



Ministry of the Environment

# ANNUAL REPORT

ON THE ENVIRONMENT  
IN JAPAN 2024



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# OBJECTIVES OF THE SIXTH BASIC ENVIRONMENT PLAN

In May 2024, the Sixth Basic Environment Plan was approved upon a cabinet decision. The Basic Environment Plan presents a broad vision of the government's environment policy based on the Basic Act on the Environment.

This plan is based on a strong “sense of crisis” about the triple crises of climate change, biodiversity loss, and pollution. As modern civilization is unsustainable, the need to make a shift in the socio-economic system is inevitable. We must shift from the linear/standard mass production type of socio-economic system, which emphasizes material wealth, to a circular/high value-added type of socio-economic system that is based on renewable resources, such as recycled resources and biomass resources, and that emphasizes intangible value and spiritual wealth as well.

1

**1****PUT THE HIGHEST PRIORITY ON “WELL-BEING/QUALITY OF LIFE”**

The Sixth Basic Environment Plan is distinctive in that it puts the highest priority on “well-being/quality of life.” The status of the environment and environmental measures are closely related to the economy and society, and the relationship is becoming closer and closer. Therefore, the plan puts the highest priority on “well-being/quality of life” as the starting point of environmental policy in order to remedy economic and social challenges in an integrated manner. This is in line with the following statement of Article 1 of the Basic Act on the Environment: “The purpose of this Act is to promote policies for

environmental conservation in a comprehensive and systematic manner so as to ensure wholesome and cultured living of the people present and in the future, as well as to contribute to the welfare of humankind.”

The strong emphasis on “well-being/quality of life” also reflects a wish to enable citizens now and in the future to have hopes for the future of the earth and Japan through environment policy under the concept of “changing the way of CHANGE,” which aims to directly address the needs of citizens now and in the future in the face of the structural problems that have continued for many years.

**Basic concepts and structure of the Sixth Basic Environment Plan [Part 1]****The necessity of coping with environmental crises and various economic and social challenges****Purpose**

“Improvement of the quality of life, level of happiness, well-being and economic welfare of individual citizens now and in the future” and “contribution to the welfare of humankind” through “environmental conservation”

**Vision****Circulation and symbiosis based society**

civilization that can grow/develop by preserving biocapacity and improving the quality of the environment

**Circulation (≈science)**

- Ensuring a sound material cycle in natural systems, including carbon and other base elements
- Shift from a socio-economic system depending on underground resources to one depending on “renewable resources, such as recycled resources and biomass resources”
- Reduction of total environmental load and creation of a good environment

**Symbiosis (≈philosophy)**

- Based on the traditional natural view of nature in Japan, promote humankind to be a sound member of the ecosystem
- Unification of the health of humans and the earth (**planetary health**)
- Awareness/efforts of individuals, efforts of community/companies, economy and society of the whole country, and the future of the planet as a whole draw a concentric circle

**Policy****“New avenues for growth” that bring about “well-being/high quality of life” in future years**

market value + non-market value

 Six viewpoints regarding “change the way of CHANGE”

- |         |                         |                  |  |                                  |   |
|---------|-------------------------|------------------|--|----------------------------------|---|
| 1 stock | 2 long-term perspective | 3 inherent needs | 4 intangible assets and spiritual happiness/wealth | 5 community and inclusive nature | 6 focus on self-reliance and decentralization |
|---------|-------------------------|------------------|--|----------------------------------|---|

- Maintaining, restoring, and enhancing natural capital (environment), which is the stock, will be the foundation of “new avenues for growth”
- Adding high value to the entire economy utilizing “environmental value,” which is an intangible asset, etc.

**Policies Development**

- Ensuring the speed and scale of science-based efforts (also coping with “decisive 2030” )

- Integration and synergy of measures, such as net-zero, circular economy, and nature-positive measures.

- Coevolution of the government, market, and citizens (civil society, regional community)

- Practice and implementation of “new avenues for growth”

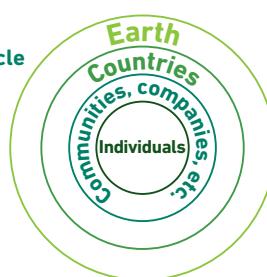
Note: Considering such basic directions, describe the priority strategies in six fields (economic system, national land, community, life, science, technologies and innovation, and international cooperation), focused points in individual environmental policies, and the system of environmental conservation measures.

**Article 1 of the Basic Act on the Environment**

The purpose of this Act is to promote policies for environmental conservation in a comprehensive and systematic manner so as to ensure wholesome and cultured living of the people present and in the future, as well as to contribute to the welfare of humankind.

**Diagram of a concentric circle**

Note: Communities and companies include local governments, regional communities, companies, and groups such as NPOs and NGOs.

**Coevolution of the government, market, and citizens**

## 2

# “NEW AVENUES FOR GROWTH” ENSURING THAT “WELL-BEING/QUALITY OF LIFE” IS MAINTAINED INTO THE FUTURE

“Well-being/quality of life” includes both market value (e.g., wages, GDP, and financial assets) and non-market value (e.g., health, comfort, and subjective happiness). The Sixth Basic Environment Plan aims

to create “new avenues for growth” that increase both sorts of value and cites the following six points as viewpoints important for realizing the goal.

- 1 — Focusing on stock: In addition to flow (e.g., GDP), an improvement of stock (e.g., natural capital) is essential.
- 2 — Long-term viewpoint: It is necessary to make investments from a long-term viewpoint and to have an altruistic viewpoint, such as giving consideration to future generations.
- 3 — Focusing on the inherent needs of citizens: It is necessary to address the inherent needs of citizens now and in the future without overly catering to companies’ seeds.
- 4 — Focusing on intangible assets: Emphasis should be placed not only on material wealth but also on spiritual wealth. In economic activity as well, the viewpoint of creating high added value using intangible assets, including environmental value, is important.
- 5 — Focusing on communities: As social capital is important for enhancing well-being, it is necessary to strengthen communities as its foundation.
- 6 — A self-reliant and decentralized system: The viewpoint of shifting to a self-reliant, decentralized, horizontally-distributed socio-economic system from a large-scale, centralized system.

## 3

# “MAINTAINING, RESTORING AND ENHANCING NATURAL CAPITAL” IS THE KEY

“Natural capital” is capital (stock) produced in nature, including forest, soil, water, air, and biological resources. Natural capital forms the foundation that makes society and the economy possible.

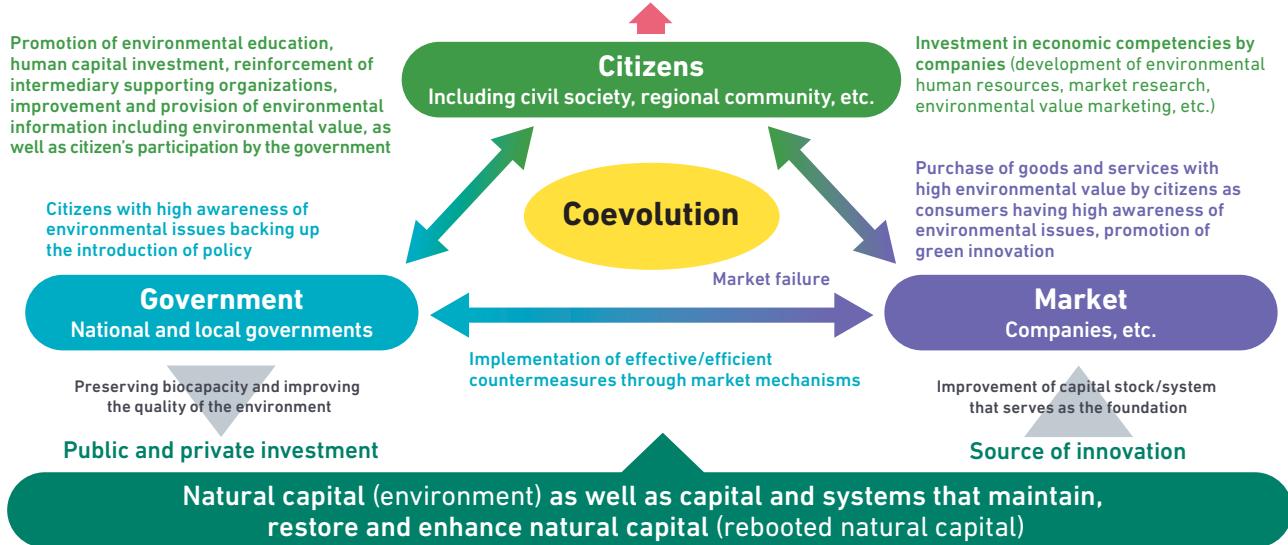
In order to maintain, restore and enhance natural capital, it is necessary to expand and develop, from a long-term viewpoint, tangible and intangible capital (e.g., artificial capital and human capital) and systems that contribute to doing that.

It is also important to carefully consider what kind of “well-being/quality of life” the people desire and to act in order to realize it. It is desirable that the government and the people evolve together while positively affecting each other, a relationship of “coevolution,” so to speak.

In order to realize a sustainable society, it is necessary that all agents of society have a sense of ownership and enhance and strengthen partnerships under an equal division of roles. It is also necessary to voluntarily and proactively reduce environmental loads and create a good environment. Moreover, it is necessary for government organizations (e.g., the national and local governments), markets (e.g., companies), and citizens (including civil society and local communities) to achieve coevolution.

**Image of the realization of “well-being/quality of life” through the coevolution of the government, market, and citizens**

**Improvement of well-being/quality of life/economic welfare of individual citizens now and in the future**



Note: Specific descriptions on mutual interaction are measures described in the Sixth Basic Environment Plan

Source: Prepared based on Philippe Aghion, Céline Antonin, Simon Bunel, *Le pouvoir de la destruction créatrice* (MURAI, A. trans., November 25, 2022) and Raghuram Rajan, *The Third Pillar: How Markets and the State Leave the Community Behind* (TSUKITANI, M. trans., July 20, 2021).

## 4

# CONTRIBUTIONS TO ECONOMIC GROWTH FROM “NEW AVENUES FOR GROWTH” USING ENVIRONMENTAL VALUE, SUCH AS GEARING THE ENTIRE ECONOMY TOWARD THE CREATION OF HIGH ADDED VALUE

“Capital that maintains, restores, and enhances natural capital” refers to the sort of capital that contributes to “well-being/quality of life” and the sort of “capital that facilitates environmental measures.” Businesses related to decarbonization are expected to continue expanding, so making large-scale investment in those sorts of capital is likely to further increase employment, wages, industrial competitiveness, and GDP.

If “environmental value” comes to be appropriately evaluated in the market and if products and services with high environmental value come to be chosen by consumers, that is expected to lead to economic

growth through the creation of high added value (internalization of non-market value). Capital and systems that maintain, restore and enhance natural capital will lead the society to “new avenues for growth”—through the creation of both market value, such as increases in investments and employment, and non-market value, such as interaction with nature and the enjoyment of a conformable environment through improved natural capital (the environment)—in a broader, diverse sense, including in terms of non-market value, while contributing to “well-being/quality of life.”

## 5

# VISION OF AN IDEAL SOCIETY: CIRCULATION AND SYMBIOSIS BASED SOCIETY

The Sixth Basic Environment Plan upholds a “circulation and symbiosis based society” that can

grow and develop by conserving biocapacity and by improving the quality of the environment as the

vision of an ideal society. In order to conserve biocapacity, the plan aims to lower dependence on underground resources, mainly comprised of fossil fuels, and minimize the input of new resources by promoting resource circulation based on the use of renewable resources, such as recycled resources and biomass resources. It is also important to reduce the total amount of environmental loads in consideration of the relationships between different sectors, including synergy effects and trade-offs.

Furthermore, the plan seeks not only to maintain the environment, which constitutes the foundation for the survival of mankind, by preventing its degradation but also calls for active efforts to improve the quality of “circulation” and restore, enhance, and sustainably utilize natural capital. In this way, the plan will realize the conservation of the environment, an activity comprised of the “prevention of hindrances to environment conservation” and the “creation of a good environment.”

“Symbiosis” referred to here means the situation

of human beings existing as part of the environment and acting as conscientious members of ecosystems and the environment. Japanese people have cultivated wisdom and a view of nature that seek harmony with nature in ways that avoid the exhaustion of natural capital while having respect for it. However, at present, mankind has become a special presence in ecosystems and the environment. In order to realize “symbiosis,” it is desirable to shift to a socio-economic system in which human activity not only avoids degrading ecosystems but also enriches them. What kind of awareness individuals have and what actions they take relates to what actions communities and companies take and what Japan’s society and economy will be like and, by extension, to the future of the entire earth. Therefore, the relationships between individuals, communities, companies, countries, and the earth can be expressed as “concentric circles,” so to speak. The Sixth Basic Environment Plan describes priority strategies in the following six sectors in order to realize a “circulation and symbiosis based society.”

- 1 — Formulation of a green economic system for realizing sustainable production and consumption that lead to “new avenues for growth”  
Expansion of investment in tangible and intangible capital that work to maintain, restore, and enhance natural capital; Adding high value to the entire economy utilizing environmental value
- 2 — Improvement of value of national land as stock on the foundation of natural capital  
Use of national land to maintain, restore, and enhance natural capital; Self-reliant and decentralized national land structure; Realization of cities/regions where citizens can realize “well-being/quality of life”
- 3 — Development of regional communities as a ground to practice/implement the Integrated Improvements on Environment, Economy and Society  
Developing sustainable regional communities that make the maximum use of regional natural capital (Circular and Ecological Economy); Maintenance, restoration, and enhancement of regional natural capital
- 4 — Realization of safe and secure, as well as healthy and prosperous life where citizens can realize “well-being/quality of life”  
Realization of a safe and secure life where citizens can realize “well-being/quality of life”; Creation of a good environment
- 5 — Development, demonstration, and social implementation of science, technologies, and innovation supporting “new avenues for growth”  
Development/demonstration and social implementation of environmental technologies based on inherent needs; Realization of green innovation; Accumulation and improvement of scientific knowledge
- 6 — Contribution to national interests and the welfare of humankind through the promotion of strategic international cooperation centered on the environment  
Strategic promotion of international cooperation centered on the environment as a country relying on natural capital abroad

# TOWARDS INTEGRATION OF NATURE POSITIVE, NET-ZERO GHG EMISSIONS, AND A CIRCULAR ECONOMY

2

## 1 INTERNATIONAL TREND

### Outcomes of the G7 and G20

At the G7 Ministers' Meeting on Climate, Energy and Environment held in Turin in April 2024, the G7 ministers reaffirmed the importance of promoting synergies between activities necessary for responding to the triple global crisis of climate change, biodiversity loss and pollution. The G7 ministers committed to submit by the deadline the Nationally Determined Contributions (NDCs), with economy-wide, absolute reduction targets, covering all greenhouse gases (GHGs), aligned with 1.5°C, while tracking the progress of emission reductions. They also called for all countries, including major economies, to submit NDCs in the same manner. Moreover, the G7 ministers reaffirmed their intention to further

promote the circular economy principles, the international recycling of critical minerals, nature positive economies, countermeasures against invasive alien species, and measures to end plastic pollution, which were included among the outcomes of the G7 Hiroshima Summit in May 2023.

