

2025

Transport and Environment in Japan



Publisher Foundation for Promoting Personal Mobility
and Ecological Transportation

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This document is a tentative translation by the Foundation for Promoting Personal Mobility and Ecological Transportation (Eco-Mo Foundation) of “Transport and Environment in Japan 2025”, published in March 2025 by the Eco-Mo Foundation under the editorial supervision of the Environmental Policy Division, Policy Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

Initial translation was performed by a translation company, with necessary revisions made afterwards. Unique terminology and phrases which cannot be understood without knowledge of the societal background and conditions involved in the Japanese transport environment have been replaced with appropriate English expressions without being constrained by the original Japanese expressions. However, no additional explanations or additional text has been inserted, and, wherever possible, the tentative translation is faithful to the original text.

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I. Developments Related to Environmental Issues in 2024

There were a great deal of developments in 2024, both inside Japan and overseas, related to environmental issues. Below are some of the developments in global warming.

■ Global warming related developments

Regarding measures against global warming, international discussions have been ongoing at the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC), which was adopted in 1992. At COP21, held in Paris, France in November–December 2015, the Paris Agreement was adopted as a new legal framework for global warming countermeasures beyond 2020. The Agreement stipulates that all countries shall regularly update their greenhouse gas emission reduction targets and make efforts to achieve them. It entered into force on November 4, 2016.

In Japan, the “Global Warming Countermeasure Plan”—a comprehensive and strategic plan to promote climate action—was approved by the Cabinet on May 13, 2016. The plan sets specific mid- and long-term targets for greenhouse gas emissions reduction. Measures in the transport sector include comprehensive approaches such as automobile and road traffic flow measures, promotion of public transportation, and logistics efficiency improvements. Furthermore, based on the Paris Agreement, Japan adopted the “Long-term Growth Strategy under the Paris Agreement” on June 11, 2019, which was subsequently submitted to the UNFCCC Secretariat.

Regarding the Paris Agreement, at COP24 held in Katowice, Poland in December 2018, implementation guidelines were adopted concerning reporting and assessment of each country’s progress in reducing greenhouse gas emissions. At COP26 in Glasgow, UK in October–November 2021, implementation guidelines related to market mechanisms under Article 6 of the Paris Agreement were adopted. Additionally, the “Glasgow Climate Pact,” the decision text of COP26, clearly stated the commitment to pursue efforts to limit the global temperature increase to 1.5°C.

As carbon neutrality by 2050 became a global trend, Japan declared in October 2020 its aim to achieve carbon neutrality by 2050. It also set a new greenhouse gas emissions reduction target for FY2030: a 46% reduction compared to FY2013 levels (approximately 760 million t-CO₂), while continuing to strive toward a 50% reduction. In October 2021, Japan revised the “Plan for Global Warming Prevention,” the “Basic Energy Plan,” and the “Long-term Growth Strategy under the Paris Agreement,” and submitted updated national targets for greenhouse gas emissions reduction under the Paris Agreement.

At COP28, held in Dubai, United Arab Emirates in November–December 2023, a decision was adopted on the Global Stocktake, which assesses global progress toward achieving the goals of the Paris Agreement. The decision text highlights the urgent need for action to meet the 1.5°C target, peaking emissions by 2025, reductions covering all gases and sectors, and sectoral contributions that reflect each country’s unique pathway.

At COP29, held in Baku, Azerbaijan in November 2024, a new collective quantified goal (NCQG) on climate finance was decided. This includes a target of at least USD 300 billion annually by 2035 to support developing countries (including assistance by multilateral development banks and from developing countries themselves), and calls for all actors to collectively expand climate finance from all public and private sources to more than USD 1.3 trillion annually by 2035. Additionally, detailed rules for Article 6 of the Paris Agreement, which had been under discussion, were finalized, enabling its full implementation.

II. Current Status of Major Environmental Problems of the Transport Sector

1 Current status of global environmental problems

Our globe is facing severe environmental problems, such as global warming and the destruction of the ozone layer. For the next generation to receive a planet in which they can live in security, our generation must rapidly implement countermeasures to these problems.

(1) Current status of global warming

■ The mechanism behind and impact of global warming

In order to produce energy, we burn fossil fuels such as petroleum, coal, and natural gas, generating gases such as carbon dioxide (CO₂) and releasing them into the atmosphere.

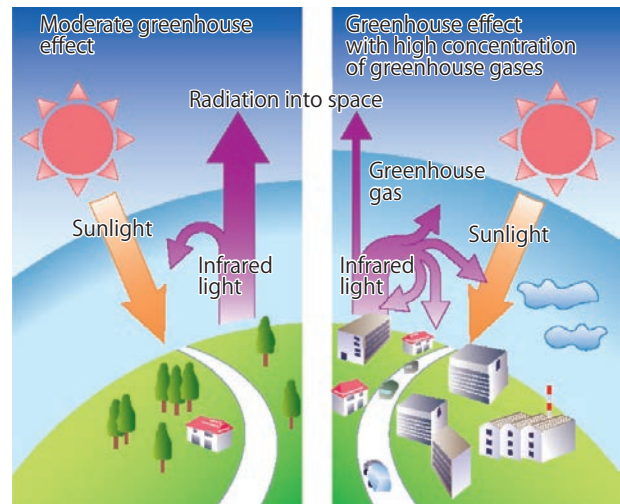
Atmospheric gases such as carbon dioxide are transparent to a great deal of the light from the sun, while the gases absorb infrared radiation released from the earth's surface. This results in a warming of the atmosphere. They act like the glass in a greenhouse, raising the earth's temperature. These gases, which have kept temperatures in the range suited for life on earth, are called greenhouse gases.

However, factors such as the rise of industry have increased the amount of daily activity, producing a rapid rise in the amount of greenhouse gases emitted into the atmosphere. This has intensified the greenhouse effect, producing a commensurate increase in climate temperature. This is called global warming. With regard to the causal link between human activities and global warming, the Intergovernmental Panel on Climate Change (IPCC) stated that "It is unequivocal that human influence has warmed the atmosphere, ocean and land." in the Working Group I Report (The Physical Science Basis) of the Sixth Assessment Report released in August 2021. The report also indicated that the global surface temperature for 2011-2020 was 1.09 [0.95 - 1.20] °C higher than that in the pre-industrial era (1850 - 1900), and the temperature over land (1.59 [1.34 - 1.83] °C) was higher than that over the ocean (0.88 [0.68 - 1.01] °C).

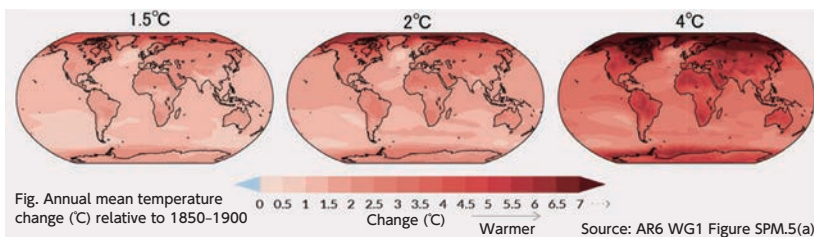
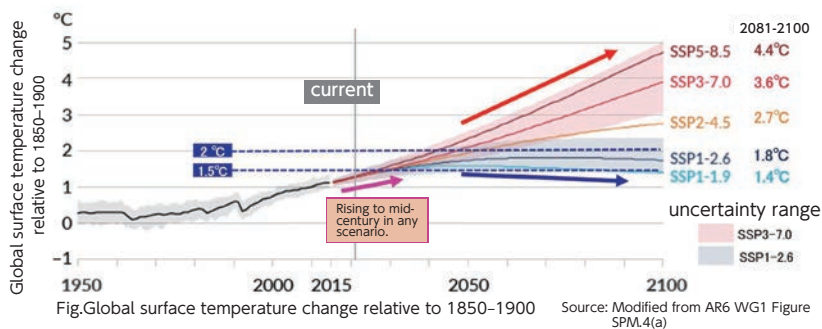
As global consumption of fossil fuels continues to increase, atmospheric concentrations of greenhouse gases will further increase, leading to global warming. The IPCC report states that the global surface temperature change by the end of the 21st century compared to the pre-industrial era (1850-1900) is very likely to be within the range of 1.0-1.8° C under a scenario with very low greenhouse gas emissions (SSP1-1.9) and within 3.3-5.7° C under a scenario with very high greenhouse gas emissions (SSP5-8.5). Additionally, relative to the period 1995-2014, the projected rise in global mean sea level by the end of the 21st century will likely be within 0.28-0.55 meters under the very low greenhouse gas emissions scenario (SSP1-1.9) and within 0.63-1.01 meters under the very high greenhouse gas emissions scenario (SSP5-8.5). Global warming is expected to increase the frequency and intensity of extreme weather events, and it is noted that, compared to pre-industrial conditions, the extreme weather events that have occurred once every 10 years will likely be 9.4 times more in frequency and 5.1°C more in intensity for extreme terrestrial temperatures, 2.7 times more in frequency and 30.2% more in intensity for heavy terrestrial precipitation events, and 4.1 times more in frequency with intensity greater by 1.0 standard deviation for agricultural and ecological droughts in arid regions in a world with temperatures increased by 4°C on average.

In the Paris Agreement, which was adopted at the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015, it was stipulated that the increase in global average temperature should be well maintained within 2°C compared to level during the pre-industrial era, and that efforts to limit the increase to 1.5°C should be continued. In November 2021, the Glasgow Climate Pact was accepted at COP26 held in Glasgow, UK. In this pact, they agreed that efforts should be made to limit the increase in global average temperature to 1.5 °C (Paris Agreement) and for that global carbon neutrality should be achieved by the middle of this century. This will accelerate the movement toward carbon neutrality in the entire world.

● Mechanism of the greenhouse effect



Forecast of increase in average global surface temperature



Scenario	Description of the Scenario [Closest RCP Scenarios]
SSP5-8.5	No additional climate policy under the fossil-fuelled socio-economic development pathway. CO ₂ emissions roughly double from current levels by 2050. [RCP8.5]
SSP3-7.0	No additional climate policy under the regional rivalry development narrative. It has particularly high non-CO ₂ emissions, including high aerosols emissions. CO ₂ emissions roughly double from current levels by 2100. [Between RCP6.0 and RCP8.5]
SSP2-4.5	Introducing climate policies under a path of moderate development. It is approximately in line with the upper end of aggregate NDC emissions levels by 2030. CO ₂ emissions remaining around current levels until the middle of the century. [RCP 4.5 (also close to RCP 6.0 through 2050)]
SSP1-2.6	Introducing climate policies to stay below 2.0 °C warming relative to 1850-1900 (median) under the sustainability development with implied net zero CO ₂ emissions in the second half of the century. [RCP2.6]
SSP1-1.9	Introducing climate policies to hold warming to approximately 1.5 °C above 1850-1900 in 2100 after slight overshoot (median) under the sustainability development with implied net zero CO ₂ emissions around the middle of the century. [Not applicable]

Created from AR6 WG1 1.6.1.1 and Cross-Chapter Box 1.4 Table 1, Box SPM.1.1.

Annual average temperature

- ✓ It is virtually certain that the land surface will continue to warm more than the ocean surface (likely 1.4 to 1.7 times more).
- ✓ It is virtually certain that the Arctic will continue to warm more than global surface temperature, with high confidence above two times the rate of global warming.

(AR6 WG1 SPM B2.1)

Source: Ministry of Environment (MOE) "Overview of IPCC 6th assessment" (Tentative translation by Eco-Mo Foundation)

Impact of individual greenhouse gases on global warming

In addition to carbon dioxide, greenhouse gases which cause global warming include methane, nitrous oxide, and chlorofluorocarbon. According to the IPCC, the greenhouse effects per unit of volume of methane, nitrous oxide, and chlorofluorocarbon, etc., are far stronger than those of carbon dioxide, but the amount of carbon dioxide being emitted is tremendous, so carbon dioxide emissions worldwide since the industrial revolution account for roughly 60% of all greenhouse gas contributions to global warming.

For Japan, in FY2022 carbon dioxide accounted for 91% of all greenhouse gas contributions to global warming, an extremely high figure.

Greenhouse gas and global warming potential (100 year period)(*1)

	Carbon dioxide	Methane	Nitrous oxide	HFC(*2)	PFC(*3)	SF ₆
Global warming potential (100 year cumulative period)	1	27.9	273	1,530	8,620	24,300

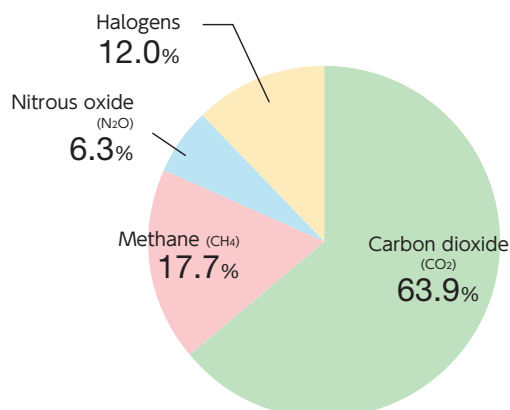
*1: Global warming potential Warming effect of greenhouse gases over a 100 year period (using carbon dioxide as a baseline with a value of 1)

*2: HFC Calculated for HFC-134a, a typical HFC used as a coolant

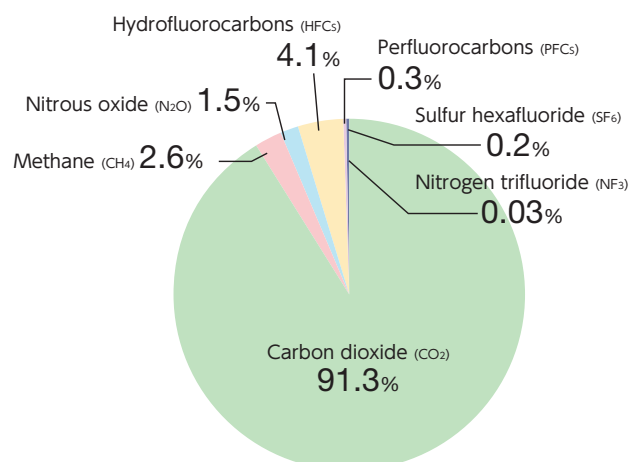
*3: PFC Calculated for PFC-5-1-14, a typical PFC used in rectifiers

Source: IPCC (2021)

Contributions to global warming by greenhouse gases emitted due to human activity since the industrial revolution



Contributions to global warming by greenhouse gases emitted by Japan (for FY2022)



Source: Created based on the documents of Working Group I of the IPCC Sixth Assessment Report (2021)

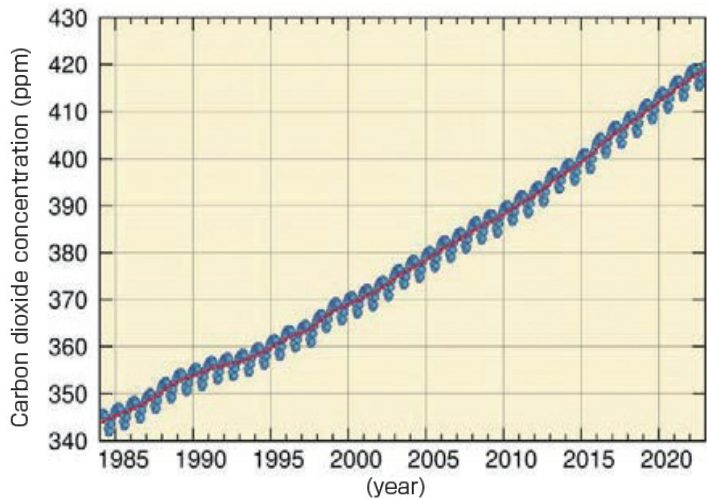
Source: GIO "Greenhouse Gas Inventory"

Trends in concentration of carbon dioxide in the atmosphere

The concentration of carbon dioxide in the atmosphere varies cyclically every year due to factors such as plant photosynthesis. The amount of change also depends on the location, due to differences in local vegetation, etc.

The concentration of carbon dioxide in the atmosphere remained roughly stable at 280ppm (ppm: parts per million) before the industrial revolution in the latter 18th century, but the rapid increase in manufacturing and production activities following the industrial revolution has been accompanied by an increase in the carbon dioxide concentration. According to the World Data Centre for Greenhouse Gases (WDCGG), the carbon dioxide concentration in 2022 was 417.9ppm, significantly higher than the concentration before the industrial revolution.

The global mean concentration of carbon dioxide in the atmosphere

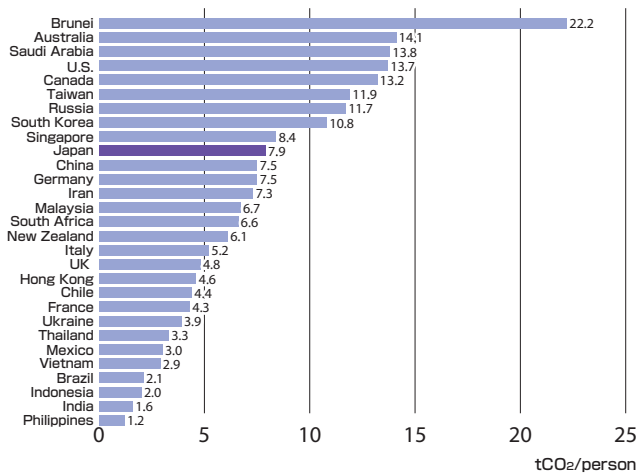
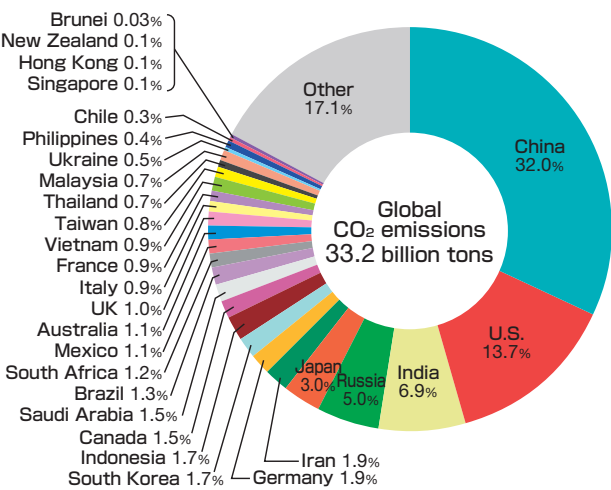


Source: Japan Meteorological Agency (JMA) "Climate Change Monitoring Report 2023" (Tentative translation by Eco-Mo Foundation)

Carbon dioxide emission volume by country

Carbon dioxide emission volume by country is as follows: China 32.0%, U.S. 13.7%, India 6.9%, Russia 5.0%, followed by Japan at 3.0%. In terms of per capita emissions by country, Japan is number 10.

Share of carbon dioxide emission volume by country (2021) Per capita carbon dioxide emission volume by country (2021)



Source: EDMC "Handbook of Energy & Economic Statistics in Japan 2024"

(2) The United Nations Framework Convention on Climate Change, the Kyoto Protocol, and Paris Agreement

■ UNFCCC

UNFCCC was formulated with the objective of stabilizing greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system. It was adopted in May 1992, and after being signed by the heads of states at the June 1992 United Nations Conference on Environment and Development (held in Rio de Janeiro), it went into effect in March 1994.

As of January 2024, the European Union (EU) and 197 countries, including Japan, are signatories.

■ The Kyoto Protocol

In December 1997 COP3 was held in Kyoto, and the Kyoto Protocol for achieving the convention's objectives was adopted. The Kyoto Protocol specifies the percentage by which average annual greenhouse gas emissions by developed countries are to be reduced compared to a reference year (in principle 1990) during the period from 2008 to 2012 (the first commitment period). Japan was to have reduced emissions by 6%, the U.S. by 7%, and the EU by 8%. No binding targets were set for developing countries. The November 2004 ratification by Russia satisfied the Kyoto Protocol's requirements for coming into force, and the treaty became effective on February 16, 2005. The U.S. did not ratify the Kyoto Protocol. The first commitment period of the Kyoto Protocol, which went into effect in 2008, ended in 2012. While official adoption will first require screening by the UN, Japan met its greenhouse gas emissions reduction target.

■ Paris Agreement

Regarding the post-2020 framework, it was agreed at COP17, held in Durban, South Africa, in November–December 2011, to establish an ad hoc working group to develop a new framework applicable to all countries by 2015.

In July 2015, Japan formulated its “Intended Nationally Determined Contribution (INDC)” —which was requested prior to the adoption of the new framework—at the Global Warming Prevention Headquarters and submitted it to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC).

Subsequently, COP21 was held in Paris, France, in November–December 2015, where the Paris Agreement —a new legal framework for climate change measures beyond 2020—was adopted. The agreement entered into force on November 4, 2016.

Following discussions at COP24, held in Katowice, Poland, in December 2018, and at COP26, held in Glasgow, United Kingdom, in October–November 2021, implementation guidelines for the Paris Agreement were adopted.

In accordance with the Paris Agreement, on June 11, 2019, the Japanese government adopted the “Long-term Strategy under the Paris Agreement as a Growth Strategy” by Cabinet decision. In March 2020, the government also decided on its “Nationally Determined Contribution (NDC)” —which outlines greenhouse gas reduction targets—through the Global Warming Prevention Headquarters and submitted both documents to the UNFCCC Secretariat.

Subsequently, Japan revised its NDC and long-term strategy in November 2021, setting a new target to reduce greenhouse gas emissions by 46% from FY2013 levels by FY2030, while continuing to pursue efforts toward a 50% reduction. The revised documents were submitted to the UNFCCC Secretariat.

In November–December 2023, COP28 was held in Dubai, United Arab Emirates, where the first “Global Stocktake” —a five-yearly assessment of the implementation status of the Paris Agreement—was conducted.

In November 2024, COP29 was held in Baku, Azerbaijan, where detailed rules on Article 6 of the Paris Agreement, concerning market mechanisms, were adopted.

The results of the November 2024 COP29 are shown below.

Outcomes of COP29, CMP19, CMA6, SBSTA61 and SBI61

January 10, 2025

1. Outline of Meeting

The 29th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP29), the 19th session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP19), and the 6th session of the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (CMA6), as well as the 61st session of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation, were held in Baku, Azerbaijan from November 11th to November 24th (2 days extension) and Decisions/Conclusions were adopted. Officials from the Ministry of Foreign Affairs, the Ministry of the Environment, the Ministry of Economy, Trade and Industry, the Ministry of Finance, the Financial Services Agency, the Ministry of Internal Affairs and Communications, the Ministry of Education, Culture, Sports, Science and Technology, the Ministry of Agriculture, Forestry and Fisheries, the Forestry Agency, the Ministry of Land, Infrastructure, Transport and Tourism, the Japan Meteorological Agency, and related organizations participated in the conferences.

Decisions on the New Collective Quantified Goal (NCQG) on climate finance, the Mitigation Work Programme (MWP), and the Global Goal on Adaptation (GGA) were adopted as the Baku Climate Unity Pact. In addition, decisions regarding Article 6 of the Paris Agreement were adopted.

New Collective Quantified Goal on climate finance (NCQG): The decision to set the support goal of “at least USD 300 billion per year by 2035 for developing country Parties” was adopted. This includes support by multilateral development banks and contributions from developing country Parties. It was also decided to call on all actors to work together to enable the scaling up of financing to developing country Parties for climate action from all public and private sources to at least USD 1.3 trillion per year by 2035.

Mitigation: In the “Mitigation Work Programme”, negotiations were held based on the discussions at the global dialogues held in 2024 on the topic “Cities: buildings and urban systems”. Noting the actionable solutions, as presented in the annual report of the dialogue, the Parties decided on the manner for the next round of the dialogue while encouraging voluntary initiatives in the light of different national circumstances.

Article 6 of the Paris Agreement: The details of the items and forms of authorization and reporting by governments of the Parties required for parties to cooperate in implementing measures and distributing emission reductions consistent with Article 6 of the Paris Agreement, interoperability between the registries used to record emission reductions were decided.

In addition to the negotiations on the agenda, several events based on COP and CMA decisions were also held.

Furthermore, during the meeting period, Japan exchanged opinions regarding climate change with several related the Parties and organizations and held discussions on the Joint Crediting Mechanism (JCM) with the aim of developing implementation rules and expanding partner countries.

2. Summary of the Negotiations for Each Agenda

(1) New Collective Quantified Goal on Climate Finance (NCQG)

In the NCQG decision, it was decided to set a goal with developed country Parties taking the lead, of at least USD 300 billion per year by 2035 for developing country Parties for climate action. This includes support by multilateral development banks and contributions from developing country Parties. It was also decided to call on all actors to work together to enable the scaling up of financing to developing country Parties for climate action from all public and private sources to at least USD 1.3 trillion per year by 2035.

Japan believes that the NCQG should reflect the reality of today’s global economy and be an achievable goal. To this end, Japan has been actively engaged in negotiations with other countries at various levels under the leadership of Minister of the Environment, Keiichiro ASAO. Japan welcomes the adoption of the NCQG agreed by all Parties, including Japan, as a result of negotiation.

(2) Mitigation

In the ‘Mitigation Work Programme’, negotiations were held based on the discussions at the global dialogues held in 2024 on the topic “Cities: buildings and urban systems”. Noting the actionable solutions as presented in the annual report of the dialogue (e.g. enhancing collaboration between cities, subnational authorities, local communities and national Governments), the Parties decided on the manner for the next round of the dialogue while encouraging voluntary initiatives in the light of different national circumstances.

(3) Article 6 of the Paris Agreement (Market Mechanism)

The full operationalization of Article 6 of the Paris Agreement was realized, under which emission reduction and removal measures, conducted through voluntary cooperation, are implemented in consistency with Article 6. The details of the items and forms of authorization and reporting by governments of the Parties required for the distribution of credits for the amount of emission reductions and removals, and the connectivity between the registries used for recording and reporting credits were decided. Japan also contributed to the adoption by making specific proposals on items for authorization and reporting, interoperability between registries. Furthermore, technical discussions were held on the operation of the non-market approach web platform and future work activity plans, and future implementation issues were decided.

(4) Adaptation, Loss and Damage

On adaptation, a work programme on indicators for measuring progress achieved towards the Global Goal on Adaptation (GGA) was discussed. Aiming for completion of this work at CMA 7, additional guidance for experts related to the work programme and others were decided. Furthermore, the Baku Adaptation Road Map was launched, including Baku high-level dialogue on adaptation.

Discussions were held on the annual report and review of the Warsaw International Mechanism for Loss and Damage, however no consensus was reached and the consideration will be continued at SB62.

(5) Global Stocktake (GST)

On the UAE dialogue on implementing the global stocktake (GST) outcomes, the Parties did not reach a consensus on the scope of the dialogue, etc., and consideration will be continued at the SB session in preparation for CMA7. On procedural and logistical elements of the overall global stocktake process, an informal note was prepared with the options advocated by each Party regarding the scope and timelines, etc., and will continue to be considered at the next session. With regard to the annual GST dialogue held at SB60 on June 2024 to facilitate the sharing of knowledge and good practices on how the outcomes of the GST are informing the preparation of the Parties' next NDC, the consideration of details for the adoption of its report, such as messages for the preparation of the next NDC, will continue to be considered at the next session.

(6) Gender and Climate Change

A decision was made to extend the enhanced Lima Work Programme on Gender for a period of ten years. It was also acknowledged that some progress had been made in addressing gender and climate change, while the need to further strengthen implementation was recognised.

(7) Other agenda items

Mandated events and discussions were held on a wide range of agenda items, including agriculture, research and systematic observation, ETF Reporting Tools, Just Transition Work Programme (JTWP), response measures, capacity-building, technology transfer, actions for climate empowerment and administration, financial and institutional matters. Decisions were adopted at several discussions.

3. Participation in COP29 by ASAO Keiichiro, Minister of the Environment

(1) Ministerial Statement including Japan Initiative

At the ministerial session on November 20th, Minister of the Environment Asao delivered a national statement. He stated that (i) regarding climate finance, Japan pledged USD 70 billion of public and private support for actions to deal with climate change in developing countries over the five years until 2025, and Japan is steadily working to achieve this goal; (ii) regarding adaptation and loss & damage, Japan is working on the "Initiative to Promote the Development of Early Warning Systems through Public-Private Partnerships in the Asia-Pacific Region", to deal with loss and damage; and (iii) regarding mitigation, Japan calls on all the Parties to set economy-wide emission reduction targets, including all greenhouse gases, sectors and categories that are consistent with the 1.5 degree goal, and based on the latest science, and is continuing its efforts to reduce greenhouse gas emissions in line with its current NDC, and net zero by 2050.

In addition, Minister Asao announced the "Cooperative Actions for NDC Implementation and Transparency Enhancement", which has three pillars: (i) "Synergy Approach" among net zero, circular economy and nature positivity; (ii) "Expanding Mitigation through Market Mechanisms such as JCM; and (iii) "Enhancing Global Transparency on Mitigation" in collaboration with Azerbaijan's initiative, "the Baku Global Climate Transparency Platform (BTP)".

(2) Bilateral Meetings

Minister Asao held bilateral meetings and had brief informal talks with the ministers and representatives from approximately 20 Parties and regions such as Malaysia, China, Bangladesh, the UK, Azerbaijan, Singapore, Ukraine,

EU, New Zealand, Germany, Australia, South Africa, Brazil and the US as well as UN Secretary-General António Guterres. During each meeting, the Minister not only had discussions for adoption of negotiation agendas such as climate finance and mitigation but also exchanged views on each bilateral environmental cooperation.

(3) Ministerial Consultations

Minister Asao participated in the ministerial meeting “QURULTAY” convened by the Presidency, along with several ministerial consultations with negotiation groups and the Presidency. The Minister greatly contributed to the COP29 decisions by actively explaining Japan’s position on climate finance, mitigation, and Article 6 of the Paris Agreement.

4. Japan Pavilion

Japan set up the Japan Pavilion at the COP29 venue where Japanese companies and institutions presented their measures on renewable and energy efficiency, adaptation, effective CO2 utilization and satellite data utilization through exhibitions, panel displays, and online exhibitions of their technology.

In addition, as Japan’s first initiative, Minister Asao announced the “Cooperative Actions for NDC Implementation and Transparency Enhancement” at the Pavilion. Similarly, Japanese government’s efforts were introduced as the Pavilion held nearly 40 seminars such as Greenhouse gases Observing SATellite (GOSAT), Joint Crediting Mechanism (JCM) partner countries meeting, Climate Information Disclosures in Asia, Asia Zero Emission Community (AZEC), Climate Resilient Debt Clause (CRDC), transition finance, avoided emissions, and industrial decarbonization and Japanese Government officials participated in over 30 events on other occasions. The Japan Pavilion was a great success and more than 100 countries came to the Japan Pavilion. We actively promoted our decarbonized technology to the whole world.

5. Participation in International Initiatives

The Government of Japan participated in the following international initiatives on climate change at COP29:

- Nov 12: “Methane Abatement Partnership Roadmap to further accelerate the reduction of methane emissions associated with fossil energy production and consumption” led by EU
- Nov 15: “Hydrogen Declaration” led by Azerbaijan
- Nov 18: “Baku Global Climate Transparency Platform (BTP)” led by Azerbaijan
- Nov 19: “COP29 Declaration on Reducing Methane from Organic Waste “ led by Azerbaijan
- Nov 19: “Baku Harmoniya Climate Initiative for Farmers “ led by Azerbaijan
- Nov 20: “COP29 Declaration on Multisectoral Actions Pathways (MAP) to Resilient and Healthy Cities “ led by Azerbaijan
- Nov 20: “COP29 Declaration on Enhanced Action in Tourism” led by Azerbaijan
- Nov 21: “COP29 Declaration on Water for Climate Action” led by Azerbaijan to launch the Baku Dialogue on Water for Climate Action which will be administered by the United Nations Environment Programme (UNEP)

6. Other UNFCCC Mandated Events and Official Side Events and Exhibits

- Nov 11: “Earth Information Day 2024”
- Nov 12: “In-session workshop under Article 6.8 of the Paris Agreement - GCNMA 6”
- Nov 13: “High-Level Event: Advancing the Effort to Triple Nuclear Energy”
- Nov 15: “Global Methane Pledge Ministerial”
- Nov 15: “Ministerial on Carbon Management”

Source: Ministry of Foreign Affairs of Japan website

(3) Current status of global warming issues in Japan

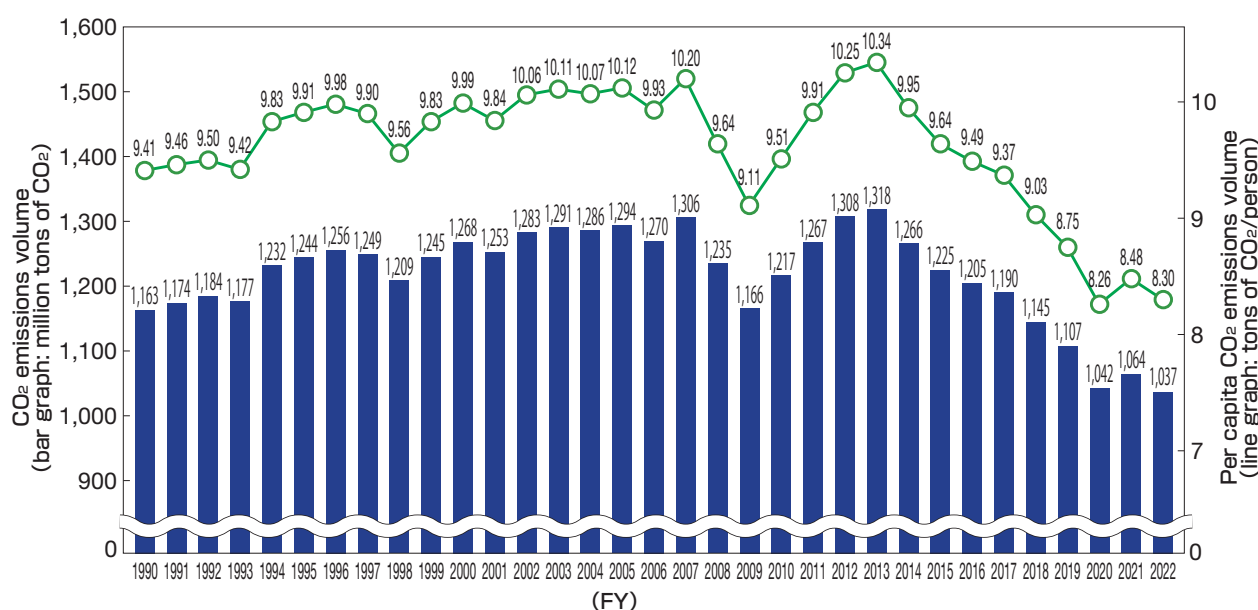
① Current status of carbon dioxide emissions in Japan

Japan is the world's 5th largest producer of carbon dioxide emissions, so it plays an extremely important role in solving the problem of global warming.

■ Trends in carbon dioxide emissions in Japan

In FY2022 Japan emitted approximately 1,037 million tons of carbon dioxide, roughly 21.3% less than it did in FY2013. The per capita emissions volume in FY2022 was approximately 8.3 tons.

● Trends in carbon dioxide emissions in Japan

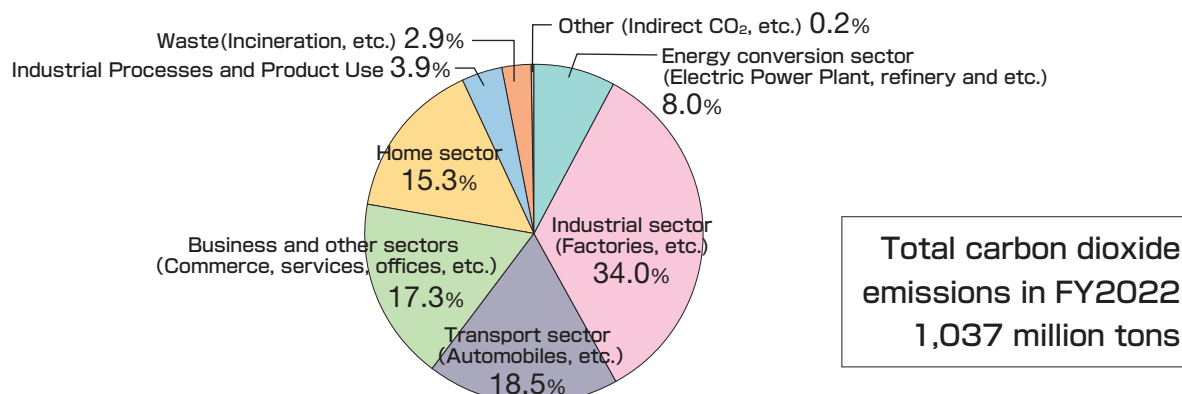


Source: GIO "Greenhouse Gas Inventory"

■ Ratio of carbon dioxide emissions in Japan by sector

The industrial sector accounts for 34.0% of Japan's carbon dioxide emissions, the transport sector for 18.5%, business and other sectors account for 17.3%, and the home sector accounts for 15.3%.

● Amount of carbon dioxide emissions in Japan (by sector) FY2022



Source: GIO "Greenhouse Gas Inventory"

②Energy consumption in Japan

The rapid increase in fossil fuel consumption since the industrial revolution is considered to be one of the main causes of global warming. Global warming is inextricably linked to energy consumption.

