasing awareness of the environment and the SDGs to our financing measures, in fiscal 2018 we issued ¥10 billion in Green Bonds*5 and in fiscal 2019, we issued ¥20 billion in Sustainability Bonds*6. We became the first company in Japan to have issued both Green Bonds and Sustainability Bonds not only to institutional investors but also to individual investors.

*5 Funds raised with Green Bonds is to exclusively finance our green projects that are effective at improving the environment.
*6 Sustainability Bonds extend the usage of funds from Green Bonds, raised to projects that address issues related to resolving social issues.

For MOL's environmental data, please visit our website.
<https://www.mol.co.jp/en/sustainability/environment/data/index.html>

Fund Allocation

Project Name	[Billions of yen]	
	Green Bonds	Sustainability Bonds
Ballast Water Treatment Systems	5.5	4.0
SOx Scrubbers	2.2	9.2
LNG Bunkering Vessels	1.4	2.0
LNG Powered Vessels	0.7	0.1
New PBCF	0.2	0.1
Others (other than green projects)	—	4.6
Total	10.0	20.0