

Achieving a Harmonized Society with Nature

Efforts to Achieve a Harmonized Society with Nature

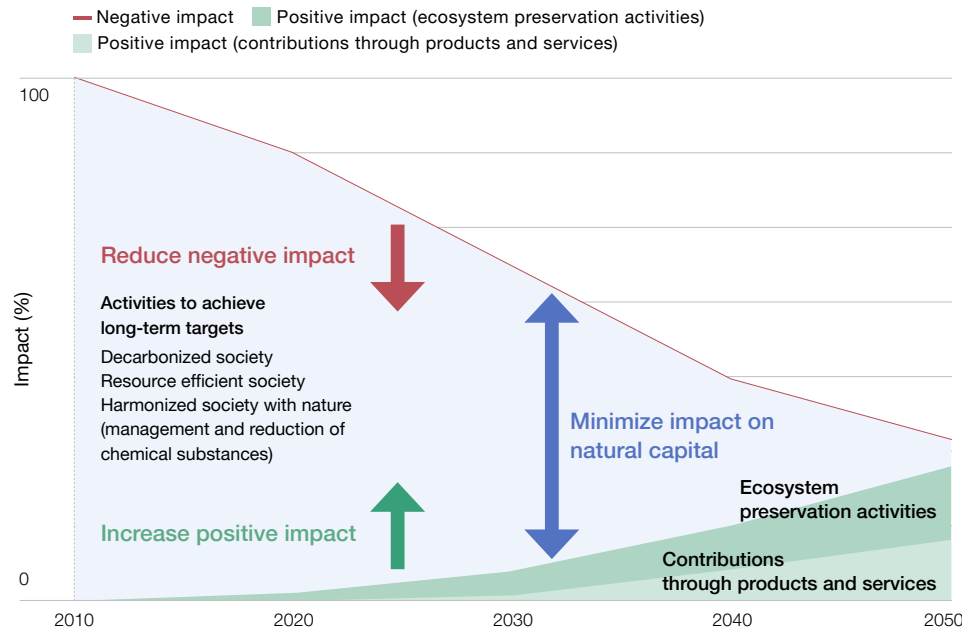
Approach

To adequately preserve the ecosystem and achieve a harmonized society with nature so that we may continue to enjoy nature's benefits, we have established targets to minimize our impact on natural capital as part of our long-term environmental targets.

We classify the emission of greenhouse gases and chemical substances into the atmosphere and the generation of waste materials as negative impact activities. Providing products and services that contribute to ecosystem preservation and undertaking social contribution activities to protect the environment through the preservation of biodiversity and ecosystems are categorized as positive impact activities. We will strive to minimize the difference between them by 2050.

By quantifying Hitachi's positive and negative impact activities across the value chain, we are advancing initiatives to reduce our negative impact and maximize our positive impact.

■ A Timetable for Minimizing Impact



Initiatives to Minimize Impact on Natural Capital

Approach

Hitachi has identified and quantified the negative impact our business activities have on natural capital with the aim of reducing such impact. According to our estimates, approximately 40% of our negative impact in fiscal 2019 was related to climate change, and 20%, respectively, to waste materials, resource consumption, and urban air pollution. These results suggest that we need to further reduce our environmental load to minimize our impact on natural capital, such as by increasing the energy efficiency of our products and services, advancing factory efficiency, using resources more effectively, and properly managing chemical substances.

As for our positive impact activities, we have been advancing social contribution activities like forest conservation and business activities that directly contribute to ecosystem preservation, such as building water treatment plants. We are also looking to quantify the impact of these activities.

We estimate the benefits gained through our forest conservation activities (flood prevention, water impoundment, water purification, soil loss prevention, and carbon fixation) on an ongoing basis using evaluation methods commonly used in forestry-related public works projects.

Achievements in FY 2019

To enable the evaluation of forest conservation efforts, in fiscal 2019 we built a framework to collect data on forest areas targeted for conservation activities through the Environmental Data Collection System (Eco-DS).