■Final energy consumption in Japan

Japan's energy consumption grew faster than its GDP during the period of rapid economic growth which lasted into the 1970s. However, the two times oil crises in the 1970s led to increased efforts to reduce energy consumption by the manufacturing sector, and the development of energy saving products. These efforts made it possible to restrain energy consumption while still achieving economic growth. Throughout the 1990s crude oil prices remained at a low level but energy consumption of the home sector and the business sector increase. The price of crude oil began rising again in the 2000s, and energy consumption has been falling since peaking in FY2005. In FY2022, real GDP increased by 1.5% compared to FY2021, while final energy consumption decreased by 3.3%.

Looking at final energy consumption trends from FY1973 to 2022, energy consumption for the company and business site sector grew 0.9-fold (0.7-fold for the industrial sector and 1.9-fold for the business and other sectors), 1.8-fold for the home sector, and 1.5-fold for the transport sector. Since the first oil crisis, the company and business site sector, although experiencing economic growth, have seen the same level in energy consumption thanks to the implementation of energy saving measures mainly in the manufacturing industry. On the other hand, the home sector and the transport sector have seen a great increase in energy consumption because of the spread of energy equipment and automobiles. In the corporate and commercial sectors, final energy consumption remained at a similar level despite economic growth, primarily due to advances in energy efficiency, particularly in the manufacturing industry. On the other hand, in the home and transport sectors, final energy consumption increased as a result of the wider adoption of energy-using appliances and the growing prevalence of automobiles.

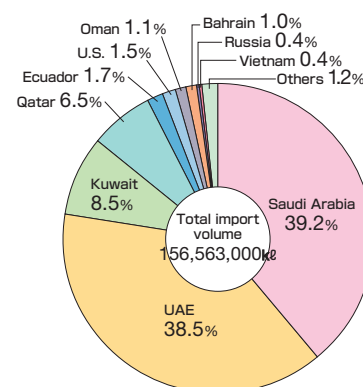
■Dependence on petroleum for energy consumed in Japan

The amount of oil supply in Japan as a primary energy source decreased due to the promotion of oil substitution policy and energy conservation policy triggered by the two oil shocks of the 1970s, but turned to increase in the late 1980s after the application round of easier energy conservation measures and with a decline in oil prices. Since the mid-1990s, the supply has been on a downward trend again due to the expansion of energy alternative to petroleum and improved fuel efficiency of automobiles.

The crude oil self-sufficiency rate in Japan has remained below 0.5% since around 1970 until FY2022. The supply structure that relies on foreign countries for the majority of its energy resources is clearly stated as a structural issue in Japan's energy supply and demand in the Sixth Basic Energy Plan approved by the Cabinet in October 2021. Japan imports the crude oil from the Middle East region including Saudi Arabia, the United Arab Emirates, Qatar, Kuwait, etc. and their combined share in total was 95.2% in FY2022.

(Source: METI "Energy White Paper 2024" (Tentative translation by Eco-Mo Foundation))

●Crude oil imports by supplying country (FY2022)



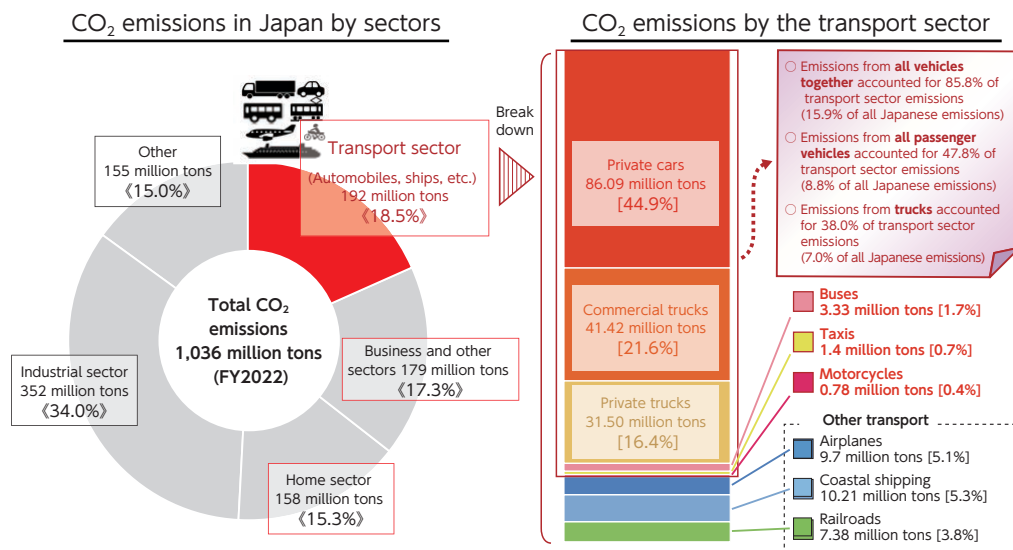
Source: created based on METI "Yearbook of Mineral Resources and Petroleum Products Statistics" (Tentative translation by Eco-Mo Foundation)

(4) Current status of global warming issues in the transport sector

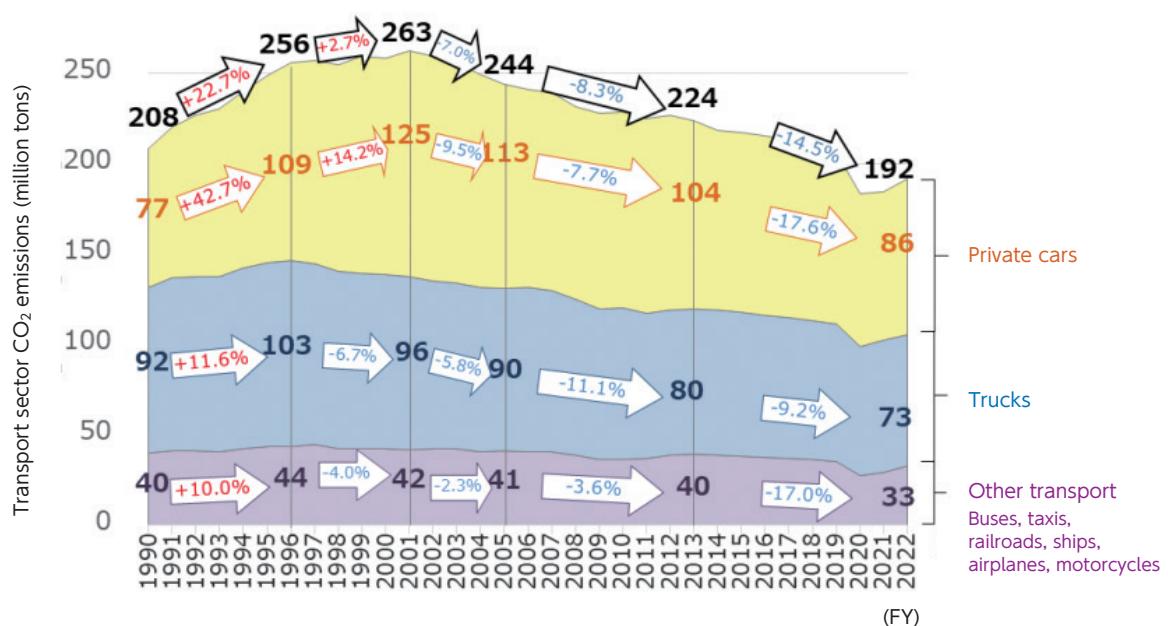
■ Trends in carbon dioxide emissions by the transport sector

Japan's total carbon dioxide emissions in FY2022 (1,037 million tons), emissions from the transport sector accounted for 18.5% (192 million tons). Emissions from all vehicles together accounted for 85.8% of the transport sector emissions (15.9% of Japan's total emissions), emissions from all passenger vehicles accounted for 47.8% of the transport sector emissions (8.8% of Japan's total emissions), and emissions from trucks accounted for 38.0% of the transport sector emissions (7.0% of Japan's total emissions).

● Trends in carbon dioxide emissions by the transport sector



※ Due to rounding, total values may not match.
 ※ Emissions from power generation by power providers and emissions from heat generation by heat providers are allocated to their respective final demand sectors in proportion to energy consumption amounts.
 ※ Created by the MLIT Policy Bureau Environmental Policy Division based on the Greenhouse Gas Inventory Office of Japan's "Greenhouse Gas Emissions Data of Japan (FY1990 to 2022) Final Amount"
 ※ Motorcycles were included in "Business and other sectors" until FY2015 data, but were calculated as an independent item in the transport sector from FY2016 data.



Source: MLIT website (Tentative translation by Eco-Mo Foundation)

From FY1990 to 1996 the amount of carbon dioxide emitted by the transport sector rose by 22.7%, but from FY1997 to 2001 emissions remained roughly level, and began falling from FY2001 onwards.

Emissions in FY2022 decreased compared to FY2013, mainly due to improved fuel efficiency of automobiles. However, compared to the previous fiscal year, emissions increased due to factors such as the increased transport volume resulting from economic recovery from the downturn caused by the COVID-19 pandemic.

■ Carbon dioxide emission volume per unit of transport volume

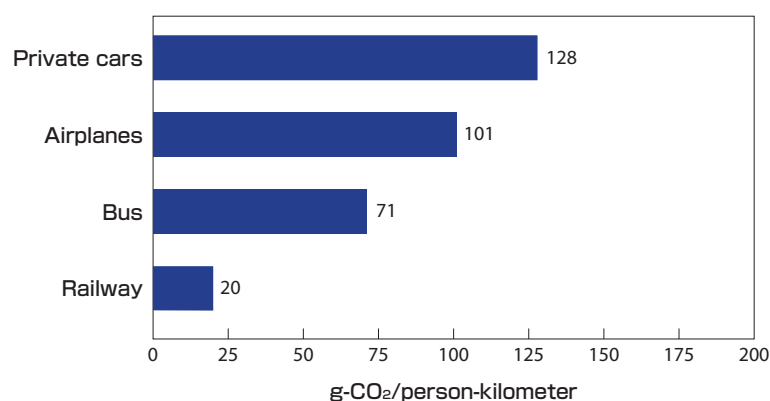
Generally speaking, when the transport volume increases, so does the amount of carbon dioxide emissions. Transport volume is affected by economic trends and other factors, so for total carbon dioxide emissions in the transport sector to fall regardless of changes in transport volume, it is important to promote highly effective transport.

In this section, we compare the amount of emissions per unit of transport volume, an indicator of efficiency, for passenger transport and freight transport.

Note that these figures consider only the classification of transport modes and do not differentiate by size, vehicle type, vessel type, or model.

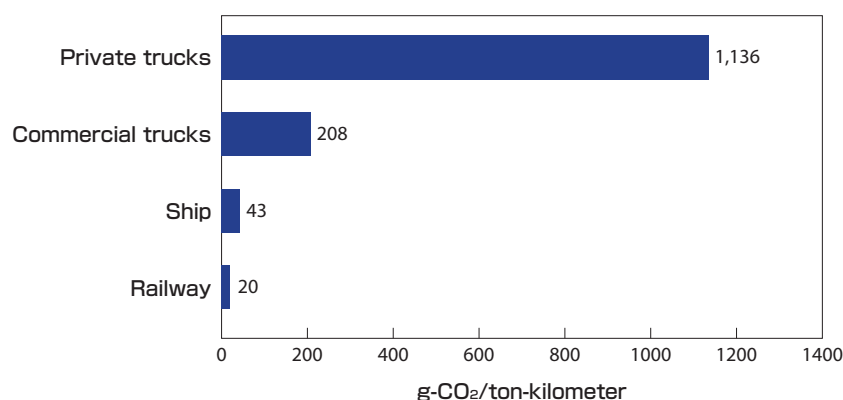
For passenger transport, the carbon dioxide emissions from each mode of transport are divided by the transport volume (person-kilometers) to calculate the carbon dioxide emissions per unit of transport volume. The results are shown in the figure below.

● Carbon dioxide emission rates by passenger transport mode (FY2022)



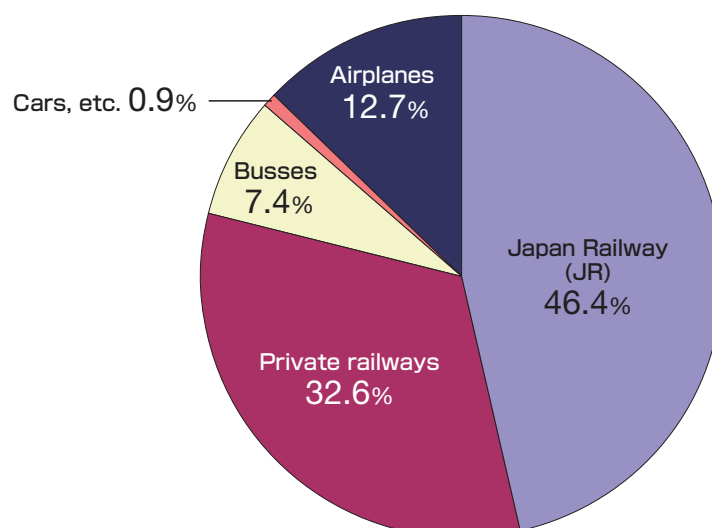
For freight transport, the carbon dioxide emissions from each mode of transport are divided by the transport volume (ton-kilometers) to calculate the carbon dioxide emissions per unit of transport volume. The results are shown in the figure below.

● Carbon dioxide emission rates by freight transport mode (FY2022)



Source: MLIT website (Tentative translation by Eco-Mo Foundation)

● Modal shares of domestic passenger transport (100 million person-km) FY2021

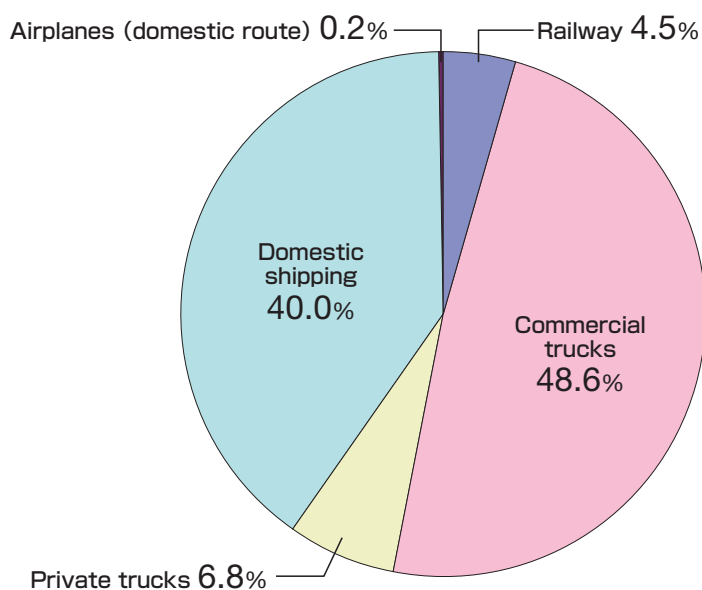


*1 The air transport volume percentage is the total of both regular and irregular services.

*2 The buses and cars, etc., percentage does not include private vehicle transport.

*3 Passenger ship figures have not been released.

● Modal shares of domestic freight transport (100 million ton-km) FY2021



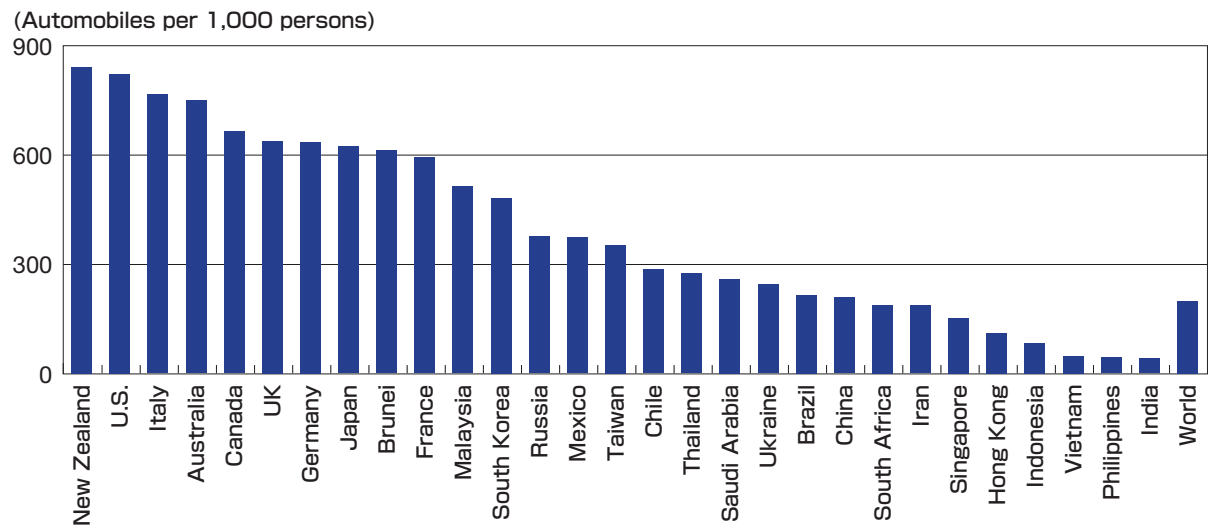
*1 The air transport percentage is the total of both regular and irregular services, and includes excess luggage and postal mail.

Source: created based on MLIT "White Paper on Land, Infrastructure, Transport and Tourism in Japan 2023"
(Tentative translation by Eco-Mo Foundation)

Automobile ownership rates and the sales share of EVs around the world

In terms of automobile ownership per thousand people, Automobile ownership rates are high for developed countries and low for developing countries. In recent years developing countries such as China and India have experienced dramatic upswells in automobile ownership led by their rapid economic growth. The number of cars owned per thousand people grew by 2.1% globally in 2021, but in China it grew by 7.2%. Automobile ownership in countries with enormous populations is predicted to have some impact on global warming, and is an area where attention is being increasingly focused.

●Automobile ownership rates in individual countries 2021



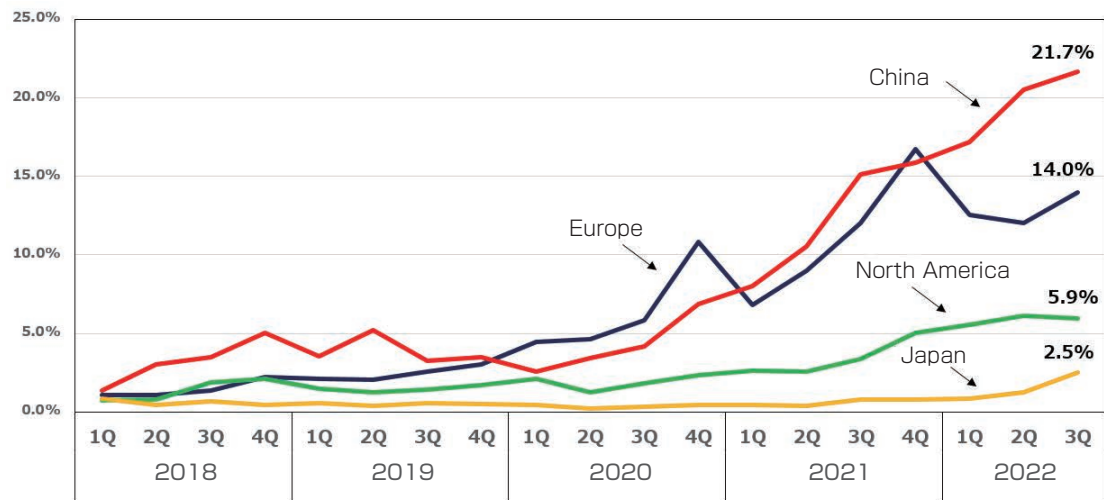
Source: EDMC "Handbook of Energy & Economic Statistics in Japan 2024"

Furthermore, the automotive industry is undergoing significant changes in its value structure, with “electrification” and “digitalization” (such as automated driving) becoming key factors in vehicle selection. Electrification, in particular, is a crucial trend in achieving “carbon neutrality”.

Regarding the current global adoption of electric vehicles (EVs), sales have been steadily increasing, especially in Europe and China. Strengthened incentives—partly in response to the COVID-19 pandemic—have also contributed to this rapid increase.

On the other hand, in Japan, the sales share of EVs has struggled to grow. In light of this situation, various support measures are being promoted to achieve the goal of “100% electric vehicle sales for new passenger cars by 2035.” These measures include purchasing subsidies for EVs, PHEVs, and FCVs, as well as the development of charging and refueling infrastructure.

● Trends in the Sales Share of Electric Vehicles in Major Countries and Regions



(Note) In North America, the data includes the United States and Canada. In Europe, it covers 14 EU countries (Belgium, Germany, France, Italy, Luxembourg, Netherlands, Denmark, Ireland, Greece, Spain, Portugal, Austria, Finland, and Sweden), as well as Norway, Switzerland, and the United Kingdom—totaling 17 countries. In the United States, the figures for passenger cars and light trucks are combined, as SUVs are classified as light trucks.

Source: METI(Tentative translation by Eco-Mo Foundation)

2 Current status of automobile gas emissions

Road traffic related environmental problems involving the transport sector include atmospheric pollution produced by suspended particulate matter (SPM) and nitrogen oxides (NO_x) such as nitrogen dioxide (NO₂) emitted from automobiles. NO_x is not only a cause of acid rain and photochemical smog, but also has negative health effects (on respiratory organs). SPM is also said to harm respiratory organs by adhering to the lungs and bronchi.

In recent years all air pollution monitoring stations^{*1} have met FY2022 air quality standards achievement rates for NO₂, with 100% achievement rates for seventeen consecutive years since FY2006. In the automobile exhaust gas monitoring stations^{*2}, 100% of all effective monitoring stations achieved the environmental standard.

For SPMs, nationwide FY2022 air quality standards achievement rate was 100% for air pollution monitoring stations and 100% for automobile exhaust gas monitoring stations. Following FY2021 (air pollution monitoring stations: 100%, automobile exhaust gas monitoring stations: 100%), all effective monitoring stations achieved the environmental standard.

*** 1 Air pollution monitoring station:**

Monitoring stations performing regular monitoring of general atmospheric pollution conditions.
(Nationwide: 1,403 stations)

*** 2 Automobile exhaust gas monitoring station:**

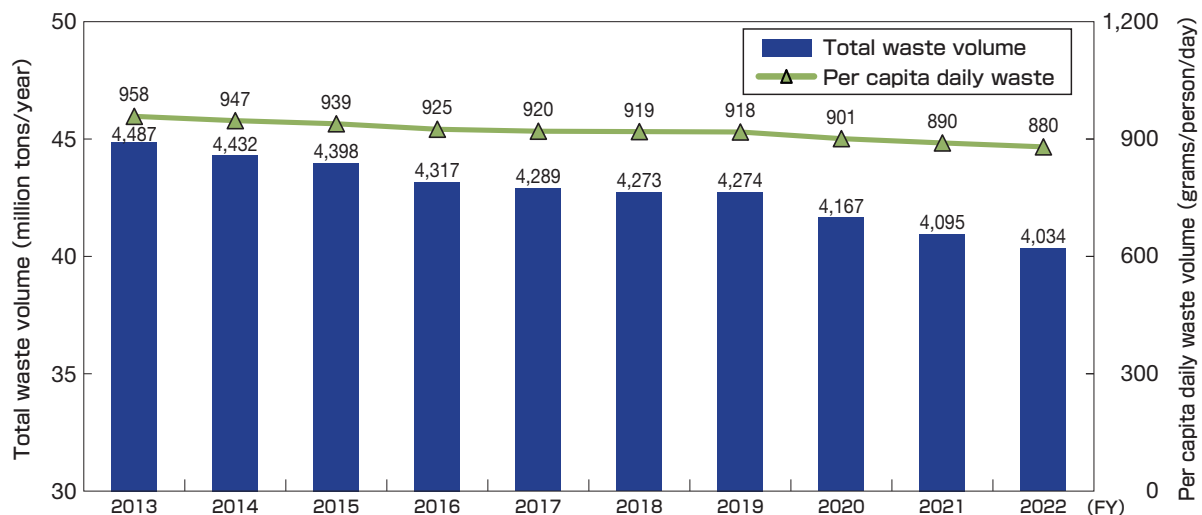
Monitoring stations performing regular monitoring of atmospheric pollution conditions near intersections, roads, and road edges in which emissions from automobiles are believed to be sources of air pollution.
(Nationwide: 379 stations)

3 Current status of waste and recycling

① Trends in general waste volume

Total waste volume and per capita daily waste volume fell slightly after the second oil crisis in FY1979, but began rising rapidly from roughly FY1985. From FY1990 they leveled off or increased slightly, but began falling from FY2001. In FY2022 the total amount of waste was 40.34 million tons. The total amount of recycled waste in FY2022 was 7.91 million tons. The ratio of total waste which was recycled has grown tremendously, from 5.3% in FY1990 to 19.6% in FY2022.

● Total waste volume and per capita daily waste volume

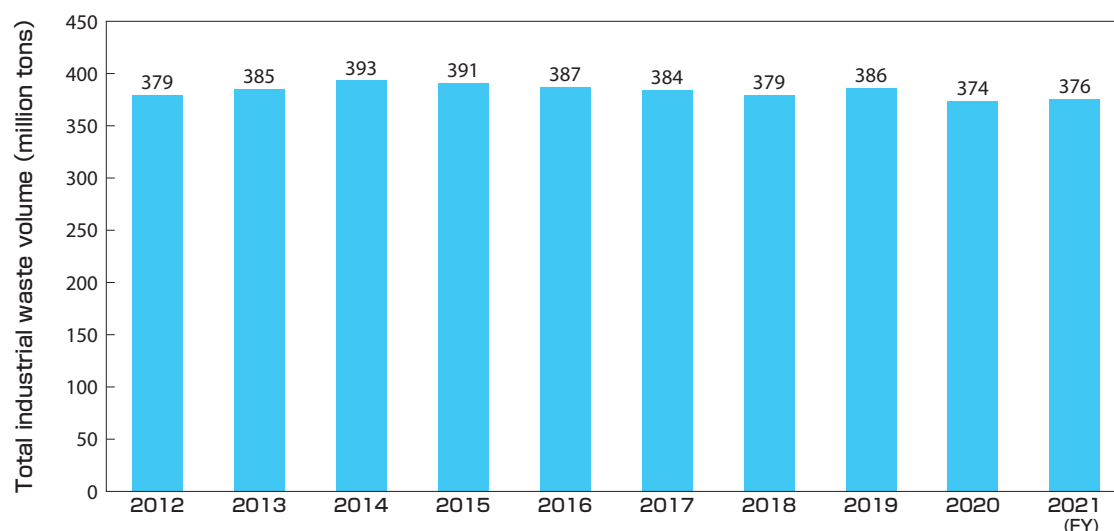


Source: MOE website (Tentative translation by Eco-Mo Foundation)

② Trends in industrial waste volume

The amount of industrial waste produced has stayed roughly at the same level since the FY1990s at approximately 400 million tons.

● Industrial waste volume



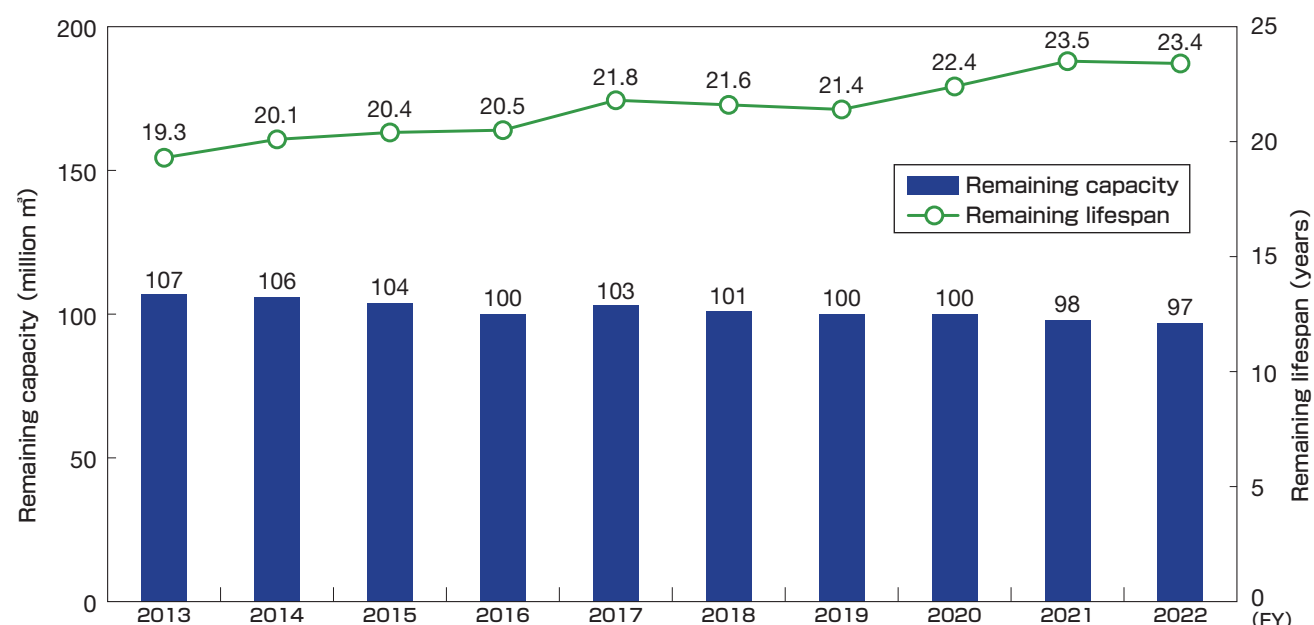
Source: MOE website (Tentative translation by Eco-Mo Foundation)

③ Remaining lifespans and remaining capacities of general and industrial waste final disposal sites

As of the end of FY2022, there were 1,557 final disposal facilities for general waste, with a remaining capacity of 96 million m³ and a remaining lifespan of 23.4 years on national average. The remaining capacity remains at roughly the same level as the remaining lifespan.

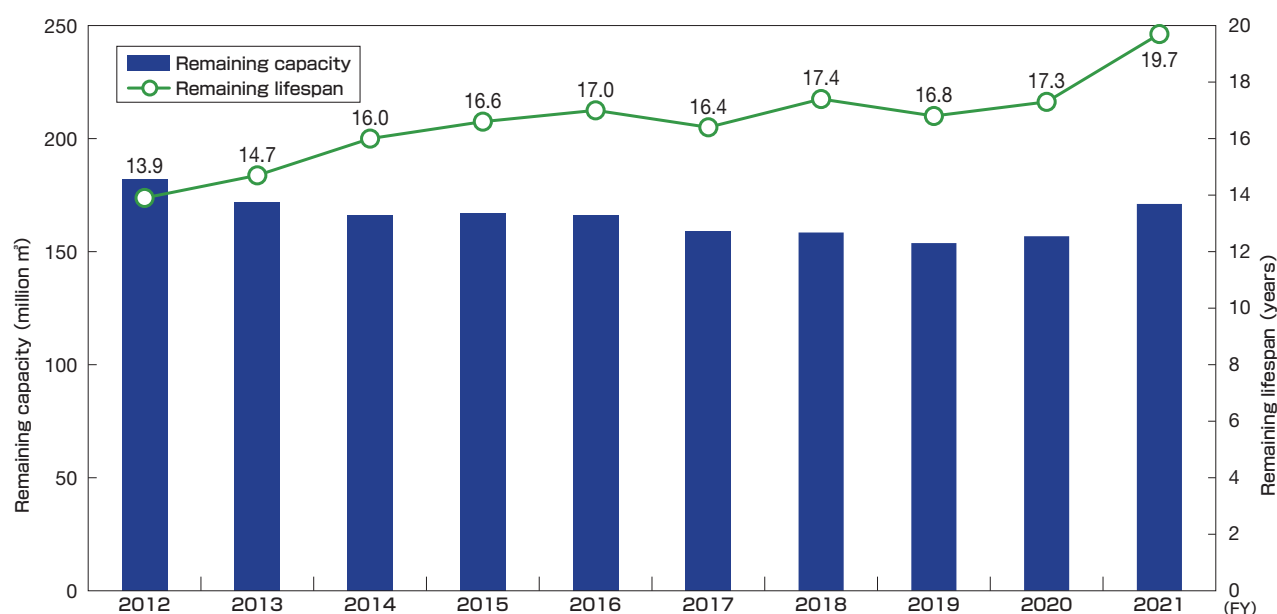
The remaining capacity of industrial waste final disposal sites as of the end of FY2021 was 171.09 million m³ –approximately 14 million m³ more than the previous year. In addition, the remaining life was 19.7 years on national average, and improvements are being made gradually.

● Remaining lifespans and remaining capacities of final disposal sites (general waste)



Source: MOE website (Tentative translation by Eco-Mo Foundation)

● Remaining lifespans and remaining capacities of final disposal sites (industrial waste)

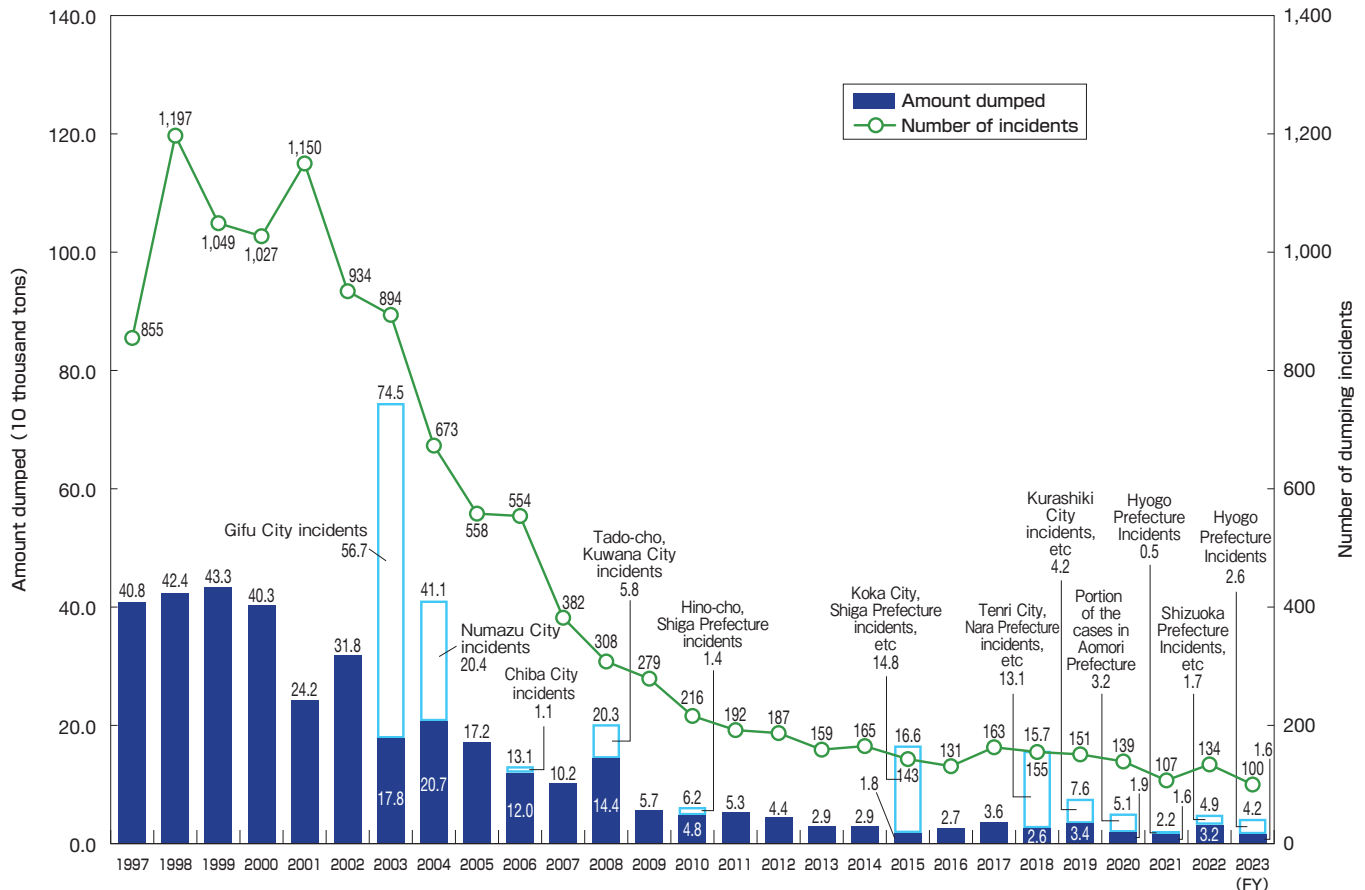


Source: MOE website (Tentative translation by Eco-Mo Foundation)

④ Trends in number of incidents of illegal dumping, etc., and amount dumped

100 incidents of illegal dumping of industrial waste, a total of 42,000 tons of waste, were discovered in FY2023, along with 121 incidents of improper disposal (50,000 tons). Newly discovered cases of illegal dumping decreased considerably and steady results are being observed. Although the number of cases of improper disposal has decreased, it has not yet been eliminated as new cases were still being discovered in FY2023.