As for the G20, which includes emerging countries, at the G20 New Delhi Summit in September 2023, the G20 leaders committed themselves to adopting an integrated approach to environmental and climate problems and reaffirmed their intention to strengthen the full and effective implementation of the Paris Agreement and its temperature goal.

### The 28th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP28)

The first global stocktake to evaluate the world's collective progress in climate action under the Paris Agreement was conducted at COP28. The need for all countries to take urgent actions in order to achieve the 1.5°C goal, which Japan has advocated at the Annual High-level Ministerial Round Table on pre-2030 Ambition and many bilateral meetings, was emphasized. In addition, decisions were made on the following points: peaking global GHG emissions at the latest before 2025; setting emission reduction targets covering all GHGs; tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements; transitioning away from fossil fuels in energy systems; and transitioning to sustainable lifestyles. The next round of NDCs is scheduled to be developed by 2025 in light of those outcomes.



The then Minister of the Environment Shintaro Ito speaking at the Annual High-Level Ministerial Round Table on pre-2030 ambition

Source: Ministry of the Environment

**2****NATURE POSITIVE****Towards achievement of the 30by30 target**

The so-called “30by30 Target,” which aims to effectively conserve at least 30% of the earth’s land and 30% of sea as healthy ecosystems, is one of the key targets for realizing “nature-positive”. In Japan, as of January 2023, around 20.5% of the land area and around 13.3% of the sea area were designated as protected areas, such as national parks. In order to enhance the soundness of ecosystems across Japanese territories, it is also important to make use of natural environments that have been maintained through human interventions, such as *satouchi-satoyama* (areas

consist of local villages, secondary forests, and mixture of areas of farmlands, reservoirs and grasslands), and areas where sustainable industrial activities giving consideration to biodiversity are ongoing. Therefore, we have designated and are managing the Other Effective area-based Conservation Measures (hereinafter “OECM”) areas, which are areas other than protected areas such as national parks and which contribute to the conservation of biodiversity, and are implementing measures in coordination with private-sector measures.

**Example case****Measures Related to Nationally Certified Sustainably Managed Natural Sites**

Mobility Resort Motegi, which is owned by Honda Motor Co., Ltd., managed by Honda Mobility Land, and located in Motegi Town, Haga Gun, Tochigi Prefecture, was certified as a Nationally Certified Sustainably Managed Natural Site in October 2023. This site is a *satouchi-satoyama* area comprising mosaics of natural features including a secondary forest of deciduous broad-leaved trees, a conifer forest, terraced rice fields, and grassland. For the purpose of conserving native species of animals

and plants, the following activities are conducted there: the control of alien plants, forest maintenance, renewal of terraced rice fields, rice cultivation, wintertime ponding, and environmental education conducted in cooperation with local educational institutions, and animal and plant surveys. At this site, the presence of endangered species listed on the Red List of the Ministry of the Environment, such as the diving beetle and gray-faced buzzard-eagle, has been confirmed.

**A new law to promote private-sector activities**

In order to further promote voluntary private-sector activities intended to restore or create ecosystems on abandoned land in addition to activities in areas with rich biodiversity, in January 2024, the Central Environment Council submitted a report on measures that should be implemented in the future in order to promote private-sector activities to realize the

nature-positive. In light of that, on April 19, 2024, the Act on Promoting Activities to Enhance Regional Biodiversity was promulgated to provide for a system whereby the government certifies excellent private-sector activities to conserve and create biodiversity.

## Transition Strategies toward Nature Positive Economy

Regarding the many social challenges faced by Japan, adopting an integrated approach—integrating environmental policy with various other governmental policies, and integrating environmental policy measures, including the nature-positive, net-zero GHG emissions, and circular economy—rather than addressing the challenges individually, is an effective way of dealing with them. For example, improving resource efficiency through measures such as promoting recycling may lead to the creation of synergy between the circular economy and the nature-positive initiative in the form of the reduction of the environmental burdens associated with the procurement of new raw materials. There may also be a relationship of trade-off between climate change mitigation measures and the burdens imposed on forests and other natural capital due to the introduction of renewable energy electricity generation equipment.

Therefore, when promoting the transition to nature positive economies, instead of individually addressing those challenges, it is necessary to maximize synergies and minimize trade-offs and

effects harmful for both human society and the natural environment by supporting companies' integrated, comprehensive approaches in consideration of interactions between various measures, such as the realization of net-zero GHG emissions and a circular economy.

In light of international trends related to the transition toward nature positive economies, the Ministry of the Environment will support companies' active initiatives. At the same time, in order to promote the shift to a socio-economic structure that contributes to the realization of the nature-positive while keeping up with international discussions, in March 2024, the Ministry of the Environment, jointly with relevant ministries and agencies, formulated the Transition Strategies toward Nature Positive Economy. We will provide support to companies through governmental measures in order to help them incorporate the concept of natural capital conservation into management, deal with risks related to natural capital and create new business opportunities.

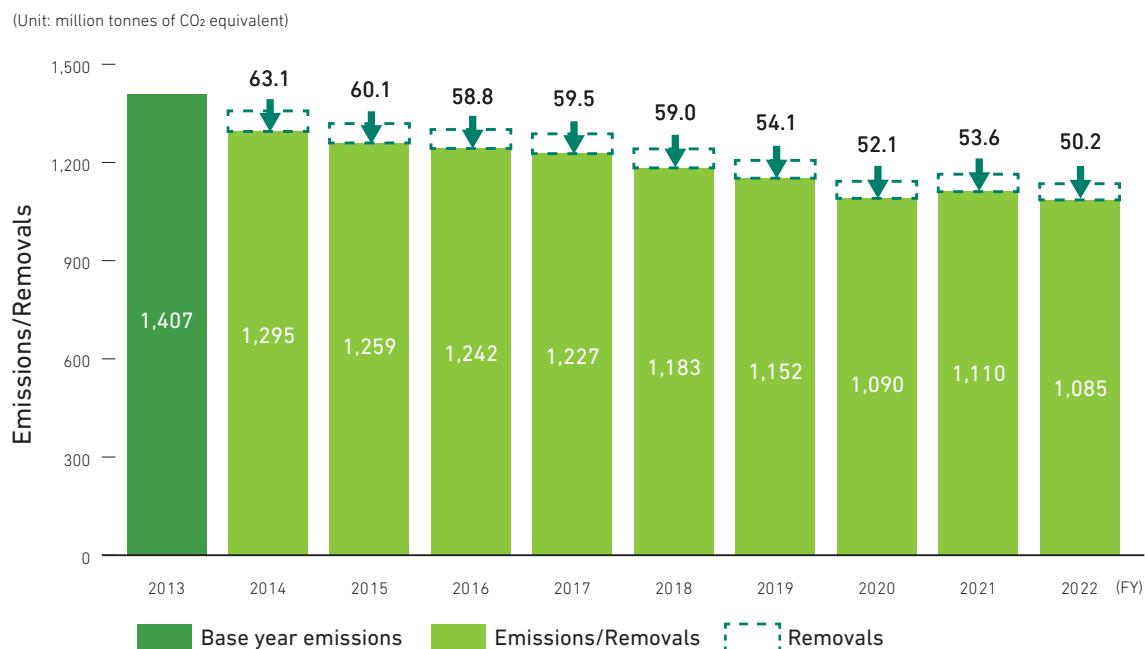
## 3 NET-ZERO GHG EMISSIONS

### Greenhouse gas emissions and removals in Japan

Japan aims to reduce its GHG emissions by 46% in FY2030 from its FY2013 levels, setting an ambitious target which is aligned with the goal of achieving net-zero GHG emissions by 2050. Furthermore, Japan will continue strenuous efforts in its challenge to meet the lofty goal of cutting its emissions by 50%. Japan's GHG emissions and removals (removals were subtracted from the sum of GHG emissions) in FY 2022 were 1,085 million tonnes of CO<sub>2</sub> equivalent, a decrease of 2.3% (25.1 million tonnes of CO<sub>2</sub> equivalent) from FY 2021. The main

factor behind the decline is a decrease in overall energy consumption volume, which was due to the significant effects of electricity saving and energy efficiency improvement efforts in the industrial sector, the commercial and other sector, and the residential sector. Compared with FY2013, the volume of GHG emissions and removals was down 22.9% (322.1 million tonnes of CO<sub>2</sub> equivalent), so Japan keeps on track for the target (steady decreasing trend toward net-zero GHG emissions by 2050).

## Japan's Greenhouse Gas Emissions and Removals



Source: Ministry of the Environment

Column

### Blue carbon ecosystems with multiple value

Seaweed and seagrass ecosystems in coastal and offshore seas are capable of sequestering CO<sub>2</sub> through the photosynthesis process, so those ecosystems, known as "blue carbon ecosystems," are attracting attention as a new key to global warming countermeasures.

Cultivating blue carbon ecosystems not only leads to CO<sub>2</sub> sequestration through seawater but also creates multi-faceted value, including the improvement of water quality, ecosystem conservation, use of ecosystems as sites for

community-wide environmental education, and maintenance and improvement of the fishing ground environment.

As Japan aims for the integrated promotion of three initiatives—the achievement of net zero GHG emissions by 2050, circular economy, and nature-positive—the whole of the government will devote efforts to activities related to blue carbon as very important ones for promoting the three initiatives in an integrated manner.

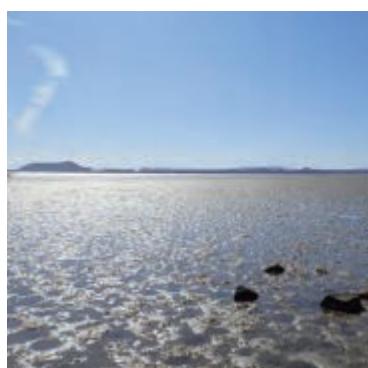
#### Blue carbon ecosystem



Mangrove forests



Seagrass meadows/macroalgal beds



Tidal marshes  
(salt marshes and tidal flats)

Source: UNEP report, "Blue Carbon: The Role of Healthy Oceans in Binding Carbon," and Ministry of the Environment

## Creation of Decarbonization Leading Areas

In order to achieve net-zero GHG emissions by 2050, Japan is striving to create Decarbonization Leading Areas based on the regional decarbonization roadmap (determined by the National and Regional Decarbonization Realization Committee in June 2021), which is mainly comprised of measures in the “everyday life” and “society” sectors, which are closely related to regional initiatives in particular. Decarbonization Leading Areas refer to areas that are committed to achieving net-zero CO<sub>2</sub> emissions associated with the electric power consumption of the consumer sector (residential, commercial, and other sectors) in line with the national goal of net-zero GHG emissions by 2050. They are also committed to achieving other GHG emission reductions, including in the transport sector and heat use,

according to their own characteristics and are consistent with the overall national target for FY2030. These areas serve as role models for nationwide decarbonization efforts. We plan to select at least 100 areas by FY 2025 to pave the way for implementing pioneering efforts according to regional characteristics toward decarbonization, and complete the program by FY 2030. In this way, we hope to offer simultaneous solutions to the challenges that exist in many local communities, including farming villages, fishing villages, mountain villages, remote islands, and urban areas, and contribute to their revitalization. By the end of FY2023, 73 areas have been selected as Decarbonization Leading Areas through four public solicitations.

## Joint Crediting Mechanism and overseas expansion of environmental infrastructure

Japan actively implements the Joint Crediting Mechanism (JCM) to contribute to GHG emission reductions by introducing decarbonization technologies and infrastructure to partner countries. In the Plan for Global Warming Countermeasures (Cabinet decision in October 2021), Japan aims to contribute accumulated emission reductions and removals through public-private collaborations at the level of approximately 100 million ton-CO<sub>2</sub> by FY2030.

In FY2023, the number of JCM partner countries increased to 29 with the addition of four new countries. To date, more than 250 decarbonization projects have been implemented, including the introduction of renewable energy and energy-saving technologies. In a joint statement adopted at the Asia Zero Emission Community (AZEC) Leaders Meeting held in Tokyo in December 2023, the importance of promoting and implementing high-integrity carbon markets and crediting schemes, including the JCM, was mentioned. Meanwhile, a bill to partially amend the Act on Promotion of Global Warming Countermeasures was approved upon a cabinet decision in March 2024 and was submitted to the 213th session of the Diet in order to strengthen the



The then Prime Minister Fumio Kishida and Parliamentary Vice-Minister of the Environment Kentaro Asahi participating in the AZEC Summit

Source: Cabinet Public Relations Office

implementation structure of the JCM in Japan, to coordinate with the increasing number of partner countries and projects, and to achieve Japan's NDCs. Japan will contribute to global decarbonization by continuing to expand the JCM and also promote the overseas expansion of superior decarbonization technologies involving Japanese companies by creating the decarbonization market.

**4****CIRCULAR ECONOMY**

## **Key Points of the formulation of the Fifth Fundamental Plan for Establishing a Sound Material-Cycle Society**

### **Thorough resource circulation throughout the whole product life cycle through cooperation among businesses**

Arteriovenous cooperation, which creates new value in the market by making more effective use of high-level technological expertise so far cultivated through cooperation between arterial industries, such as manufacturing and retail trade, and venous industries, such as waste processing and recycling, is the key to Japan's new avenues for growth.