● Number of incidents of illegal dumping of industrial waste and amount dumped



Note)

- The number of incidents of illegal dumping and the amount of illegally dumped waste were calculated based on incidents of illegal dumping of 10t or more of industrial waste per incident identified by the prefecture governments and designated cities (as well as all incidents of illegal dumping of special controlled industrial waste).
- The white areas of the bar graph correspond to the following incidents.
 - FY2003, Gifu City – Large scale incidents were reported in FY2003
 - FY2004, Numazu City – Large scale incidents were reported in FY2004
 - FY2006, Chiba City – Incidents were discovered in FY1998, but reported in FY2006
 - FY2008, Tado-machi, Kuwana City – Incidents were discovered in FY2006, but reported in FY2008
 - FY2010, Hino-machi, Shiga Prefecture – Incidents were discovered in FY2009, but reported in FY2010
 - FY2015, Koka City, Shiga Prefecture, Ube City, Yamaguchi Prefecture and Kuji City, Iwate Prefecture – Incidents were reported in FY2015
 - FY2018, Tenri City – Incidents were reported. Also, Incidents discovered in FY2016 by Yokosuka City and incidents discovered in FY2017 by Shibayama-machi, Chiba Prefecture are included.
 - FY2019, Kurashiki City – Incidents discovered in FY2014 by Yamaguchi City, Yamaguchi Prefecture and incidents discovered in FY2016 by Kurashiki City are included
 - FY2020, Cases in Goshogawara City, Aomori Prefecture; Kanuma City, Tochigi Prefecture; Yawata City, Kyoto Prefecture; and Mito City reported as large-scale cases
 - FY2021, Kakogawa City, Hyogo prefecture – Large scale incidents were reported in FY2021
 - FY2022, Cases in Kakegawa City, Shizuoka Prefecture; Kasai City, Hyogo Prefecture; Kamigori Town, Hyogo Prefecture reported as large-scale cases
 - FY2023, Cases in Kamigori Town, Hyogo Prefecture, and Hashimoto City, Wakayama Prefecture reported as large-scale cases
- Sulfuric acid pitch was excluded from this study.
- Ferosilt dumping incidents were not included in this study. 720,000 tons of Ferosilt were sold and used as backfilling material since August 2001, but it was later discovered that the manufacturer and seller of Ferosilt had mixed in toxic waste liquid, making this an illegal industrial waste dumping incident. Illegal dumping was confirmed in 45 locations in 4 prefectures, and Ferosilt removal has been completed in all of these locations.

* Amounts are rounded, so totals may not match.

Source: MOE website (Tentative translation by Eco-Mo Foundation)

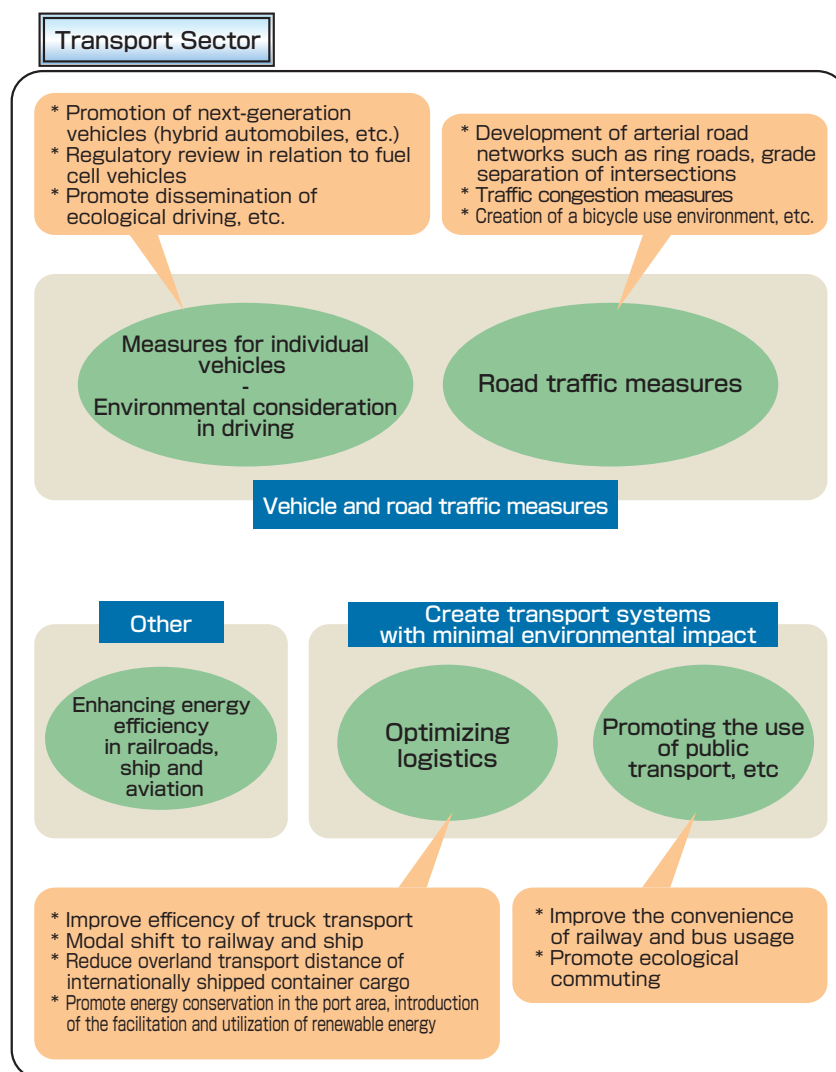
III. Measures in Response to Major Environmental Problems of the Transport Sector

1 Promotion of global warming countermeasures

(1) Transport sector countermeasures

The amount of carbon dioxide emitted by the transport sector in FY2022 was 14.0% lower than the amount emitted in FY2013, and emissions volume has been decreasing since 2001. In order to ensure that this decrease continues steadily, the MLIT is promoting comprehensive measures such as automobile and road traffic measures, logistics efficiency improvements, and promoting the use of public transport.

● Global warming countermeasures of MLIT



Source: MLIT (Tentative translation by Eco-Mo Foundation)

①Promotion of individual automobile measures

The automobile sector accounts for a large share of the energy consumed by the transport sector, so individual automobile measures have been implemented, including further improving fuel efficiency through the world's leading fuel efficiency technologies and measures to promote the use of automobiles with superior fuel efficiency and the use of clean energy vehicles.

■Fuel efficiency improvements through Top Runner Standards

○The Energy Saving Act and fuel efficiency standards (Top Runner Standards)

Improving the fuel and electric efficiency of automobiles is one of the crucial measures to reduce automobile CO₂ emissions and promote climate change mitigation. To promote the improvement of fuel and electric efficiency in automobiles, fuel efficiency standards (Top Runner Standards*) have been established based on the Act on Rationalization of Energy Use and Shift to Non-fossil Energy (Energy Saving Act).

As a result, automobile manufacturing industry members (automobile manufacturers and importers) are required to improve fuel and electric efficiency performance such that the average fuel and electric efficiency of vehicles sold (determined by taking the weighted harmonic average of automobile fuel efficiency values) does not fall below the standards set for each company based on their vehicle sales composition. Furthermore, it requires that they post fuel and electric efficiency related information so that automobile users can select automobiles with superior fuel and electric efficiency, and the fuel and electric efficiency values are listed in the product catalogs of individual automobiles.

* Top Runner Standards: Standards based on the currently commercially available automobiles with the highest fuel efficiencies, taking into consideration future technological advances

○Fuel efficiency standards

In March 1999 fuel efficiency standards for FY2010 were formulated for passenger cars and small trucks, based on the Top Runner Standards concept.

In March 2006 the world's first heavy duty vehicle (truck, bus, etc.) fuel efficiency standards were formulated, with a target year of FY2015.

In July 2007 new fuel efficiency standards were formulated for passenger cars. These new standards aimed for a 23.5% improvement in fuel efficiency (versus FY2004) for passenger cars by FY2015.

In March 2013 new fuel efficiency standards were created for passenger cars, aimed at FY2020, requiring fuel efficiency to be improved by 24.1% versus actual FY2009 figures, assuming a shipped vehicle composition equivalent to that of FY2009. Furthermore, in July 2015 fuel efficiency standards for FY2022 were formulated for small trucks, based on the assumption of equivalent shipment volume as in FY2012, requiring them to be 26.1% more fuel efficient than vehicles sold in FY2012 (based on actual FY2012 vehicle fuel efficiency).

In March 2019, fuel efficiency standards for FY2025 were formulated for heavy duty vehicles (trucks, buses, etc.), based on the assumption of equivalent shipment volume ratio as in FY2014, requiring them to be 13.5% more fuel efficient than FY2015 standards.

In March 2020, assuming that the ratio of vehicles shipped remains the same as that of FY2016, FY2030 was designated as the target year with new fuel efficiency standards, which also includes electric vehicles in its scope, formulated to improve fuel efficiency in passenger cars by 44.3% compared to the standard value for FY2020.

Measures for developing and promoting next-generation vehicles

Because Japan's overall CO₂ emissions, the transport sector occupies around 20% and around 90% of that is emissions from automobiles, the raising of fuel efficiency and emission performance in automobiles is extremely important. In addition, The "Green Growth Strategy Through Achieving Carbon Neutrality by 2050," formulated in June 2021, calls for comprehensive measures to be taken to achieve a goal in which *electrified vehicle (including hybrid EV and Plug-in hybrid EV) sales will account for 100% of new car sales by 2035 as well as for setting a new goal for commercial vehicles.

In order to promote environmental conservation, including CO₂ emission reduction, the Japanese government has positioned electric vehicles, fuel cell vehicles, plug-in hybrid vehicles, hybrid vehicles, clean diesel vehicles, and natural gas vehicles as "next-generation vehicles", and is promoting their widespread use.

Due to this, along with raising fuel efficiency through the establishment of standards and harmonizing international technical standards, measures are being carried out to encourage the promotion of the next-generation vehicles, beginning with tax benefits and support systems.

Specifically, by establishing fuel efficiency standards based on the Energy Saving Act and requiring automobile manufacturers to meet such standards, the promotion of highly fuel efficient automobiles, including the next-generation vehicles, is being encouraged. Also, Japan is taking the lead in establishing international standards for the next-generation vehicles, and this is expected to help expand such electrifying technologies as electric cars and fuel cell vehicles, improve Japan's automobile safety and environmental performance and strengthen the ability of international competition.

Furthermore, a tax benefits system for automobiles with excellent environmental performance, including the next-generation vehicles, is being established and eco-car tax reductions for greater environmental performance that exempt motor vehicle tonnage tax are being enforced in order to encourage promotion.

*Electrified vehicles: electric vehicles, fuel cell vehicles, plug-in hybrid vehicles, hybrid vehicles

Revision of automobile-related taxes (extension and revision of eco car tax reductions, etc.)

○Revisions such as raising fuel economy standards will be implemented in stages over a three-year period in consideration of technological developments other than electric vehicles, while maintaining the current tax breaks, such as tax reduction for eco cars, until the end of 2023, with a firm adherence to "business-private gap" for trucks, buses, and taxis.

	Heavy-duty vehicles (trucks, buses)				Passenger vehicles (private cars, taxis)									
Tax reduction for eco cars (vehicle tonnage tax)	Applied period*1				Applied period*1									
	FY2015 fuel economy standards				FY2030 fuel economy standards									
	105%	110%	115%	Electric vehicles*2	60%	70%	75%	80%	90%	100%	120%	125%	Electric vehicles*2	
①	▲50%	▲75%	Tax exemption	Tax exemption*3	▲25%	▲50%	Tax exemption	Tax exemption*3						
②	▲25%	▲50%			NA	▲25%	▲50%	Tax exemption	Tax exemption*3					
Special provisions on general vehicles (vehicle ax, light vehicle tax)	Applied period*1				Applied period*1									
	FY2025 fuel economy standards				FY2030 fuel economy standards									
	95%	100%	100%	Electric vehicles*2	70%	80%	90%	Electric vehicles*2						
①	▲50%	▲75%	Tax exemption	Tax exemption*3	NA	▲50%	▲75%	▲75%						
②	▲25%	▲50%			NA	▲50%	▲75%	▲75%						
③	▲50%	▲75%	Tax exemption	Tax exemption*3	NA	▲50%	▲75%	▲75%						
Environmental performance discount (vehicle ax, light vehicle tax)	Applied period*1				Applied period*1									
	FY2015 fuel economy standards				FY2030 fuel economy standards									
	Not met	100%	105%	110%	115%	60%	65%	70%	75%	80%	85%	90%	95%	Electric vehicles*2
	① Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	② Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
	③ Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	④ Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
	Applied period*1				Applied period*1									
	FY2025 fuel economy standards				FY2030 fuel economy standards									
	<95%>	95%	100%	105%		60%	65%	70%	75%	80%	85%	90%	95%	Electric vehicles*2
①	Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
②	Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
③	Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
④	Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
Environmental performance discount (vehicle ax, light vehicle tax)	Applied period*1				Applied period*1									
	FY2025 fuel economy standards				FY2030 fuel economy standards									
	<95%>	95%	100%	105%		60%	65%	70%	75%	80%	85%	90%	95%	Electric vehicles*2
	① Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	② Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
	③ Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	④ Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
	Applied period*1				Applied period*1									
	FY2025 fuel economy standards				FY2030 fuel economy standards									
	<95%>	95%	100%	105%		60%	65%	70%	75%	80%	85%	90%	95%	Electric vehicles*2
	① Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	② Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
	③ Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	④ Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
Environmental performance discount (vehicle ax, light vehicle tax)	Applied period*1				Applied period*1									
	FY2025 fuel economy standards				FY2030 fuel economy standards									
	<95%>	95%	100%	105%		60%	65%	70%	75%	80%	85%	90%	95%	Electric vehicles*2
	① Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	② Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
	③ Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	④ Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
	Applied period*1				Applied period*1									
	FY2025 fuel economy standards				FY2030 fuel economy standards									
	<95%>	95%	100%	105%		60%	65%	70%	75%	80%	85%	90%	95%	Electric vehicles*2
	① Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	② Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction
	③ Private	3%	2%	1%		1%	2%	1%	1%	1%	1%	1%	1%	Tax reduction
	④ Business	2%	1%	0.5%		1%	0.5%	1%	1%	1%	1%	1%	1%	Tax reduction

Source: MLIT (Tentative translation by Eco-Mo Foundation)

In addition, for the next-generation vehicles, such as electrified vehicles and plug-in hybrid vehicles that are used for commercial purposes, including buses, taxis and trucks, partial support for vehicle prices when they are introduced is being carried out.

In particular, ultra-small electrified mobility vehicles that are compact, agile, exceptionally environmentally performative, are an easy means for moving around local areas, and are for around one to two passengers. Procedures were streamlined and the revising of the certification system was carried out in January 2018. For ultra-compact mobility vehicles with a maximum speed of less than 60 km/h intended for mass production, the standard was revised in September 2020 to promote vehicles that can travel freely on public roads without any restrictions on users or driving areas.

In addition, in light of the fact that Road Traffic Act was revised in April 2022 to define “specified small motorized bicycles” as a new vehicle category for electric kickboards, etc., the safety standards for “specified small motorized bicycles” were established in December 2022.

②Promotion of environmentally friendly automobile usage

“Eco-driving” has been positioned as an environmentally friendly automobile usage promotion measure. The Eco-driving is actively being promoted by the Eco-Drive Promotion Liaison Committee (National Police Agency (NPA), METI, MLIT, and MOE) and the Eco-Drive Promotion Council, which includes 16 transport-related organizations, among others.

In 2006 the committee proposed the “10 Tips for Eco-driving”, which outlined specific eco-driving efforts. These recommendations were revised in January 2020.

● 10 Tips for Eco-driving



10 Tips for Eco-driving

Eco-driving consists of driving techniques and mentalities that conserve fuel, reduce CO₂ emissions, and help prevent global warming. Eco-driving also helps reduce traffic accidents. Fuel-efficient driving is not only gentle on the wallet, but is also safer, putting passengers at ease. Calm driving at ease, with plenty of time to spare, is also a form of eco-driving. Eco-driving is something that anyone can start doing right away. Little changes to your driving mentality and habits can improve your driving and create a better society. Let's start eco-driving, beginning with the basics you can immediately put into action.

1 Understand your own fuel efficiency.

Make it a habit to have an understanding of the fuel efficiency of your own vehicle. If you have a grasp of your normal fuel efficiency, you will have a real understanding of the effects of your own eco-driving. It is useful to use tools that support eco-driving such as the fuel efficiency monitoring equipment fitted in your vehicle, eco-driving navigation or fuel efficiency management on the internet.

2 Accelerate gently eStart.

When setting off, be gentle on the accelerator. (You should aim to reach around 20km/h in 5 seconds.) Just by doing this on a daily basis, you can improve your fuel efficiency by around 10%. Unrushed, gentle acceleration also contributes to safe driving.

3 Maintain a steady speed and keep your distance.

Try to maintain a steady speed when you are driving. If you are too close to the vehicle in front of you, you are more likely to speed up or reduce speed unnecessarily and this reduces fuel efficiency by around 2% in urban areas and 6% in the suburbs. Try to drive with as few speed changes as possible depending on the traffic.

4 Slow down by releasing the accelerator.

If you know you are going to stop, for example, at traffic lights, take your foot off the accelerator early. This is called engine braking and improves fuel efficiency by 2%. Try using engine braking when you are slowing down or going down hills.

5 Make appropriate use of your air conditioner.

Air conditioners (A/C) in cars cool and dehumidify the interior of the car. If you only need the heater, turn the A/C switch to OFF. For example, even if the car temperature is set to 25°C, the same as the external temperature, if you leave the A/C switch to ON, fuel efficiency reduced by around 12%. In addition, even when you do need the air conditioner, make sure that the car interior isn't too cool.

※ 1 Please be careful when switching off your engine at intersections as it can cause the following safety issues. (There are no issues for cars that do this automatically.)
- If you press the brake pedal a number of times while you are stopped, it can affect the effectiveness of the brakes.

- If you are not used to doing this, you may make a mistake or be late in moving again. There may also be cases in which the engine does not start up again due to decreased lifespan of parts such as the battery.

- As safety devices such as airbags and direction indicators do not activate, it is better not to switch off your engine if you are near the front of the queue or on a hill.

※ 2 It is perfectly OK to warm up your car as you drive unless under special circumstances such as cold regions with a temperature of -20°C.

※ 3 Tire pressure decreases by around 5% in a month.

※ 4 If the value is 50kPa (0.5kg/cm²) less than the recommended value.

6 Don't warm up or idle your engine.

When the car is stopped when you are waiting for someone or you are loading or unloading something, do not let the engine idle *1. Ten minutes of idling (with the A/C set to OFF) consumes around 130cc of fuel. In addition, modern vehicles do not normally need to have their engines warmed up *2. You should start moving as soon as you have started the engine.

7 Leave in plenty of time and avoid congestion.

Before you leave, use traffic information about traffic jams and regulations, etc. as well as maps and your satnav to check your destination and route. For example, if you get lost on a one-hour drive and drive for an extra 10 minutes, the amount of fuel consumed increases by 17%. You can save both time and fuel by checking traffic information while you are driving to avoid traffic jams.

8 Check and maintain your car regularly, starting with tire pressure.

Make it a habit to check your tire pressure *3. If tire pressure is less than the recommended value, fuel efficiency decreases by around 2% in urban areas and 4% in the suburbs *4. You can also improve fuel efficiency if you regularly change the oil, the oil filter, the air cleaner element and so on.

9 Reduce your load.

Unload anything unnecessary from your vehicle. Fuel efficiency is greatly affected by the weight of what is in your car. For example, if you load an object weighing 100kg and then drive, fuel efficiency decreases by around 3%. It is also sensitive to air resistance. Remove external equipment such as ski carriers, etc. when you are not using them.

10 Do not obstruct the flow of traffic when you are parking.

Do not cause obstructions when you park. Parking in this way near intersections, for example, causes traffic jams. Not only does it reduce fuel efficiency for other vehicles, it also causes accidents. When there are no obstructions to the flow of traffic, average speed is improved and reductions in fuel efficiency are prevented.

The Eco-Drive Promotion Liaison Committee

(Metropolitan Police Department, METI, MLIT, Ministry of the Environment)

The Eco-Drive Promotion Liaison Committee website →



Technological development and institutional framework for realizing autonomous driving systems

Based on discussions in the Mobility Working Group—which began in December 2023 under the government's Digital Society Promotion Council—the implementation of autonomous driving in society is being advanced. Specifically, efforts are underway to promote the integration of mobility technologies that support local communities, such as autonomous driving, drones, and service robots, with the aim of enhancing mobility in the digital society. In this context, the Mobility Working Group has formulated a “Mobility Roadmap” and is promoting systematic social implementation by reviewing progress each FY.

Furthermore, the development of digital infrastructure to support advanced operations of autonomous vehicles, drones, and delivery robots is underway. This includes the standardization of information formats such as the “4D spatiotemporal ID,” which enables pinpointing of location information based on unified criteria.

By FY2024, the “Year-round operation project on public roads” will be expanded to more than 20 locations, with a goal of reaching 50 locations by FY2025 and more than 100 by FY2027. Additionally, to promote the widespread adoption of autonomous driving, projects are being developed in at least one location in every prefecture across Japan. Roadside support measures are also being strengthened, including demonstrations of “road-vehicle coordination systems” to ensure smooth driving at intersections.

Moreover, in line with the “Digital Lifeline National Comprehensive Development Plan”, policies to accelerate the introduction of services utilizing autonomous driving and drones are being promoted. These efforts are making the future of mobility increasingly tangible.

●Example of bus-type vehicles: Minibus 2.0 (Oota Ward)



●Example of Green Slow Mobility: NAVYA ARMA (HANEDA INNOVATION CITY)



③Promotion of Decarbonization Initiatives on Roads

MLIT is promoting various decarbonization initiatives on roads, such as improving fuel efficiency through the smooth flow of traffic to enhance driving speeds and reducing carbon dioxide emissions from automobiles.

Specifically, MLIT is promoting efforts to strengthen arterial road networks, including ring roads, which contribute to the reduction of carbon dioxide emissions, as roads are developed. These include taking targeted measures to traffic congestion bottleneck points based on scientific analysis of big data utilizing ETC2.0 and consideration of introduction of planar congestion control measures including toll policies for traffic demand adjustment utilizing ICT, AI, etc. MLIT is also promoting efforts to make road infrastructure more energy-efficient by switching road lighting to LED or by upgrading it, and to realize energy-creating road infrastructure by promoting the introduction of renewable energy from solar power generation using road space for electricity needed for road management. In addition, MLIT is promoting efforts to create an environment for bicycle use, including support for the formulation of bicycle use promotion plans by local governments, development of bicycle traffic space networks, improvement of bicycle parking facilities, and promotion of shared bicycle use, in coordination with safety assurance measures to promote bicycle usage.

Construction of road networks

- Construction of Metropolitan Ring Roads

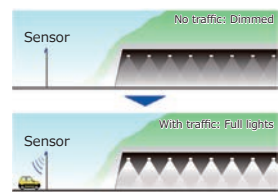


Making road infrastructure more energy-efficient

- Install LED road lighting, upgrade road lighting



Install LED road lighting



Upgrade road lighting

Measures against congestion

- Improvements congesting points



Installation of additional lane

Creating an environment for bicycle usage

- Promote bicycle usage



Furnish bicycle lane



Encourage commuting by bicycle

Source: MLIT (Tentative translation by Eco-Mo Foundation)

④Improvement of freight distribution efficiency

■Creation of sustainable logistics systems through collaboration between freight owners and logistics operators

○Green Logistics Partnership Conference

Promoting the creation of a greener overall logistics system requires greater collaboration between freight owners and logistics operators, and the expansion of sustainable logistics systems for global warming countermeasures improving productivity, etc.

The “Green Logistics Partnership Conference” , launched in 2004 and composed of companies and organizations united by this goal, strives to promote mutual understanding of the importance of the Green Logistics and improve coordination between freight owners and logistics operators, in order to carry out modal shifts and improve truck transport efficiency.

As part of this activities, “Joint Guidelines on the Method for Calculating CO₂ Emissions by the Logistics Sector” (METI and MLIT) were formulated. These guidelines establish a unified method of calculating carbon dioxide emissions by the logistics sector, and can be used by both freight owners and logistics operators for smoother collaboration, and to enable objective evaluation of the effectiveness of each initiative. Particularly successful good practice example projects involving logistics operators and freight owners engaging in partnerships to reduce CO₂ emissions, to create sustainable logistics systems for improving productivity, etc. are recognized by MLIT Minister awards and METI Minister awards.

Green Logistics Partnership Conference

[Background]
In order to promote the reduction of CO₂ emissions and other environmental burdens in the logistics sector, as well as to improve logistics productivity, the partnership was established to share awareness of the importance of green logistics among shippers, logistics providers, and other related parties, and to promote their interactions.

[Organizers] Ministry of Land, Infrastructure, Transport and Tourism, Ministry of Economy, Trade and Industry, Japan Logistics Systems Association, Japan Federation of Freight Industries

[Sponsor] Japan Business Federation

[Establishment] April 2005

[Number of members] Approx. 3,400

[Activities]
Toward the expansion of voluntary private sector initiatives for green logistics, recognize excellent logistics partnership operators and introduce their initiatives, and so on.

Award for Excellence in Logistics Partnership

[Purpose]
By presenting awards to companies that have made outstanding achievements in reducing the environmental burden of logistics, improving logistics productivity, and creating a sustainable logistics system, the program aims to motivate companies to take voluntary action and to promote the spread and expansion of green logistics.

[Type of Award].
1. Grand Prize (Minister's Commendation)
2. Division Award (Director-General's Award)
-Logistics DX-Standardization Award
-Logistics Structural Reform Award
-Toughness and Sustainability Award
3. Special Award

Minister of MLIT Award, FY2024

[Project Name]
“Enhancing logistics efficiency by promoting the standardization of transport modules and implementing inspection-free delivery systems.”

[Recipients]
Earth Corporation, Otsuka Warehouse Co., Ltd., Kato Sangyo Co., Ltd., Gifu Plastic Industry Co., Ltd., KUBARAHONKE Group Headquarters, J-Oil Mills, Inc., Taiyo Kagaku Co., Ltd., LOGIPAL EXPRESS INC. Mizkan Logitec Corporation, Lion Corporation, Suzuyo & Co., Ltd.

<Project Overview>

1. Modularization of Transport and Mixed Load Shipping

1 Modularization of Transport

Bulk loading and various pallet sizes → standardized pallet size (1.1 meters) using box pallets

2 Mixed Loads from Multiple Shippers / Reduction in Vehicle Numbers

large 4-ton trucks → Transition to trailer-based transport

3 Modal Shift and Switch Transport

2. Joint Delivery of Food Products Using Inventory-Based Logistics and Advance Shipment Notification Systems

1 Joint Delivery of Food Products

Inventory-based logistics model → Delivery destinations in the southern Kanto region

2 Advance Shipment Notification

Inspection-free delivery

Source: MLIT (Tentative translation by Eco-Mo Foundation)

■Promotion of modal shift and increased efficiency of freight distribution

○Enhanced coastal shipping competitiveness and modal shift to sea transport

The MLIT is engaged in efforts aimed at strengthening the competitiveness of the coastal shipping industry and promoting a modal shift to sea transport.

As part of these efforts it is implementing the “Eco-Ship Modal Shift Project”, which promotes modal shift by selecting companies which contribute to modal shift by using some degree of sea transport, and permitting those companies to use the Eco-Ship Mark. As part of this project, the Eco-Ship Modal Shift Project Executive Committee has implemented an Eco-Ship Mark certification system (the Eco-Ship Mark indicates that a company is contributing to environmental efforts by using sea transport). As of May 2024, 213 freight owners and 239 logistics operators have received Eco-Ship Mark certification. Eco-Ship Mark certified companies that have made particularly large contributions are also selected to receive Director-General, Maritime Bureau, Ministry of Land, Infrastructure, Transport and Tourism awards.

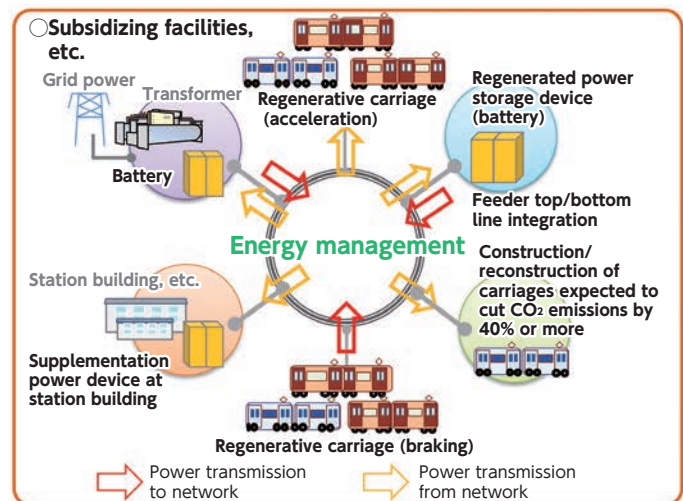


(Poster of invitation for Eco-Ship Mark certification)
Source: Committee for Implementation of Eco-Ship Modal Shift Operations

○Project to promote network low carbonization in railroad businesses, etc.

Railroads are essential means of transport in the daily lives and economic activities of the people of Japan. One of their notable features is that they have a smaller environmental impact than other modes of transport. In order to further promote reductions in CO₂ emissions by railroads and develop circular and ecological economies, MLIT and MOE are working together to support deployment of state-of-the-art energy-saving facilities and devices that use energy efficiently through a project to promote network low carbonization in railroad businesses, etc.

●Project to promote network low carbonization in railroad businesses, etc.



Source: MOE (Tentative translation by Eco-Mo Foundation)

○“Eco Rail Mark” system promotion and expansion

The “Eco Rail Mark” was established in FY2005 to certify companies and products that are actively engaged in environmentally friendly rail freight transport. By supporting companies and products certified with the “Eco Rail Mark”, awareness of efforts to reduce environmental impact increase,



Source: RFA

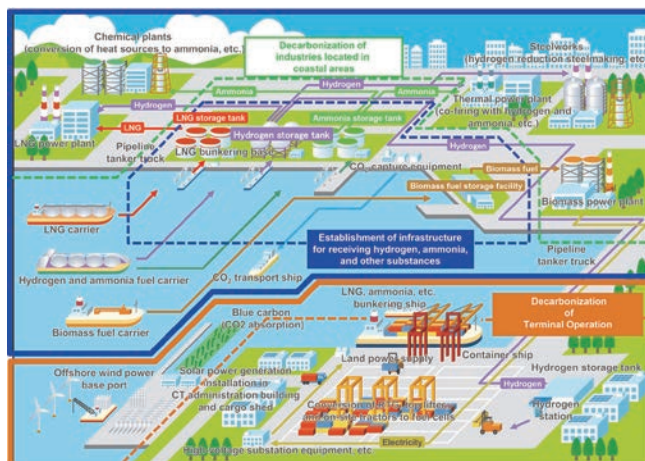
III. Measures in Response to Major Environmental Problems of the Transport Sector

among freight owner companies such as manufacturers, as well as consumers, with the goal of promoting modal shift to rail freight transport. MLIT and the Railway Freight Association (RFA) are striving to further promote and expand the “Eco Rail Mark”. As of December 5, 2024 there are 183 “Eco Rail Mark” certificated products (number of certifications is 158), 100 certified companies, and 59 certified supporting companies.

○Promotion of Carbon Neutral Port

MLIT is promoting Carbon Neutral Port (CNP) initiative to contribute to strengthening the competitiveness of our country’s ports and industries and the realization of a decarbonized society. This includes the decarbonization of terminal operation and the development of an environment for receiving hydrogen, ammonia etc. MLIT has provided support for the development of Port Decarbonization Promotion Plans prepared by port management bodies based on the Port and Harbour Act, including assistance and advice for plan development. Additionally, the project promoted the development of LNG bunkering bases, consideration

●Image of Carbon Neutral Port (CNP)



Source: MLIT(Tentative translation by Eco-Mo Foundation)

of the development of methanol bunkering bases, the introduction of onshore power supply facilities for vessels at berth, the introduction of offshore wind power generation, the introduction of low-carbon cargo handling equipment, consideration of the introduction of cargo handling equipment powered by hydrogen, and the used of blue carbon, among others. Furthermore, discussions were held regarding the establishment of a certification system to evaluate the status of decarbonization efforts at container terminals.

○Approval of Distribution Integration Efficiency Plans based on the Act on Advancement of Integration and Streamlining of Freight Distribution Business (Distribution Integration Efficiency Act).

In order to increase distribution efficiency and reduce environmental impact, plans have been approved for a project aimed at integrating and improving the efficiency of advanced freight distribution facilities with a specified minimum scale (specified freight distribution operation facilities) and other facilities. Roughly 300 projects have been approved since the establishment of “Distribution Integration Efficiency Act” on October 1, 2005.

On October 1, 2016, a revision to the Act was enacted, requiring two or more parties to collaborate during the implementation of projects. This revision was enacted in response to labor shortages in the distribution field, with the aim of expanding modal shifts among support recipients and measures which do not require joint delivery, etc., specified distribution operation facilities.

Based on this, as of the end of December, 2024, 526 diverse projects, including modal shifts, joint delivery, and special freight distribution operation facility wait time reduction, have been approved, and measures have been implemented to achieve freight distribution labor savings, improve freight distribution efficiency, and reduce environmental impact. On July 27, 2020, approval was given for the first time in Japan for a plan to simultaneously convert two modes of transport, marine and rail, at the same time.

Distribution Integration Efficiency Act and labor savings

Overview of the Distribution Integration Efficiency Act

Revision enacted October 1, 2016

Objectives

- Secure labor required for freight distribution operations
- Reduce environmental impact, etc.

Overview of system

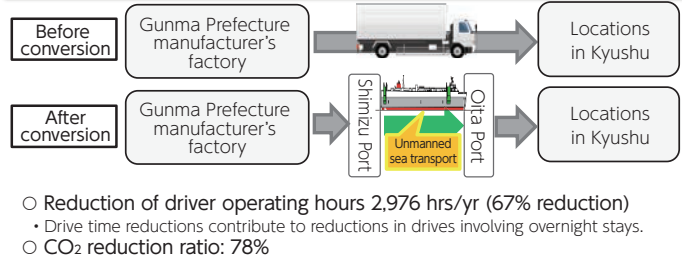
The system approves projects in which two or more parties collaborate to integrate distribution operations (integrating transport, storage, freight handling, and distribution processing) and make them more efficient (transport rationalization), contributing to environmental impact reductions and labor savings (distribution operation integration efficiency projects), and provides support to approved parties.

Main support measures

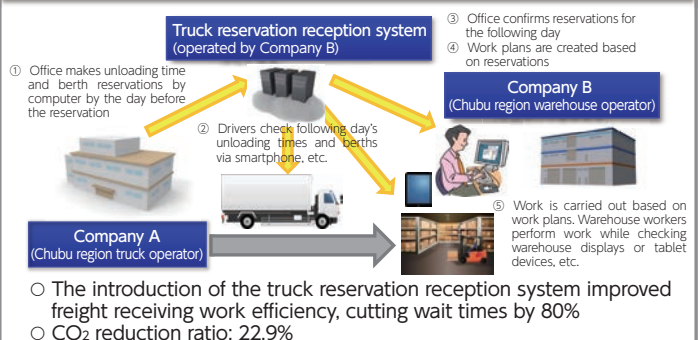
- ① **Project startup/implementation support**
 - Plan formulation expense and operation expense subsidies, etc.
- ② **Support for necessary facilities and equipments, etc.**
 - Special taxation structures for transport-linked warehouses (warehouses with truck arrival time reservation systems, etc.)
 - Corporate tax: 8% additional depreciation deduction (5 years)
 - Fixed property tax: 1/2 taxation base (5 years), etc.
 - Consideration of facility location restrictions, etc.
 - Consideration for permission to perform development in urbanization control areas

Example of Freight Distribution Integration Efficiency Act approval

<Example 1> Sea transport used for portion of trunk transport



<Example 2> Introduction of truck reservation reception system into warehouse, dramatically reducing truck wait time and improving efficiency of work within the warehouse



Source: MLIT (Tentative translation by Eco-Mo Foundation)

Promotion of the Green Management Certification System

In recent years there has been an increasing focus on environmental problems such as global warming and air pollution. Satisfying both environmental and economic concerns and creating a sustainable economic society has become an urgent challenge. The Eco-Mo Foundation has created and distributed green management promotion manuals containing checklists for self-assessment in order to promote environmental conservation activities by transport related companies. This manual, based on the concepts of



(Poster of Green Management Certification System)



(Green Management Promotion Manuals)

ISO14031 (an international environmental performance evaluation standard), contains checklist items for environmental conservation items to be addressed, and descriptions of specific corresponding environmental

III. Measures in Response to Major Environmental Problems of the Transport Sector

efforts. This makes it easy to set and evaluate environmental targets, thereby achieving greener management.

Green management consists of companies assessing their own environmental conservation efforts, using promotion manuals as references in considering improvement measures based on the results of these environmental conservation efforts, creating action plans which include these improvement measures, and implementing them in order to achieve the improvements. This cycle makes it possible to implement proactive, ongoing environmental conservation activities.

The MLIT is striving to promote this green management as a countermeasure against environmental problems.

In order to promote green management, the Green Management Certification System was established in 2003. The Eco-Mo Foundation acts as the certification body under this system, objectively certifying and publicizing environmental improvement efforts by companies, based on the green management promotion manuals. This produces greater understanding and motivation of the green management certified businesses by other companies and users, with the ultimate objective of reducing the environmental impact of the transport industry.

Promoting Decarbonization in Distribution Operations

By supporting the introduction of refueling and charging facilities for advanced initiatives utilizing next-generation energy sources --such as hydrogen and renewable energy --at logistics facilities including regional collection and distribution hubs, warehouses, and truck terminals, efforts are being made to promote the decarbonization of distribution operations.

Project for Promoting Decarbonization in Logistics

<Project Objective>

- This project aims to support **the introduction of advanced infrastructure—such as refueling and charging facilities utilizing next-generation energy sources like hydrogen and renewable energy**—at logistics facilities including regional collection and delivery hubs, warehouses, and truck terminals, in order to promote **decarbonization in logistics**.

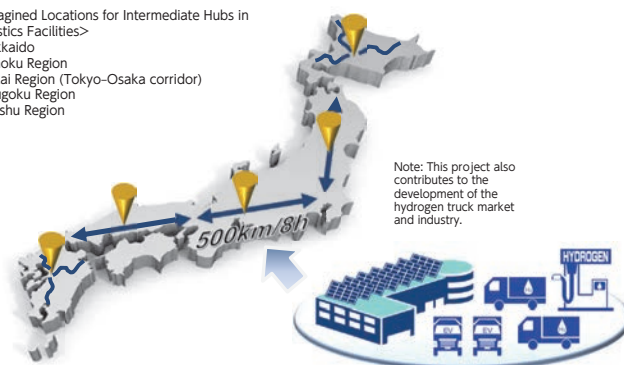
<Project Details>

- Amid the continued rise in fuel prices due to instability in international affairs, achieving sustainable logistics in response to fluctuations in **resource fuel prices is crucial. Decarbonization and improvements in energy efficiency in both vehicles and facilities are vital to achieving logistics Green Transformation (GX).**
- **To encourage the use of vehicles such as fuel cell vehicle (FCV) trucks and electric vehicle (EV) trucks—which currently have shorter ranges than gasoline trucks—we support the introduction of hydrogen- and renewable energy-related equipment at logistics facilities that can serve as intermediate hubs for mainline and regional transport.**

※ Comparison of fuel type range for a 4-ton truck:

- Gasoline truck: 700 km
- FCV truck: 260 km
- EV truck: 180 km

<Imagined Locations for Intermediate Hubs in Logistics Facilities>
• Hokkaido
• Tohoku Region
• Tokai Region (Tokyo–Osaka corridor)
• Chugoku Region
• Kyushu Region



Note: This project also contributes to the development of the hydrogen truck market and industry.

<Subsidy Rate & Eligibility>

[Subsidy Rate]

- Up to 50%

[Eligible Facilities]

- Commercial warehouses
- Collection and delivery facilities for freight transport companies

[Eligible Applicants]

- Warehouse operators
- Freight transport companies
- Cargo handling agents
- Truck terminal operators, etc.

[Eligible Equipment]

- Hydrogen-related equipment (e.g., hydrogen stations, FCV trucks) and Renewable energy-related equipment (e.g., EV charging stations, solar panels, EV

trucks, energy management systems)

- Equipment and devices required to implement advanced initiatives in conjunction with the above (e.g., truck reservation systems, automated guided vehicles)

[Subsidy Requirements]

- Hydrogen:

① Introduction of equipment and devices for hydrogen production and storage

② Integrated efforts involving hydrogen stations, FCV trucks, etc., that utilize hydrogen

- Renewable Energy:

① Purchase of renewable energy or installation of renewable energy generation systems (new construction)

② Integrated efforts involving the introduction of at least two of the following: large-capacity storage batteries, charging equipment, EV trucks, etc.

Source: MLIT (Tentative translation by Eco-Mo Foundation)

⑤ Promotion of usage of public transport

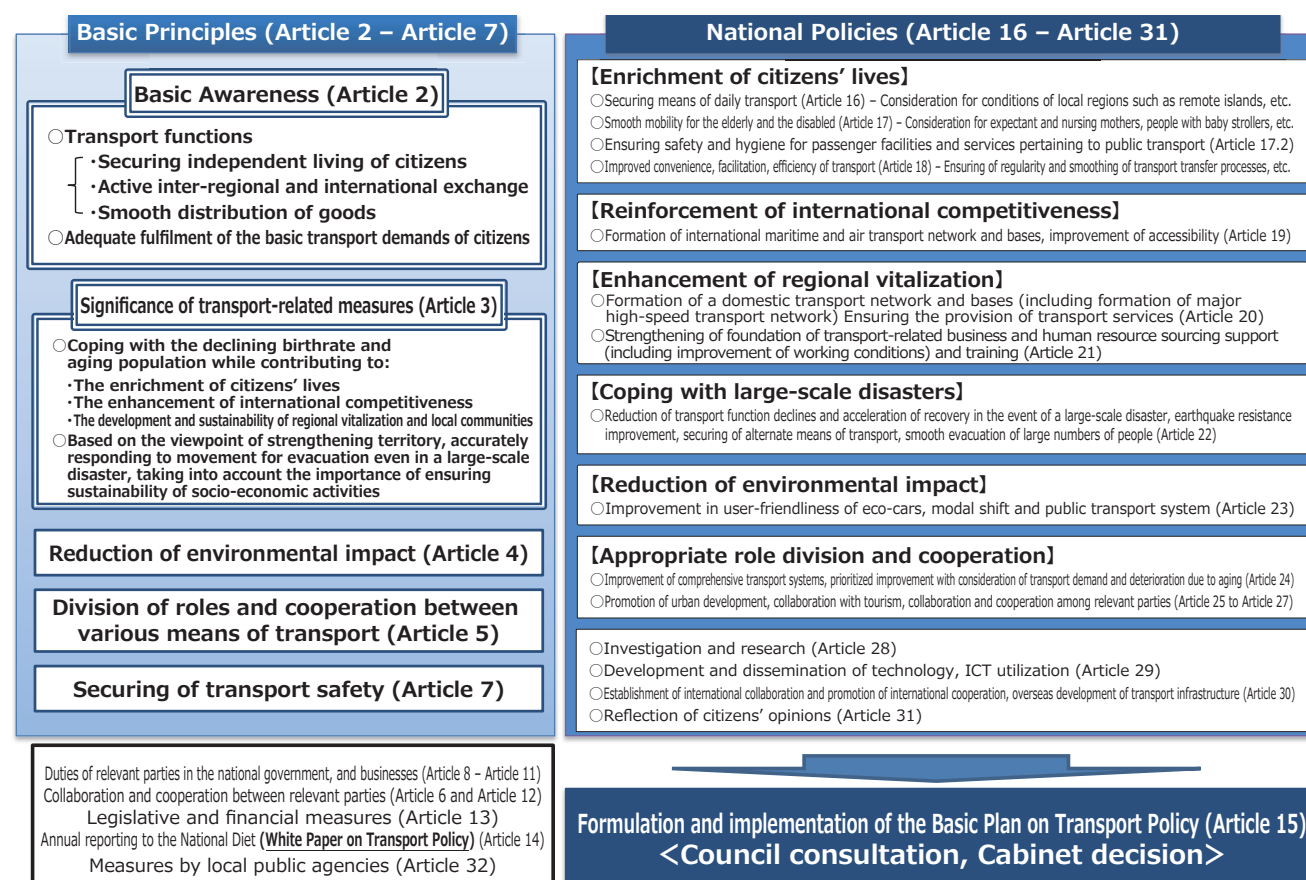
Creating new railroad lines and new transport systems, and making rail and bus transport more convenient, contribute a shift in passenger transport from private cars to public transport, which has less of an environmental impact. This leads to reductions in automobile CO₂ emissions, so various measures are being implemented in order to achieve this shift.

■ Establishment of the Basic Act on Transport Policy

The Basic Act on Transport Policy defines the basic philosophy underpinning transport related measures in order to promote measures necessary for the national government to coordinate closely with local governments and transport companies in implementing comprehensive and systematic measures from the perspectives of increasing international competitiveness and regional vitality, and ensuring preparedness for large-scale disasters. This act applies to the international transport, national transport, and regional transport which acts as the infrastructure supporting Japan's economic and social activities. The Second Basic Plan on Transport Policy, endorsed by the Cabinet on May 28, 2021, covers the period from FY2021 to 2025, and based on this plan, transportation-related measures have been promoted in a comprehensive and systematic manner.

The Basic Act on Transport Policy requires that a white paper on the transport policy be approved by the Cabinet and reported to the Diet every year. The 2024 edition of the white paper was approved by the Cabinet and reported to the Diet in June 2024.

● Summary of the Basic Transport Policy Plan



Source: MLIT (Tentative translation by Eco-Mo Foundation)

Promotion and support for Japanese MaaS

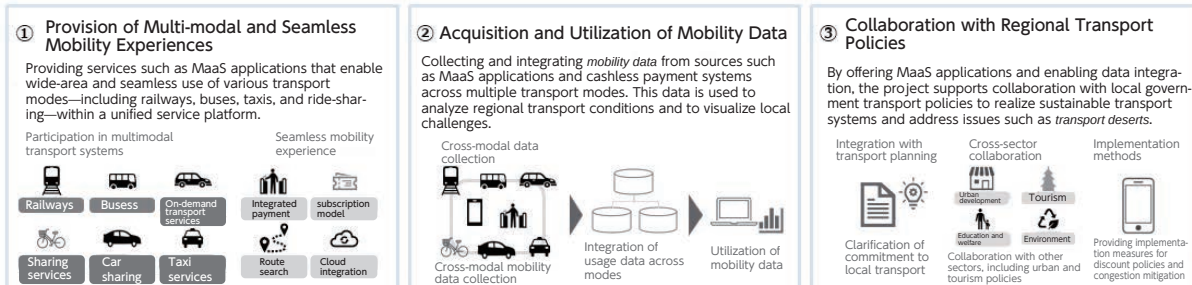
MLIT is actively supporting initiatives aimed at promoting the nationwide adoption of Mobility as a Service (MaaS), which enables seamless access to a wide range of transport services through collaboration among multiple transport operators. These efforts are designed to improve local mobility environments and address regional challenges through integration with various content and services.

Japanese MaaS Promotion and Support Project

- To address regional transport issues—such as securing daily mobility and providing secondary transport for tourism—it is essential to fully mobilize and utilize regional transport resources through digital technologies. Additionally, enhancing service quality is vital to improve the sustainability, productivity, and convenience of local public transport.
- By promoting Mobility as a Service (MaaS)—which integrates diverse mobility services into a single accessible platform through collaboration between transport operators and tourism-related content providers—this initiative aims to improve access to transport resources and accelerate the full-scale redevelopment of regional transport systems, including the “re-design” of transport and the elimination of transport-deprived areas.

<Project Overview (Subsidy Eligibility Requirements)>

This initiative supports projects that implement the following three components in an integrated manner to improve mobility environments and address regional issues through integration with local content:



<Project Requirements>

[Eligible Entities for Subsidy]

Prefectures or municipalities (hereinafter referred to as *local governments*), private businesses collaborating with local governments, or councils composed of these entities.

[Eligible Expenses for Subsidy]

- System development, purchase, usage, and modification costs
- Other costs arising from system implementation (e.g., training, manual creation)
- Costs for implementing cashless payments in regional public transport
- Costs for digitizing transport information
- Survey expenses for impact evaluation, etc.

[Subsidy Rate]

- | A. Core urban areas, depopulated regions, etc.
(Local governments with a population of 100,000 or more) | B. Regional core cities, etc.
(Local governments with a population of 100,000 or more) | C. Major metropolitan areas
(Government-designated cities within the three major metropolitan areas) |
|---|---|---|
| Fixed subsidy up to 5 million yen, and two-thirds (2/3) of the amount exceeding 5 million yen, up to a maximum of 100 million yen | Two-thirds (2/3) subsidy, up to a maximum of 100 million yen | One-half (1/2) subsidy, up to a maximum of 100 million yen |

Source: MLIT (Tentative translation by Eco-Mo Foundation)

Green Slow Mobility

Based on the Paris Agreement that was concluded in 2015, the aim is to reduce greenhouse gas emissions to essentially zero by the latter-half of the 21st century within a global framework. In Japan, the aim is to achieve a carbon neutral, decarbonized society with greenhouse gas emissions at zero overall by 2050.

At the MLIT, Green Slow Mobility aims to solve various transport problems in local areas, such as the securing of transport services where societal aging is advancing and the development of new sightseeing mobility for tourist attractions. Simultaneously it also aims to spread low carbon mobility in local areas.

Green Slow Mobility is a small mobility service that utilizes electrified vehicles that can travel on public roads at speeds of less than 20 kilometers per hour. A decarbonized transport system can be realized through not only introducing green slow mobility but also utilizing electricity generated from renewable energy sources such as solar power and wind power.

Green Slow Mobility : A small mobility service that utilizes electrified vehicles that can travel on public roads at speeds of less than 20 kilometers per hour.

【Features of GSM】

- ① **Green**...Eco-friendly transport service utilizing electrified vehicles
- ② **Slow**...Enjoy the scenery, suitable for residential roads, reduce the number of serious accidents occurred
- ③ **Other**...Smaller, more open, and easier to get on and off compared to vehicles with the same capacity

Light vehicles	Small vehicles	Standard-sized vehicle
 4-person	 5-person	 10-person
 4-person	 6-person	 11-person
 4-person	 7-person	 18-person

* A midsize vehicle driving license is required to operate vehicles bearing 11 people

Green Slow Mobility, which is specialized for short-distance travel at low speed, is expected to provide new transport services that complement existing transport systems to introduce the “one last/first mile” for local residents and new mobility for tourists, as well as to encourage local activities.

① **Transporting rural residents**

- 1) Areas without bus service
- 2) Areas with a high proportion of elderly residents
- 3) Improving welfare for the elderly
- 4) Conversion from existing buses

② **Mobility for tourists**

- 1) Sightseeing tours by guides
- 2) Short-term regular tourist buses
- 3) Park-and-ride
- 4) Events

③ **Short rides**

From parking spaces to facilities, or between facilities

④ **Local branding**

As the "face" of the area



Source: MLIT (Tentative translation by Eco-Mo Foundation)

Measures for promoting railway use

MLIT promotes the use of railway by supporting for constructions of connecting lines between routes, mutual direct connections, subway constructions, and comprehensive renovation at railway stations.

Support for the establishment of next generation streetcar systems (LRTs*), which

Examples of Service and Convenience Improvement Measures

◆Urban Railway Convenience Enhancement Project

· Eastern Kanagawa Railway Link Project (Sotetsu/Tokyu Link Line)

◆Urban Railway Construction Project (Subway Construction Project)

· Naniwasuji Line, Tokyo Metro Yurakucho Line extension, Tokyo Metro Namboku Line extension

◆Railway Station Comprehensive Improvement Project

Keihin Kyuko Railway Shinagawa Station, Sagami Railway Ebina Station, Odakyu Railway Chuo-Rinkan Station, Odakyu Railway Tsurukawa Station, JR Tokai Kariya Station, JR West Shimogion Station

are increasingly in the spotlight, is being provided as part of the “Project for Enhancing Local Acceptors.”

- * LRT: Short for “Light Rail Transit”. These next generation streetcar transport systems use low-floor trams (LRVs), improve their tracks and stops to provide easy boarding and alighting, punctuality, travel speed, comfort, and other features.

Overview of LRT systems

What is LRT (Light Rail Transit)? LRT is an improvement on the driving areas, carriages, and other aspects of conventional streetcars, effectively utilizing existing road, rail, and other infrastructure. It is a public transport system which is friendly to people and to the environment, providing greater speeds, punctuality, and transport capabilities. It is gaining greater attention for its barrier free access and environmental friendliness, contributing to the restoration of urban and regional areas by vitalizing central urban districts.

Features

- **Overview of LRT systems**
- **High speeds and punctuality levels**
 - * LRT offers high speeds and high levels of punctuality through high performance carriage, the use of dedicated tracks, partial grade separation, signal prioritization, fare payment system improvements, and more.

Coordination with town planning efforts

- * Installation of LRT as a town symbol to create lively center
- * Can be installed in conjunction with other town planning measures such as development of station plaza and conversion of adjacent streets into transit malls, creation of park & ride parking lots, development of public facilities along the line, etc.

Driving area (right-of-way)

Automobiles can physically enter the track area

⇒

Tracks and road are separated by a curb divider

* Tracks and road are separated by a curb divider

* Priority signals are used

Unified appearance

Conventional design

⇒

Train designed to match local scenery

Sufficient transport capacity

- * High frequency and articulated carriage are combined appropriately to ensure sufficient transport capacity

Environmentally-friendly

- * In addition to providing the environmentally friendly streetcar feature of producing CO₂ emissions less than automobiles, LRT systems also reduce noise and vibration through the use of resilient wheels and vibration control tracks

Train transport capacity (maximum capacity)

Approx. 90 people (Single-car: Hiroshima Electric Railway train)

⇒

Approx. 150 people (Five-car: Hiroshima Electric Railway train)

Track structure

Normal track

⇒

Vibration control track

87dB ⇒ 76dB

[Noise comparison] Measured at a distance of 7.5m from the center line between tracks, at a height of 1.2m above ground, for an LRT travelling at 40km/h

People-friendly

- * Low carriage floors, boarding and disboarding slopes, etc., eliminate height differences and ensure ease in transferring to other means of transport

CO₂ emissions

Mode	CO ₂ emissions per person per kilometer transported (g)
Privately owned car	188
Minibus	94
LRT streetcar	36

Floor height

780mm ⇒ 330mm

Height difference makes steps necessary

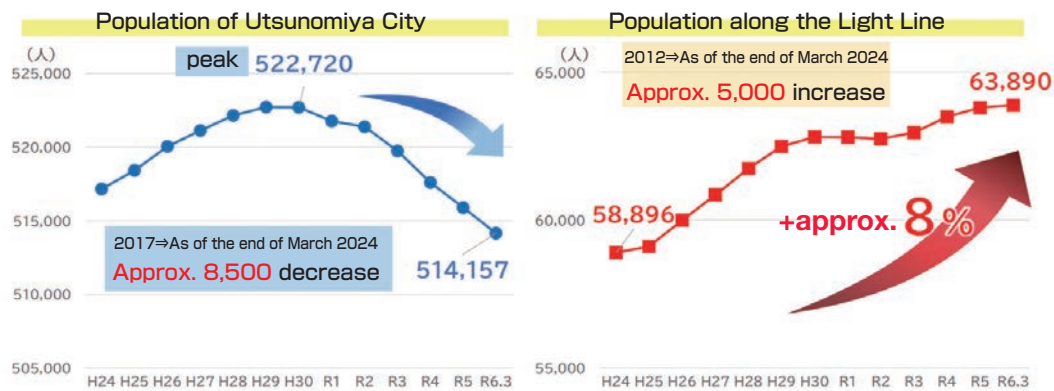
Train can be boarded directly from platform, with no height difference

Source: MLIT (Tentative translation by Eco-Mo Foundation)

① Domestic LRT Case Studies

[Haga Utsunomiya LRT]

In Haga Town and Utsunomiya City, the Light Rail Transit (LRT) system has been positioned as the core mode of public transport under the Location Optimization Plan. The development of the LRT aimed to enhance and strengthen public transit, alleviate traffic congestion, and reduce environmental impact through the construction of a comprehensive transport network. The LRT line officially opened in August 2023. Since its launch, positive impacts have been observed along the LRT corridor, including an increase in population, a surge in private investments such as condominium developments, and a rise in land values.

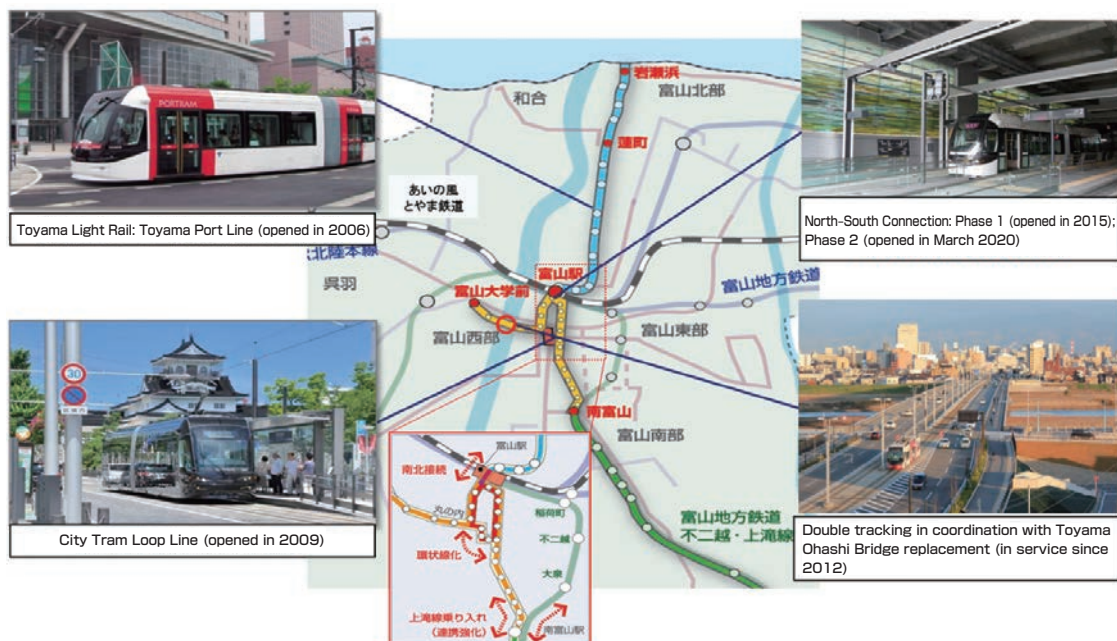


Source: Utsunomiya City, Basic Resident Register Population, as of the end of September each year (as of the end of March for 2024 only)

Note: "Along the Light Line" refers to the aggregation of districts located within a 500-meter radius of the Light Line.

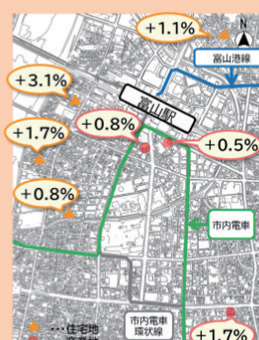
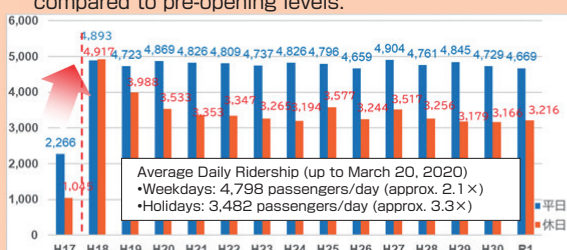
[Toyama LRT]

Toyama City has been actively promoting compact urban development by converting the Toyama Port Line into a light rail system and creating a city-center circular tram loop. Through the north-south tram connection project, a 15.2-kilometer integrated LRT network centered around Toyama Station has been completed, incorporating existing tram routes. This has facilitated the unification of urban development in both the northern and southern parts of the city. As a result, not only has accessibility to the city center improved, but pedestrian mobility within the downtown area has also increased. In addition, the project has spurred private investment, including urban redevelopment initiatives.



Development effects

Following the development of the Toyama Light Rail, ridership significantly increased—approximately 2.1 times on weekdays and 3.3 times on holidays compared to pre-opening levels.



While the average land prices in Toyama Prefecture have been declining since 1993, Toyama City maintained—and even increased—its average land value across all uses for six consecutive years up to 2020.

(Based on the 2021 Land Price Publication)
※ Land price survey conducted by the national government (reference date: January 1), with 107 survey points within the city.

Source: MLIT (Tentative translation by Eco-Mo Foundation)

② International LRT Case Study

[Australia: Sydney]

Sydney, Australia's largest city by population and a major economic hub, has developed a comprehensive public transport network, including metro and LRT systems. In suburban areas of Sydney, certain LRT stops are designed with shared platforms for buses and trams, enabling seamless intermodal transfers. Additionally, by lowering the track level around LRT stops, barrier-free access has been achieved, ensuring that platforms and adjacent sidewalks are level and accessible to all users.



Source: MLIT (Tentative translation by Eco-Mo Foundation)

■ Comprehensive Rollout of Transport System Redesign to Eliminate “Transport Deserts”

Local transport serves as a foundation for regional revitalization and plays a vital role in ensuring access to essential daily services such as shopping, healthcare, and education. However, the sustainability of these services is under increasing pressure due to long-term demand decline caused by population decrease, aging demographics, and a shortage of drivers, among other challenges.

In response to these circumstances, the **Act on Revitalization and Rebirth of Local Public Transportation** (Act No. 59 of 2007) was amended in 2023 to enhance the legal framework, including the creation of new mechanisms for restructuring local railway services. In addition to legal reforms, financial support has been strengthened through various means: assistance for collaborative initiatives involving a wide range of regional stakeholders; support for digital (DX) and green (GX) transformation efforts by transport operators to improve management and secure human resources; and subsidies for infrastructure development—such as railway and bus facilities—through the Comprehensive Social Infrastructure Development Grant.

These efforts are part of a broader strategy to redesign regional transport systems with higher levels of convenience, productivity, and sustainability.

A key milestone in this strategy was the establishment of the Ministry of Land, Infrastructure, Transport and Tourism's Headquarters for Eliminating Transport Deserts in July 2024. This initiative focuses on addressing areas where residents and visitors face limited or no access to transport services through the strategic deployment of taxis, shared taxis, public ride-sharing, and Japanese-style ride-share systems. As part of the initiative, senior ministry officials, local transport bureau staff, and branch offices are conducting direct visits to municipal leaders in affected regions, providing hands-on support to local officials, and acting as intermediaries between local governments and relevant industries.

Furthermore, in November 2024, a new platform—the **Public-Private Partnership Platform for Eliminating Transport Deserts**—was launched under the Headquarters to facilitate broad-based collaboration between public and private sector actors. This platform aims to establish a comprehensive framework for addressing region-specific transport issues across the country.

Looking ahead, the government has designated FY2025 to FY2027 as a **Priority Period for Eliminating Transport**

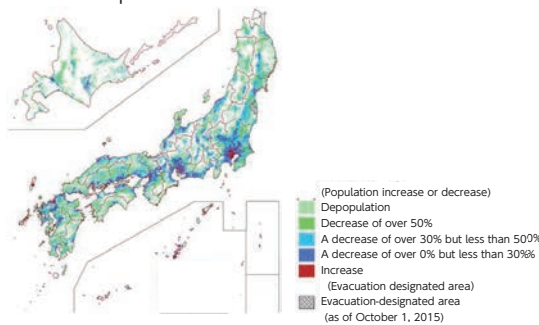
Deserts. During this period, all available tools will be mobilized to comprehensively support local initiatives through ongoing engagement with municipalities and transport providers, as well as enhanced financial assistance, with the goal of firmly establishing and expanding effective solutions nationwide.

●The environment surrounding regional public transport

- It is predicted that the population of Japan will decrease by more than 50% in over half of the residential areas nationwide by 2050.
- The decrease in local small- and medium-sized shops, the consolidation or relocation of hospitals, and the consolidation of schools have exacerbated the issue of “mobility” in daily life, such as shopping, medical visits, and commuting to school.
- With an increasing proportion of dual-income households, including those with part-time employment, the burden of transport for elderly individuals’ medical visits and children’s commute to school or extracurricular activities has also increased.
- There is growing concern about traffic accidents involving elderly drivers, leading to voluntary surrender of driving licenses. However, there are also voices expressing concerns about alternative means of transport after surrendering licenses, as well as hesitation regarding voluntary surrender.
- There is a need for new approaches to transport within urban areas and between regions, considering the rapid recovery of inbound tourism and lifestyle changes (such as diverse working styles and a focus on quality of life).

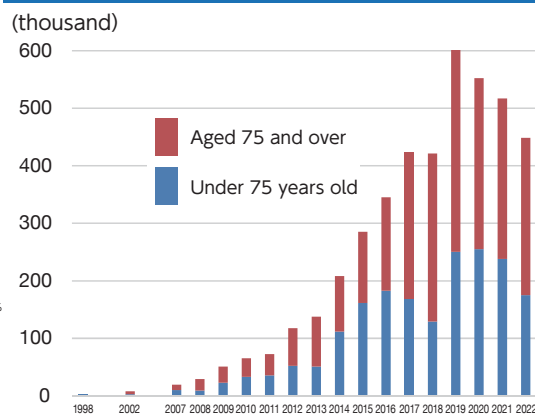
Population projections for the future

By 2050, the population is projected to decrease by over 50% in approximately half of the populated mesh areas nationwide compared to 2015.



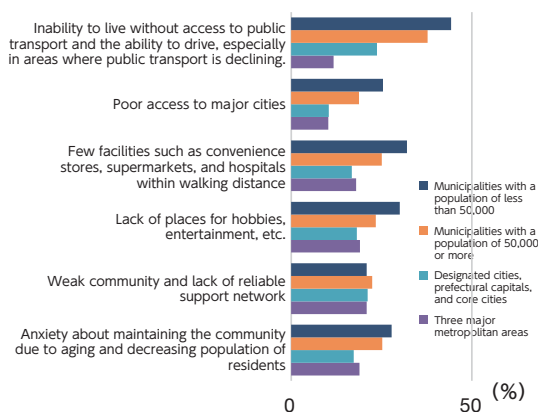
Source: Compiled by the Ministry of Land, Infrastructure, Transport and Tourism based on the “2015 National Census” by the Ministry of Internal Affairs and Communications and the “Regional Future Population Estimates for Japan (Estimates for 2018)” by the National Institute of Population and Social Security Research.

The trend in the number of license returns



Source: Compiled by the Ministry of Land, Infrastructure, Transport and Tourism from publicly available data from the National Police Agency

Issues regarding residential areas (by region)



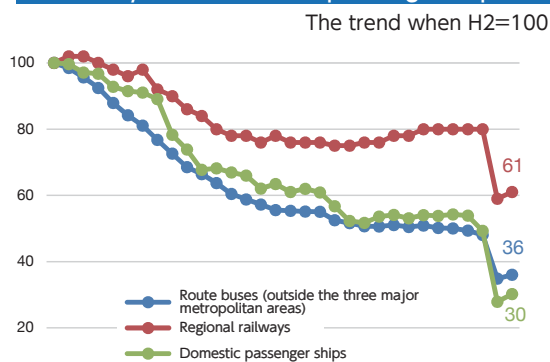
Source: Ministry of Land, Infrastructure, Transport and Tourism, “National Survey of Public Awareness, FY2017”

Source: MLIT (Tentative translation by Eco-Mo Foundation)

● The current situation of public transport operators

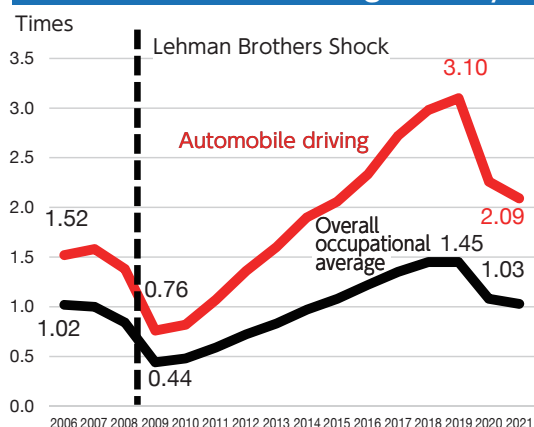
- The management environment of public transport operators has deteriorated due to long-term decreases in users and sharp declines caused by the COVID-19 pandemic. Even after the pandemic, the number of users has not fully recovered to pre-pandemic levels.
- Many operators of route buses and regional railways are in deficit, and the prospects for recovery are bleak. This poses challenges for the stable provision of public transport services in the future.
- The wage levels for drivers of automobiles (buses and taxis) are low, and the shortage of personnel is worsening (the effective job openings-to-applicants ratio is about twice the average for all occupations). There is a risk of an expanding trend of route bus closures or suspensions due to the shortage of personnel.
- In the transport sector, many operators are lagging behind in efforts to implement digital transformation (DX) in areas such as cashless payment compatibility, operation management, vehicle and facility management, and labor management.

The number of users of route buses, regional railways, and domestic passenger ships



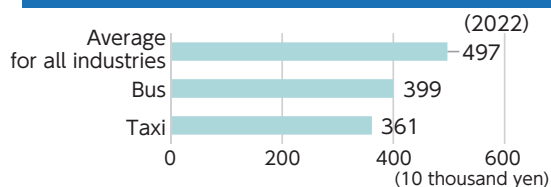
Source: Compiled by the Ministry of Land, Infrastructure, Transport and Tourism based on the "Automobile Transport Statistics Yearbook," "Railway Statistics Yearbook," and surveys conducted by the Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism based on the Ordinance concerning regular report submissions by ship operators, etc.

Shortage of personnel in the automotive driving industry



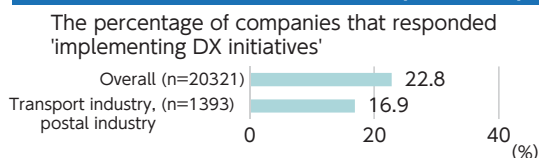
Source: Compiled by the Ministry of Land, Infrastructure, Transport and Tourism based on the "General Occupational Introduction Status" from the Ministry of Health, Labour and Welfare

Wage levels for automobile drivers



Source: Estimated by the Ministry of Land, Infrastructure, Transport and Tourism based on the "Basic Survey on Wage Structure" by the Ministry of Health, Labour and Welfare

The status of DX initiatives by industry



Source: Compiled by the Ministry of Land, Infrastructure, Transport and Tourism from the "Survey and Research on the Impact of Digital Transformation on the Economy" by the Ministry of Internal Affairs and Communications, 2021

Source: MLIT (Tentative translation by Eco-Mo Foundation)

Promotion of eco-commuting

There is a growing demand for a shift in means of transport, from the use of private cars to low carbon dioxide emission measure, by promoting the use of public transport. In order to promote highly effective measures which match both user side efforts and transport operator side efforts, a Conference on Promotion of Public Transport was held in March 2005, involving transport operators, members of the business sector, and members of the government.

In November 2007 the “Eco-commuting Promotion Action Program through the Mobility Management Project” was adopted to promote conversion from the use of private cars to public transport, bicycles and on foot for commuting.

Furthermore, from June 2009, thereby promoting eco-commuting, the “Excellent Eco-Communing Business Site Certification System” was launched to certify businesses which voluntarily and actively promoted eco-commuting. As of the end of February 2025, 861 business sites have been registered.

Advantages of increasing eco-commuting for communities and companies

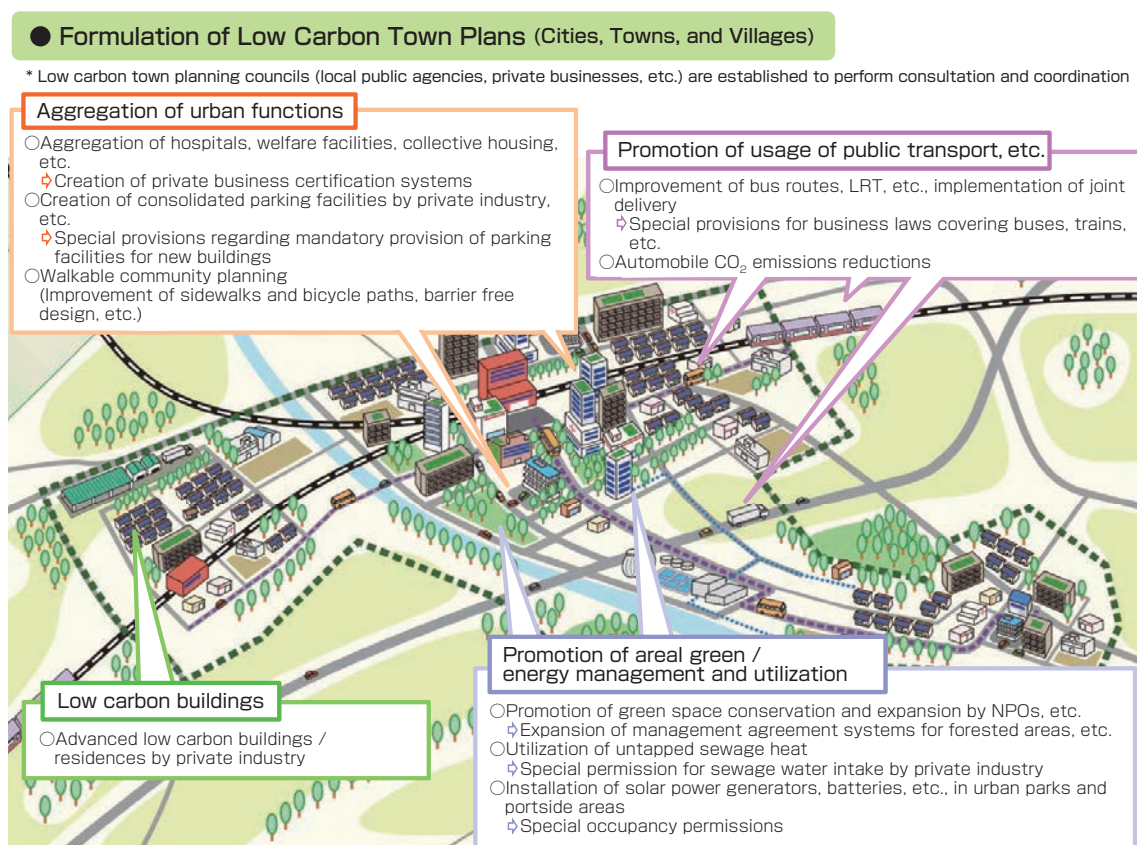


Source: MLIT (Tentative translation by Eco-Mo Foundation)

Low Carbon City Promotion Act

It is important to build up a collection of success cases of rationalization of energy usage and urban and transport carbon emissions reduction, to promote the greater adoption and to vitalize the housing market and local economies, by encouraging private investment in urbanization areas, etc. based on changes in energy supply and demand triggered by the Great East Japan Earthquake and increasing energy and global warming awareness among citizens.

The Low Carbon City Promotion Act was passed by the Diet in September 2012 and enacted in 2012 December of the same year. As of December 2023, 26 cities have created low carbon town plans. These plans are listed on the MLIT website.