In order to enable manufacturing and retail trade companies and waste processing and recycling companies to cooperate in securing the supply of recycled materials of the required levels in terms of both quality and quantity, we will promote the

Design for Environment (DfE) concept, the improvement of recycled material utilization rates, and the sophistication of recycling processes, including the disassembly, crushing and sorting of used products. At the same time, we will steadily promote initiatives based on various recycling laws. We thereby promote thorough resource circulation throughout the whole product lifecycle in accordance with the future directions of recycling by type of material and product that are indicated in the Circular Economy Roadmap.

### **Realization of diverse regional circulation systems and regional revitalization**

Local governments, as coordinators, will promote cooperation and collaboration between regional agents, including citizens, companies, NPOs and NGOs, and encourage the “Reduce” initiative by raising awareness. Local governments will also develop systems that efficiently circulate local resources on an optimal scale suited to each type of resource and promote activities such as reuse, recycling, repair, maintenance, sharing, and subscription. Through those activities, they will invigorate regional economies by creating new value and jobs in regions by using local circular and renewable resources as raw materials for new

products, fertilizers and feeds and contribute to the reduction of expenditures by reducing the volume of resources disposed as waste.

In addition, local governments will promote a lifestyle shift and realize high-quality life so that consumers can have a higher level of awareness of resource circulation and turn the awareness into practical actions by promoting the provision of diverse options of products and services accompanied by labeling concerning environmental value, including reused products, repair service, and products using circular and renewable resources produced through local resource circulation activity.

### **Construction of appropriate circular resource systems and promotion of overseas expansion of the circular industry**

Japan will promote resource circulation measures integrating domestic and international approaches by playing the leading role in forging international agreements on measures related to a circular economy and resource efficiency, including the 3Rs initiative and in holding international discussions on

appropriate exports and imports of renewable waste and plastic pollution and also by cooperating with international organizations and private-sector companies to develop international rules. Japan will construct international circular resource systems based on agreements on the strengthening of

domestic and international recovery and recycling of critical minerals that were reached under the Japan-ASEAN partnership and at the G7. Moreover, Japan will ensure appropriate waste management, strengthen resource circulation, contribute to the

reduction of environmental pollution, and ease global resource constraints by spreading a package of excellent Japanese schemes, systems, technologies and personnel training to developing countries, including ASEAN.

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## Promotion of plastics resource circulation

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### Formulation of a legally binding international instrument (treaty) on plastic pollution, including in the marine environment

At a UN Environmental Assembly session held in February-March in 2022, a resolution was adopted to establish the Intergovernmental Negotiating Committee (INC) to develop an international legally binding instrument (treaty) on plastic pollution, including in the marine environment. This resolution called for the start of negotiations at the INC in the second half of 2022 with the ambition to complete its work by the end of 2024. The first session of the INC was held in Uruguay in November-December 2022, marking the official launch of negotiations on the instrument.

Japan has actively engaged in measures to address plastic pollution. For example, at the G20 Osaka Summit in 2019, Japan proposed the Osaka Blue Ocean Vision, and at the G7 Hiroshima Summit in 2023, it played the leading role in forging an agreement on the ambition to reduce plastic pollution. Japan will continue to make active contributions to discussions with a view to developing an effective and progressive international framework involving many countries, including major producers and consumers.

# REALIZATION OF SUSTAINABLE LOCAL COMMUNITIES AND LIFESTYLES

Under the Sixth Basic Environment Plan, Japan aims to create a Circular and Ecological Economy (local SDGs), which is the key to realizing a self-reliant and decentralized sustainable society using local resources, and develop it as a ground to practice/implement the “new avenues for growth” concept with an eye to “the vision of an ideal future” for local communities.

# 3

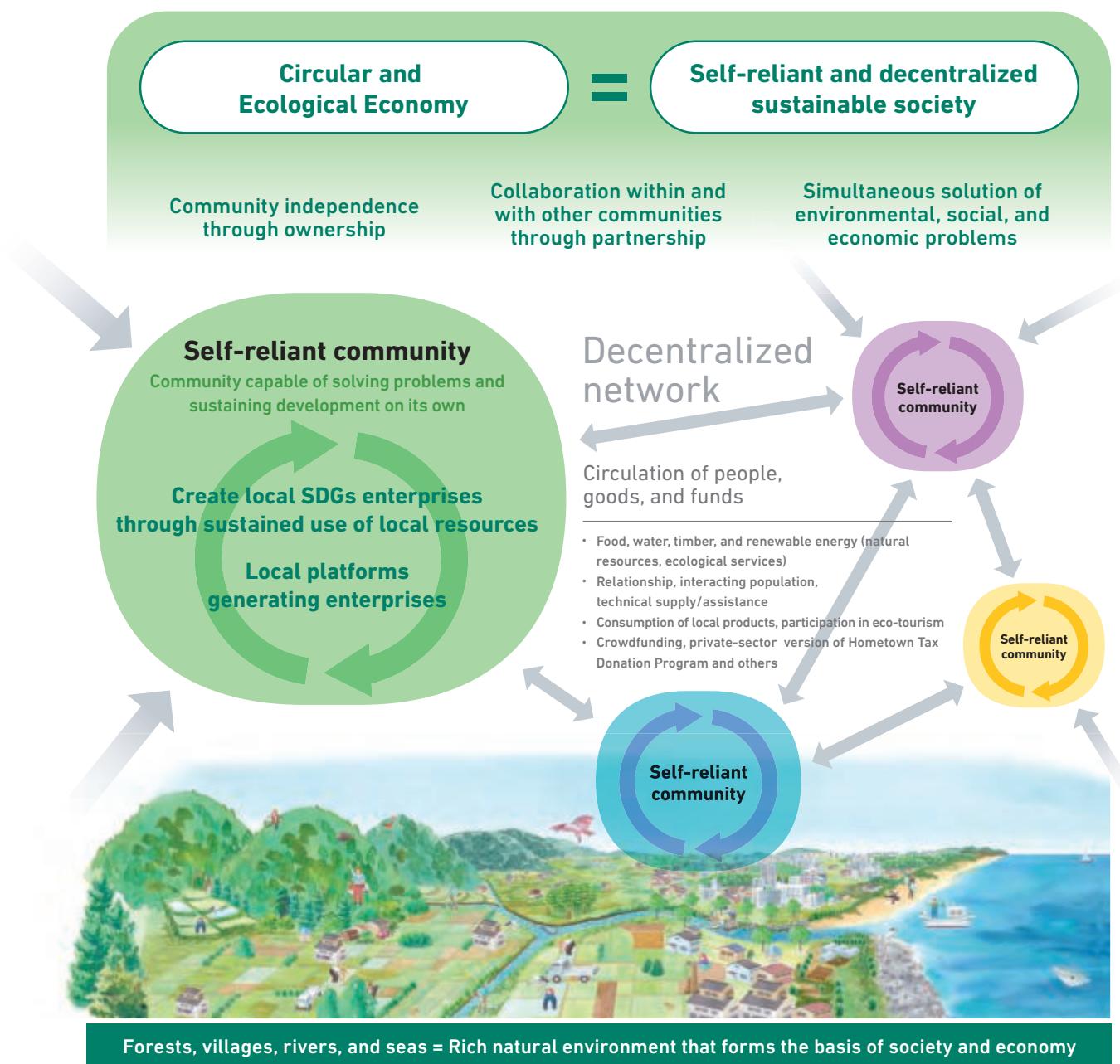
## 1

# PRACTICE AND IMPLEMENTATION OF THE CIRCULAR AND ECOLOGICAL ECONOMY

The Circular and Ecological Economy is the concept of a “self-reliant and decentralized society” wherein each local community solves its own challenges self-reliantly through continuous creation of enterprises using local resources and improving the environment, economy, and the society (“local SDGs enterprises”), while making best use of its unique characteristics to network

with other communities and help each other. As the Circular and Ecological Economy represents an approach to solve local environmental, social, and economic challenges in an integrated manner primarily based on the independence of the local communities and in partnership with others, it may also be called local SDGs.

### Concept of Circular and Ecological Economy



Source: Ministry of the Environment

## Column

## Nanohana Eco Project to lead sustainable local communities to the future (Ai No Machi Eco Club)

In the 11th Good Life Award (a program to commend activities and initiatives related to "way of living friendly to the environment and society" conducted across Japan), the Minister of the Environment Grand Prize was given to Ai No Machi Eco Club, an NPO, from among the 202 applicants. The Nanohana Eco Project, which was launched in 1998 in Higashioomi City, Shiga Prefecture, has its roots in the Lake Biwa "Soap Movement". It is a local resource circulation project for the manufacturing of rapeseed oil, including rapeseed cultivation, and the refining of biodiesel fuels using recovered waste edible oil. In 2005, Aito Eco Plaza Nanohana Kan, which is the base for this project, was constructed. The NPO that is the designated

manager, citizens, administrative officials, and experts have worked together to continue this project for 25 years.



Rapeseed oil "Nabakari" produced from rapeseed cultivation

Source: Ai No Machi Eco Club (NPO)

## Example case

## Passing on traditional culture and creating a new one—Upcycling of Meisen kimono (Ay)

Ay, a company located in Maebashi City, Gunma Prefecture, was founded in 2020 by a university student. Under the ideal of disseminating the culture and history of Gunma Prefecture, Ay upcycles the "Isesaki Meisen" brand of kimono (traditional Japanese garment), for which Gunma Prefecture is famous, and designs, manufactures and sells products such as clothing and accessories.

Meisen is silk kimono that is distinctive for its bold colors and modern designs, such as abstract and geometric patterns. Currently, as production has been discontinued in some regions because of the aging of artisans and the shrinkage of the market, this is a declining tradition.

All manufacturing processes for Ay's upcycled products, which features Meisen's distinctive characteristics, are implemented at a factory in Gunma Prefecture. Cloth materials other than

Meisen used in those products are also sustainable ones. As a result, the manufacturing of upcycled products not only gives consideration to environmental loads that arise during product life cycles but also leads to the dissemination of the history and industrial heritage of Gunma Prefecture, for which the spinning and textile industry used to be the main industry.

As a result of the decline of the industry and a decrease in the number of manufacturers, the available volume of Meisen cloth is limited. Therefore, Ay has now taken on the challenge of going beyond preserving and passing on the traditional culture to creating and disseminating a new culture. For example, the company has created a database of patterns used in Meisen kimono and develops original cloth materials, and manufactures miscellaneous goods and yukata summer kimono with a modern style.



Isesaki Meisen kimono



Photos of upcycled products



Source: Ay

## 2 LIFESTYLE SHIFT

If one looks at Japan's GHG emissions on a consumption basis, approximately 60% of the total is reportedly due to households. To realize net-zero, not only national and local governments, companies, and other constituent units, but also all ordinary citizens need to change their familiar lifestyle.

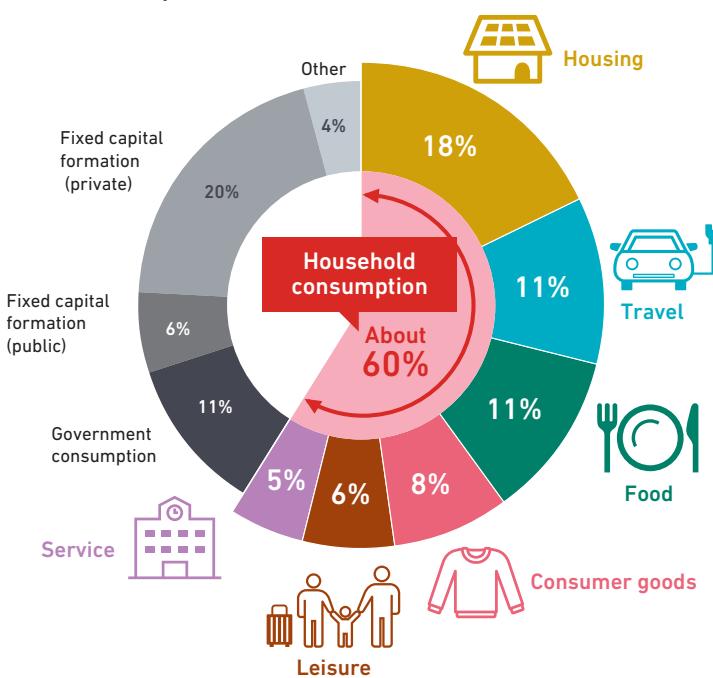
The conventional "mass-production, mass-consumption, mass-disposal" type of lifestyle is deteriorating

"ecosystem services," which are the various blessings that nature provides to support us with food, clothing, and shelter. To realize a green society, we need to change our lifestyles from the aspects of housing, travel, food, and fashion to reduce GHG emissions, reduce waste, and place value on resource circulation and natural resources through the 3Rs + Renewable.

### Japan's Life cycle Greenhouse Gas Emissions on a consumption basis

Source: Estimated by National Institute for Environmental Studies and Institute for Global Environmental Strategies (GES) based on: Keisuke Nansai, "Embodied Energy and Emission Intensity Data for Japan Using Input-Output Tables (3EID)" (National Institute for Environmental Studies, 2019); Nansai et al. Resources, Conservation & Recycling 152 104525 (2020); and Ministry of Internal Affairs and Communications, "Input-output Table 2015"

Note: Each item represents the calculated total amount of greenhouse gas emissions (carbon footprint) throughout the life cycle (i.e., resource extraction, material processing, product manufacturing, distribution, retail, use, disposal) of each consumption/fixed capital formation product or service in Japan (numbers do not match direct emissions based on domestic production).