Source: MLIT (Tentative translation by Eco-Mo Foundation)

⑥ Promotion of Environmentally Sustainable Transport (EST)

In order to reduce carbon dioxide emissions by the passenger transport sector, it is important to implement measures to reduce the excessive dependence on private vehicles, which account for the majority of the sector's emissions, and promote the use of public transport, etc. It is essential, when doing so, to employ measures which reflect the local area's features, and for measures to be driven by the community with the collaboration of related parties.

In order to achieve this, the MLIT has implemented an "EST Model Project", selecting areas which are implementing leading efforts at achieving "Environmentally Sustainable Transport (EST)", and related ministries and agencies collaborate to provide support in the areas such as promoting the use of public transport, implementing measures to smooth automobile traffic flow, promoting the use of low-emission vehicles, and promoting awareness raising.

Over the three year period projects, related from FY2004 to 2006, 27 areas were selected as EST Model Project areas, and each area has implemented three year model projects related ministries and agencies are coordinating with each other, providing support and making information regarding the results of these projects available in order to expand EST to a nationwide scale. As part of these efforts, the MLIT website provides an EST Database with the results of these model projects, sharing information about how to effectively implement EST activities.

● MLIT website "EST Database"



Source: MLIT website

● Promotion of Environmentally Sustainable Transport (EST)

Achieving Environmentally Sustainable Transport (EST)

* From FY2004 to 2006, 27 areas were selected as EST model areas due to their leading efforts at achieving EST, such as promoting the use of public transport and implementing measures to smooth automobile traffic flow. Related ministries and agencies have collaborated to provide these model regions with concentrated support.
* In the future the leading efforts of these 27 EST model regions will be applied on a nationwide scale in order to promote EST.

Autonomous areas

* **Autonomous efforts which effectively utilize local features** in order to achieve environmental improvement targets (CO2 reductions, etc.)
* Project implementation through **collaborations between a wide range of local parties**, such as local governments, local shopping areas and commercial facilities, transport operators, road management authorities, police and related organizations, NPOs, etc.

Automobile traffic smoothing

[Road maintenance, etc.]
* Intersection improvements, etc.
* ITS promotion
* Countermeasures for bottleneck rail crossings
[Traffic restrictions, etc.]
* Implementation of illegal parking countermeasures



Promotion of usage of public transport

[Commuter traffic management]
* Voluntary refraining from private vehicle usage by employees, etc.
* Park & ride
[LRT installation and rail vitalization]
* LRT project implementation
* IC card deployment
* Traffic node maintenance
[Bus vitalization]
* Omnibus town service improvement
* PTPs
* Bus stop improvement
* Bus location system
* Non-step buses
* Unified IC card



Pedestrian and bicycle measures

[Related infrastructure maintenance, etc.]
* Maintenance of sidewalks, bicycle paths, bicycle parking spaces,



Low-emission vehicle deployment

[Low-emission vehicle, etc. deployment]
* Promotion of CNG bus
* Support for introducing low emission vehicles



Promotion and awareness raising

[Promotion and awareness raising activities]
* Implementation of PR activities
* Symposium, events, etc.



Related ministries coordinate with autonomous areas implementing measures which utilize local features in order to achieve EST, sharing information regarding the results of past EST efforts, providing support, and working to **promote** EST on a nationwide scale.

Support coordinated with related ministries and agencies

Source: MLIT "White Paper on Land, Infrastructure, Transport and Tourism in Japan" (Tentative translation by Eco-Mo Foundation)

Regional EST Forum in Asia

The motorization that has accompanied economic development and urbanization in Asia has produced severe social issues such as air pollution. The "Regional EST Forum in Asia" has been held by the United Nations Centre for Regional Development (UNCRD) and the MOE Japan with the aim of achieving Environmentally Sustainable Transport (EST) in the Asian region. Currently, there are roughly 300 members, both from Japan and other Asian countries, including high level government officials in charge of environmental and transport agencies, local governments, environmental and transport experts, and Asian and European international support organizations, ADB and NGOs, etc.

The first Forum was held in August 2005 in Nagoya and attended by a total of 13 Asian countries. Its objective was to promote EST, then being advanced by the OECD, throughout Asia. To achieve this, it adopted the "Aichi Declaration," which set out the fundamental philosophy of EST in Asia, the importance of transport for solving the problems faced by socially vulnerably people and the poor, based on the MDGs that served as the basis of SDGs, and formulated a strategic plan and action plan for each country, led by the UNCRD.

The Forum has been held continuously in Asian countries roughly once a year since then, and the number of participating countries and attendees has grown. In 2010, the Bangkok Declaration for 2020, which laid out the targets for the years leading up to 2020, was adopted, promoting EST-related measures in each country.

On the global level, in 2015, the United Nations Headquarters adopted the "2030 Agenda for Sustainable Development," which set forth 17 international targets, called SDGs. In the same year, the Paris Agreement on climate change was adopted with the consent of all countries. It aims to create sustainable, rich societies in which no one is left behind, while at the same time demanding major changes in societies, which until now have been predicated on the use of fossil fuels. Against this background, at the 10th Forum held in Vientiane, Laos, in 2017, the member states adopted the "Vientiane Declaration" which applied the SDG approach to EST.

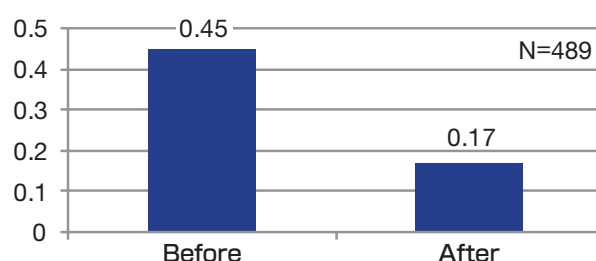
With regard to the recent EST Forum, the 13th Forum was held with the main theme of "Changing the course of Asia's transport sector through transformational change" and discussed situations after the "Bangkok Declaration 2020". In October 2021, the 14th Forum was held online at "Aichi Sky Expo (Aichi International Exhibition Center)". In this Forum, "Aichi 2030 Declaration" was adopted, setting out EST goals by 2030 in line with international trends including the SDGs and the Paris Agreement to accelerate the decarbonization movement in Asia. In October 2024, the 16th Forum was held in Manila, Philippines, where participating countries shared their policies on Environmentally Sustainable Transport (EST) and engaged in a wide-ranging exchange of views. The forum also served as an opportunity to follow up on each country's progress toward achieving the goals of the Aichi 2030 Declaration.

Effectiveness of car sharing in reducing environmental impact

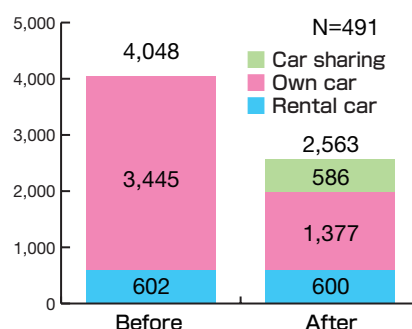
Car sharing, which allows people to use cars only when needed without owning them, has been popular in Japan, the number of car-sharing members is approaching 5 million (according to an Eco-Mo Foundation survey conducted in March 2024).

In FY2012 the Eco-Mo Foundation performed an evaluation of the effectiveness of car sharing at reducing environmental impact. A survey of car sharers was carried out with the cooperation of five major car sharing operators. The survey found a decrease of over 60% in the number of cars owned per household after joining a car sharing scheme, a decrease of just under 40% in average annual miles driven, and an average annual reduction in automobile CO₂ emissions of 0.34t (45%). A report containing detailed survey results and measures for popularizing car sharing in the future can be found on the Eco-Mo Foundation website.

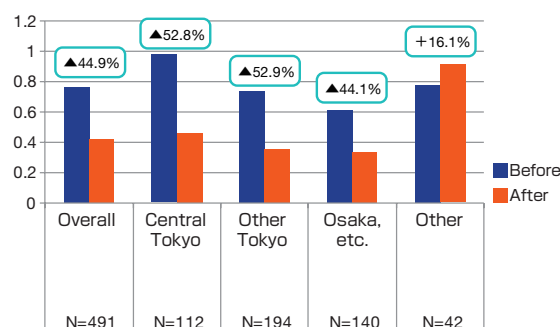
● Change in average number of automobiles owned per household



● Changes in annual total distance driven (km/year/household)



● Change in annual CO₂ emissions from automobile use (t-CO₂/year/household)



Note 1) Central Tokyo: Chiyoda-ku, Minato-ku, Chuo-ku, Shibuya-ku, Shinjuku-ku, Bunkyo-ku, Toshima-ku

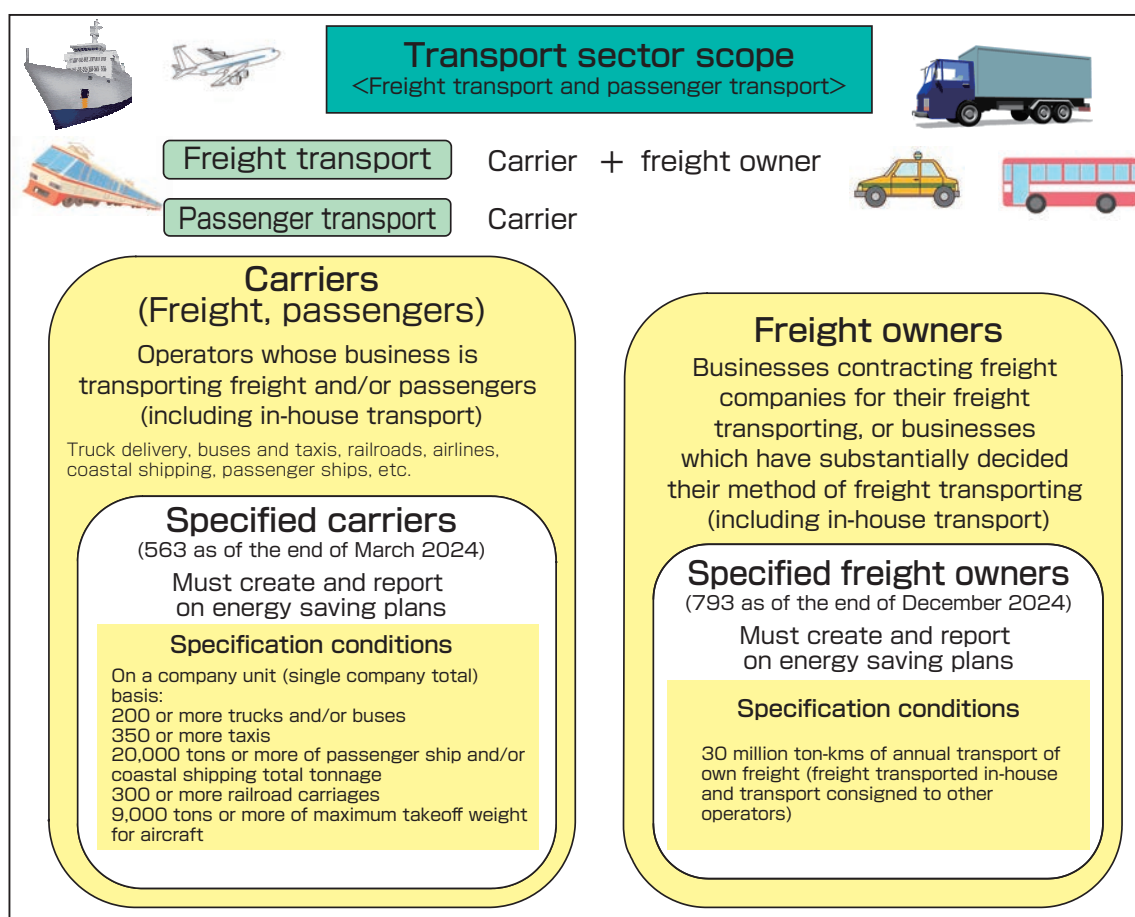
Note 2) Osaka, etc: Osaka Prefecture, Hyogo Prefecture, Kyoto Prefecture, Aichi Prefecture, Kanagawa Prefecture

(2) Energy Saving Act-based measures

The steady implementation of energy saving measures is an important challenge in tackling global warming.

The Energy Saving Act requires businesses to rationalize energy use based on the criteria set by the government. In particular, businesses whose energy consumption exceeds a certain amount are required to report their actual energy consumption (periodic report), prepare a medium- to long-term (3–5 years) plan for rationalization of energy consumption (medium- to long-term plan) and submit it to the government every fiscal year.

In addition to these efforts, the revised Energy Saving Act, which was passed in May 2022, requires businesses to switch to non-fossil energy sources to achieve carbon neutrality by 2050 in response to the growing environmental awareness in recent years. The name of the law was revised to “Act on Rationalization of Energy Use and Shift to Non-fossil Energy” from “Act on Rationalizing Energy Use” in line with the content. Under the revised Energy Saving Act, businesses are required to set targets for the conversion to non-fossil energy and take respective measures based on the criteria for businesses converting to non-fossil energy newly established by the government, while continuing to rationalize overall energy use as before. Specific carriers and shippers are also required to submit reports on their medium- to long-term plans for transitioning to non-fossil energy sources, as well as regular reports on overall energy usage, including non-fossil energy, along with a medium- to long-term plan for rationalization of energy use.



Specified carriers designation status (total of 563 companies as of the end of March 2024)

	Freight				Passengers				Aviation	Total
	Railway	Commercial trucks	Private trucks	Shipping	Railway	Buses	Taxis	Shipping		
No. of carriers	1	308	74	35	25	86	23	11	2	563

[Overview of determination criteria for carriers with respect to energy usage rationalization, etc.]

The following items are specified.

- (1) From a medium- and long-term perspective, each carrier should set as a target an annual average reduction of 1% or more in energy consumption rates or electricity demand equalization evaluation rates.
- (2) Carriers should formulate policies indicating their energy saving efforts, and appoint energy saving measure administrators and establish promotion systems for energy saving measures.
- (3) Carriers should strive to perform the following.

	Items to be addressed (energy conservation criteria)
Common	Enhance collaboration with freight owners and other carriers
Rail	- Introduce energy saving trains - Expand the size of universal containers and introduce freight trains capable of carrying large containers - Secure a transport capacity which accurately matches transport demand by adjusting the number of trains operated, etc. - Perform appropriate train inspections and maintenance
Automobiles	- Introduce low-emission vehicles and high fuel efficiency tires - Promote eco-driving through driver education and the use of digital drive records and eco-driving management systems - Promote increases in truck and trailer sizes in accordance with freight volume - Perform cooperative delivery and improve loading rates through securing return cargo, etc.
Ships	- Introduce high fuel efficiency ships and low friction ship-bottom paint - Use on-land power supply systems - Promote increases in ship sizes in accordance with freight volume - Perform joint delivery to improve loading rates
Airplanes	- Introduce airplanes with superior energy usage efficiency - Rationalize ground operation energy usage - Promote appropriate equipment selection in accordance with freight volume - Coordinate aircraft operation, such as by reducing ferry flight distances

【Freight owner's decision criteria】

From a medium- and long-term perspective, freight owners will aim for an annual average reduction of 1% in energy consumption rates or electricity demand equalization evaluation rates by implementing measures such as those below:

- Appointing energy saving measure officers
- Providing in-house training
- Selecting environmentally-friendly cargo carriers (carriers who have obtained ISO14001 or green management certifications)
- Promoting modal shifts
- Shifting from the use of private trucks to commercial trucks
- Performing joint delivery with other companies
- Reducing redeliveries

etc.

●Criteria for transport operators for non-fossil energy conversion

Targets related to the conversion to non-fossil energy for transport

Transport Business	Approximate Quantitative Targets	Guideline for Qualitative Targets
Small truck (8 tons or less)	Replace 5% of the fleet with non-fossil energy vehicles by FY2030	Increase in the share of non-fossil energy in the use of electricity for vehicles
Large truck (Over 8 tons)	None (Considering setting quantitative guidelines by FY2030)	Introduce non-fossil energy vehicles by FY2030 (including the establishment of an operational structure)
Bus	Replace 5% of fleet with non-fossil energy vehicles by FY2030	Increase in the share of non-fossil energy in the use of electricity for vehicles
Cab	Replace 8% of the fleet with non-fossil energy vehicles by FY2030	Increase in the share of non-fossil energy in the use of electricity for vehicles
Railroad	Convert 59% of electricity consumption to non-fossil energy in FY2030 (for electric vehicles)	Introduction of electric, FC, or non-fossil energy vehicles (including establishment of an operation system) by FY2030 (for internal combustion vehicles)
Ship	None (Considering setting quantitative guidelines by FY2030)	Introduction of hydrogen FC, battery, and LNG carriers from the late 2020s onward (including establishment of operational systems, etc.)
Aircraft	The percentage of SAF use in fuel use in FY2030 shall be 10%*. * Total of international and domestic flights	Proactive introduction of aircraft equipped with new aircraft environmental technology

Measures to be taken to achieve the goal of non-fossil energy conversion

Transport Business	Measures to be taken
Automobile (trucks, buses, cabs)	(1) Introduction of non-fossil energy vehicles (EVs, FCVs, PHEVs, non-fossil fuel vehicles) (2) Use of non-fossil fuels instead of fossil fuels (3) Introduction of charging and other infrastructure integrated with (1) (4) Cooperation, investigation and study with related parties (government agencies, manufacturers, shippers, etc.) toward (1) or (2). (5) Select a high non-fossil energy rate for electricity used in EVs and PHEVs.
Railroad	(1) Conversion of externally procured electricity to non-fossil fuel, acquisition of non-fossil fuel certificates, etc. (2) Installation of photovoltaic power generation equipment, etc. (3) Introduction of electric or fuel cell vehicles (4) Use of non-fossil fuels in place of fossil fuels (5) Cooperation, investigation and study with related parties (government agencies, manufacturers, etc.) toward (3) or (4).
Ship	(1) Introduction of ships that use non-fossil energy such as hydrogen FC ships (2) Introduction of LNG carriers for future use of synthetic fuels, etc. (3) Use of non-fossil fuels (4) Cooperation with related parties (government agencies, manufacturers, shippers, etc.), surveys and studies for (1) to (3) (5) Utilization of onshore power supply system at anchor
Aviation	(1) Proactive use and expansion of SAF (2) Introduction of equipment equipped with new environmental technology (3) Cooperation with related parties (government agencies, manufacturers, shippers, etc.) toward (1) or (2) (4) GPU (ground power unit) is given priority
Common to all modes	(1) Efforts to switch to non-fossil energy in cooperation and collaboration with shippers, users, or other businesses

【Shipper's Criteria】

Transport Machinery and Equipment	Approximate Quantitative Targets	Guideline for Qualitative Targets and Measures to be Taken
Small truck (8 tons or less)	5% of vehicles used for transport both for private use and dedicated use by shippers will be replaced with non-fossil energy vehicles in FY2030.	○Conducting technical development and demonstration tests of vehicles and other equipment that use non-fossil fuels in cooperation with transport companies and manufacturers of vehicles and other equipment.
Large truck (Over 8 tons)		○Conducting technical development and demonstration experiments of non-fossil fuels in cooperation with manufacturers and others related to non-fossil fuels
Railroad		○Establishment of operational rules for the introduction plan and delivery plan for vehicles, etc. that use non-fossil energy and for refueling and recharging infrastructure in cooperation with other shippers, quasi-shippers, freight forwarders, etc.
Ship		○Conversion to non-fossil energy through the development and supply of non-fossil energy production facilities in cooperation with energy suppliers, etc.
Aircraft		

(3) International maritime and air transport sector countermeasures

■ Introduction of international maritime transport greenhouse gas (GHG) emissions regulations

The International Maritime Organization (IMO) is discussing uniform worldwide measures for reducing GHG emissions from international maritime transport, which are not included in the scope of individual countries' activities based on the Kyoto Protocol or the Paris Agreement. In April 2018, the IMO adopted the "IMO GHG Reduction Strategy", the first commitment in the world to zero greenhouse gas (GHG) emissions in a single sector as soon as possible during this century. Since then, the development of an international framework for GHG reduction in the maritime sector has steadily progressed.

Specifically, in June 2021, they decided to adopt a treaty on a new CO₂ emission regulation for the world's large ocean-going vessels, the "Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII) Rating System," based on a joint proposal led by Japan to encourage existing ships not subject to CO₂ emission regulations to improve fuel efficiency and operations. Enforcement of these regulations began in 2023.

Furthermore, in July 2023, the IMO revised its GHG reduction strategy, setting a new target to achieve net-zero GHG emissions from international shipping around 2050. Japan is actively participating in the development of international rules to realize this goal, working in close collaboration with other member states.

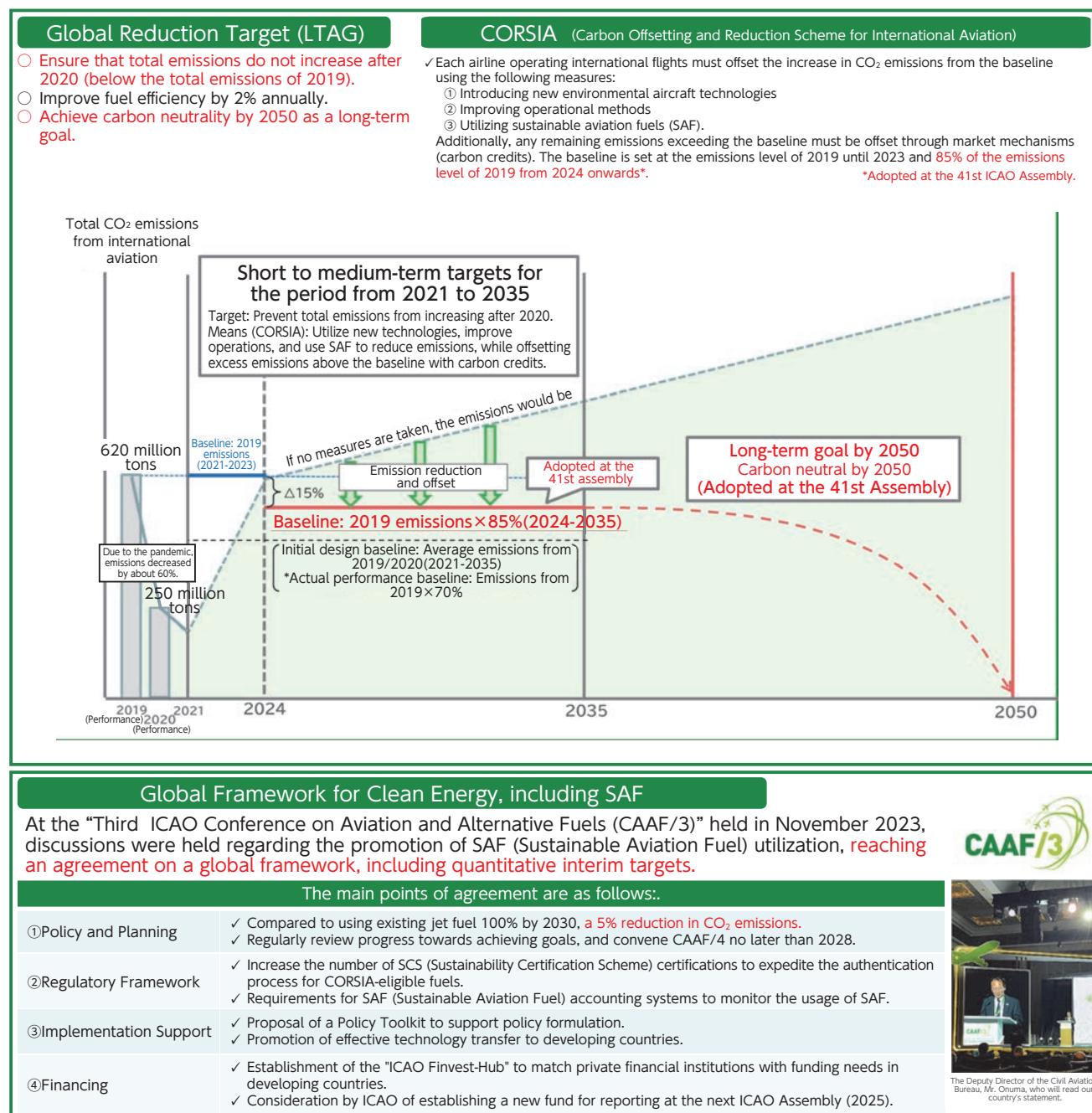
In order to achieve the global GHG reduction targets, Japan, which has excellent energy-saving technology, will take the lead in formulating an international framework in order to reduce GHG in the IMO to improve international competition in the international maritime industry.

■ International air transport sector greenhouse gas emissions reduction measures

In 2022, the 41st Assembly of the International Civil Aviation Organization (ICAO) adopted carbon neutrality by 2050 as a global long-term reduction target for greenhouse gas emissions in the international aviation sector. Moreover, "Carbon Offsetting and Reduction Scheme for International Aviation" (CORSIA), which offsets CO₂ emissions in excess of the baseline through a market mechanism by utilizing sustainable aviation fuels (SAF), improving operational methods, and introducing new aircraft technologies, was also reviewed in the Assembly. It has been decided that, from 2024 onward, CO₂ emissions from international aviation will be reduced to 85% of the 2019 level.

Achieving these long-term goals and emission reduction obligations requires improvements in operational methods, the introduction of new aircraft environmental technologies, and the promotion of SAF utilization. Therefore, in November 2023, ICAO held the "Third ICAO Conference on Aviation and Alternative Fuels (CAAF/3)." During this meeting, ICAO agreed on a global framework, including targets to reduce greenhouse gas emissions by 5% compared to jet fuel usage by 2030 through SAF utilization, as well as policy tools to promote SAF manufacturing and utilization, and support for developing countries.

Decarbonization Initiatives at the International Civil Aviation Organization (ICAO)



Source: MLIT (Tentative translation by Eco-Mo Foundation)

2 Promotion of emissions gas measures for trucks and busses (diesel vehicles), etc.

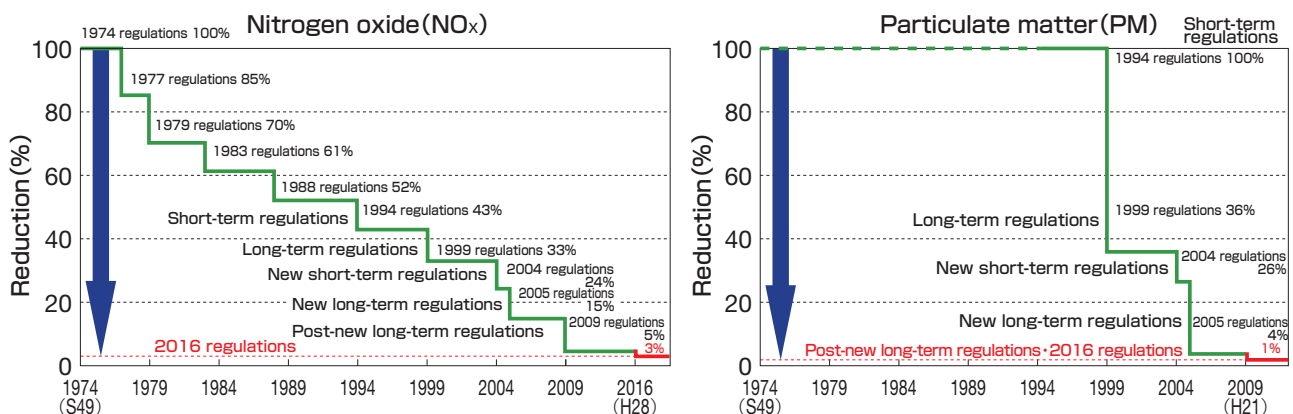
The problem of vehicle exhaust gas became a serious social problem with the rapid urbanization which began in the mid-1960s and the increase in vehicle traffic. For emissions gas measures for diesel vehicles it is especially important to reduce the amount of emissions of nitrogen oxide (NO_x), which is a cause of respiratory disorders and causes photochemical smog and acid rain, and particulate matter (PM), which is a carcinogen. In order to do this, the government strengthened exhaust gas regulations by enacting vehicle composition regulations and repeatedly revising road vehicle safety standards. Furthermore, in 1992 the Automobile NO_x Reduction Law (now the Automobile NO_x/PM Law) was enacted to reduce NO_x and PM emissions.

(1) Promotion of emissions gas measures for diesel vehicles

① Restrictions on manufacturers

In 2016 with the introduction of measures such as cold engine exhaust gas testing, the scope of exhaust gas regulations came to include vehicles with actual NO_x emissions of about 1/3 of those included in previous regulations. As a result of the regulations, the vehicles will successively be replaced by clean diesel vehicles with dramatically improved exhaust gas performance.

● Vehicle exhaust gas restrictions (diesel-powered heavy vehicles)



Source: MLIT (Tentative translation by Eco-Mo Foundation)

②Restrictions on users

In urban areas where Automobile NOx/PM air quality standards had not met, nitrogen oxide countermeasure areas and particulate matter countermeasure areas were defined and restrictions were placed on vehicle users with the aim of achieving air quality standards in the areas by roughly 2010. Specifically, for areas specified in the regulations, users are prohibited from registering vehicles which do not meet specific exhaust standards (model prohibition) and mandate the submission of exhaust gas regulation plans by specified operators. Tokyo Metropolis, Saitama Prefecture, Chiba Prefecture, Kanagawa Prefecture, Hyogo Prefecture, and Osaka Prefecture have also defined ordinances restricting the inflow of non-compliance vehicles from other regions, for further reducing nitrogen oxide and particulate matter emissions. (Note: The vehicle entry restriction in Osaka Prefecture was officially abolished as of April 1, 2022.)

In order to differentiate between vehicles which do and do not meet these standards, complied vehicles are issued with stickers, preventing the inflow of illegal vehicles. Despite the implementation of restrictions affecting users in areas implementing these measures, non-compliance vehicles from other areas pass through intersections with heavy traffic, resulting in areas not meeting air quality standards. In response to this situation, the Automobile NOx/PM Law was partially revised in 2008 to apply to users outside regulation-specified areas as well.

Furthermore, in March 2011 the Automobile NOx/PM Law enforcement and ministerial orders were revised and regulations for users with the aim of achieving air quality standards targets in urban areas by 2020 were set out.

Subsequently, based on the “Future Comprehensive Measures for Automobile Exhaust Emissions” issued in April 2022, the enforcement order of the Automobile NOx and PM Act was amended in November 2022, and the target year for achieving air quality standards in urban areas was changed to FY2026.

	Automobile NOx/PM Law	Tokyo, Saitama, Chiba, and Kanagawa Prefecture Ordinances	Hyogo Prefecture Ordinance	Osaka Prefecture Ordinance (Abolished as of April 1, 2022)
Category	National law	Ordinance	Ordinance	Ordinance
Regulated material	Nitrogen oxide (NOx), particulate matter (PM)	Particulate matter (PM)	Nitrogen oxide (NOx), particulate matter (PM)	Nitrogen oxide (NOx), particulate matter (PM)
Contents of regulation	Prohibits registration of vehicles which do not conform with exhaust standards (vehicles do not pass ongoing vehicle inspections)	Prohibits driving of vehicles which do not conform with exhaust standards	Prohibits driving of vehicles which do not conform with exhaust standards	Prohibits driving of vehicles which do not conform with exhaust standards
Vehicles affected	Vehicles whose use is based in specified measure implementation areas	Diesel vehicles driving in the area covered by the ordinance	Diesel vehicles driving in the area covered by the ordinance	Vehicles which arrive at or depart from the restricted area (does not apply to vehicles passing through the area)
Vehicle models affected	Diesel passenger vehicles, trucks, buses, special purpose vehicles (not including light motor, special vehicles, and passenger vehicles which use gasoline or LPG as fuel)	Diesel vehicles with license plate numbers 1-, 2-, 4-, 6-, or 8- (except for passenger vehicles with 8- license plate numbers)	Vehicles with total weights of 8ton or more which cannot be registered due to their use being based in non-regulated areas specified by the Automobile NOx/PM Law (for buses, buses with capacities of 30 people or more)	All trucks, buses, and special vehicles other than passenger vehicles covered by the Automobile NOx/PM Law

(2) Appropriately maintained vehicle usage and appropriate fuel usage guidance

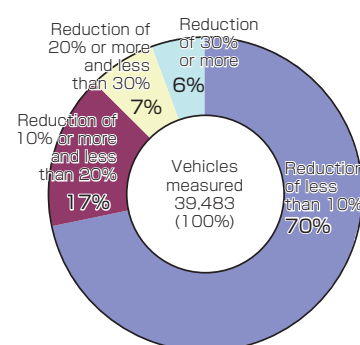
① Appropriately maintained vehicle usage

In order to reduce the environmental impact of vehicles, it is essential that they should be properly maintained and that they consistently maintain exhaust gas performance during operation. Insufficiently maintained vehicles emit greater amounts of NO_x and PM than properly maintained vehicles, creating major environmental problems.

A study of reductions in emissions of black smoke after maintenance on diesel vehicles brought in for maintenance found that 30% of all the vehicles examined are found reduced the black smoke concentration 10% or more. This confirmed that inspection and maintenance significantly reduces diesel black smoke emissions.

● Reduction in black smoke emissions as the result of inspection and maintenance / Number of vehicles brought in for maintenance in October 2014 (According to a study by the Japan Automobile Service Promotion Association)

	Vehicles Measured	Percentage
Reduction of less than 10%	27,745	70%
Reduction of 10% or more and less than 20%	6,973	17%
Reduction of 20% or more and less than 30%	2,575	7%
Reduction of 30% or more	2,190	6%
Total	39,483	100%



(Breakdown of reductions in black smoke emissions as the result of inspection and maintenance)

② Appropriate fuel usage guidance

Since FY2005 the MLIT has conducted street inspections to check fuel sulfur content. When incidents of use of illegal diesel fuel with high sulfur content are discovered, warnings or orders to switch to proper fuel are issued, with the goal of eliminating the use of illegal diesel fuel.

<Illegal diesel fuel>

Illegal diesel fuel refers to diesel fuel mixed with kerosene or fuel oil, and to manufactured diesel fuel which has been produced by adding sulfuric acid, etc. to fuel oil. Industrial waste such as sulfate pitch, which is discharged during the production of illegal diesel oil, is mostly disposed of by illegal dumping, creating environmental problems nationwide. Using illegal diesel fuel in diesel vehicles also increases the amount of air pollutants PM and NO_x in their exhaust.

An illegal diesel fuel which mixes diesel oil and A-type fuel oil equally increases diesel vehicle exhaust gas PM levels by 14 to 17% and NO_x levels by 7 to 8% in their exhaust gas.

● Illegally dumped sulfate pitch which has leaked out of its containers



3 Creation of a recycling-oriented society

(1) Creation of recyclable resource distribution systems

① Formation of a recyclable resource distribution system using sea transport

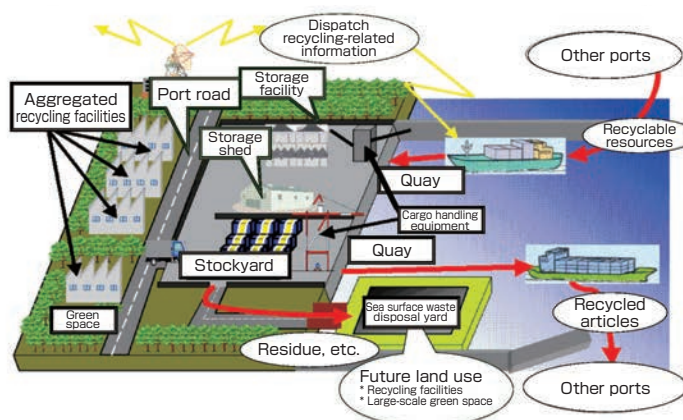
In order to create a recyclable resource cycle as part of the creation of a recycling-oriented society, 22 ports nationwide have been designated as Recycle Ports (integrated venous logistics ports), centers of wide-area circulation of recyclable resources. The MLIT provides the support necessary to improve port facilities such as shipment transfer, storage facilities, and other recyclable resource handling support facilities.

● Outline of the Recycle Port Policy

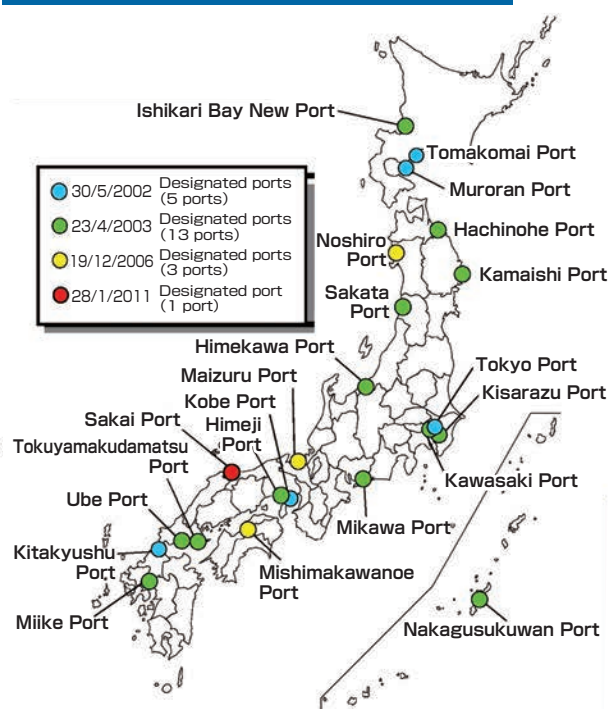
Recycle Port Policy

- Securing port facilities such as quays
- Providing support for the maintenance of shipment transfer and storage facilities, etc. (subsidized with subsidy rate of 1/3)
- Improvement of operations related to recyclable resource handling
- Promotion of coordination between the government and private sector (use of the Recycle Ports Promotion Council, etc.)