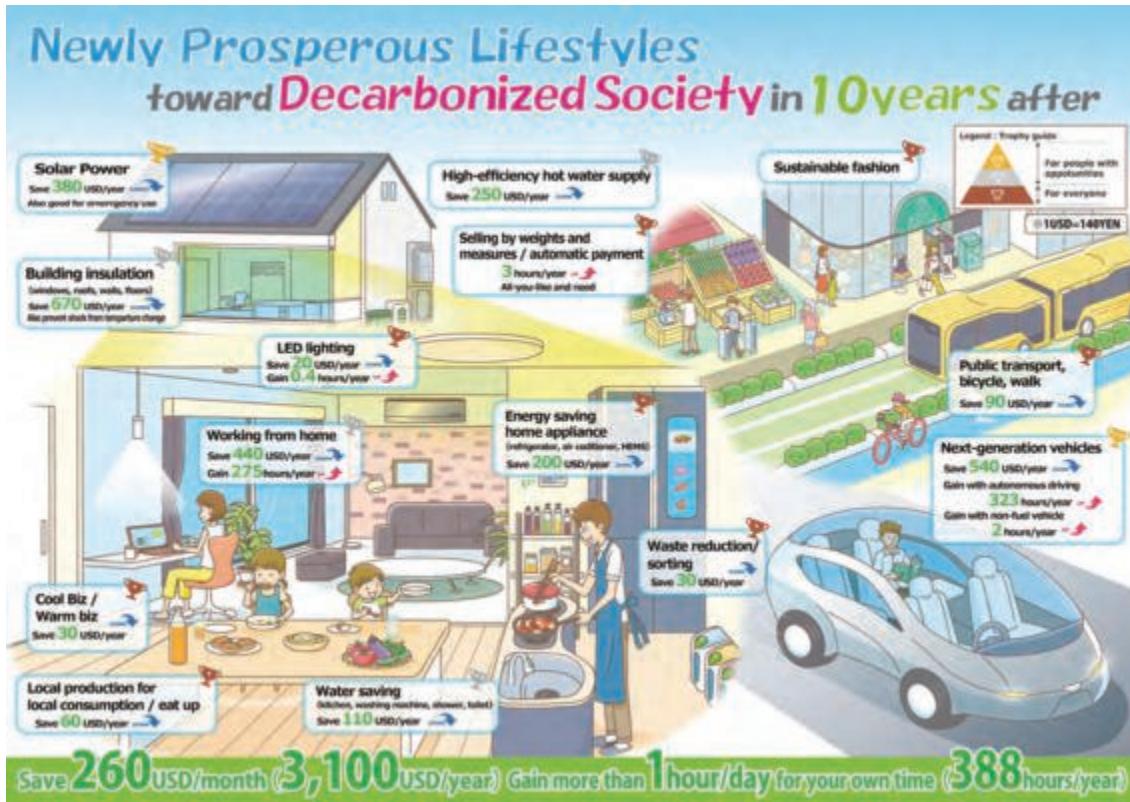
## DECOKATSU

(National Movement for New and Prosperous Lifestyles toward Decarbonization)

To achieve net-zero GHG emissions by 2050 and the reduction target for FY2030, it is necessary to significantly reduce CO<sub>2</sub> emissions in the field of lifestyle. Therefore, in order to encourage changes in the behavior of Japanese citizen and consumers and a lifestyle shift, the Ministry of the Environment launched the National Movement for New and Prosperous Lifestyles toward Decarbonization in October 2022 and dubbed it "DECOKATSU\*" in July 2023.

Under the DECOKATSU movement, the Ministry of the Environment has proposed "Newly Prosperous Lifestyles toward Decarbonized Society in—10 years after," an overall vision of the citizen's future lifestyles that encompasses general aspects of life, including how they dress, eat, live, work, move, and purchase and is implementing initiatives to create "Newly Prosperous Lifestyles toward Decarbonized Society" for the people in cooperation with local governments, companies, associations, and other entities.

\*Note: "DECOKATSU" is a newly coined word that combines these words, "DE" carbonization, "ECO", and "Katsu"(Japanese word for activity and lifestyle).



### Proposed Features of Newly Prosperous Lifestyles

Source: Ministry of the Environment

In addition, the Ministry of the Environment is stimulating new patterns of consumption and behaviors, and promoting the creation of demand for products and services in and outside Japan in parallel with a lifestyle shift by supporting the creation of enriching lifestyles for the people while cooperating with local governments, companies, associations, and other entities participating in a public-private partnership council (DEKOKATSU Support Team), which was established at the same time as the launch of the DEKOKATSU movement. In order to further accelerate this initiative, we have

bundled budget items related to lifestyles, such as the net-zero emissions initiative within the ministry, into the DECOKATSU related budget and appropriated slightly below 300 billion yen under the FY2023 supplementary budget and the FY2024 initial budget.

As a specific DECOKATSU activity, we will encourage the creation of enriching lifestyles for the Japanese citizens by disseminating information registered by local governments, companies, associations and other entities on a newly opened website under the following four approaches.

- 1 — Encouraging diverse and comfortable ways of working and lifestyles taking advantage of digital technology (e.g., telework, relocation to rural regions, and workation)
- 2 — Proposing and providing products and services that support New and Prosperous Lifestyles toward Decarbonization
- 3 — Encouraging behavior change through incentives and effective dissemination of information (actions based on nudge theory (hereinafter “nudge actions”); including dissemination of consumers input)
- 4 — Proposing and supporting lifestyles particular to local communities (suited to the climate, culture and other features of each community)

(The number of information items published on the website as of March 2024 [1] information related to digitalization: 39 items; [2] information related to products/services: 197 items; [3] information related to incentives: 125 items; and [4] information related to local communities: 35 items; total: 396 items (some items are related to two or more categories))

Moreover, as initiatives to enrich and upgrade the citizen's lifestyles, the Ministry of the Environment determined the following 13 actions and is calling for each and every individual to practice DECO-katsu in everyday life: [1] "Four Actions to take first," [2] "Three Actions to Unconsciously Reduce CO<sub>2</sub>," and [3] "Six Actions to take by each of us."

In addition, in order to promote the diffusion and penetration of DECOKATSU, we are calling on organizations (local governments, companies, and associations) and individuals to make a "DECOKATSU Declaration" and are requesting the dissemination of information on the DECOKATSU activities that they conduct in everyday life through SNSs with the hashtag #DECOKATSU (in Japanese) to spread the movement. We are also implementing various other measures, including holding the DECOKATSU Action *Ogiri* (Improv Comedy Event," which gives the Minister of the Environment award to successful applicants selected from among those who responded to the solicitation for individuals,

including employees, as well as organizations, companies, and associations to conceive and submit slogans related to "My DECOKATSU actions," "Our DECOKATSU actions," "Our company's DECOKATSU actions," and "Our town's DECOKATSU actions."

Going forward, based on the 10-year roadmap of lifestyles, published in February 2024, we will use every occasion to promote the DECOKATSU movement in order to structurally resolve the challenges and bottlenecks that are in the way of behavior change and lifestyle shift in general aspects of the people's lives while using the DECOKATSU related budget. For example, we will effectively promote activities conducted through cooperation between the public and private sectors.



DECOKATSU Action *Ogiri* Event  
Source: Ministry of the Environment

#### Example case

### CO<sub>2</sub> emission coefficients specific to time periods of the day and nudge actions for daytime EV recharging

A nudge action is a policy device to help people spontaneously choose better options for themselves, using knowledge gained from behavioral science. As part of the Ministry of the Environment's nudge project, D-Sharing Co., Ltd., using an own patented technique for calculating CO<sub>2</sub> emission coefficients specific to time periods of the day, has developed a technique to evaluate environmental considerations on a household-by-household basis based on precise calculations of CO<sub>2</sub> emissions associated with electricity usage. Using this technique, we are conducting demonstration experiments to promote, in addition to electricity saving, electricity usage and recharging of electric vehicles in time periods when the share of renewable energy in power generation is large.

In one experiment, a smartphone app was used to record the status of recharging of electric vehicles on a daily basis. The experiment demonstrated that the percentage of households that recharge electric vehicles in the daytime period, when CO<sub>2</sub> emissions are small, registers a statistically significant increase as a result of the following nudge actions: showing data on the volume of CO<sub>2</sub> emission reductions in the case of daytime recharging compared with recharging at

night, when the CO<sub>2</sub> emission coefficient is large because of the relatively large share of thermal power generation; showing the rankings of users of the abovementioned app based on the volume of CO<sub>2</sub> emission reductions; giving small monetary rewards (points) in accordance with the volume of CO<sub>2</sub> emission reductions.

The volume of electricity generated from renewable energy may change significantly depending on the time of day, so it is possible to encourage the effective use of renewable energy by showing data by time of day.

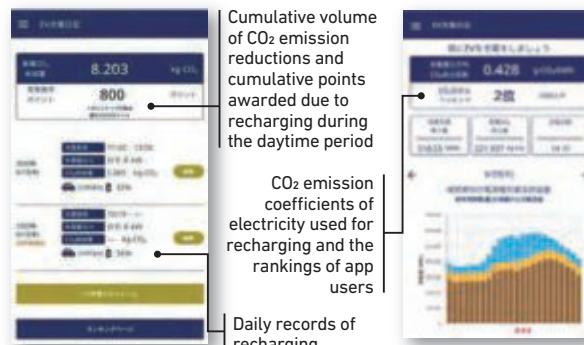


Image of the smartphone app interface  
Source: D-Sharing Co., Ltd.

**3**

## PROTECTING HUMAN LIFE AND THE ENVIRONMENT

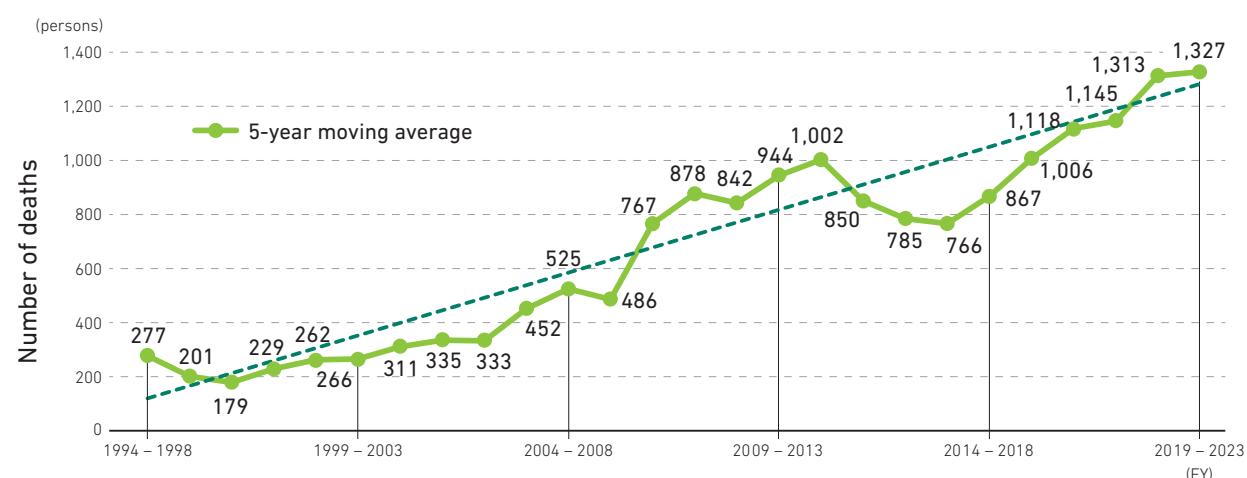
### The aggravating heat illness problem

In recent years in Japan, the numbers of ambulance transports and deaths due to heat illness have been alarmingly high. Between May and September 2023, approximately 91,000 people were transported to emergency hospitals. Between 2019 and 2023, the annual fatality on a 5-year moving average basis has been 1,327. The number of deaths due to heat illness has continued to trend upward. In recent years, the

annual number of deaths due to heat illness has frequently exceeded 1,000 people and has been higher than the number of deaths due to natural disasters.

As global warming progresses, the risk of extremely high temperatures is expected to increase. As such, countermeasures against heat illness are an urgent issue in Japan.

#### Heat illness fatalities (5-year moving average)



Source: Ministry of the Environment, based on Ministry of Health, Labour and Welfare, "Vital Statistics"

**4**

## FUNDAMENTAL ENHANCEMENT OF COUNTERMEASURES

In order to further promote countermeasures against heat illness, in April 2023, the Act to Partially Amend the Climate Change Adaptation Act and the Act to Partially Amend the Act on the Environmental Restoration and Conservation Agency, Independent Administrative Agency (Act No. 23 of 2023) was passed and enacted in the 211th Diet session. This law upgrades the existing action plan regarding countermeasures against heat illness into a statutory plan subject to cabinet decision in order to promote countermeasures through closer government-wide cooperation. The law also designates the Heat Stroke Alert as statutory information and prescribes that when there is the risk of serious health damage, a higher level of alert, Special Heat Stroke Alert, should be announced. In addition, when a Special Heat Stroke

Alert is announced, the law empowers mayors to designate facilities meeting certain criteria, such as having air-conditioning equipment installed, as cooling shelters to be made available for residents and designate private-sector organizations engaging in efforts to disseminate and raise awareness about countermeasures against heat illness as heat illness countermeasures dissemination organizations. In May 2023, the Heat Illness Prevention Action Plan, based on the Climate Change Adaptation Act (Act No. 50 of 2018), was approved upon a cabinet decision. The action plan set a medium-term goal (to be achieved by 2030) of halving the number of deaths due to heat illness (on a five-year moving average basis) from the current level and called for the enhancement of measures taken by relevant ministries and agencies.

# EFFORTS FOR RECONSTRUCTION AND REVITALIZATION AFTER THE GREAT EAST JAPAN EARTHQUAKE AND NUCLEAR POWER PLANT ACCIDENT

On March 11, 2011, a magnitude 9.0 earthquake occurred off the coast of Japan. It was the most powerful earthquake ever recorded around Japan. It generated a tsunami that caused massive damage across a wide swath of northeastern Japan, particularly along the Pacific coast. Simultaneously, the accident at the Tokyo Electric Power Company (TEPCO) Fukushima Daiichi Nuclear Power Station released a large volume of radioactive materials into the environment, forcing many residents to evacuate to other areas. The Ministry of the Environment has been engaged in the efforts aimed at the reconstruction and revitalization of the affected areas, including the decontamination and construction of Interim Storage Facilities, the disposal of specified wastes, and the decontamination and administration of the Specified Reconstruction and Revitalization Bases (SRRBs) in the Restricted Areas.

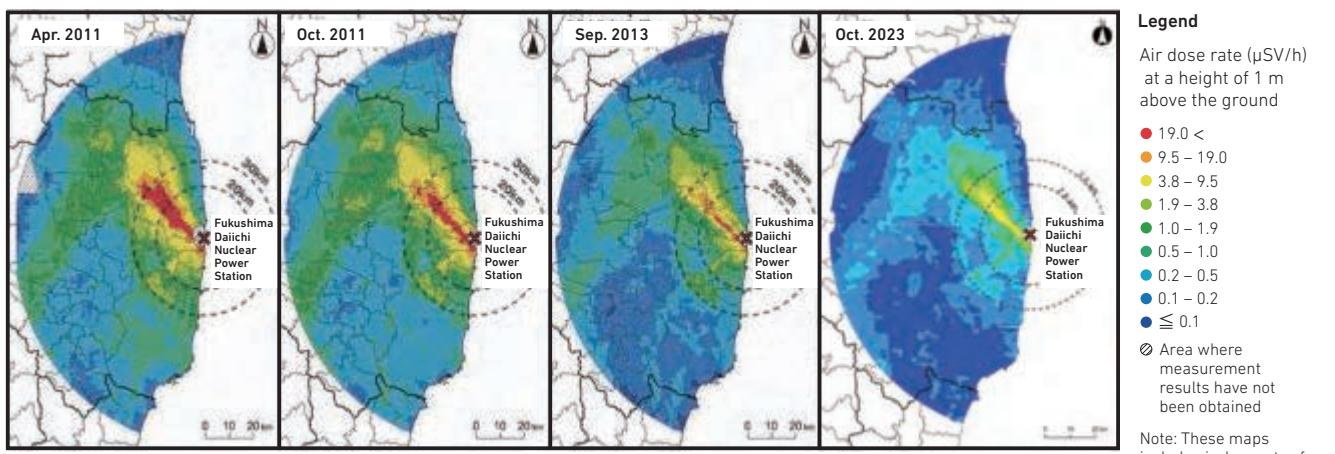
## 1 STATUS OF ENVIRONMENTAL RESTORATION FROM RADIOACTIVE CONTAMINATION

Airborne monitoring within the 80-km zone around the Fukushima Daiichi Nuclear Power Station has shown that the average air dose rate of radioactivity at a height of 1 meter above the ground continues to decline as of November 2023.

In addition, according to monitoring in Fukushima

Prefecture and surrounding areas conducted by the Ministry of the Environment, no radioactive cesium has been detected in rivers, coastal area water, or groundwater in recent years. Further, in lakes, radioactive cesium has been detected in only 2 out of 164 spots in FY 2022.

**Distribution of air dose rates within 80 km radius of TEPCO Fukushima Daiichi Nuclear Power Station**



Note: The April 2011 chart was mapped using a different method than is used now.

Source: Secretariat of the Nuclear Regulation Authority

## 2 DECONTAMINATION MEASURES FOR SOIL CONTAMINATED BY RADIOACTIVE MATERIALS

By the end of March 2018, whole area decontamination of 100 cities, towns, and villages in eight prefectures was completed, excluding Restricted Areas. In addition, decontamination work and the demolition of houses and other buildings in SRRBs have been progressing since December 2017. In the SRRBs, decontamination work was almost completed, while the progress rate for demolition in relation to the number of applications received was approximately 86% by the end of February 2024.

As a result of these efforts, by November 2023, evacuation orders for the SRRBs in six towns and villages (Katsurao Village, Okuma Town, Futaba Town, Namie Town, Tomioka Town, and Iitate Village) were all lifted. Regarding areas outside the SRRBs, the Nuclear Emergency Response Headquarters and the Reconstruction Promotion

Council issued a document titled “Consideration on the Lifting of Evacuation Orders to Facilitate Return to and Residence in Areas Outside Specified Reconstruction and Revitalization Bases” in August 2021. Accordingly, efforts will be made to decontaminate necessary locations and lift evacuation orders so that residents who wish to return home may do so over the course of the 2020’s. To implement this government policy, we amended a draft law to partially amend the Act on Special Measures for the Reconstruction and Revitalization of Fukushima in June 2023. As a result, mayors in the Evacuation Order Areas have been empowered to designate The Specified Living Areas for Returnees with the aim of facilitating residents’ return to their home towns and the rebuilding of their lives after returning by lifting the evacuation orders.

### 3 EFFORTS TOWARD THE FINAL DISPOSAL OF REMOVED SOIL AND WASTE WITHIN FUKUSHIMA PREFECTURE

Regarding removed soil and waste arising from decontamination activities within Fukushima Prefecture, necessary measures are to be taken to complete the final disposal outside Fukushima Prefecture within 30 years from the start of interim storage.

To achieve the final disposal of removed soil outside the prefecture, it is important to reduce the volume for the final disposal by efforts of the managed recycling and volume reduction. Regarding the managed recycling, demonstration projects for agricultural embankment and road embankment have been carried out and the safety of recycled soil has been confirmed. As for volume

reduction, demonstration tests for basic technology related to cleaning and stabilizing fly ash generated at ash processing facilities in the Interim Storage Facility have been carried out.

To foster public understanding of the managed recycling and the final disposal outside the prefecture of removed soil nationwide, various initiatives have been implemented, including dialogue forums across the country on the necessity and safety of the managed recycling and volume reduction of removed soil, site tours of demonstration projects for the general public, lectures on environmental restoration projects for university students, and others.

### 4 MONITORING OF SEA AREAS RELATED TO ALPS TREATED WATER

In August 2023, the discharge of water treated by multi-nuclide removal equipment (Advanced Liquid Processing System: ALPS) (hereinafter “ALPS treated water”) into the sea started. When ALPS treated water is discharged into the sea, it is necessary to confirm that radioactive materials have been sufficiently purified to reduce their levels of concentration to well below the maximum allowable level under the safety standard. Regarding the concentration of tritium, which is difficult to remove, it is required that treated water be disposed of after being diluted with seawater significantly, down to a concentration level that sufficiently meets the safety standard (below 1,500 becquerel/litter).

In order to grasp the situation of contamination in the environment, the Ministry of the Environment measures the concentration levels of tritium and other radionuclides contained in seawater, fish, and seaweed based on the Comprehensive Radiation Monitoring Plan (decided by the Monitoring Coordination Meeting in August 2011 and revised in March 2024). Since the start of the discharge of ALPS treated water in particular, we have enhanced and expanded monitoring and conducted an analysis intended to obtain results over a short period of time (rapid analysis), approximately one week or so, at a high frequency, in addition to an existing analysis intended to obtain precise results over an extended period of time (precise analysis). As a result of those

analyses, we have confirmed that there have been no effects on the human body or the environment.

When examining the monitoring method and evaluating analysis results, we check scientific validity by receiving reviews and advice from experts at meetings of the panel of experts on the monitoring of sea areas related to ALPS treated water.

In order to check the credibility of Japan’s analysis capability, in October 2023, experts from the International Atomic Energy Agency (IAEA) and third countries visited Japan as part of the Interlaboratory Comparison initiative and jointly conducted sample collection and other activities. Going forward, the IAEA will conduct comparison and evaluation of the results of analyses conducted by Japan, the IAEA and third countries. According to the results of the Interlaboratory Comparison conducted in 2022, the IAEA recognized the sample collection method used by Japanese laboratories as appropriate and gave the assessment that Japanese laboratories involved in the analysis of radionuclides in the marine environment possess a high level of accuracy and competence.

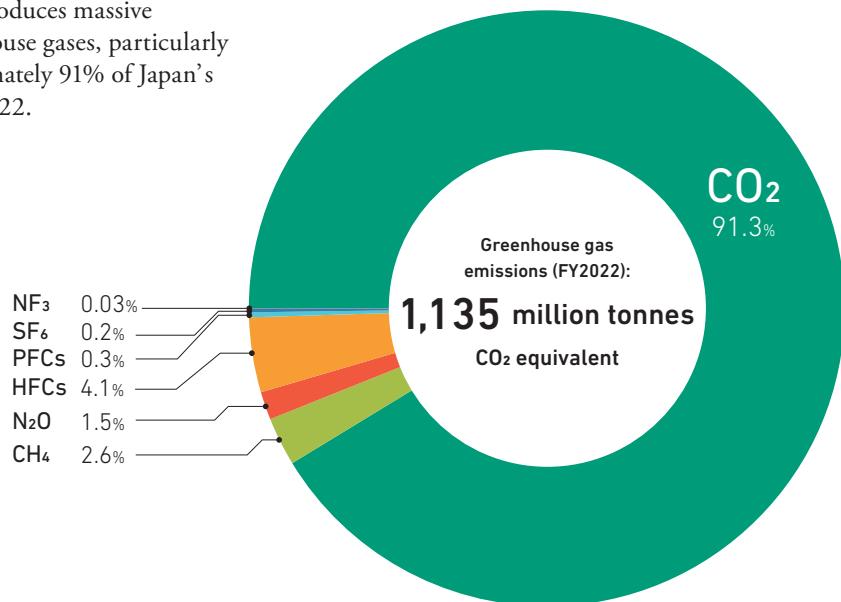
We will continue the monitoring of the sea areas with a high level of objectivity, transparency, and credibility, as well as disseminating information on the results domestically and internationally in an easy-to-understand manner.

# ADDITIONAL MATERIALS

FROM  
THE ANNUAL REPORT  
ON THE ENVIRONMENT  
IN JAPAN 2024

## Breakdown of Japan's Greenhouse Gas Emissions (FY2022)

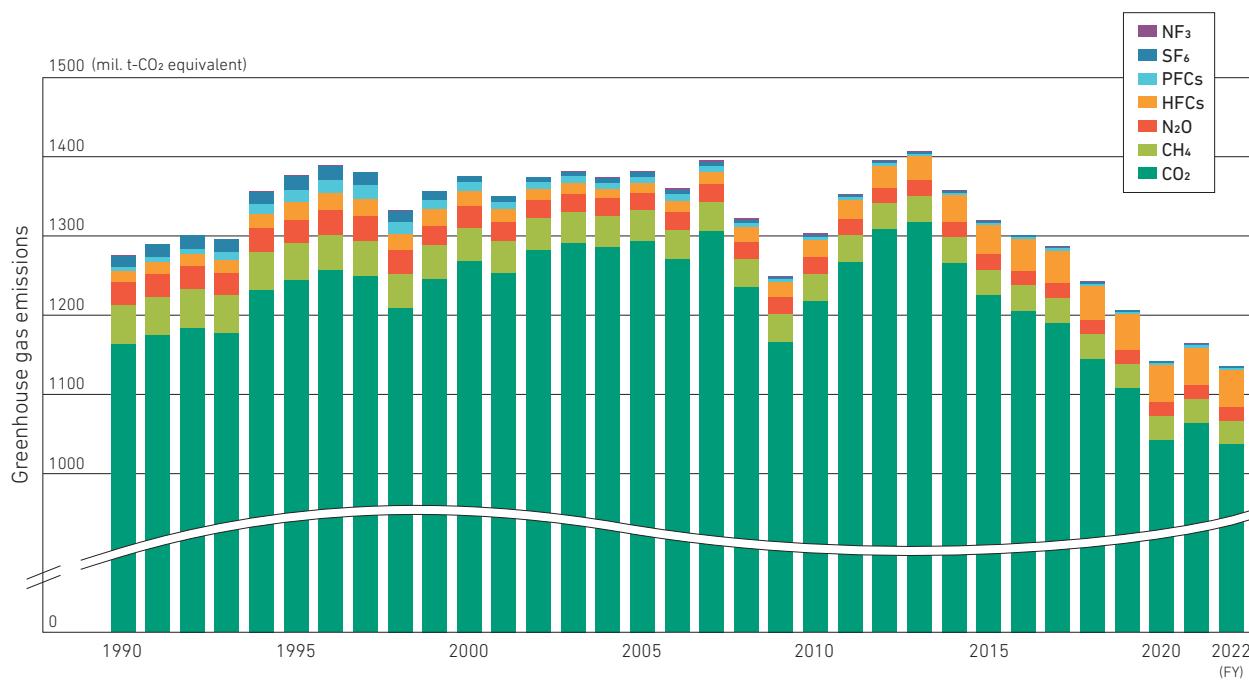
Globally, fossil fuel combustion produces massive amounts of anthropogenic greenhouse gases, particularly CO<sub>2</sub>, which accounts for approximately 91% of Japan's greenhouse gas emissions in FY 2022.



Source: Ministry of the Environment

## Japan's Greenhouse Gas Emissions

In Japan, the greenhouse gas emissions in FY2022 were equivalent to 1,135 million tonnes of CO<sub>2</sub>. The significant effect of electricity/energy-saving efforts in the industry, commercial and other, and residential sectors due to the reduced energy consumption, contributed to a 2.5% decrease over the previous fiscal year.