Recycle Port Image



Designated Recycle Ports (22 ports)



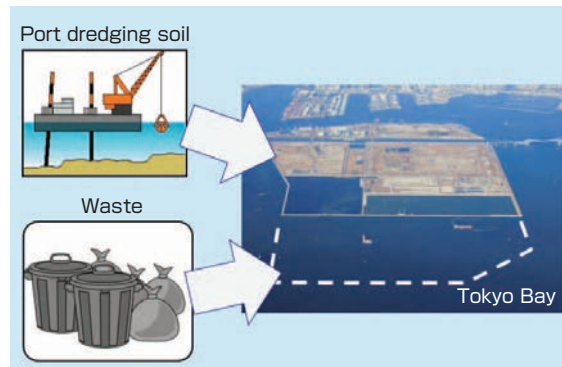
[Expected benefits] Support for the creation of a recycling-oriented society, reduction of environmental impacts, reduction of recycling costs, and vitalization of coastal area industry

Source: MLIT (Tentative translation by Eco-Mo Foundation)

② Systematic securing of sea surface waste disposal yards

In order to dispose of dredge soil from port improvement works and waste which is difficult to handle at the inland final disposal site, a systematic development of sea surface disposal yards is underway. In particular, at Osaka Bay, a wide-area disposal yards based on the Osaka Bay Phoenix Plan is being developed which enables the disposal of waste generated from the Osaka Bay area. In addition, construction-generated soil from the Tokyo Metropolitan Area is transported by sea based on the Super Phoenix Plan and is used on a wide scale as landfill material in ports and harbors nationwide.

● Promotion of planned improvement of sea surface waste disposal yards



Source: MLIT (Tentative translation by Eco-Mo Foundation)

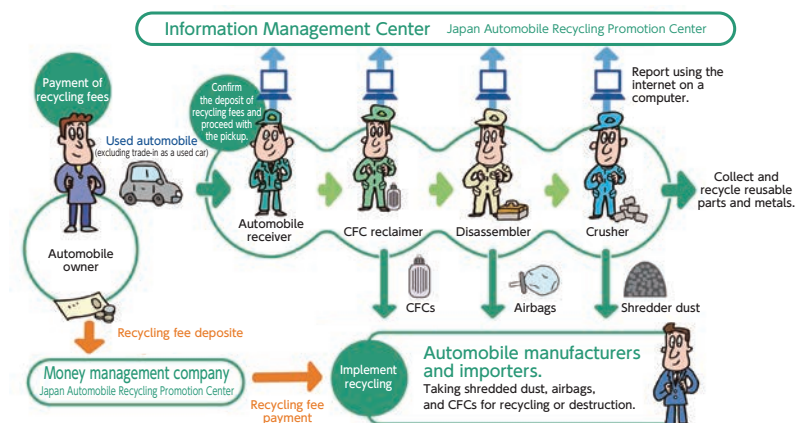
(2) Creation of vehicle recycling system

Every year between 3 and 4 million used vehicles are disposed of. Landfill space is running out, making it urgent to further increase the recycling rate, which is current roughly 80%. As of 2004, over 195,000 automobiles were improperly stored on roads, etc. each year. And over 20,000 automobiles were illegally dumped. These have a negative impact on living environments and the disposal involves tremendous social costs, making it urgent to implement countermeasures.

In response to this situation, the “Act on Recycling, etc. of End-of-Life Vehicles” was enacted in January 2005. This law mandated appropriate divisions of duties between the parties involved in end-of-life vehicle disposal, focusing on automobile manufacturers. At the same time revisions were made to the Road Transport Vehicles Act mandating that vehicle registration be deleted only after confirming that vehicles were disassembled as specified in the Act on Recycling, etc. of End-of-Life Vehicles, and a motor vehicle tonnage tax reimbursement system was instituted for end-of-life vehicles. The aims of these efforts were the promotion of appropriate processing of end-of-life vehicles and the prevention of illegal dumping.

As a result, a significant reduction has been achieved nationwide by the end of FY2022 in the numbers of improperly stored vehicles (4,021 vehicles; 97.9% decrease compared FY2004) and illegally abandoned vehicles (756 vehicles; 96.6% decrease compared to FY2004).

● Act on Recycling of End-of-Life Automobiles



Source: MLIT (Tentative translation by Eco-Mo Foundation)

(3) Ship recycling

Ship dismantling (ship recycling)*¹ is carried out primarily in developing countries such as India and Bangladesh, and the problems of occupational accidents and environmental pollution in this work are beginning to be acknowledged. In order to solve these problems on an international level, Japan, as a leading country of maritime trade and shipbuilding capabilities, led work on discussing within the International Maritime Organization (IMO) and drafting a treaty, and the “Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009” (also known as the “Ship Recycling Convention”) has been adopted.

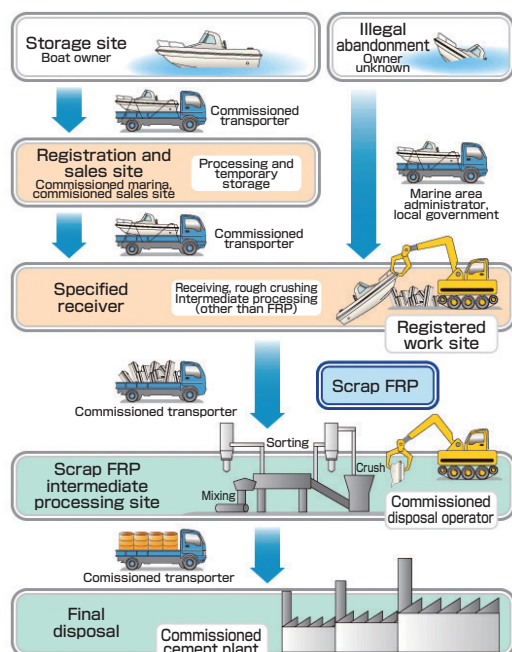
Early enactment of the Ship Recycling Convention not only ensures the safety of ship recycling facility workers and protects the environment but it is also important for the continuous development of the global maritime industry through smooth removal of old vessels from the market.

In March 2019, Japan ratified the Ship Recycling Convention and has been urging other countries to ratify it for its early entry into force. In April 2023, during a summit with Bangladesh, one of the largest ship dismantling countries, the need for early ratification of the convention was confirmed, and Japan expressed its intention to consider providing support to Bangladesh in the field of ship recycling. In response, the MLIT signed a memorandum of cooperation at the deputy ministerial level with the Ministry of Industry of Bangladesh. Subsequently, with Bangladesh and Liberia ratifying the convention in June 2023, the requirements for its entry into force were met, and as a result, the Ship Recycling Convention will come into effect on June 26, 2025. In response, to promote international cooperation for the smooth implementation of the treaty, Japan is providing technical cooperation to Bangladesh –including the dispatch of experts –through JICA. Additionally, within Japan, efforts will be made to ensure the effective enforcement of the Act Concerning the Proper Implementation of Recycling and Dismantling of Ships (Ship Recycling Act), which serves as the domestic law for the Ship Recycling Convention.

Meanwhile, as pleasure boat hulls are made of FRP (Fiber Reinforced Plastic), to ensure proper recycling of used FRP vessels, awareness of the “FRP Ship Recycling System” used by the Japan Marine Industry Association (JMIA) has been promoted through information and opinion exchange meetings at the District Transport Bureau, the Regional Development Bureau, and prefectural governments, which are held in each regional block.

* 1 Ships which have reached the end of their lifespans are disassembled and the majority of the ships’ materials are used for steel.

●FRP boat recycling system



令和6年度(期間:2024.4.1~2025.3.31)
FRP船リサイクルシステム(廃船処理)のご案内

不要になったFRP船の廃船処理は、ご相談・ご用命ください。

FRP船リサイクルシステムは適正処理でFRP船を再資源化
本システムでFRP材は、セメントの原料と燃料として活用されます。

◆処理できる船:FRP船、軽合金とFRPの複合船、FRPコーティングの木造船を本システムで処理します。
◆処理できない船:カーボン繊維使用艇、ケブラー繊維使用艇、ABS材使用艇は本システムの対象外です。
◆官公庁様へ:自ら廃棄するFRP船を排出する場合は、FRP船リサイクルセンターにて報告頂けますようお願い致します。

FRP船リサイクルシステムについてのQ&A

1.どこで相談・受付をしてくれるの？
A.下記マップの右にある対応で相談・受付します。
《相談・受付の場所》
① 各都道府県の環境部(局)に相談・受付します。
② 各都道府県の産業部(局)に相談・受付します。
③ 各都道府県の建設部(局)に相談・受付します。
④ 各都道府県の国土交通部(局)に相談・受付します。
⑤ 各都道府県の労働部(局)に相談・受付します。
⑥ 各都道府県の警察本部に相談・受付します。
⑦ 各都道府県の消防本部に相談・受付します。
⑧ 各都道府県の建設業協会に相談・受付します。
⑨ 各都道府県の船舶協会に相談・受付します。
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⑳ 各都道府県の漁業協会の漁船部に相談・受付します。

Source: Japan Marine Industry Association FRP Boat Recycling Center
(Tentative translation by Eco-MoFoundation)

4 Measures by local governments, companies, citizens' organizations, etc.

(1) Measures by local governments

Local governments are working on global warming countermeasures in the transport and traffic sectors according to their regional characteristics. Here we introduce the efforts of Utsunomiya City(510,000 inhabitants), Oyama City (170,000 inhabitants), and Shikaoi Town (5,000 inhabitants).

■ Utsunomiya City - Building a Compact City Centered Around Public Transport -

In Utsunomiya City, we are working toward realizing a town called “Super Smart City,” where everyone can live comfortably, conveniently, and securely and where dreams and hopes can come true. To achieve this, we are advancing the creation of a “Networked Compact City,” where a compact city serving as the “foundation” of the town is connected by public transport. Our goal is to transition from a society overly dependent on automobiles to one where public transport and automobiles coexist harmoniously, creating a transport environment centered around public transport that supports various activities in the city, ensures smooth coordination among the various centers, and enables everyone to actively engage in going out and interactions.

To this end, Utsunomiya City has been promoting the introduction of bus routes connecting various locations and intra-regional transportation systems that cover the entire area for daily transportation in order to build a hierarchical public transportation network, and has opened the Haga-Utsunomiya LRT “Light Line” in August 2023, which serves as a next-generation tram, forming a crucial part of the public transport network along with the north-south railway. Moreover, the Light Line operates as “Zero Carbon Transport,” running entirely on locally sourced renewable energy obtained from household waste incineration and solar power generation. Alongside initiatives such as introducing electric buses and electrifying local transport, Utsunomiya City is promoting the “decarbonization of public transport,” not only enhancing convenience but also prioritizing environmental friendliness.

Furthermore, we have established the route search system “Let's Ride! Navi,” which not only provides route information but also displays CO₂ emissions and calorie consumption when using public transport, thereby visualizing one's contribution to a decarbonized society and the health benefits that public transport offers to encourage the use of public transport. We are also conducting promotional activities to showcase the attractiveness of public transport.

● Station East Plaza and the Light Line



● Light Line



● Utsunomiya Light & Power Co., Inc.



● “Let's Ride! Navi” search screen



Oyama City

-A project on promoting the use of community buses-

The number of bus users in Oyama City, which used to be 13.33 million/year (FY1970) at its peak, dropped to 152,000/year (FY2007), and private bus companies withdrew from the business. Since then, Oyama City has been operating the city's only community bus service, the "O-Bus".

The city launched a project on promoting the use of "O-bus" in FY2018, and since then, it has undertaken a variety of initiatives to promote the use of this service. Below are three distinctive initiatives in this project.

The first was publication of "Bloom!", a lifestyle tabloid that proposes a life with buses. It was distributed three times to a total of 53,000 households in the city. They also included information on places that can be accessed by bus and articles describing how to live more comfortably by using buses for men and women of all ages. As a consequence, the impression of people that "it is lame to take buses" changed, and the number of opportunities for them to use buses increased.

The second, a new paper pass for commuters, "O-Bus noroca," was launched in October 2009. This commuter pass features a user-friendly name ("noro" means both "let's take a bus" and "running slow") and design in addition to a discount of 70% off the original price with unlimited-area ride by making it available for all lines.

In October 2020, a mobile pass for commuters "Smartphone de noroca" was launched, allowing customers to purchase and ride "O-Bus noroca" via a smartphone application LINE. Most recently, in February 2021, they started a LINE coupon service. Furthermore, they have conducted an experimental study on taxi vouchers that the clients can use by presenting "O-Bus noroca" and provided a service that the clients can receive discounts at commercial centers.

Third, they have put efforts into developing new routes, using larger buses, and increasing the number of services; Watarase line was newly introduced in March 2019, and in April 2020, Harvest Walk line was added and the number of services increased for the New Shimin Hospital line. In addition, a larger bus started running for Hanegawa line. In October, 2021, the number of services for Takadake line increased.

As a consequence of the above efforts, the system currently operates buses on 14 routes, covering 5 suburban-demand bus areas. The number of users increased from 367,000, approximately, in 2008 to 737,000 in FY2020, and reached 837,000 in FY2021.



The lifestyle tabloid "Bloom!" distributed to a total of 53,000 households in the city.



70% off the original price with unlimited-area ride
A commuter pass for buses "O-Bus noroca"



From the minimum service to the convenient service
Proactive introduction of new routes and increased operations

■ Shikaoi Town - EST Project Centered on Hydrogen Derived from Livestock Excreta

Shikaoi Town has been operating a centralized biogas plant since 2007 to address odor control in agriculture and ensure proper treatment of livestock excrement and urine, food waste, and sewage sludge. The plant produces digestate during the treatment process, which is then returned to the fields as environmentally friendly organic fertilizer, realizing a “local resource circulation-oriented agriculture.” Additionally, the town has been pioneering efforts in improving transport environment by not only effectively utilizing biogas generated from methane fermentation in power generation and heat but also by operating “biogas vehicles” that utilize biogas methane obtained during the purification process.

Furthermore, since 2015, Shikaoi Town has been establishing a mechanism for stable “production, transport, and usage” of hydrogen by operating FCEVs and FC forklifts, supplying hydrogen to pure hydrogen-type fuel cells, and other measures as an Ministry of the Environment demonstration project. Starting in 2022, the town and private companies have been cooperating to commercialize the hydrogen supply business. Presently, with the cooperation and support of local private businesses (JA, financial institutions, construction, transport, tourism, etc.) and residents, Shikaoi Town has introduced 22 FCEVs, including 10 municipal vehicles, into the municipality. Additionally, in October 2022, the town established the “Carbon-Free Vehicle Introduction and Promotion Subsidy System” targeting used FCEVs and is advancing efforts to address challenges in collaboration with automobile manufacturers to introduce FC buses and FC trucks.

Moreover, by utilizing unused idle land for the “Self-employed Line Microgrid Project,” Shikaoi Town operates CEMS to supply surplus solar power to EVs and PHEVs physically. Furthermore, it promotes the use of public bicycles, recommends walking and cycling to work, implements an eco-driving promotion project targeting all households, and conducts detailed environmental education. By taking advanced and comprehensive measures to address transport environment, Shikaoi Town pursues sustainability as the “Japan Geopark - Decarbonization Pioneer Region (selected in the first round).”

● Hokkaido's Only Fixed Hydrogen Station “Shikaoi Hydrogen Farm”



● Microgrid for Private Lines “Shikaoi Private Line Network”



(2) Measures by companies in the transport sector

①Aviation companies

The Scheduled Airlines Association of Japan, a Japanese association of air transport operators, has implemented environmental measures. Major measures are the following.

○Global warming prevention targets:

Goal: By FY2030, achieve the CO₂ emission intensity of 0.8054 kg-CO₂/RTK (Revenue Ton-Kilometer), representing a reduction of ▲22.2% compared to FY2013 and ▲15.4% compared to FY2019.

Actual Performance: In FY2023, the CO₂ emission intensity was 0.9478 kg-CO₂/RTK(Revenue Ton-Kilometer), representing a ▲8.4% reduction compared to FY2013 and a ▲0.4 % increase compared to FY2019.



Contents of major measures:

- Promoting the introduction (and renewal) of fuel-efficient equipment with better fuel efficiency.
- Improving aircraft operation methods through precise navigation and other means.
- Promoting the adoption of SAF and strengthening response to market mechanisms.
- Reducing weight onboard (lightening aircraft components, optimizing fuel load, etc.).
- Reducing the use of auxiliary power units while parked, improving performance through engine cleaning, and enhancing fuel efficiency.

○Support for the creation of a recycling-oriented society

Goal: Achieve a final disposal rate for industrial waste of 2.4% or less by the FY2025.

Actual performance: The final disposal rate for industrial waste in the FY2023 was 11.0%.

Contents of major measures:

- Promotion of sorting and collection for recycling, as well as encouraging reuse and repurposing.
- Reduction of plastic products and transition to environmentally friendly materials.

○Environmental awareness raising activities

- Strengthening the publication and dissemination of initiatives related to decarbonization and sustainability by member companies on the Association's dedicated sustainability website.
- Introduction of efforts toward climate change mitigation and achieving SDGs goals at the "Environmental Plaza Sapporo 2024" - a comprehensive environmental event where children, who will shape the future, can learn about the environment in an integrated and enjoyable manner.

② Railway companies

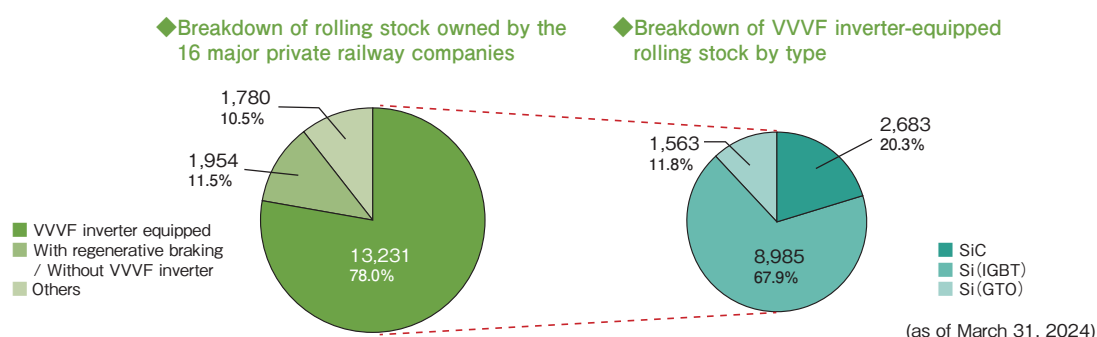
The Japan Private Railway Association, which is a group of railway operators has been involved in the “Carbon Neutral Action Plan” formulated by the Japan Business Federation to realize a carbon neutral society in the future, and the following efforts are being made mainly to achieve FY2030 target.

Target: 46% reduction in CO₂ emissions related to operational electricity for all major businesses in FY2030 compared to FY2013

Contents of major measures:

○Introduction of energy saving railcars

Energy-saving railcars are being introduced by equipping them with VVVF inverter control and regenerative brakes for more efficient use of electric power and by reducing the weight of the car body. Among these, the VVVF inverter using cutting-edge SiC (silicon carbide) semiconductors has been increasingly adopted by companies in recent years, as it significantly reduces power consumption.



○Effective use of renewable energy

Operation of trains with less CO₂ emission by using electricity from renewable energies that utilize Non-Fossil Fuel Certificate, etc., as well as regenerative electric power generated during braking.

○Optimization of vehicle operations

Measures are being taken to optimize train schedules and train operations through energy-saving operations by reducing train acceleration times, and by decentralizing demand.

③ Truck, bus, and taxi companies

Each industry associations have formulated voluntary action plans as environmental measures, striving to popularize green management certification and promote eco-driving, etc.

Japan Trucking Association

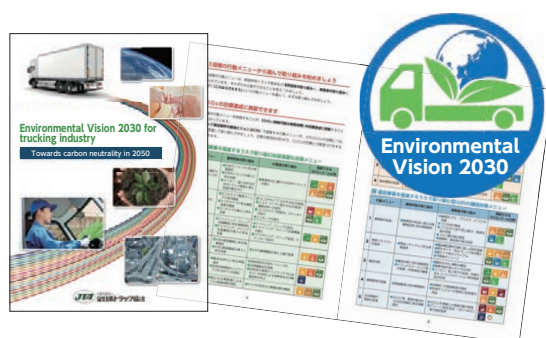
The Japan Trucking Association participates in the Japan Business Federation's "Carbon Neutral Action Plan (formerly the Low Carbon Society Action Plan)". They have set a goal of reducing commercial trucks' CO₂ emissions per ton-kilometer transport in FY2030 by 31% compared to FY2005 in terms of CO₂ emissions per unit of transport, and the entire industry is working on various measures to achieve this goal.

【Contents of major measures】

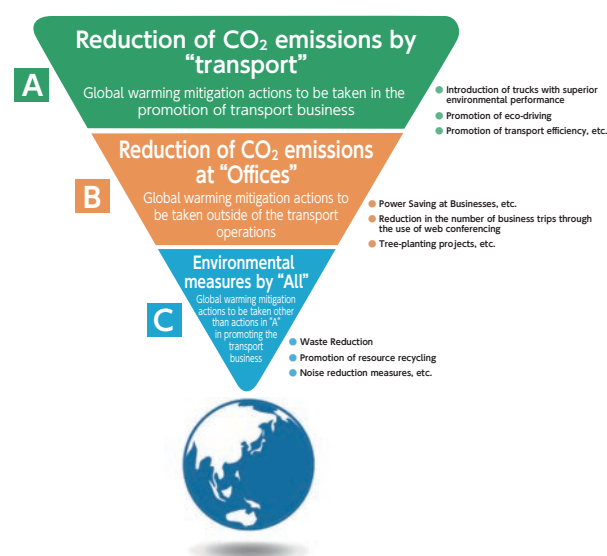
- ◆ Developing a new action plan for the trucking industry as a whole
 - The importance and urgency of measures to combat global warming are increasing due to the frequent occurrence of disasters around the world that are believed to be caused by climate change, and the trucking industry is required to be more proactive in its efforts to combat global warming. Thus, the "Environmental Vision 2030 for the Trucking Industry - Toward Carbon Neutrality in 2050" was formulated in March 2022 as an action plan to be undertaken by the Japan Trucking Association, prefectural trucking associations, and businesses as a whole. Efforts are progressing.

Environmental Vision 2030 for the Trucking Industry" formulated in March 2022.

Brochure and Symbols



A "three-step actions" to be undertaken by carriers



Main goal and three sub-goals

Main Target
Reduce CO₂ emission intensity of the trucking industry as a whole by 31% in 2030 compared to FY2005 levels

Sub-targets

- (1) For vehicles with a gross vehicle weight of 8 tons or less, the number of electric vehicles in the fleet in 2030 shall be 10%.
- (2) Aim for each business to understand the total CO₂ emissions or CO₂ emissions intensity of its own fleet
- (3) Establish an "Action Month" to be shared by all Japan Trucking Associations and all Prefectural Trucking Associations.

- ◆ Spread of trucks with great environmental performance and equipment that greatly improves fuel efficiency
 - To further promote the spread of environmentally friendly vehicles, such as natural gas trucks which are a promising alternative to petroleum in terms of energy security, hybrid trucks with excellent fuel efficiency, and electric trucks that do not emit CO₂ when they run, a portion of the price difference between the regular vehicle and these vehicles is subsidized.
 - Provide subsidies for air heaters and truck battery driven coolers which can be used when engines are stopped during truck driver breaks, when waiting for cargo to be loaded, etc.
 - Make environment-compatible trucks and energy-saving equipment eligible for modernization fund financing and subsidize high rates of interest compared to ordinary investment.

Eligibility for various subsidies



Electric truck



Large LNG truck



On-board battery-operated cooler

Environmentally-friendly vehicles



Small CNG truck



Small hybrid truck



Large CNG truck



Air heater

Idling-stop support apparatus

- ◆ Support for improvement of awareness about environmental measures and energy-saving
 - ・ Distribute manuals to promote eco-driving and provide support for operator and driver initiatives.
 - ・ Participate in “the Eco-Drive Activity Contest” held by the Eco-Mo Foundation and promote the acquisition of Green Management certification.
- ◆ Project to create “Truck Woods”
 - ・ With the aim of preventing global warming through cultivating trees, the association has been promoting its project to create “Truck Woods” since FY2003. Around one hectare of national forest field has been set aside as “Truck Woods” and the association planted trees in Gankai Park in Kumamoto City in FY2024 in a project to contribute society in which the association is involved in various activities in cooperation with local volunteers to protect the forests.
 - ・ In addition, the association is promoting projects to create independent “Truck Woods” in prefectural trucking associations and to spread this initiative nationwide.

〈FY2024 Project to create “Truck Woods” (Gankai Park, Minami-ku, Kumamoto City,)〉



■ Business Initiatives: Japan Logistics Co., Ltd.

Promoting activities that ensure “nothing is left unattended” through a unified approach between headquarters and field operations.

Japan Logistics Co., Ltd. has expanded its logistics network from the Kanto region to the Chubu and Kansai areas. The company supports Japanese industry through its high-quality 3PL services, developed through years of accumulated expertise, along with transport services that incorporate collaborative delivery systems and logistics center operations capable of handling a wide range of stored goods. Environmental measures are integrated through the combined use of “ISO 14001” certification and “Green Management Certification,” establishing a structure in which headquarters supports field operations—elevating these initiatives to a dynamic and impactful level.

○Promoting Environmental Activities Through Two Management Systems

Our company has obtained “ISO 14001” certification at our headquarters and “Green Management Certification” at our sales offices. By operating both systems concurrently, we are advancing our environmental efforts. In the early 21st century, as the logistics industry faced challenges from global warming and air pollution, we recognized the need to integrate environmental management systems into our operations. As a result, we obtained “ISO 14001” in 2003. At that time, the entire company aligned its practices with “ISO 14001” standards.

However, because operations at our truck-centered and warehouse-centered offices differ, we also adopted “Green Management Certification,” which allows for clearer activity goals tailored to each business type. Through dual implementation of these systems, we continue to strengthen our group’s management foundation.



Sales offices promote environmental activities based on “Green Management Certification”

○Essential “e-Learning” for Driver Education

The group’s environmental activities are overseen by the Quality Control Department, which supports and manages the sales offices. Each month, we hold logistics quality meetings where leaders of transport and warehouse operations gather to discuss not only environmental issues but also safety measures, transport quality improvements, and more. Information from these meetings is shared with sales offices and relayed to drivers and staff through internal meetings and discussions.

As our operations have diversified, it has become increasingly difficult to conduct company-wide training sessions. As a solution, we introduced an external “e-learning program” to educate drivers on safety and environmental topics. The flexibility of “e-learning” allows drivers to learn at their own pace. If a session is interrupted, drivers can resume later, enabling study during gaps in their schedules. This method also helps standardize instructional content. Participation in the “e-learning program” is mandatory for all drivers. Each subject includes a test designed to confirm understanding; a perfect score is required to proceed to the next module, ensuring foundational knowledge is thoroughly grasped.



Promoting safety and environmental education through “e-learning”

○Longstanding Efforts to Balance Environment and Safety

We have installed in-vehicle devices that integrate digital tachographs and drive recorders in all vehicles. These devices are connected to our core system, enabling constant monitoring by both sales offices and headquarters. When potential “danger” is identified, the responsible office manager is instructed to confirm the situation, check the facts with the driver, offer guidance, and report the outcome using a communication tool called the “2way sheet.” Though analog in nature, this long-standing tool remains effective in identifying and mitigating risk.

Additionally, the Quality Control Department and Safety Division conduct monthly inspections (one to two times per month) of each sales office, reviewing driver education, driving performance, fuel efficiency, and more. By managing these efforts centrally rather than delegating to branch offices, we have observed increased ownership among local managers and team leaders.



Enhancing skills through the “Skills Contest”

To further raise awareness and improve practical skills, we host an annual “Skills Contest” targeting drivers and forklift operators across the group. Contest categories are separated by vehicle type (large and medium trucks; counterbalance and reach forklifts) and include written tests, maintenance checks, and driving/operating demonstrations. Last year, 40 contestants were nominated by their offices. High performers received awards to boost motivation. Going forward, we plan to organize themed competitions for similar skill levels to encourage fair and focused improvement.

○Pursuing the Importance of Maintaining Fuel Efficiency

Seventeen years after acquiring “Green Management Certification,” year-over-year improvements in fuel efficiency have diminished. However, we see value in our ability to maintain high performance levels. We continue to pursue improvements—striving for gains even as small as 0.1 km/ℓ. Because fuel efficiency is affected by factors like vehicle load, region, and road conditions, we do not simply label underperformance as “bad.” Instead, we analyze the causes and emphasize the importance of sustaining efficiency over time.

We are also actively upgrading our fleet. Recently, we introduced small EV trucks. However, since our core fleet consists of large and medium trucks, widespread EV adoption is not yet feasible. For now, we plan to continue using the most environmentally efficient diesel vehicles on a shortened replacement cycle.

In alignment with our management policy to promote sustainability, we have also begun exploring the use of biofuels. Led by the Sustainability Promotion Department, we plan to begin pilot operations by FY2024.

○DX and Modal Shifting—Actions to Reduce Emissions

We have implemented a range of environmentally friendly measures that have been well accepted by our field staff. We believe this is due to strong top-level support—from leadership including the president—who emphasize the importance of environmental responsibility.

As a transport service provider, we operate on public roads, consume large volumes of fuel, and emit significant exhaust gases. Reducing these emissions is key to our environmental strategy. To achieve this, we collaborate with partner companies, develop efficient transport solutions, and promote digital transformation (DX) in our logistics. Additionally, we actively promote modal shifting to customers. Drawing on our long history with rail transport, we aim to propose shipping methods that offer environmental and operational benefits to our clients.

Company Overview:

Location: 5-11-3 Shimbashi, Minato-ku, Tokyo, Shimbashi Sumitomo Building

President & CEO: Hiroki Nakanishi

Established: October 1944

Capital: ¥3,146,000,000

Fleet Size: 228 vehicles (as of February 2024)

Number of Employees: 3,705 (as of September 2024)

Green Management Certification Registration: January 2007

- *Registered sales offices:* Sanko, Shinasu, Funabashi, Atsugi West, Yokohama, Nagoya, Ibaraki, Kashiwa, Oi
- *Registered truck operations offices:* Kawaguchi, Tokorozawa, Handa, Haneda, Shizuoka
- *Registered warehouse operations offices:* Shizuoka, Saitama, Tomei Atsugi, Ariake

■ Nihon Bus Association

- Bus business “Low Carbon Society Implementation Action Plan” -

Target:

○Cut CO₂ emission intensity in FY2030 by 6% in comparison to FY2015.

○Promote shift from use of private cars to buses.

Specific activity contents:

○CO₂ emission rates reduction measures

- Nationwide promotion of eco-driving

Member companies are striving to ensure drivers thoroughly engage in eco-driving, such as by stopping their engines when idle, and avoiding quick acceleration and quick braking. During Eco-Driving Promotion Month, of which the Nihon Bus Association is a leading advocate, the association takes even more intensive measures, such as carrying out checks of eco-driving implementation.

For buses, make efforts to proactively introduce equipment such as idling-stop vehicles and digital operation recorders that are effective in reducing CO₂ emissions.

- Promotion of introduction of high fuel efficiency buses

Toward Carbon Neutral 2050, utilize subsidy programs provided by the national government, local governments, and the Nihon Bus Association to actively promote the introduction of electric vehicles (EV buses, FCV buses, hybrid buses) and fuel-efficient vehicles, etc.

- Enforcement of detailed inspections and maintenance which help maintain fuel efficiency performance

○Measures for promoting shifting from use of private cars to buses

- Bus usage promotion

The association is implementing the following measures in order to improve omnibus convenience and promote bus usage.

◇Popularization of non-step buses and pleasant, comfortable buses

◇Promotion of installation and improvement of shared card systems and IC card systems

◇Popularization of information systems such as bus location systems

◇Active participation in regional measures such as Park & Bus Ride and omnibus town systems

◇Promote introduction of community buses

- Driving environment improvement

◇Issuing of requests to related organizations whenever possible regarding the creation of bus-only lanes and bus-priority lanes, bus-prioritizing traffic signals, the removal of illegally parked vehicles on streets used by buses, etc.

■ Japan Federation of Hire-Taxi Association

- Hire-taxi industry's a Low Carbon Society Implementation Action Plan (voluntary action plan) -

Target level:

○FY2020 target (total volume of emissions target)

Reduce CO₂ emissions by 20% in comparison to FY2010.

○FY2030 target (total volume of emissions target)

Reduce CO₂ emissions by 25% in comparison to FY2010.

Basis used to establish targets:

○FY2020 target

30% of taxis will consist of HVs, EVs, or other environmentally friendly vehicles. CO₂ emissions will be reduced by reducing fuel consumption through demand and supply optimization.

○FY2030 target

40% of taxis will consist of HVs, EVs, or other environmentally friendly vehicles. CO₂ emissions will be reduced by reducing fuel consumption through demand and supply optimization.

Specific plans:

○Global warming countermeasures

In order to achieve hire-taxi industry target levels, the following countermeasures will be promoted and the federation will coordinate and collaborate with national and local governments as necessary.

- Switchover to environmentally friendly taxi vehicles
 - ◇ By FY2020 30%, by FY2030 40% of taxis will consist of HVs, EVs, or other environmentally friendly vehicles, and the association will encourage automobile manufacturers to speedily launch HV vehicles which use LP gas.
- Optimization of the number of taxi vehicles
 - ◇ Based on the “Act on Special Measures Concerning the Rectification and Vitalization of the General Passenger Vehicle Transport Business in Specific Areas” , revised in November 2013, the Association is promoting the elimination and suspension of vehicles in order to eliminate excess supply.
- Taxi usage promotion
 - ◇ Promotion of universal driver training and cultivating high quality drivers.
 - ◇ Improve of user convenience and promotion of taxi usage by improving taxi stands and promotion of the deployment of advanced technologies such as smartphone-based technologies.
 - ◇ Expansion of shared taxi use and reduction of the amount of private car usage.
- Enrichment of and PR for sightseeing taxis
 - ◇ Enrichment and engagement of PR for sightseeing taxis in order to reduce the usage of private cars on freeways and at destinations, cut exhaust gas emissions, mitigate traffic congestion and parking space shortages, and reduce the number of traffic accidents.
 - ◇ Multilingual audio translation system and foreign language sheets which can be used by pointing at phrases are being prepared and supplied in order to enable taxi drivers to accommodate foreign travellers.
- Improvement of operation efficiency
 - ◇ Promotion of the use of GPS-AVM-based taxi assignment systems and advanced technologies such as smartphone-based technologies in order to improve operation efficiency and reduce exhaust gas emissions.
 - ◇ Requests to related organizations to establish and improve taxi pools in order to reduce the amount of unoccupied taxi operation.
- Implementation of eco-driving, and etc.
 - ◇ Ensuring thorough stopping of engines when vehicles are stopped, prevention of excess vehicle cooling and heating, and prevention of quick acceleration and braking.
 - ◇ Engines are to be stopped when drivers are taking rests, naps, and washing vehicles.
 - ◇ Green management is being promoted through measures such as expanding the number of operators with green management certification.
 - ◇ Promotion of the stopping of engines when vehicles are stopped and the deployment of EMS (digital tachographs) in order to support eco-driving.
- Office and business site measures
 - ◇ Air conditioner thermostats in offices and business site are set to 28 degrees or higher during the summer and 20 degrees or lower during the winter.
 - ◇ Training regarding environmental measures and fuel efficiency improvements are provided to mechanics and drivers through maintenance managers and driving managers.
- Improvement of environmental issue related implementation systems
 - ◇ Environmental measure related policies such as carbon offset policies are considered by committees such as technical and environmental committees.
- PR regarding global warming countermeasures

- ◇ Encouraged use of websites, posters, stickers applied to taxis, and other means to publicize the taxi industry's efforts to reduce CO₂ emissions and increase awareness among the general public regarding the prevention of global warming.

○ Creation of a recycling-oriented economic society

Disposable economic society will be reevaluated from the position of effective resource utilization, and hire-taxi operators will do their utmost to achieve the following, in order to systematically reduce waste production, and to recycle resources.

- ELVs (End-of-Life Vehicles) will be processed appropriately in accordance with the Act on Recycling, etc. of End-of-Life Vehicles.
- End-of-life tires, etc. will be appropriately processed as industrial waste.
- Recycling will be promoted through measures such as the proactive purchasing of recycled products.

④ Warehouse companies

The Japan Association of Refrigerated Warehouses is continuing its efforts to reduce "CO₂ emissions and energy usage" through measures such as: ① Promote the introduction of energy-saving equipment that does not use CFCs by actively utilizing the project for promoting the de-CFC and decarbonization of refrigeration equipment that supports the cold chain (one-third of the project cost subsidy, etc.) ② Carrying out "Energy usage fact-finding studies" and "Coolant studies" to collect basic data related to CO₂ emissions reductions ③ Hold "Training Course for Experts in Handling Refrigerants and CFCs" to develop human resources with knowledge for proper management of CFCs, and ④ Promoting the acquisition of Green Management certifications (subsidizing part of the cost of acquiring new Green Management certifications).