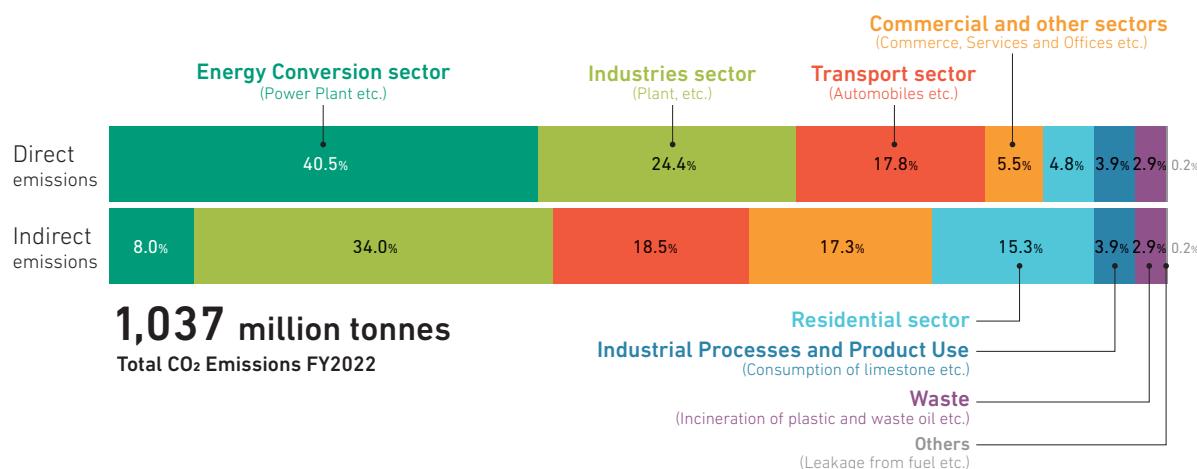
Source: Ministry of the Environment

# Japan's GHG Emissions

Additional materials provide more details about the Japan's GHG Emissions

## Breakdown of CO<sub>2</sub> Emissions by Sector

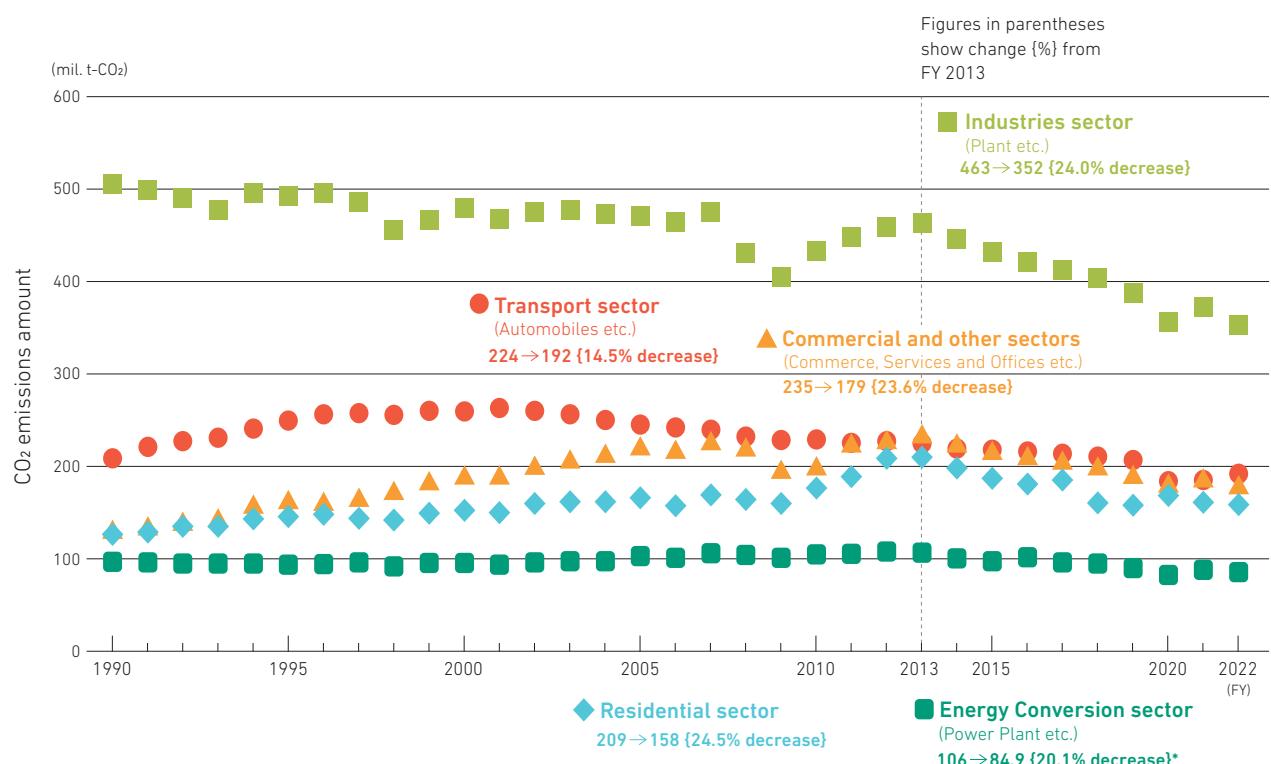
The sector with the largest CO<sub>2</sub> emissions in indirect emissions in FY 2022 was industries sector, accounting for approximately 34.0% of Japan's total.



Source: Ministry of the Environment

## Energy-related CO<sub>2</sub> Emissions by Sector (Indirect Emissions)

Plotting energy-related CO<sub>2</sub> emissions by sector reveals that emissions in every sector decreased from FY 2013.



\* Excluding statistical discrepancy from power and heat allocation.

Source: Ministry of the Environment

# ADDITIONAL MATERIALS

## FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2024

### Threatened Species in Japan

With an increasing number of species being put on the Red List, which publicizes threatened species, it is clear that the circumstances of wild fauna and flora in Japan continue to be severe.

(Reported in March 2020)

Fauna	Taxon	Species Targeted for Evaluation	Extinct	Extinct in the Wild	Threatened Species			Near Threatened	Data Deficient	Total of listed species	Endangered Local Population				
					Endangered Class I		VU								
					Class IA	Class IB									
			EX	EW	CR	EN	NT	DD			LP				
Mammals		160 (160)	7 (7)	0 (0)	34(33)			17 (18)	5 (5)	63 (63)	26 (23)				
Birds		Approx. 700 (Approx. 700)	15 (15)	0 (0)	98(98)			22 (21)	17 (17)	152 (151)	2 (2)				
Reptiles		100 (100)	0 (0)	0 (0)	37(37)			17 (17)	3 (4)	57 (58)	5 (5)				
Amphibians		91 (76)	0 (0)	0 (0)	47(29)			19 (22)	1 (1)	67 (52)	0 (0)				
Brackish water and freshwater fish		Approx. 400 (Approx. 400)	3 (3)	1 (1)	169(169)			35 (35)	37 (37)	245 (245)	15 (15)				
Insects		Approx. 32,000 (Approx. 32,000)	4 (4)	0 (0)	367(363)			351 (350)	153 (153)	875 (870)	2 (2)				
Shellfish		Approx. 3,200 (Approx. 3,200)	19 (19)	0 (0)	629(616)			440 (445)	89 (89)	1177 (1169)	13 (13)				
Other invertebrates		Approx. 5,300 (Approx. 5,300)	1 (0)	0 (0)	65(65)			42 (42)	44 (44)	152 (151)	0 (0)				
Subtotal of Fauna		49 (48)	1 (1)		1446(1410)			943 (950)	349 (350)	2787 (2759)	63 (60)				
Flora	Vascular plants	Approx. 7,000 (Approx. 7,000)	28 (28)	11 (11)	1790(1786)			297 (297)	37 (37)	2163 (2159)	0 (0)				
	Bryophytes	Approx. 1,800 (Approx. 1,800)	0 (0)	0 (0)	240(241)			21 (21)	21 (21)	282 (283)	0 (0)				
	Algae	Approx. 3,000 (Approx. 3,000)	4 (4)	1 (1)	116(116)			41 (41)	40 (40)	202 (202)	0 (0)				
	Lichens	Approx. 1,600 (Approx. 1,600)	4 (4)	0 (0)	63(61)			41 (41)	46 (46)	154 (152)	0 (0)				
	Fungi	Approx. 3,000 (Approx. 3,000)	25 (26)	1 (1)	61(62)			21 (21)	51 (50)	159 (160)	0 (0)				
	Subtotal of Flora		61 (62)	13 (13)	2270(2266)			421 (421)	195 (194)	2961 (2956)	0 (0)				
Total of thirteen taxonomic groups			110 (110)	14 (14)	3716(3676)			1364 (1371)	544 (544)	5748 (5715)	63 (60)				

\* Numerals within parentheses indicate the respective numbers of species (including subspecies, variety (only for flora) and form (only for algae and fungi)) from the Red List 2019. The numbers in the LP column are the numbers of local population. \*\* The number of species excluding those that cannot be evaluated by the naked eye.

The categories are considered as follows:

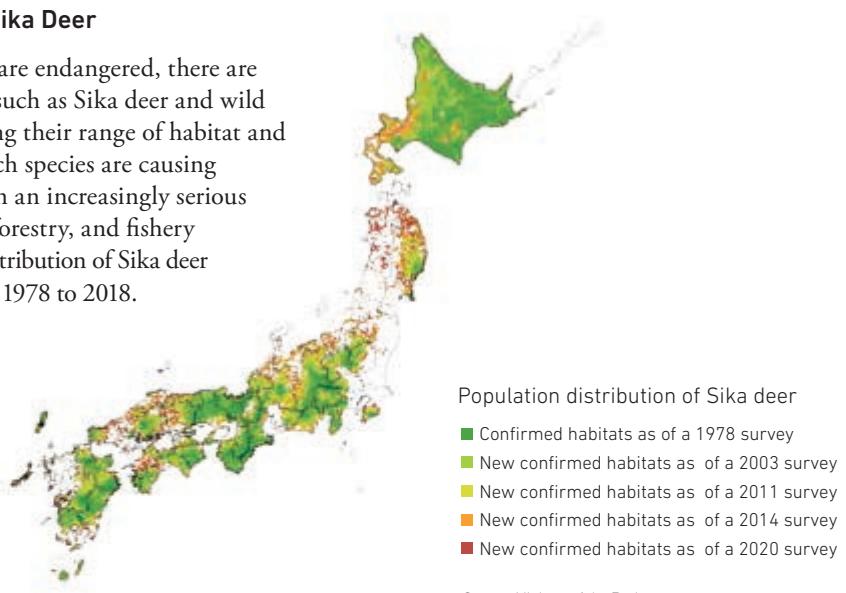
Extinct [EX]: Species that are likely to already be extinct / Extinct in the Wild [EW]: Species that exist only in captivity or as a naturalized population outside its natural habitat / Endangered Class I (Critically Endangered + Endangered) [CR+EN]: Species that are threatened to extinction / Endangered Class I A (Critically Endangered) [CR]: Species that are facing an extremely high risk of extinction in the wild in the near future / Endangered Class I B (Endangered) [EN]: Species that are facing a high risk of extinction in the wild in the near future / Endangered Class II (Vulnerable) [VU]: Species with an increasing risk of extinction / Near Threatened [NT]: Species that are not currently endangered, but may possibly qualify for "endangered" status with changes in their habitat conditions / Data Deficient [DD]: Species with data insufficient for adequate evaluation / Endangered Local Population [LP]: Species with a population isolated regionally, and face a high risk of extinction

# Biodiversity

Additional materials provide more details about biodiversity in Japan.

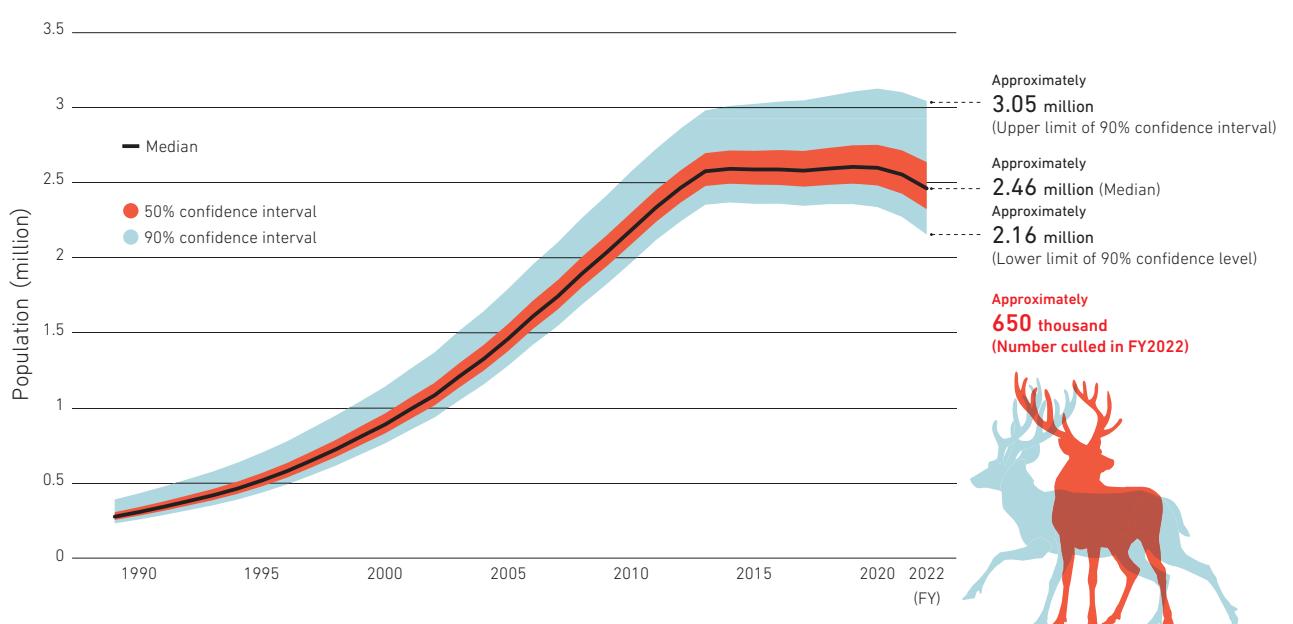
## Expanding Distribution of Sika Deer

While certain flora and fauna are endangered, there are also issues with other species, such as Sika deer and wild boar, that are rapidly expanding their range of habitat and growing their populations. Such species are causing increasing damage, resulting in an increasingly serious situation for the agricultural, forestry, and fishery industries. For example, the distribution of Sika deer expanded approx. 2.7 fold from 1978 to 2018.



## Estimated Number of Sika Deer in Japan (excluding Hokkaido prefecture\*)

Various efforts have increased the number of Sika deer captured, but the estimated population remains high.



\*: In FY 2022, estimated number in Hokkaido was approx. 670,000, and number culled was approx. 107,000 (Hokkaido data).

Source: Ministry of the Environment

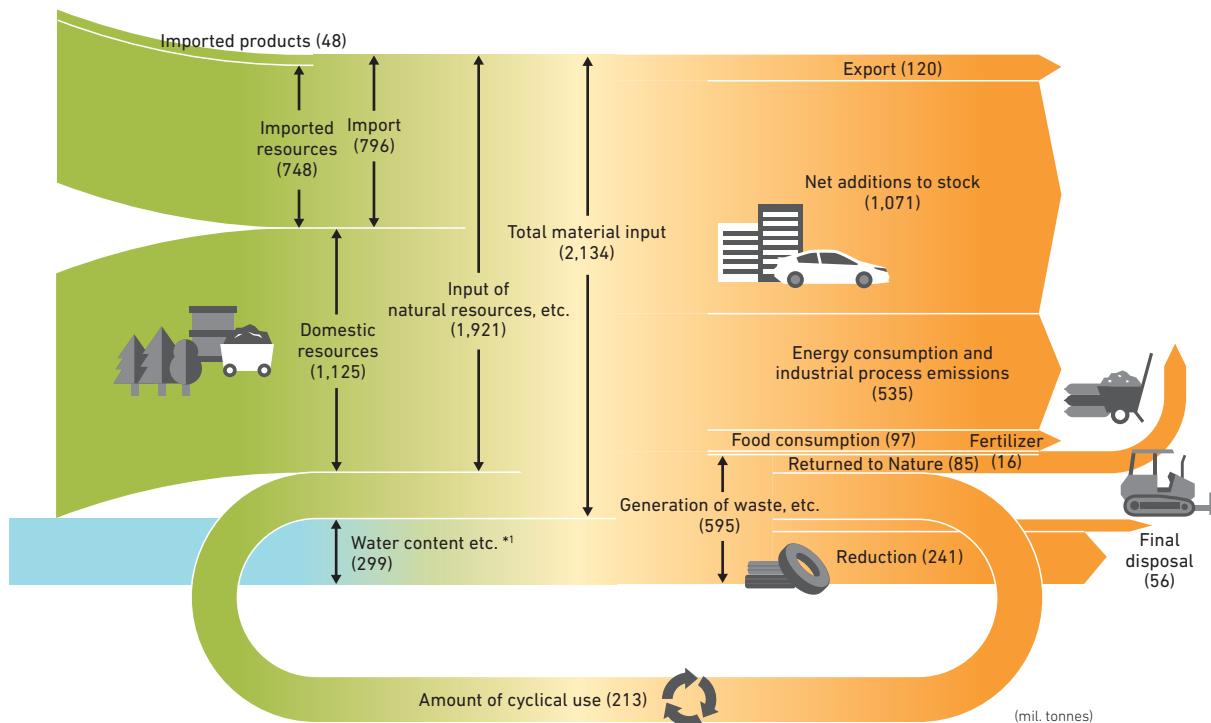
# ADDITIONAL MATERIALS

## FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2024

### Material Flow in Japan

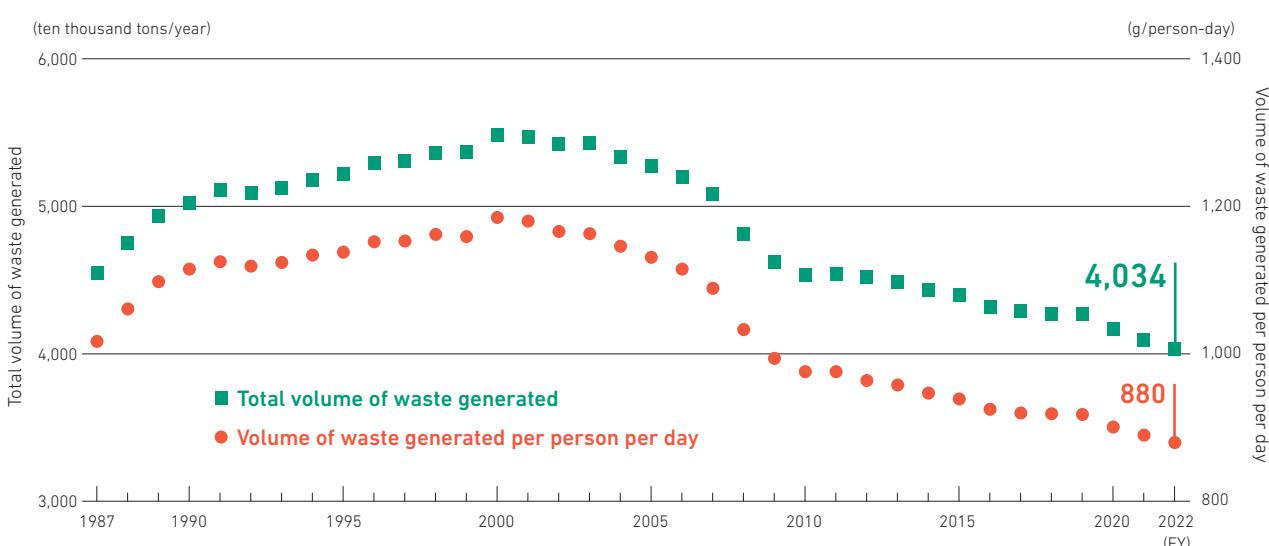
In order to establish a sound material-cycle society, it is necessary to comprehend material flows (or substance flows) to understand the extent of material extraction, consumption, and disposal in Japan. Japan uses material flows to determine targets for the four indicators of resource productivity, cyclical use rate(resource base), cyclical use rate (waste base), and final disposal amount.

**FY2000** (for reference)



### Total Volume of Waste Generation and Waste Volume Per Person Per Day

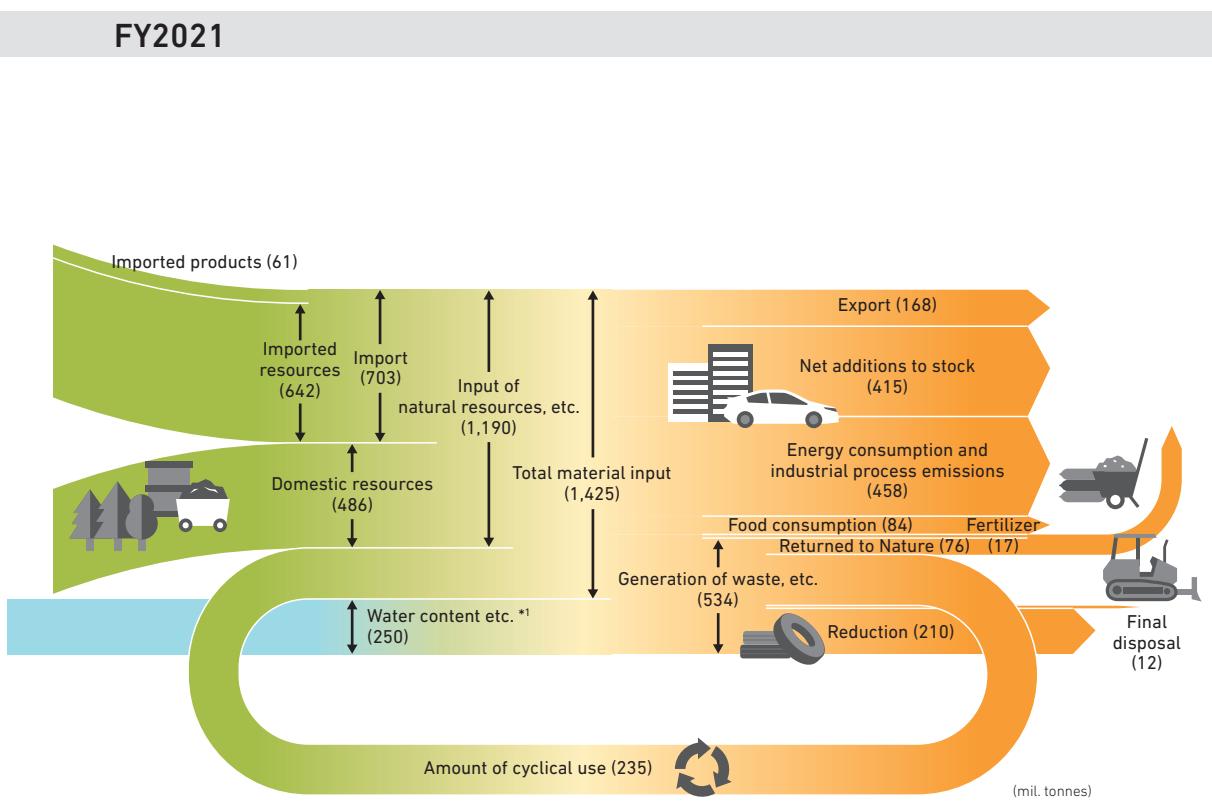
Total generated waste and waste generated per person per day are declining year by year.



# Sound material-cycle society

Additional materials provide more information about current efforts to form a sound material-cycle society.

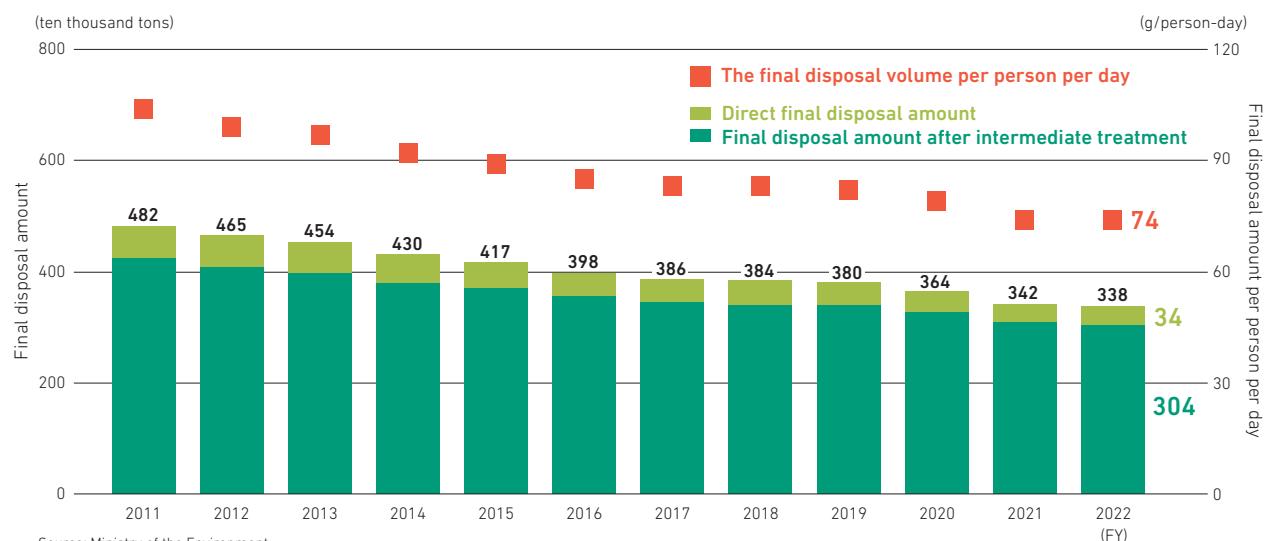
\*1 Water content: water contents of wastes (sludge, livestock waste, night soil, waste acid, waste alkali) and sediments dumped in association with the process of economic activities (sludge in mining, construction and in waterworks as well as slag)



Source: Ministry of the Environment

## Final Disposal Amount and Final Disposal Amount Per Person

Final disposal amount of waste and final disposal amount per person per day are trending downwards.



Source: Ministry of the Environment

# ADDITIONAL MATERIALS

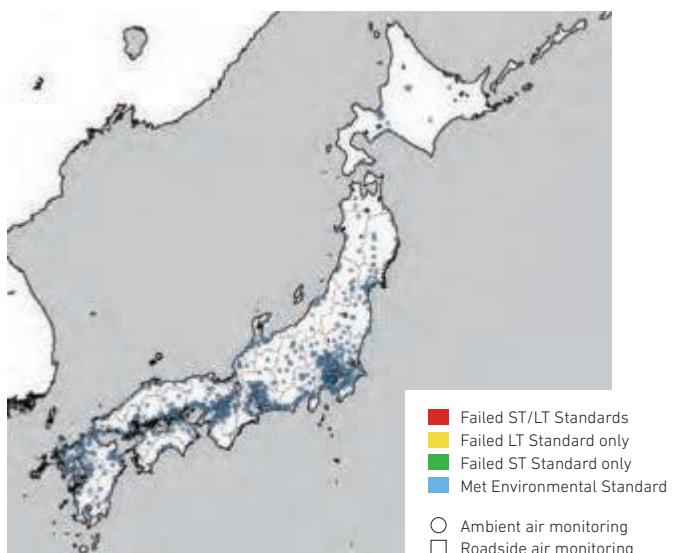
## FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2024

### Fine particulate matter (PM<sub>2.5</sub>)

In FY2022, the rate of compliance with ambient air quality standards for fine particulate matter (PM 2.5) was 99.9% for ambient air pollution monitoring stations and 100% for roadside air pollution monitoring stations throughout Japan. The annual average was 8.8 µg/m<sup>3</sup> for ambient air pollution monitoring stations and 9.2 µg/m<sup>3</sup> for roadside air pollution monitoring stations.

Fiscal year	2017	2018	2019	2020	2021	2022
No. of valid stations						
Ambient	814	818	835	844	858	855
Roadside	224	232	238	237	240	236
No. of valid stations compliant with ambient air quality standards						
Ambient	732	765	824	830	858	854
	89.9%	93.5%	98.7%	98.3%	100%	99.9%
Roadside	193	216	234	233	240	236
	86.2%	93.1%	98.3%	98.3%	100%	100%

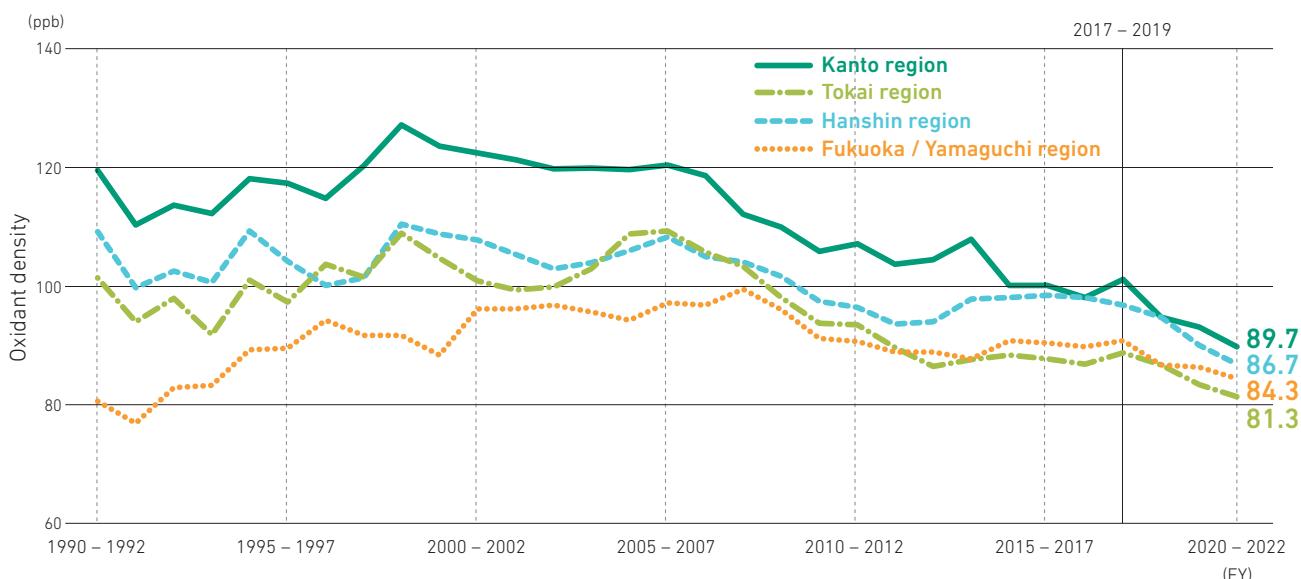
Source: Ministry of the Environment



Source: Ministry of the Environment

### Photochemical oxidants

Photochemical oxidant concentrations (highest in the region for the 3-year average of the 99th percentile of the highest 8-hour day values) had been trending to decline compared FY 2017 to FY 2019.