(3) Measures by citizens' organizations

The expansion of lifestyles which are dependent on the use of private cars has resulted in chronic traffic congestion and the waning of public transport. In order to create a shift from the use of private cars to public transport, Car-free Day are taking place.

Every year cities around the world take part in Mobility Week & Car-free Day (September 16 to September 22), initiatives in which residents refrain from using their own personal vehicles in central city areas and consider the issues of traffic and its effects on the environment, and urban life and how to best use vehicles. This transport policy and event, which started in Europe, have now become a global environmental and transport event with about 3,000 cities around the world, linked by a common objective and working at the same time. In 2024, the event was held in eight locations in Japan (Suginami-ku, Tokyo; Zushi City*; Kanazawa City; Fukui City*; Toyohashi City; Hino-machi, Shiga; Osaka City*; and Fukuyama City*).

* Citizen group-sponsored; Those unmarked are local government-sponsored. Secretariat : (GIA) Car Free Day Japan

In addition, the “Kumamoto Prefecture All Citizen Stop Warming Movement Meeting” is a prefectural citizen’s movement started in August 2008 for reviewing lifestyles and corporate activities so that each citizen can completely eliminate the waste of energy and the efforts to reduce greenhouse gases can be progressed further. Based on the fact that automobiles are the main means of transport in areas outside the central zone of Kumamoto Prefecture, the concept of eco-driving was put in the spotlight.

Specifically, eco-driving diagnoses via safe driving eco-driving support systems that use GPS receivers are being actively promoted in collaboration with Kumamoto Prefecture. These are devices for managing drivers, rather than just cars, and diagnoses are possible even if the vehicle driven is different - if it is for example a company car or a private vehicle. Offices purchase the devices and lend them out to participants to conduct eco-driving diagnosis relays with all citizens.

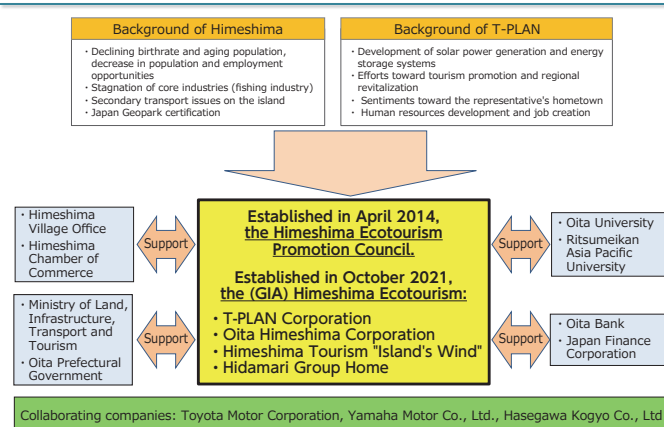
Additionally, (GIA) Himeshima Ecotourism, located in Himeshima Village in Seto Inland Sea, which is in the eastern part of Oita Prefecture, offers rental cars for tourists, including green slow mobility options, as part of decarbonized tourism mobility. Established in April 2014, the Himeshima Ecotourism Promotion Council (the predecessor of the current nonprofit organization) aims to promote regional development through tourism utilizing electric mobility while protecting the abundant natural environment of Himeshima. Their activities began with the provision of secondary transport for tourists on the island to alleviate inconvenience and create new attractions for tourism through the use of electric mobility.

Starting in 2018, they introduced solar power generation and storage system called the “Blue Sky Outlet,” initiating efforts to use only renewable energy for the electric power that drives rental cars. This initiative, named the “Himeshima Model,” aims to advance as a model for utilizing energy and mobility for the future, with the goal of expanding to remote islands and mountainous areas facing similar challenges.

●“The Blue Sky Outlet” and electric mobility



(GIA) Himeshima Ecotourism



Nationwide Bus Map Summit (Bus map creation initiative by citizens)

The Nationwide Bus Map Summit is held once a year by the Nationwide Bus Map Summit Planning Committee, which is composed of citizens' organizations and other bus map creating organizations. Approximately 100 people from across Japan participate.

In 2024, two events were held –one in Edogawa and another in Fukui. Additionally, based on discussions during weekly Zoom meetings, the “Bus Map Handbook” was published and distributed by the specified non-profit organization RACDA. At the Fukui event, this handbook served as a key topic, sparking discussion not only about trains and buses but also about the broader landscape of transport information.

●List of citizen's organizations in the Nationwide Bus Map Summit Planning Committee

Region	Name	Bus Map, etc.
Sapporo	Yourun NPO Inc.	Sapporo Super Convenient Bus Map Hakodate Super Cool Bus Map Iwamizawa Super Rice Bus Map
Hirosaki	H・O・T Managers	“Hotto” informational magazine
Sendai	Community Development Policy Forum	100 Yen Pakku Map
Tokyo (Metropolitan Area)	YUKAI 3-chome RACUMobi	Bus Service Map
Niigata	Niigata Environment and Transport Research Society	Niigata City Transport Map
Fukui	ROBA (Fukui Tram and Machizukuri Association NPO Inc.)	Fukui Norinori Map BUS-DENSYA-NET FUKUI
3 Tokai Prefectures (Aichi, Gifu, Mie)	Public Transport Machizukuri Promotion Network	Rosenzu.com Gifu City Bus Map, etc.
Matsue	Project UI NPO Inc.	Docodemo Bus Net Docodemo Bus Book Docodemo Bus Map Sugoroku
Okayama	Rail transport system Amenity Community Design Association (RACDA) NPO Inc.	Bokke Convenient Bus Map Bisan Seto Access Map
Hiroshima	Hiroshima BRT Research Society	Bus Supermap
Okinawa	Bus Map Okinawa	Bus Map Okinawa

Source: The Nationwide Bus Map Summit website (Tentative translation by Eco-Mo Foundation)

●Bus maps example

Docodemo Bus Book



Fukui Norinori Map



Source: NPO Project YUAI, ROBA (NPO Fukui Streetcar and Town Development Association)

(4) Measures by the Eco-Mo Foundation

① Implementation of the transport business Green Management (low environmental impact business management) Certification System

The Green Management Certification System, which objectively certifies the efforts of companies to make environmental improvements, strives to encourage companies to engage in environmental efforts, and contributes to reductions in the environmental impact of industry by fostering understanding and cooperation of certified companies, among society, or users. The system, with the Eco-Mo Foundation as its certifying body, certifies and register transport operators whose environmental activities meet or exceed levels defined in the Green Management Promotion Manual*. The system was launched for the truck industry in October 2003, for the bus and taxi industry in April 2004, and for the passenger ship, coastal shipping, port transport, and warehouse companies in July 2005. By the end of 2024, the number of certified and registered operators reached 3,050 at 6,058 business sites. The Eco-Mo Foundation announces these operators as “environmentally friendly transport operators” on its website, and also makes a monthly press release on the new registrations to newspapers. In addition, the number of vehicles owned by certified and registered operators of trucks, buses and cabs accounts for 10.1% to 14.6% of the total number of vehicles owned by operators nationwide in Japan.

※ The Green Management Promotion Manual contains specific measures for individual environmental conservation items, based on the concepts of ISO14031 (an international standard for environmental performance evaluation). They make it easy to establish targets and carry out evaluations, which in turn make it easy to implement environmental management on an ongoing basis.

● Number of vehicles owned

	Certified Companies as of December 31, 2024	Vehicles owned by all companies	Percentage Owned by Certified Companies	Notes
Trucks	132,974	1,323,065 (Note 1)	10.1%	(Note 1): The number of vehicles owned as of the end of March 2023. Source: “The number of vehicles owned based on data from the MLIT’s Motor Vehicle Bureau” (published by the Automobile Inspection and Registration Information Association). Figures include the number of trucks for business use (excluding trailers) and special purpose vehicles for business use, and do not include the number of registered light freight vehicles.
Buses	12,668	106,453 (Note 2)	11.9%	(Note 2): The number of vehicles owned as of the end of March 2023. Source: “The number of vehicles owned based on data from the MLIT’s Motor Vehicle Bureau” (published by the Automobile Inspection and Registration Information Association).
Taxis	25,346	173,041 (Note 3)	14.6%	(Note 3): The number of corporate taxi vehicles as of the end of March 2023, excluding vehicles dedicated to welfare transport. Source: “Taxi Today in Japan 2023” (published by the Japan Federation of Hire-Taxi Associations).

■The effects of obtaining the Green Management Certification (2022 Edition)

A quantitative evaluation of the effects of obtaining Green Management Certification revealed that, within two years of certification, improvements in fuel efficiency were observed among truck, bus, and taxi operators. In addition, reductions in CO₂ emissions per unit of activity were noted among warehouse operators, port transport services, passenger ship operators, and domestic maritime transport providers. Other positive outcomes included fewer traffic accidents and vehicle breakdowns, demonstrating a wide range of benefits.

○Improvement in fuel efficiency and reduction in the number of traffic accidents and vehicle breakdowns among truck, bus, and taxi operators

Two years after obtaining the certification, the average fuel efficiency of truck, bus, and taxi operators showed improvements compared to that at the time of certification. For trucks with a total vehicle weight of over 8 tons, there was a 3.1% improvement, and for those under 8 tons, a 3.1% improvement. Buses showed a 2.5% improvement, whereas taxis showed a 1.6% increase. Furthermore, in the first year after certification, the number of traffic accidents per distance traveled decreased by 25.9% for trucks, 20.5% for buses, and 7.0% for taxis compared to the previous year. Additionally, the number of vehicle breakdowns per distance traveled decreased by 20.9% for trucks, 4.0% for buses, and 15.9% for taxis compared to the previous year.

○Improvement in CO₂ emissions from warehouse, port transport, passenger ships, and inland shipping operators

In warehouse and port transport businesses, the CO₂ emission intensity improved by 3.6% for regular warehouses and 3.3% for refrigerated warehouses after two years of certification. For port transport, there was a 5.9% improvement per ton handled and a 11.0% improvement per container handled.

For passenger ships and inland shipping operators, the CO₂ emission intensity improved by 3.3% for passenger ships, 4.4% for inland shipping, and 1.3% for tugboats after two years of certification.

○Other secondary effects

Furthermore, it was found that certified businesses experienced various benefits such as “improvement in workplace morale and motivation,” “enhanced customer feedback and preferential treatment from clients,” and “development of leadership talent.”

■Evaluations of Green Management Certification

The results of various green management efforts have been tested and verified, and this certification system has come to be evaluated highly, even being included as an element in government measures.

○Freight owner considerations required by notices based on the revised Energy Saving Act

One of the energy saving measures required of freight owners under the revised Energy Saving Act (enacted in December 2018) is the “selection of environmentally-friendly freight carriers (carriers who have obtained ISO14001 or green management certifications)” .

○Addition of transport and delivery, chartered buses, and taxis to the procurement items specified in the Act on Promoting Green Purchasing

The FY2007 basic policy on the Act on Promoting Green Purchasing (Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities) was approved by the Cabinet on February 2, 2007. It added 【transport and delivery】* to the list of specified procurement items. The FY2008 basic policy was approved by the Cabinet on February 5, 2008, and added 【chartered buses and taxis】 to the list. The decision criteria are the “neutral evaluation by a third party” of measures such as “implementing measures for promoting eco-driving” . In general, this corresponds with green management certified companies.

※ Transport and delivery operations within green procurement scope: Domestic correspondence, parcel delivery, parcel post, mail express

○Expressly written in the “Guidelines for the Selection and Use of Chartered Buses in Order to Ensure Transport Safety”

【Published: June 29, 2012】

The MLIT has formulated and issued guidelines which clearly explain the key points involved when travel companies, local governments, educational institutions, etc. select and use chartered bus operators.

These guidelines clearly specify “green management certification” as one of the “evaluation items and evaluation elements involved in comprehensive evaluation” indicated in the guidelines’ “key points regarding the selection of chartered bus operators” and “key points regarding bidding, etc., for chartered bus procurement”.

○Expressly written in the “Community Bus Deployment Guidelines” as specified in the notice regarding the revision of the Road Transport Act

【Notice: MLIT Notice 633, April 10, 2013 “Concerning the Approach of the MLIT to Local Public Transport Councils”】

The notice clearly states that the perspective of “environmentally consciousness” is to be included by cities, towns, or villages, etc. when selecting community bus operators, and specifies “acquisition of Eco-Mo Foundation Green Management Certification or ISO14001 certification” as a means of evaluating this environmental consciousness.

○Relaxation requirements for Superior Hybrid Vehicles and CNG Vehicles deployment subsidy systems

In order to promote the greater use of low-emission vehicles, the MLIT provides systems for partial subsidization of the difference in prices between low-emission vehicles and standard vehicles. Subsidy requirements such as fleet size limitations are relaxed for truck transport operators who have received the Green Management Certification.

○Certification acquisition subsidy systems

Local governments:

9 organizations (Hitachi City, Ibaraki Prefecture; Tokyo; Sumida-ku, Tokyo; Nerima-ku, Tokyo; Katsushika-ku, Tokyo; Yokohama City, Kanagawa Prefecture; Shiojiri City, Nagano Prefecture; Himeji City, Hyogo Prefecture; Saga City, Saga Prefecture)

Industry groups

34 prefectural Trucking Associations

(Hokkaido, Aomori Prefecture, Iwate Prefecture, Miyagi Prefecture, Fukushima Prefecture, Ibaraki Prefecture, Tochigi Prefecture, Gunma Prefecture, Saitama Prefecture, Chiba Prefecture, Tokyo Metropolis, Kanagawa Prefecture, Niigata Prefecture, Nagano Prefecture, Fukui Prefecture, Gifu Prefecture, Aichi Prefecture, Mie Prefecture, Shiga Prefecture, Osaka Prefecture, Hyogo Prefecture, Nara Prefecture, Wakayama Prefecture, Tottori Prefecture, Okayama Prefecture, Hiroshima Prefecture, Tokushima Prefecture, Kagawa Prefecture, Kochi Prefecture, Nagasaki Prefecture, Kumamoto Prefecture, Oita Prefecture, Miyazaki Prefecture, Kagoshima Prefecture)

②Implementation of the Excellent Eco-Commuting Business Site Certification System

The Excellent Eco-Commuting Business Site Certification System has been implemented since June 2009 to certify business sites which actively promote eco-commuting, widely sharing information on their efforts in order to promote greater adoption of eco-commuting.

The “Conference on Promotion of Public Transport”, consisting of various transport operator organizations, economic organizations, related government bureaus, and other organizations, acts as its certification body. MLIT’s Policy Bureau Regional Transport Division and the Eco-Mo Foundation jointly operate the certification system as the secretariat. By the end of December 2024, 858 business sites have been certified and registered.

Certified establishments that have made particularly outstanding efforts may be recommended for the Minister of Land, Infrastructure, Transport and Tourism Award.

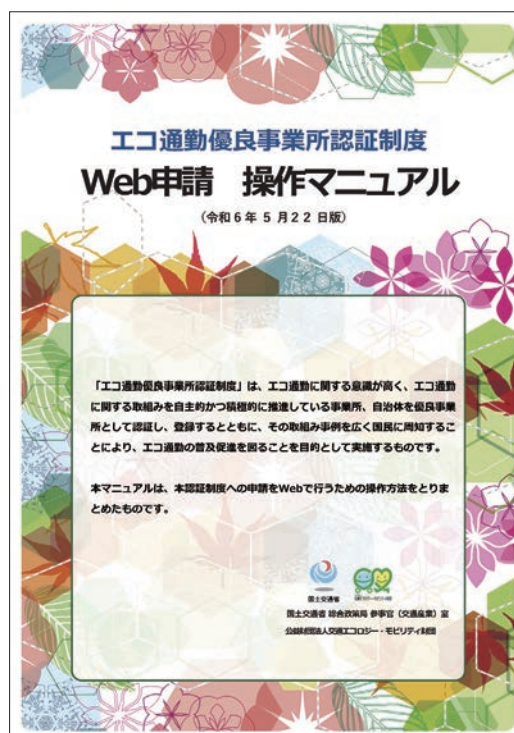
Since FY2017, the Eco-Mo Foundation have been reviewing its promotional strategy, advancing the updating or creation of tools, and in FY2024, the Eco-Mo Foundation developed internal tools to support in-house awareness and education. Additionally, to enhance convenience for registered operators, the Eco-Mo Foundation launched an online application system.

●Promotional enhancement tool (poster) image



●Start of online application

●Online Application Manual



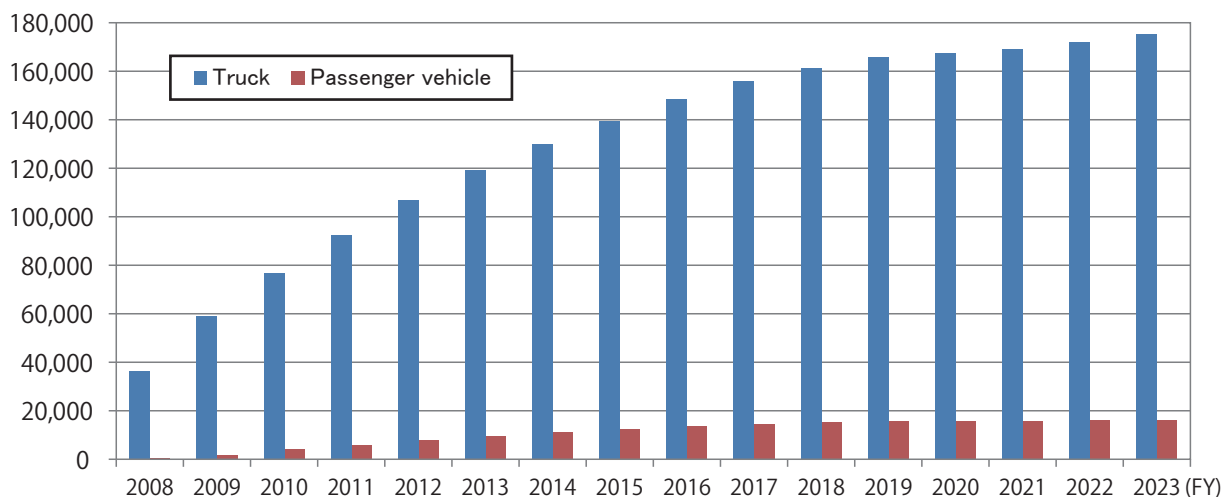
③Promotion of eco-driving

The Eco-Mo Foundation acts as the secretariat of the Eco-Drive Promotion Implementation Council (consisting of 16 transport related organizations) as well as conducting activities in order to promote the spread of diverse eco-driving independently.

Since April 2007 it has offered truck eco-driving training certification, and then passenger vehicle eco-driving training certification from September 2008, and presents attendants who have successfully completed training at certified organizations with completion certificates.

Since FY2011, the “Eco-Driving Activity Contest” has been held under the auspices of the Eco-Drive Promotion Liaison Committee (National Police Agency, Ministry of Economy, Trade and Industry, Ministry of Land, Infrastructure, Transport and Tourism, and Ministry of the Environment) and the Eco-Driving Promotion Council, with the “Minister of Land, Infrastructure, Transport and Tourism Award” (business category) and the “Minister of the Environment Award” (general category) being given since FY2014. The award ceremony for the top winners for FY2024 was held on November 22 during the “Eco-Driving Symposium FY2024”.

●Accumulated number of completed certificates issued



●FY2024 Eco-Drive Activity Contest award ceremony



●Contest Flyer



④Promotion of Environmentally Sustainable Transport (EST)

The OECD has proposed Environmentally Sustainable Transport (EST) (see page 43), and organizations such as Japan's MLIT have implemented EST model projects. In order to achieve greater use of EST by local governments and transport operators, since FY2006 the Eco-Mo Foundation has worked with academic experts, related groups, EST related ministries and agencies, and other organizations to promote EST.

The 14th EST Transport Environmental Awards, which commends outstanding efforts in regional transport environmental initiatives, was conducted. Ise Regional Public Transport Council were awarded the Minister of Land, Infrastructure, Transport and Tourism Award, and (GIA) Rikuzen Takata Green Slow Mobility and Rikuzen Takata City received the Environment Minister's Award. In May, a symposium (the 14th EST Promotion Forum) was held in Tokyo, which also served as the award ceremony. Additionally, seminars (EST Creation Seminars) targeting municipalities and transport operators were held online and in person in collaboration with regional transport bureaus in Rikuzentakata City, Iwate Prefecture.

In addition, information was provided through the EST portal site (<https://www.estfukyu.jp/>) and newsletter.

●Results of the 14th EST Transport Environmental Awards

Awards	Awarded Organization	The main initiative
Grand Prize	【MLIT Award】 Oise Regional Public Transport Council (Ise City, Mie Prefecture)	Operation of electric buses powered by renewable energy and promotion of public transport use
Grand Prize	【MOE Award】 O(GIA) Rikuzen Takata Green Slow Mobility and Rikuzen Takata City (Rikuzentakata City, Iwate Prefecture)	Achieving decarbonization and addressing regional issues through Green Slow Mobility
Excellent Award	ODaiichi Kotsu Sangyo Co., Ltd. (Nationwide)	Nationwide Taxi EV Conversion Project
Encouragement Award	OUrban and Social Systems Engineering Laboratory of Yamaguchi University, Ube City Public Transport Council and Yamaguchi City (Yamaguchi City, Yamaguchi Prefecture)	Public transport board game "YAMAGUCHI"

●Okage Bus Circular Route Connecting Radial Routes from the Central Station (Ise Regional Public Transport Council)



●Green Slow Mobility Powered by Renewable Energy ((GIA) Rikuzen Takata Green Slow Mobility and Rikuzen Takata City)



⑤Promotion of mobility management education (Transport Environment Education)

In order to promote mobility management education (transport environment learning), this project supports local governments and elementary, junior high, and high schools in creating the basis for continuous implementation, preparing and distributing educational declarations and case studies that serve as guidelines, and distributing an e-mail magazine.

In 2024, the Eco-Mo Foundation updated its portal site with revised data to aid in lesson planning and reorganized the content for easier access to practical examples and survey results from municipalities, schools, and educators the Eco-Mo Foundation have supported to date.

As part of its municipal support efforts, the Eco-Mo Foundation launched a new initiative in Nanjo City, Okinawa Prefecture, after a competitive review process. Alongside practical work in schools, the Eco-Mo Foundation also visited Sapporo City—which has long been active in this field—to exchange ideas on sustaining activities, expanding programs to more schools, and improving teaching materials.

Regarding teacher support, the Eco-Mo Foundation selected 17 elementary, junior high, and high schools for assistance following a competitive application and committee review.

Furthermore, the Eco-Mo Foundation continued its SDGs learning and career education programs, which began in 2023. In 2024, the Eco-Mo Foundation welcomed approximately 330 students from 37 schools nationwide, providing instruction on environmentally conscious practices and creating inclusive, accessible mobility environments for all.



Mobility Management Education Portal Site (<https://mm-education.jp/>)



⑥Exploring a Slow Mobility Society

The Eco-Mo Foundation is conducting research aimed at realizing a slow mobility society—one in which transport modes can coexist with both pedestrians and conventional vehicles, particularly in regions with limited access to public transport and in tourist destinations.

In 2024, the Eco-Mo Foundation continued trial runs and demonstration studies of green slow mobility solutions, primarily on remote islands. Additionally, in the Hoyoshi area of Matsue City, Shimane Prefecture, test rides and monitoring-based demonstration trials were conducted using single-passenger mobility scooters (maximum speed: 15 km/h) within residential neighborhoods and similar areas.

●The Eco-Mo Foundation conducts test runs and demonstration surveys for green slow mobility in remote island areas.

FY	Test run and demonstration areas
2022	Toshi Island (Toba City, Mie Prefecture) Sagi Island (Mihara City, Hiroshima Prefecture)
2023	Saku Island (Nishio City, Aichi Prefecture) Ibuki Island (Kanonji City, Kagawa Prefecture) Amami Oshima (Amami City, Kagoshima Prefecture) Shodoshima Island (Shodoshima Town, Kagawa Prefecture) Okinoerabu Island (China Town, Kagoshima Prefecture) Itsukushima (Miyajima) (Hatsukaichi City, Hiroshima Prefecture)
2024	Saku Island (Nishio City, Aichi Prefecture) Hotojima (Tsukumi City, Oita Prefecture)

●Green Slow Mobility Demonstration on a Remote Island (Saku Island, Nishio City)



●Mobility Scooter Demonstration (Hokki Area, Matsue City)



IV. Measures in Response to Other Environmental Issues

1 Noise related measures

(1) Automobile noise countermeasures

A study of automobile noise environmental standard compliance status conducted in FY2022 found that of the approximately 9,378,600 homes studied, approximately 479,800 (5.1%) homes had automobile noise levels which exceeded environmental standards either during the day (6:00 a.m. to 10:00 p.m.), at night (10:00 p.m. to 6:00 a.m.), or both. Approximately 231,100 homes (2.5%) exceeded environmental noise standards both during the day and at night.

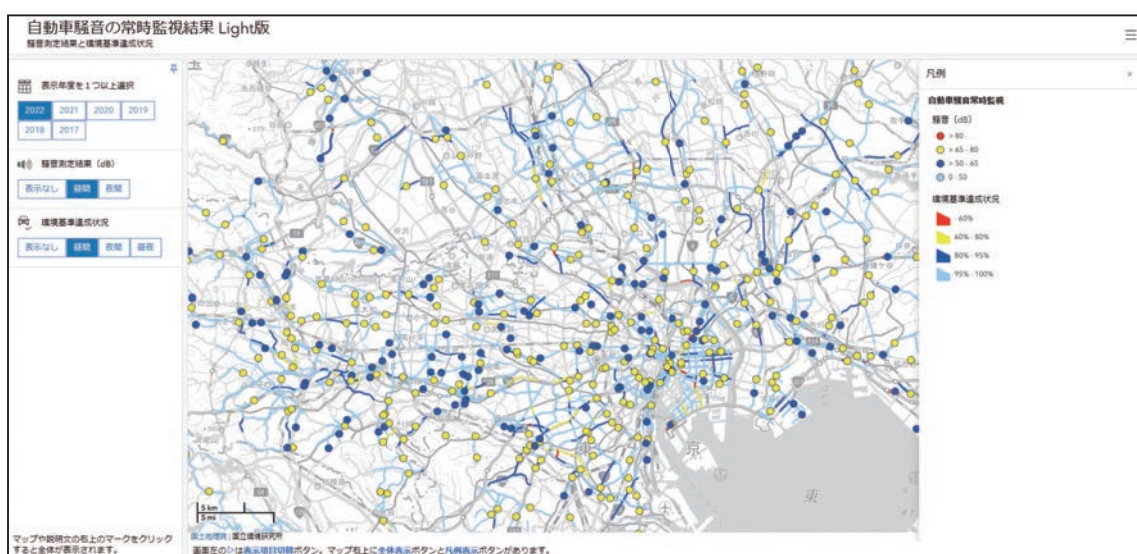
Of the approximately 4,020,800 homes in areas along major arterial roads, approximately 330,300 (8.2%) homes exceeded environmental noise standards during the day, at night, or both. Of those, approximately 157,500 (3.9%) homes exceeded environmental noise standards both during the day and at night.

Changes in the compliance of environmental noise standards must take into consideration changes in the homes investigated each year, but within the reported scope there appears to have been a gradual improvement over time.

Broken down by road type, the largest share of homes in areas exceeding environmental noise standards either during the day, at night, or both were located near urban expressways. Of the approximately 106,100 homes located in these areas, approximately 19,600 homes (18.4%) exceeded environmental noise standards. (Source: Ministry of the Environment “Automobile Transport Noise in FY2022”)

This information is provided together with corresponding maps on the Nationwide Automobile Noise Map (Environmental GIS Automobile Noise Survey Report) website, operated by the National Institute for Environmental Studies (NIES).

● Nationwide Automobile Noise Map



Source: NIES

(2) Railway noise countermeasures

Regarding noise from Shinkansen, the government is taking a comprehensive approach to ensure compliance with environmental standards by promoting such as source-based noise control measures and land-use planning in surrounding areas. In terms of source-based efforts, based on “Environmental Quality Standards for Shinkansen Superexpress Railway Noise” that was announced by the Environment Agency in 1975, countermeasures such as setting up and raising height of soundproof walls, are continued to be promoted. Further, regarding noise from conventional railway lines, based on the “Noise Countermeasure Guidelines Regarding the New Construction or Large-Scale Improvement of Conventional Railway Lines” that was published by the Environment Agency in 1995, countermeasures such as the use of long rails are continued to be promoted to meet the Guidelines.

(3) Aircraft noise countermeasures

Aircraft noise countermeasures in Japan can be broadly categorized into source control, improvement of the airport structure and environmental measures in areas surrounding airports. Combinations of these measures are being implemented in a balanced way according to the characteristics of each airport.

Regarding the source control, there are such measures as noise reduction

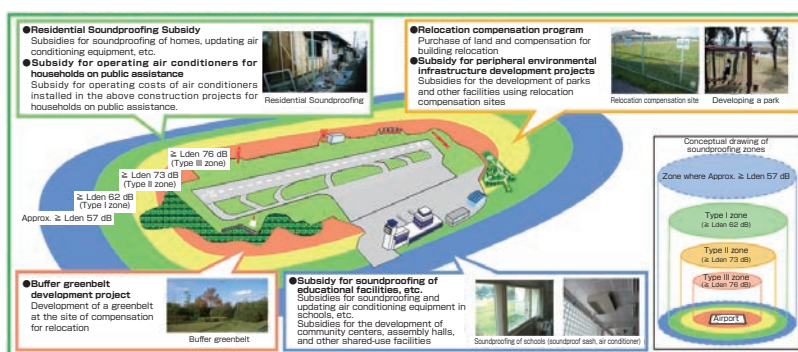
of aircrafts, improvement in the operation method and restrictions on departures and landings. As a result of advancements in noise reduction technology, the latest aircrafts can achieve an approximately 30dB noise level reduction in comparison to aircrafts 50 years ago.

As for improvement of the airport structure, efforts are being made to open offshore airports where the effects of noise are minimal, as well as to install sound-insulating walls.

With regard to environmental measures in areas surrounding airports, based on the Act on Prevention of Damage Caused by Aircraft Noise in Areas Around Airports (Act No. 110 of 1967), subsidies for noise prevention works in residences and schools are being granted and development of green belts, etc. is being carried out.

The Eco-Airport Guidelines were established in order to assist with environmental protection and creation for airports and their surrounding communities. Based on these guidelines, eco-airport design is being implemented in airports through measures such as the creation of environmental plans for airports and their surrounding areas, and through support for the installation of Ground Power Units (GPUs).

● Airport Periphery Environmental Management Project – General drawing



Source: MLIT (Tentative translation by Eco-Mo Foundation)

2 Sea pollution countermeasures

(1) Large scale oil spill countermeasures

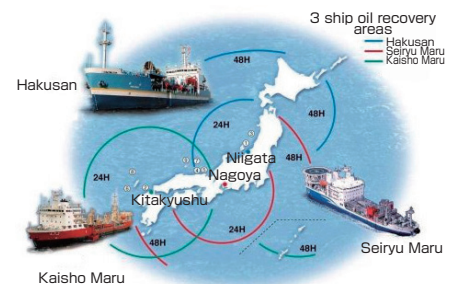
One of the major factors behind the large scale oil spills in recent years is the existence of ships which do not meet the standards set forth in Marine Safety and Sea Environmental Conservation Treaties (sub-standard ships). In order to eliminate these ships, Japan is participating in international efforts such as the creation of an international ship database (EQUASIS), as well as enhancing port state control (PSC) by performing onboard inspections of foreign vessels stopping in Japanese ports confirming that they meet treaty standards.

The creation of a system, advocated for by the Japanese government, for checking that flag state governments are fulfilling their duties to monitor and supervise ships flown under their flags was approved at the 2005 IMO general meeting as a voluntary system.

Based on the efforts that followed, this system was made mandatory from January 2016.

There are three large vessels for dredging and oil recovery deployed in the country, and there is a public-private oil control system established in accordance with the Law Relating to the Prevention of Marine Pollution and Maritime Disasters so that they can respond immediately in the event of an oil spill incident in the waters surrounding Japan. Furthermore, there is a system established for Japan, China, South Korea and Russia to respond in a cooperative manner to a large-scale oil spill in the waters surrounding Japan; the international cooperation and coordination is being strengthened through the “Northwest Pacific Action Plan (NOWPAP) Regional Oil, Hazardous and Noxious Substances (HNS) Spill Contingency Plan (2008)”.

● Coverage scope of system of 3 large dredging and oil reclamation ships



"Hakusan" can start oil recovery operation within 24 hours in the Japan Sea area, and even in the Hokkaido sea area can start operation within 2 days. Together with the "Seiryu Maru" and the "Kaisho Maru", it helps further enhance Japan's ability to respond to oil spills around Japan.

Source: MLIT (Tentative translation by Eco-Mo Foundation)

(2) Countermeasures against harmful aquatic organisms in ballast water

Various organisms such as plankton contained in ballast water (seawater loaded as a safety weight when a ship is empty) can induce harmful effects on the ecosystem and cause damages to human health and economic activities when they are transported to places where they do not belong and released in the ballast water being discharged. In order to implement a standardized regulation worldwide as a countermeasure to this problem, the Ballast Water Control and Management Convention, adopted by the International Maritime Organization (IMO) in February 2004 came into force in September 2017. Japan has concluded the Convention and has guaranteed it domestically through the Law Relating to the Prevention of Marine Pollution, etc. and Maritime Disasters.

As of December 2024, 17 hazardous water ballast treatment facilities from 13 companies have received type designation based on the latest standards (BWMS Code), and after September 2024, all international vessels are, in principle, required to be equipped with ballast water treatment systems to manage harmful discharges.

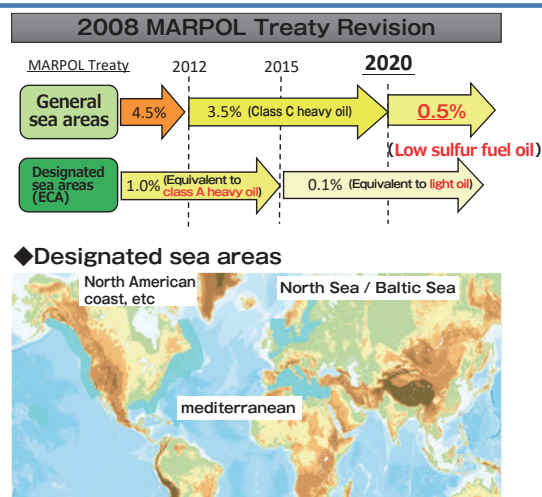
3 Ship exhaust gas emissions countermeasures

In order to reduce air pollution caused by Sulphur Oxides (SOx) emitted from ships, the Sulphur content in ship fuel oil is being regulated on a global scale under the MARPOL Convention. Due to revisions to the MARPOL Convention in 2008, the allowance of Sulphur content was strengthened from its previous level of 3.5% or less to 0.5% or less from January 2020.

● International regulations for reducing Sulfur Oxide (SOx) and Particulate Matter (PM) emissions

Summary of SOx regulations

- Through the revising of the MARPOL Convention in 2008 by the International Maritime Organization (IMO), the allowance of Sulphur content within fuel oil for ships was globally strengthened from its previous level of 3.5% or less to 0.5% or less from January 2020.
- For Japan, as an environmentally advanced country, it is necessary to appropriately handle the reduction of the bad effects on human health and the environment from the SOx emissions of ships.



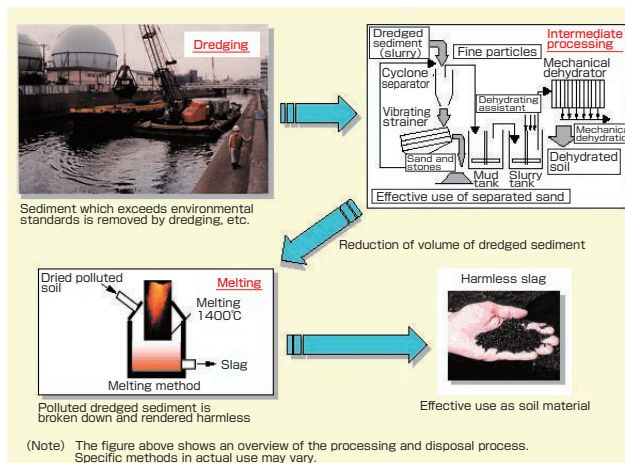
Source: MLIT (Tentative translation by Eco-Mo Foundation)

4 Chemical substances countermeasures

(1) Dioxin, etc. countermeasures

Dioxins are produced when garbage and other matter are burned. There are concerns about the harm these chemicals cause to the human body. The MLIT is studying dioxins and implementing countermeasures, monitoring marine pollution conditions, and carrying out other measures by establishing a “Fundamental Policy Regarding Countermeasures Against Sediment Dioxins”, technical guidelines concerning the removal of sediment in ports with dioxin levels exceeding environmental standards for sediment, and revising the “Manual of Sediment Dioxin Countermeasures for Rivers, Lakes, etc.” (the River Manual) and the “Technical Guidelines Regarding Sediment Dioxin Countermeasures for Ports” (the Port Guidelines).