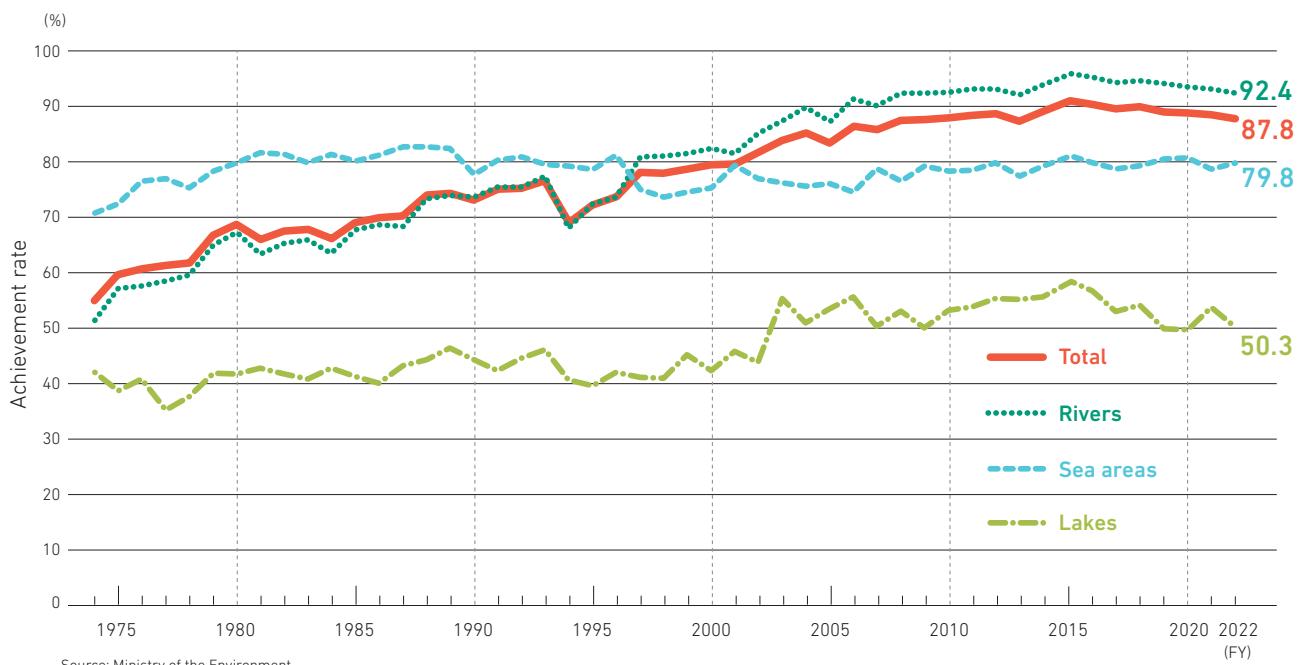
Source: Ministry of the Environment

# Atmospheric and water environments

Additional materials provide more details about biodiversity in Japan.

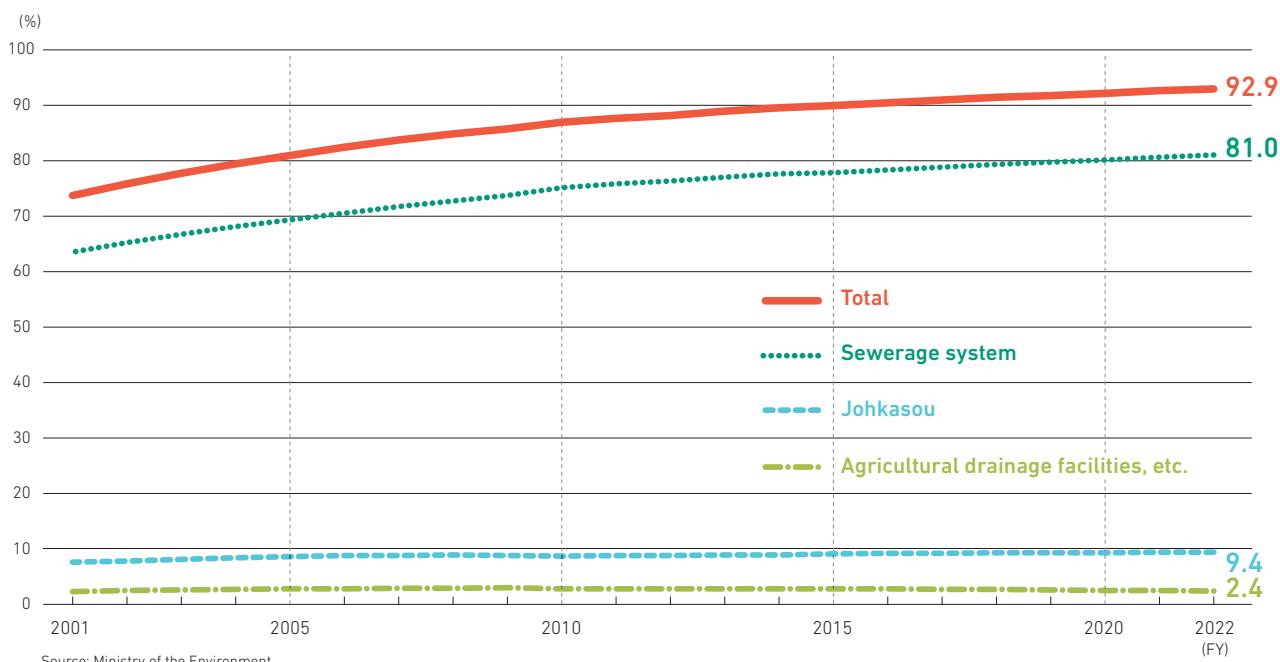
## Achievement of Environmental Standards (BOD or COD)

An overall level of 87.8% has been achieved for the biochemical oxygen demand (BOD) and chemical oxygen demand (COD) environmental standards relating to the maintenance of living environments. BOD and COD are leading indicators of water quality in respect of organic pollution.



## Coverage of Population Served by Wastewater Treatment System

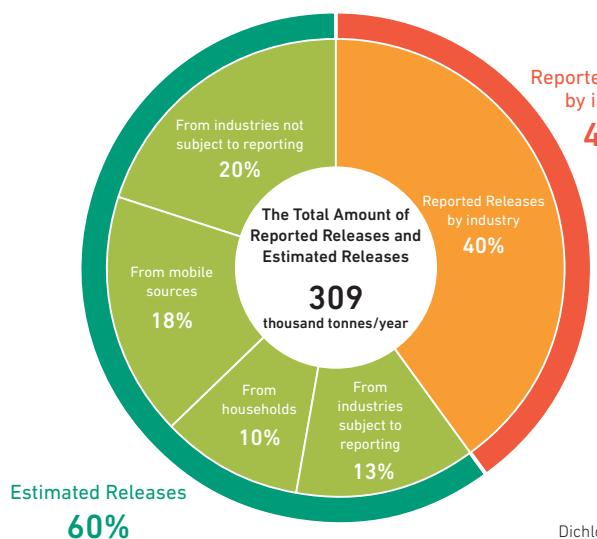
The population coverage of wastewater treatment systems in Japan is 92.9%. Wastewater treatment facilities are being installed to cover the population not yet served by the wastewater treatment systems.



# ADDITIONAL MATERIALS

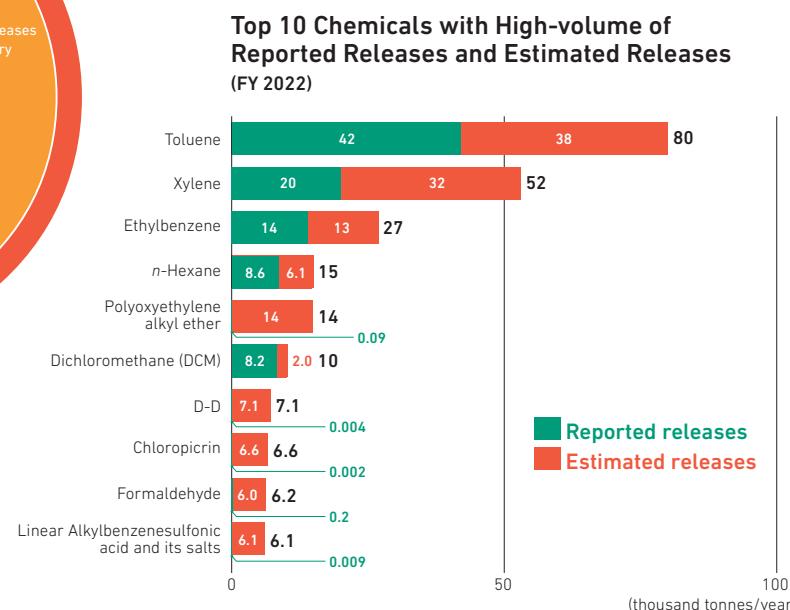
## FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2024

### Breakdown of Reported Releases by Industry and Estimated Releases of Chemical Substances in FY 2022

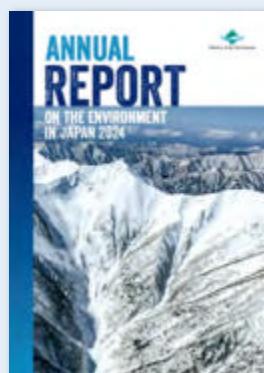


Notes: The reported releases are from the business entities categorized as subjected to reporting. Releases are estimated for businesses that do not meet the reporting requirements, such as number of employees, annual handling quantity, etc., and are exempted from reporting.

Source: Ministry of Economy, Trade and Industry and Ministry of the Environment



In February 2024, the government compiled data reported from businesses concerned on release and transfer of chemical substances complying with 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). Releases that were not subject to reporting were estimated.



### The newest 35th National Park, Hidakasanmyaku-Erimo-Tokachi National Park, was born in 2024

The Hidakasanmyaku-Erimo-Tokachi National Park, called "The backbone of Hokkaido" became the 35th designated national park in Japan. This national park located in south-central Hokkaido is the largest one in the land area of Japan, stretching approximately 140 km from north to south along a mountain range. It runs from the Hidaka Mountains, which embrace glacial landforms, alpine flora, and the largest pristine watershed in Japan, through forested areas at the foot of the mountains, then links to coastal areas that feature sheer sea cliffs and marine terraces. The national park is enough to represent outstanding scenery of Japan, in terms of the magnificence of the Hidaka Mountains extending from the inland to the sea and their existence remaining in a pristine natural state.

# Environmental risks of chemicals

The following data provides information on action regarding chemical substance emissions into the environment and initiatives for children's environmental health.

## The Japan Environment and Children's Study (JECS)

The Japan Environment and Children's Study (JECS), a large-scale, long-term national birth cohort study involving 100,000 mother-child pairs, was launched in FY 2010. The Sub-cohort study, which includes home visits for environmental measurements, medical examinations and children's bio-specimen collection, began in November 2014, involving 5,000 participants selected from the Main Study. In FY2022, a conceptual plan was formulated to conduct the follow-up study on the participants of ages 13 and higher in FY2024.

**JECS is a large-scale, long-term prospective cohort study to examine the impact of the exposure to chemicals during pregnancy and childhood on children's health.**

<b>Study protocols</b>	<div style="display: flex; align-items: center; justify-content: space-between;"> <div style="flex: 1;"> <p><b>Recruitment (3 years)</b></p> <p><b>Follow-up and Analysis</b></p> </div><div style="flex: 1; border-left: 1px solid black; padding-left: 10px;"> <p>FY 2010: Establishment of national and regional organizations and formulation of research protocols</p> <p>January 2011: Start of recruitment period (100,000 pregnant women)</p> <p>March 2014: Completion of the recruitment</p> <ul style="list-style-type: none"> <li>- Questionnaire</li> <li>- Collection of maternal blood, urine, and hair samples as well as paternal blood samples</li> </ul> <ul style="list-style-type: none"> <li>- Health check of the babies</li> <li>- Collection of cord blood samples</li> </ul> <ul style="list-style-type: none"> <li>- Physician's examination and questionnaire</li> <li>- Collection of breast milk and babies' hair samples</li> </ul> <ul style="list-style-type: none"> <li>- Physician's examination and questionnaire</li> <li>- Collection of children's bio-specimens</li> </ul> </div><div style="flex: 1; margin-left: 20px;">   </div></div>
<b>Organization</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 35%;"> <p><b>Ministry of the Environment (MOE)</b></p> <p>Considers environmental policies incorporating results of the study, and conducts coordination with other ministries as well as on an international level.</p> </div> <div style="width: 35%;"> <p><b>Programme Office (National Institute for Environmental Studies)</b></p> <p>Leads the study, manages the collected data and bio-specimens, and conducts exposure analysis</p> </div> <div style="width: 30%;"> <p><b>Regional Centers (15 universities and institutes)</b></p> <p>Recruit participants and conduct follow-up study (in cooperation with local health care providers)</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 50%;"> <p><b>Medical Support Center (National Centre for Child Health and Development)</b></p> <p>Provides medical expertise</p> </div> <div style="width: 40%;"> <p>Accreditation from the MOE (April 2010)</p> <p>[1] Hokkaido [2] Miyagi [3] Fukushima [4] Chiba [5] Kanagawa [6] Koshin [7] Toyama [8] Aichi [9] Kyoto [10] Osaka [11] Hyogo [12] Tottori [13] Kochi [14] Fukuoka [15] South-Kyushu / Okinawa</p> </div> </div>
<b>Expected outcomes</b>	<ul style="list-style-type: none"> <li>- Policy development to provide parents with the safe and secure child-raising environment</li> <li>- Development of better strategies for chemical risk assessment and management that considers children's vulnerability</li> </ul>

Source: Ministry of the Environment



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[hakusho@env.go.jp](mailto:hakusho@env.go.jp)  
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