●Dioxin, etc. countermeasures



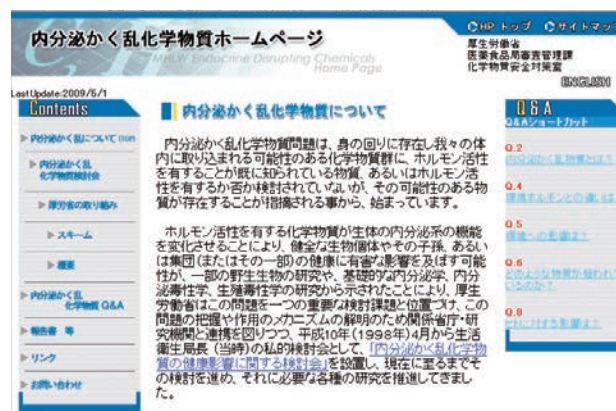
Source: MLIT (Tentative translation by Eco-Mo Foundation)

(2) Endocrine disruptors countermeasures

Endocrine disruptors (environmental hormones) disrupt the endocrine systems of people and wild animals, producing a number of adverse effects such as reducing sperm counts.

The need for countermeasures in response to these endocrine disruptors is growing year by year. In September 2008 the “International Convention on the Control of Harmful Anti-fouling Systems in Ships (AFS Convention)” went into effect. This global convention completely prohibits the use of ship hull antifouling paint containing tributyltin (TBT), an endocrine disruptor. The convention prohibits new application of TBT paint, and requires ship owners to completely remove all TBT paint already applied to ships, or to coat painted portions with a protective layer which prevents leaching of TBT into seawater. All foreign ships entering Japanese ports are prohibited from using TBT hull antifouling paint, so when the MLIT actively includes monitoring for TBT hull antifouling paint usage as part of its port state control (PSC) monitoring of whether arriving foreign ships are in conformance with international conventions regarding marine safety and marine environmental conservation, with the aim of eliminating foreign ships on which toxic hull paint has been used.

●Endocrine disruptor website



Source: Ministry of Health, Labour and Welfare (Tentative translation by Eco-Mo Foundation)

(3) Asbestos countermeasures

Asbestos, used in various facilities, such as warehouses and storage sheds, present a life-threatening hazard. The buildings constructed in the 1970s and onwards, when large amounts of asbestos were imported, are reaching the ends of their lifespans and will be dismantled, so it is important to implement preemptive measures to prevent this work from causing public harm.

The MLIT is following up on the status of asbestos removal and scatter prevention measures for facilities under its jurisdiction in order to advance the removal of asbestos from existing buildings. In addition, measures for removing spray-applied asbestos insulation in existing buildings are being promoted through activities such as subsidies for residence and building safety stock formation operations and local housing subsidies.

In conjunction with revisions to the Building Standards Act the use of spray-applied asbestos insulation etc. in buildings has been prohibited, and Japan is disseminating information in the form of asbestos removal work reference estimates, documents which assist with the process of identifying building materials containing asbestos (visually identifiable building materials containing asbestos), by compiling databases of information regarding building materials containing asbestos, and preparing pamphlets regarding building asbestos countermeasures. Japan is also implementing measures for thoroughly ensuring the prevention of asbestos scattering or exposure during building dismantling.

● Asbestos countermeasure pamphlet



Source: MLIT

(4) PRTR(Pollutant Release and Transfer Register) system

There is growing interest around the world in environmental pollutants such as environmental hormones and new chemical substances produced by high-tech industry. In 1992 the UN Conference on Environment and Development (Earth Summit) indicated the need for a system for managing the discharge and movement of hazardous chemicals in order to reduce their inherent risks.

In response, in 1999 Japan formulated the “Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Law)”. This act defines a system for confirming, tabulating, and publicly releasing data on which of a wide range of hazardous chemicals have been produced, by whom they were produced, how much of the chemicals have been released into the environment, and how much of the chemicals have been taken off from company properties in the form of waste products. This system has been in effect since 2001.

Under this act, warehouse operators (limited to warehousing to store farm products or to store gas or liquid in storage tanks) and automobile maintenance operators are also required to report transfers of specified chemical substances.

● PRTR pamphlet



Source: METI and MOE

5 Ozone layer destruction prevention

The ozone layer which envelops the earth plays an important role in protecting life on the earth by absorbing harmful ultraviolet radiation. When this ozone layer is damaged, it allows a greater amount of hazardous ultraviolet radiation to pass through, increasing the incidence of skin cancer and cataracts, and impairing immunity in humans as well as affecting animal and plant ecosystems.

Fluorocarbons (CFCs and HCFCs), used as coolants in devices such as refrigerators and air conditioners, are known to damage the ozone layer. Fluorocarbons are greenhouse gases that are hundreds to tens of thousands of times stronger than carbon dioxide, so it is important to prevent fluorocarbons used in devices (CFCs, HCFCs, and HFCs) from being discharged into the atmosphere in order to protect the ozone layer and prevent global warming.

The “Act on the Protection of the Ozone Layer Through the Control of Specified Substances and Other Measures,” passed in 1995, prohibited the manufacturing of specified fluorocarbons (CFCs), and the “Act for Recycling of Specified Kinds of Home Appliances (the Appliance Recycling Act)”, passed in 2001, mandated the reclamation of fluorocarbons from domestic refrigerators and air conditioners. In 2002 “the Act Concerning the Recovery and Destruction of Fluorocarbons (the Fluorocarbon Recovery and Destruction Act)” mandated the recovery of fluorocarbons from industrial air conditioning and refrigeration equipment and vehicle air conditioners.

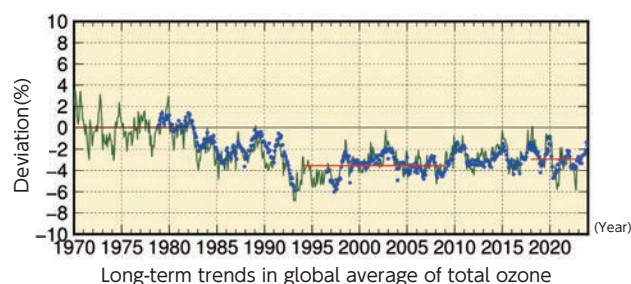
With regard to the recovery of fluorocarbons from vehicle air conditioners and subsequent destruction, due to the fact that vehicle air conditioners are constituent components of automobiles, in January 2005 they were excluded from the scope of the “Fluorocarbon Recovery and Destruction Act”, and regulated together with the disposal of vehicle bodies and engines under “the Act on Recycling, etc. of End-of-Life Vehicles”, which regulates the appropriate processing and disposal of end-of-life vehicles.

In response to a rapid increase in emissions of fluorocarbons (HFCs) with very strong greenhouse effects, particularly those used as coolants in air conditioning and refrigeration equipment, in June 2013 the Fluorocarbon Recovery and Destruction Act was revised to require that the manufacturers of fluorocarbons and devices which use fluorocarbons, and the users of industrial air conditioning and refrigeration equipment, rationalize fluorocarbon use and appropriately manage fluorocarbons. It also established mechanisms such as a fluorocarbon filling operator registration system and a recycling operator licensing system, and the name of the law was changed to the “Act on the Rational Use and Management of Fluorocarbons (Fluorocarbon Discharge Prevention Act)”.

● Changes in global amount of ozone over time

Amount of ozone worldwide

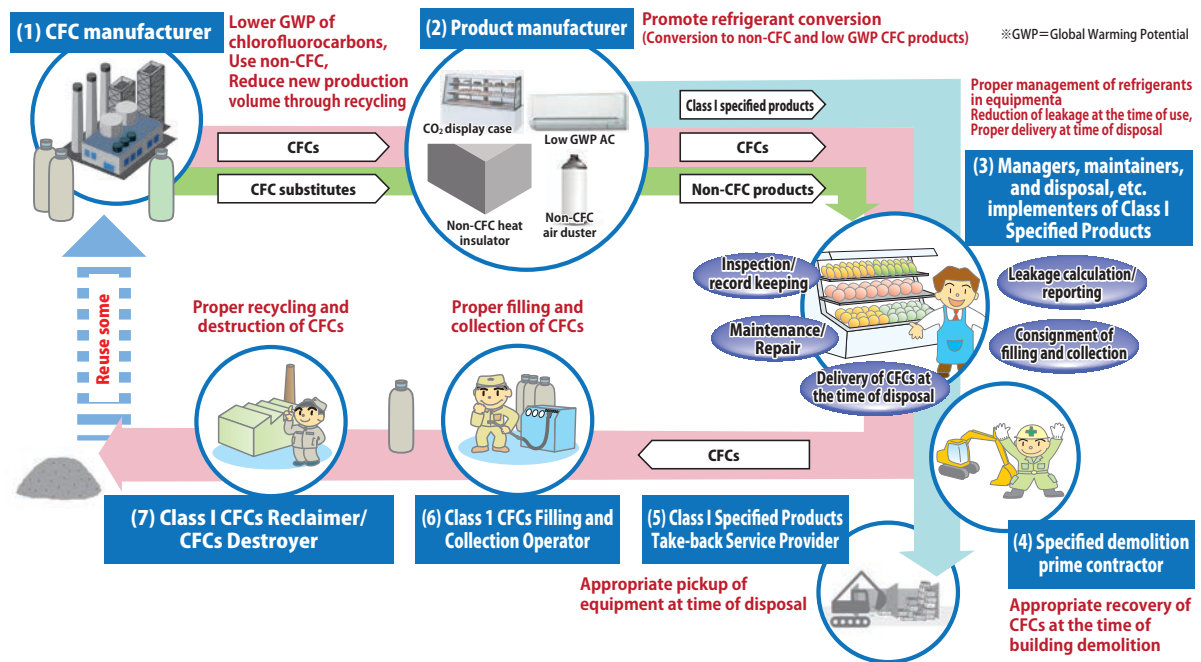
Global average total ozone decreased significantly from the 1980s to the early 1990s. Although the decreasing trend halted in the 1990s and the variation have become relatively small since 2000, the total ozone continues to remain at low level.



This graph shows the increase or decrease of global average total ozone expressed as deviation (%) compared to the value averaged for 1970 to 1980 period. The solid green line indicates data from ground stations, the blue dot indicates the satellite observation data averaged for the latitude between 70° N and 70° S, red line indicates the cumulative average of ground observation data, from which seasonal variations are removed. The terrestrial observation site data was supplied by the World Ozone and Ultraviolet Radiation Data Centre. The satellite observation data was obtained from data supplied by the US National Aeronautics and Space Administration (NASA). Note: The period before the prominent damage to the ozone layer

Source: JMA (Tentative translation by Eco-Mo Foundation)

● Overview of the Fluorocarbon Discharge Prevention Act



Source: METI and MOE (Tentative translation by Eco-Mo Foundation)

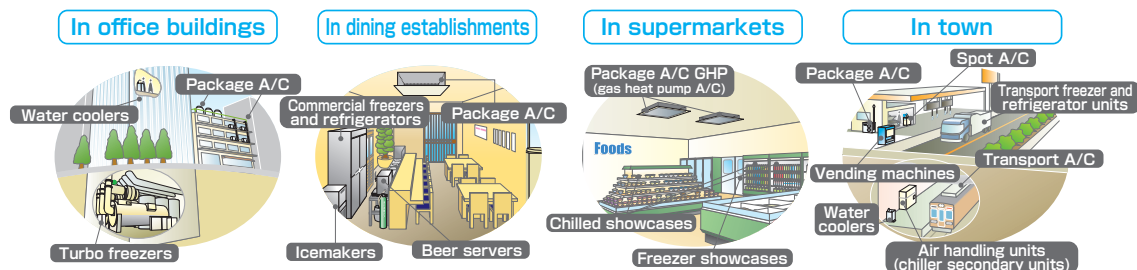
● Fluorocarbon Discharge Prevention Act pamphlet

Fluorocarbons must be reclaimed whenever performing disassembly work!

Under the Act on the Rational Use and Proper Management of Fluorocarbons (Fluorocarbon Release Prevention Act), fluorocarbons must be reclaimed when disposing of commercial air conditioners, refrigerators, or freezers which use fluorocarbons (CFC, HCFC, and HFC).

It is against the law to allow fluorocarbons to be released into the atmosphere when performing disassembly work.

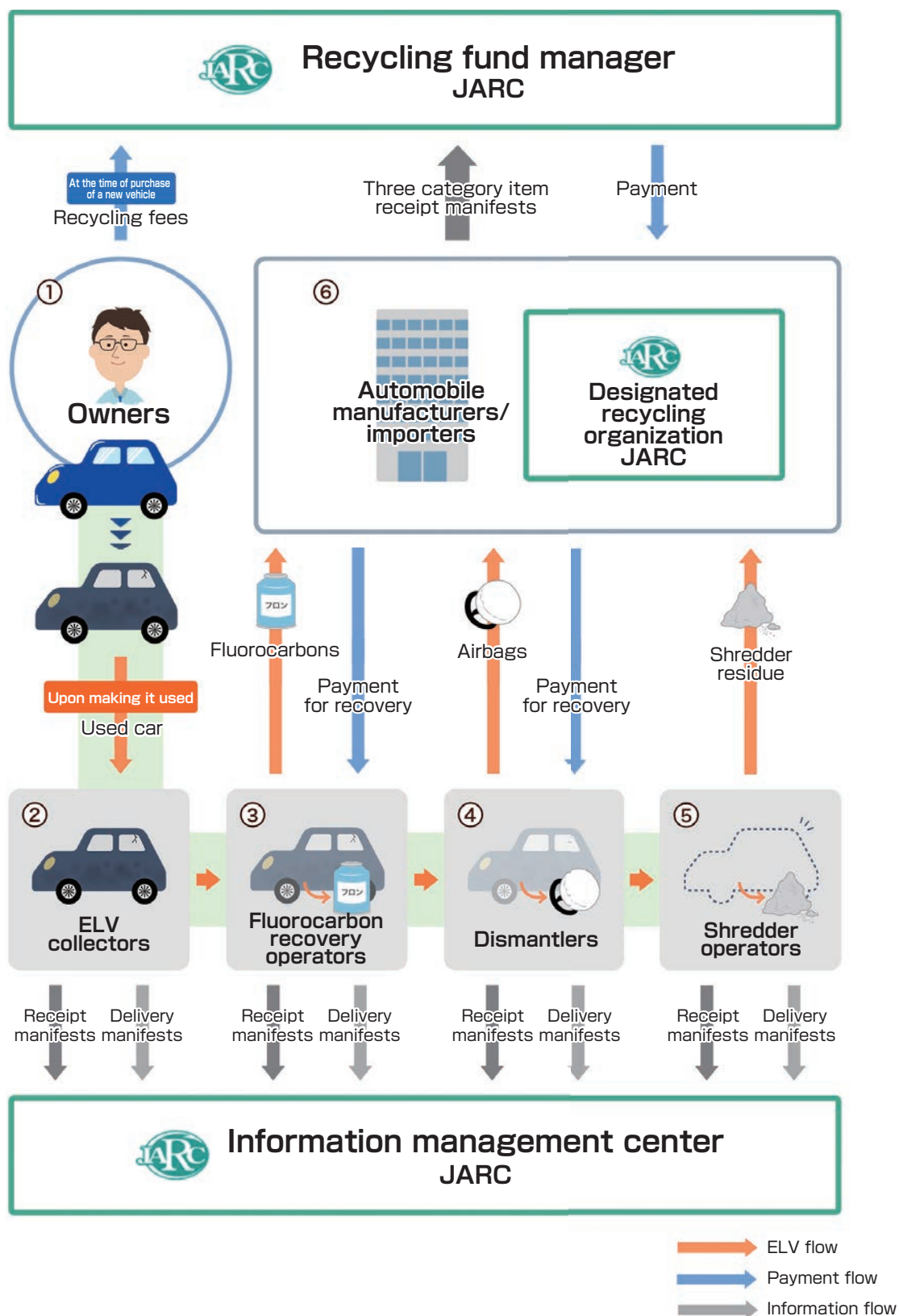
Examples of devices which use fluorocarbons (commercial refrigerators, freezers, and air conditioners)



The penalty for reckless releasing of fluorocarbons is imprisonment of up to 1 year or a fine of up to 500 thousand yen.

Source: METI and MOE (Tentative translation by Eco-Mo Foundation)

● Overview of the Act on Recycling, etc. of End-of-Life Vehicles process



Source: Japan Automobile Recycling Promotion Center (Tentative translation by Eco-Mo Foundation)

6 Global environmental observation and monitoring

Implementing appropriate environmental problem countermeasures in the transport sector requires the accurate assessment of air and sea changes through steady, long-term observation and monitoring. Diverse air, sea, and other observation and monitoring are being implemented by global monitoring networks.

(1) Climate change observation and monitoring

Climate change is an urgent global issue that requires a united and coordinated response from the international community. To support mitigation and adaptation measures, the Japan Meteorological Agency is undertaking the following initiatives.

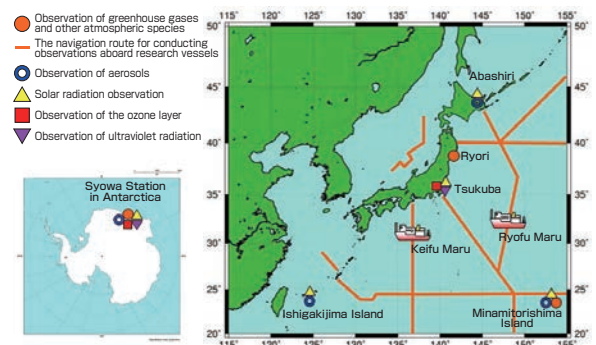
In order to assess greenhouse gas conditions, the amount of CO₂ and other gases in the atmosphere is being measured at two locations in Japan and the amount of CO₂ in the surface sea water and the air above the northwest Pacific Ocean is being measured using research vessels. Furthermore, precise sunlight and infrared radiation measurements are being performed at four locations in Japan.

Sea level rise caused by global warming is also being monitored, and information is being released regarding long-term sea level changes along the coast of Japan.

In order to achieve more accurate climate change monitoring and seasonal forecasts, long-term reanalysis datasets that accurately reconstruct past atmospheric conditions are provided to the public. In addition to these, the latest information based on the observation and monitoring of atmospheric and oceanic conditions are compiled in the “Climate Change Monitoring Report”.

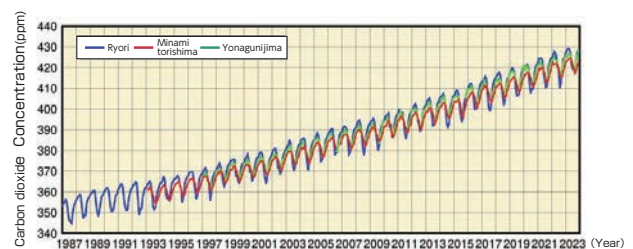
Furthermore, in March 2025, the Agency, in collaboration with the Ministry of Education, Culture, Sports, Science and Technology (MEXT), published “Climate Change in Japan 2025”, which consolidates observational results and future projections -focused on Japan- for use as fundamental information supporting climate change mitigation, adaptation measures, and impact assessments.

● Atmospheric environment monitoring network



Source: JMA (Tentative translation by Eco-Mo Foundation)

● Trends in atmospheric carbon dioxide concentration in Japan (3 observational sites with observations on Yonagunijima Island concluding at the end of March 2024)

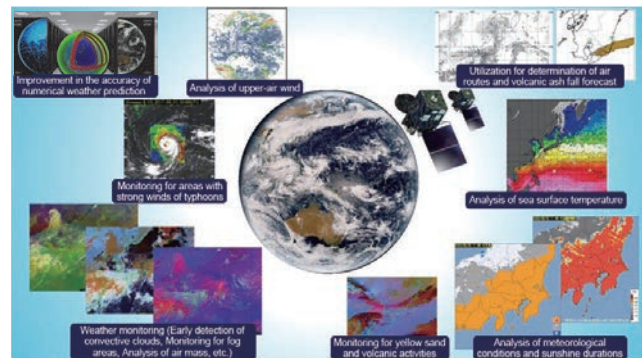


Source: JMA (Tentative translation by Eco-Mo Foundation)

(2) Himawari-8/9

Geostationary meteorological satellite Himawari-8 began observation operations on July 7, 2015, and Himawari-9 began standby operations on March 10, 2017. The roles of the two satellites were switched on December 13, 2022, with Himawari-9 performing the observation operations and Himawari-8 performing the standby operations. The two satellites, Himawari-8/9, continue to provide an uninterrupted meteorological satellite observation system for the purpose of ensuring the safety and security of the public, including monitoring and forecasting of typhoons and torrential rains, safe navigation of aircraft and ships, and monitoring of the global environment and volcanoes.

●Examples of the use of data from Himawari -8/9



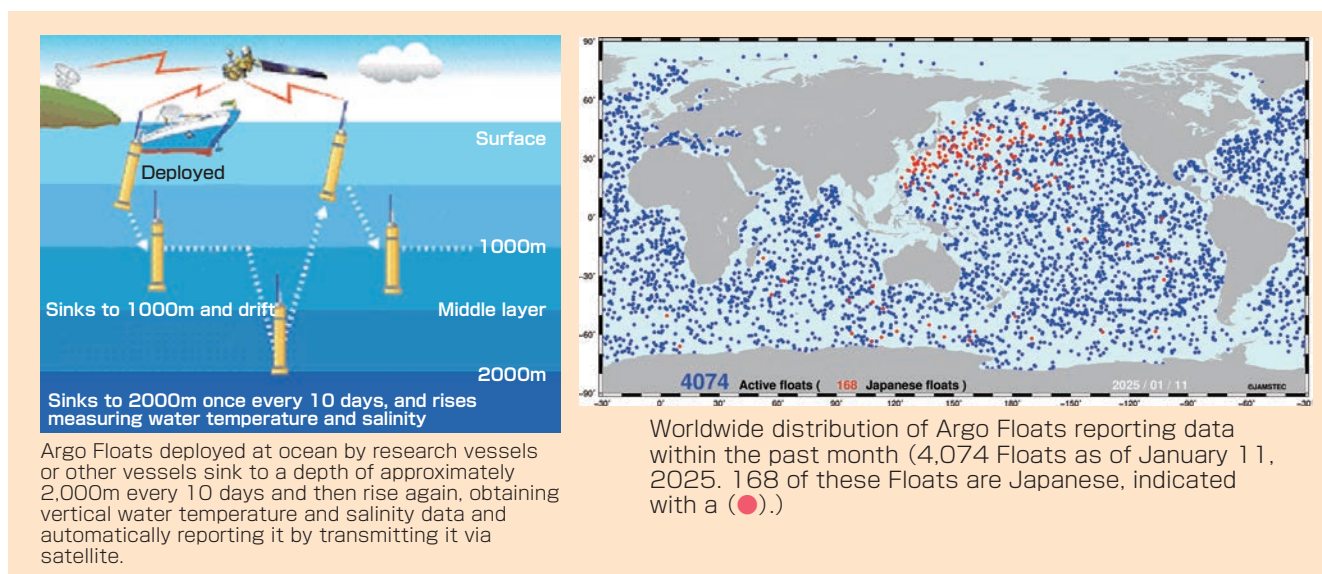
Source: JMA (Tentative translation by Eco-Mo Foundation)

(3) Ocean observation and monitoring

The ocean absorbs CO₂, a greenhouse gas, and retains heat, moderating global warming. Ocean changes are intrinsically linked to typhoons and anomalous weather conditions, so accurately assessing ocean conditions is an important part of responding to global environmental problems.

In order to immediately monitor and assess ocean changes throughout the world, the MLIT is coordinating with other related ministries and agencies, engaging in international collaboration with organizations such as the World Meteorological Organization (WMO) to carry out the Argo project, deploying devices (Argo Floats) around the world to automatically observe conditions within the ocean.

●Overview of Argo project monitoring and Argo Floats distribution



Source: MLIT and Japan Agency for Marine-Earth Science and Technology (Tentative translation by Eco-Mo Foundation)

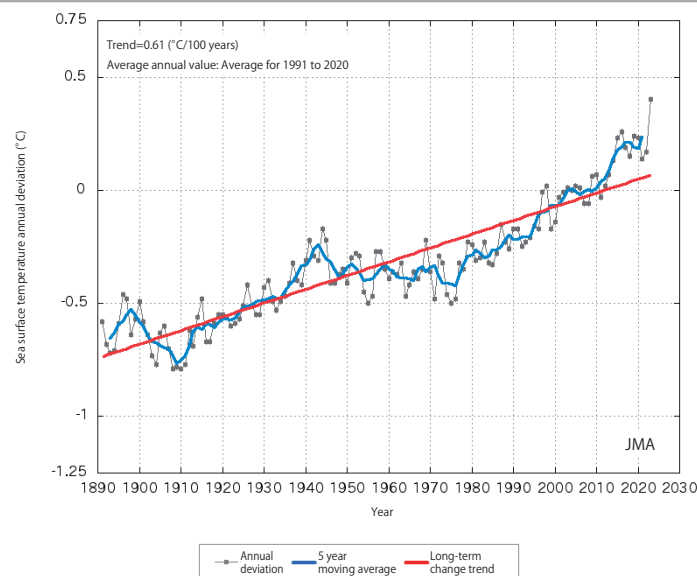
The JMA collects and analyzes data from various sources, such as research vessels, Argo Floats, and satellites, and releases “Marine Diagnosis Report”, providing the present status and the prospect for the future regarding marine environment.

The Japan Coast Guard collects and manages oceanographic data obtained by Japan’s marine research institutions, and provides it to relevant agencies and the general public as the Japanese Oceanographic Data Center.

● “Marine Diagnosis Report” Long-term trends in sea surface temperature (global average)

Diagnosis (2023)

- The annual mean sea surface temperature (global average) for 2023 was $+0.40^{\circ}\text{C}$, which was the highest since the statistics began in 1891.
- The annual mean sea surface temperature (global average) changes due to a combination of oceanic and atmospheric variations over time scales of several years to several decades, global warming, and other influences. The long-term trend is an increase of 0.61°C per 100 years.



Trends in annual mean sea surface temperature (global mean) changes

Values for individual years are connected with a black line. 5 year moving average values are connected with a blue line. The long-term change trend is indicated with a red line. The average annual value is the average value for the 30 year period from 1991 to 2020.

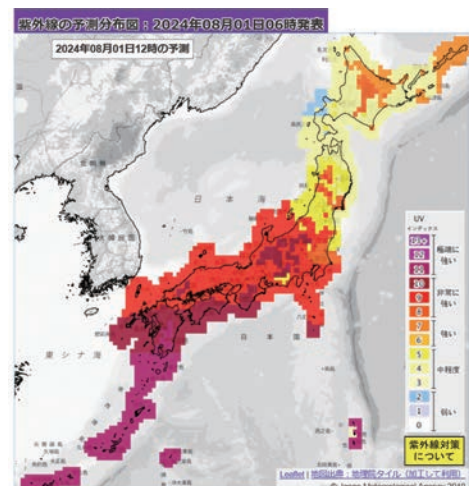
Source: JMA (Tentative translation by Eco-Mo Foundation)

(4) Ozone layer observation and monitoring

In order to protect the ozone layer, which absorbs harmful ultraviolet radiation from the sun, the production, use, and trading of chlorofluorocarbons and other ozone-depleting substances is internationally regulated in accordance with the “Montreal Protocol” and other agreements and conventions.

The JMA releases the results of ozone and ultraviolet radiation observation on a yearly basis. It also provides ultraviolet radiation data daily in the form of a UV index, easy-to-understand numerical data indicating the strength of ultraviolet radiation.

● UV index (Prediction value)



(5) Promotion of regular observation at the Antarctic

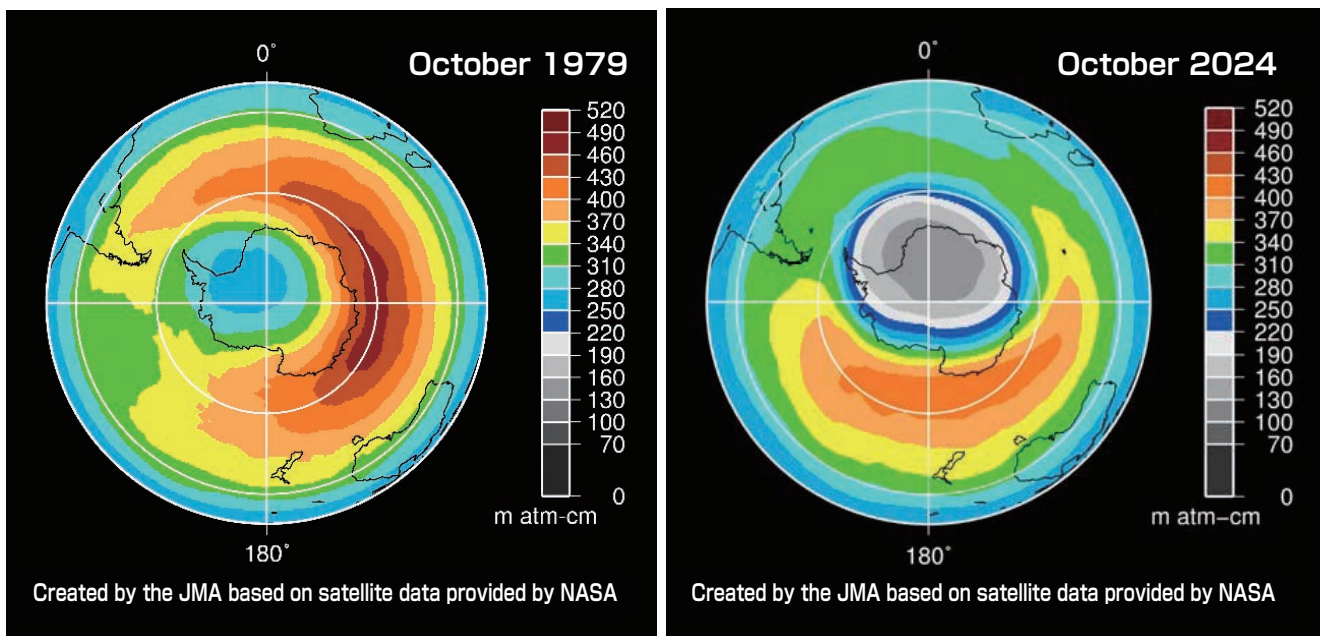
The Geospatial Information Authority creates topographical and other maps based on reference point measurements, gravity measurements, continuous GPS observation, bare rock area change measurements, and photographic measurements. The results contribute to research regarding global environmental changes in the Antarctic, etc., and international activities focusing on land measurement and geographical information.

At Showa station, JMA conducts continuous observations of sun light, infrared radiation, and surface and upper-air weather. The data of these observations are effectively used to formulate international policies, such as contributing to climate change research and monitoring of the Antarctic ozone hole.

The Japan Coast Guard carries out sea floor topographic surveys. It also performs tidal observation, which contributes to monitoring of sea level changes, which are closely linked to global warming.

● Total ozone distribution map in the Antarctic (October)

Southern Hemisphere distribution of monthly average total ozone in October 1979, before the appearance of the Antarctic ozone hole, and in October 2024. The region with a total ozone of 220m atm-cm or less is the ozone hole. Created by the JMA based on satellite data provided by NASA.



Source: JMA and NASA (Tentative translation by Eco-Mo Foundation)

7 Adaptation Measures for Climate Change in the Land, Infrastructure and Transport Sectors

In order to deal with the effects from climate change that accompany global warming, not only “mitigation” by restraining greenhouse gas emissions, but also “adaptation” to the already appearing effects and the long-term effects should be promoted.

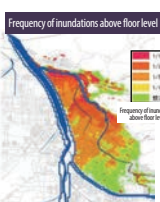
In October 2021, the “Climate Change Adaptation Plan” based on the Climate Change Adaptation Law was revised in order to strengthen Japan’s overall climate change adaptation measures. Under the Plan, relevant ministries and agencies will work closely together to promote climate change adaptation measures under the following seven basic strategies.

- ① Incorporate climate change adaptation into all relevant measures
- ② Promote climate change adaptation based on scientific knowledge
- ③ Consolidate the wisdom of Japan’s research institutions and develop an information infrastructure
- ④ Promote climate change adaptation in accordance with local conditions
- ⑤ Deepen public understanding and promote climate change adaptation in accordance with business activities
- ⑥ Contribute to the improvement of adaptation capacity in developing countries
- ⑦ Ensure close coordination and cooperation systems among relevant government agencies

The Ministry of Land, Infrastructure, Transport and Tourism (MLIT), which has jurisdiction over various fields including land conservation and is responsible for creating a safe and secure national and regional land, has established the pillar “Promotion of Adaptation Measures to Realize a Climate Change Adaptive Society against Climate Crisis” in the “MLIT Environmental Action Plan (revised in October 2021)” that comprehensively summarizes environmental measures within the ministry and has been working to steadily implement various measures in areas including natural disasters, water resources and water environment, national and urban life, and enhancement and utilization of scientific findings.

● Overview of the MLIT Climate Change Adaptation Plan (Summary of policies by sector)

Potential impact of climate change on land, infrastructure and transport			
(Natural disasters)		Frequent flooding, extremely large-scale flooding, increase in landslide frequency, significant impact on harbors and coasts	
(Water resources/environment)		Greater drought frequency, water quality changes	
(Peoples’ lives, industrial activity, etc.)		Increased risks to transport infrastructure, large-scale rise in temperatures in urban areas, impact of storm and flood damage on distribution and tourism, etc.	

Natural disasters		Water resources/environment	
○Flood damage - Use facilities to prevent disasters involving flooding and relatively frequent external forces from occurring - When facilities are subject to external forces which exceed their capacity, mobilize all personnel to implement measures to minimize damage - Disaster risk evaluation - Disaster risk information sharing 1) Disaster prevention measures for external forces with relatively high disaster risks - Thorough facility maintenance - Improvement of functionality of existing facilities - Design of facilities to minimize reworking, etc. 2) Disaster mitigation measures for external forces which exceed facility capacities ① Facility measures involving operation, structure, maintenance procedures, etc. ② Flood mitigation measures integrated with town planning and community development ③ Evacuation, first-aid activity, business continuity, and other preparation		○Water resources - Measures for thoroughly leveraging existing facilities, using rainwater and reclaimed water, minimizing critical drought damage, etc. ○Water environments - Monitoring and forecasting related research, water quality improvement measures	
○Landslide disasters - Measures to address rise in landslide frequency, deep-seated landslide countermeasures - Warning and evacuation for landslides with little lead time - Land usage, dwelling styles, etc., that take disaster risks into consideration ○High tides and tidal waves, etc 1) Harbors - Sea phenomena monitoring and regular evaluation for harbors - Countermeasures for external forces which exceed protection levels, etc. 2) Coasts - Disaster risk evaluation and countermeasures for individual disaster risks - Enhancement of coastal erosion countermeasures, etc.		Daily life/urban life ○Transport infrastructure (Rail) Flooding countermeasures for subway stations, etc. (Harbors) Business continuity plan (harbor BCP) formulation (Airports) Hazard maps, airport snow removal system review and revision (Roads) Safety, high reliability road network improvement, promotion of telephone pole-free design, Active use of bicycle (Distribution) Distribution BCP, improvement of disaster support-supply storage agreements, countermeasures for transport obstacles for rail cargo movement ○Heat islands - Ground surface covering improvements (promotion of installation of rooftop gardens on private land and public spaces, etc., urban park improvement, treated sewage water usage, etc.) - Reduction of artificial exhaust heat (energy savings in houses and buildings, promotion of low-emission vehicles, more use of bicycle, promotion of usage houses of sewage heat, etc.)	
Industrial/economic activity - Use of Arctec Sea route - Measures for providing information to foreign travelers and countermeasures for damages by rumors		 (Use in detailed disaster risk information evacuation decisions, town planning, etc.)	

Basic measures	Promotion and awareness raising, information provision	Observation, research, and technical development	International contributions
	- Promotion and awareness raising regarding disaster prevention and climate change information - Provision of geospatial information, etc.	- Climate, sea level, and land observation and monitoring - Climate change forecasting, analysis of snow and ice environment change trends, etc. - Impact of growing external forces on flooding and inland water measures and countermeasures	- Global provision of Japanese disaster sector technologies and expertise - Participation in international observation, monitoring, and research, etc.

Source: MLIT (Tentative translation by Eco-Mo Foundation)

List of Abbreviations

BRT (Bus Rapid Transit)
CMP (Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol)
CNG (Compressed Natural Gas)
COP (Conference of Parties to the UNFCCC)
Eco-Mo Foundation (the Foundation for Promoting Personal Mobility and Ecological Transportation)
EDMC (the Energy Data and Modelling Center)
ELV (End-of-Life Vehicle)
EST (Environmentally Sustainable Transport)
ETC (Electronic Toll Collection System)
EU (European Union)
FY (fiscal year)
GIA (General Incorporated Association)
GIF (General Incorporated Foundation)
GIO (The Greenhouse Gas Inventory Office of Japan)
ICT (Information and Communication Technology)
INDC (Intended Nationally Determined Contribution)
IPCC (Intergovernmental Panel on Climate Change)
ISO (International Organization for Standardization)
JCM (Joint Crediting Mechanism)
JMA (Japan Meteorological Agency)
LED (Light Emitting Diode)
LNG (Liquefied Natural Gas)
LRT (Light Rail Transit)
MDGs (Millennium Development Goals)
METI (Ministry of Economy, Trade and Industry)
MLIT (Ministry of Land, Infrastructure, Transport and Tourism)
MOE (Ministry of the Environment)
NASA (US National Aeronautics and Space Administration)
NIES (The National Institute for Environmental Studies)
NPA (National Police Agency)
OECD (Organization for Economic Co-operation and Development)
PM (Particulate Matter)
RFA (the Railway Freight Association)
SDGs (Sustainable Development Goals)
SPM (Suspended Particulate Matter)
UNCRD (United Nations Centre for Regional Development)
UNFCCC (the United Nations Framework Convention on Climate Change)
VVVF (Variable Voltage Variable Frequency)
WDCGG (World Data Centre for Greenhouse Gases)

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