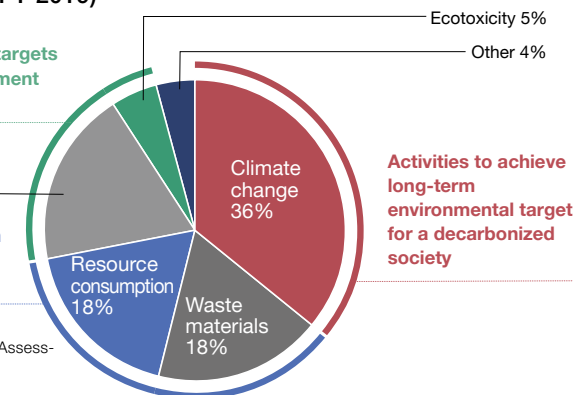
■ Negative Impact on Natural Capital (FY 2019)

Activities to achieve long-term environmental targets for a harmonized society with nature (management and reduction of chemical substances)

Urban air pollution 19%

Activities to achieve long-term environmental targets for a resource efficient society

Note: Calculated using version 2 of the Life-cycle Impact Assessment Method based on Endpoint Modeling (LIME2).



Scope of Negative Impact Calculations
<http://www.hitachi.com/environment/data/method.html>

Managing and Reducing Chemical Substances

Managing Chemical Substances

Approach

Hitachi believes that control and reduction of chemical substances like volatile organic compounds (VOCs), one of the causes of urban air pollution, are important to minimizing our impact on natural capital.

Based on this belief, Hitachi formulated the Regulations for Environmental CSR-Compliant Monozukuri to manage chemical substances at all stages of its operations—from design and development, procurement, and production to quality assurance and shipping. Chemical substances in our products are divided into two categories, prohibited substances and controlled substances, for separate management to respond to legal and regulatory frameworks at shipping destinations. With regard to chemical substances used in our business operations, we reduce risk by assigning three ranks to the use of such substances: prohibited, reduced, and controlled, as well as by educating chemical substance handlers and managers on laws and regulations and on proper risk assessment.

Managing Chemical Substances in Our Products

System

Activities

Hitachi designates the chemical substances in our products requiring management as Voluntarily Controlled Chemical Substances. With the basic principle of taking as our model the standards of the EU, where regulations are stringent, we determine and manage controlled chemical substances extensively, regardless of export destination, type of industry, or purpose of use. Specifically, we distinguish between prohibited substances (Level 1), which are basically illegal to use inside and outside Japan in products (including packaging) but which might be found in products from suppliers, and controlled substances (Level 2), which includes substances we are required to track and manage the use of and substances requiring attention to recycling or appropriate disposal methods. The list of managed substances and levels is revised when necessary based on updates to the EU's REACH*1 and other regulations, with the aim of adding substances to the list of Voluntarily Controlled Chemical Substances six months before they are officially regulated.

Achievements in FY 2019

Because perfluorooctanoic acid (PFOA), its salts, and PFOA-related substances were to be added to the list of restricted substances in the EU's POPs Regulation*2 in July 2020, we designated them as prohibited substances in a January 2020 revision. As a result, the list of Voluntarily Controlled Chemical Substances now contains 23 prohibited substance groups and 21 controlled substance groups.

*1 REACH: The European Union regulation on Registration, Evaluation, Authorization, and Restriction of Chemicals.

*2 EU's POPs Regulation: Regulation of the European Parliament and of the Council on persistent organic pollutants (POPs).

Managing Chemical Substances in Our Business Operations

System

Activities

305-7

We have been cutting emissions of chemical substances from our factories and other sites through stricter management, such as by expanding the number and scope of controlled chemical substances. Information on our efforts has been translated into English and Chinese and shared globally with Hitachi Group members. We also follow legally prescribed procedures in measuring and managing emissions of sulfur oxides (SOx) and nitrogen oxides (NOx),*1 whose measurement is required under the laws and regulations of our business site locations, and are advancing efforts to further restrict emissions.

We comply with Japan's Pollutant Release and Transfer Register (PRTR) Law*2 through Group-wide monitoring of chemical substances released into the atmosphere or into public waters, removed outside our plants as waste, or discharged into sewage systems, reporting the results to local governments for each office or plant. Although some substances are exempt from reporting due to their small quantities, our policy is to aggregate and manage data on the handling, emission, and transfer of all PRTR substances totaling 10 kilograms or more per year.

Achievements in FY 2019

Initiatives in fiscal 2019 to reduce emissions of chemical substances included switching from paints containing VOCs to water-soluble and powder paints as well as expanding their use and altering the painting and washing processes. These efforts enabled us to successfully achieve our target of reducing atmospheric emissions of chemical substances per unit by 16% compared to fiscal 2010.

*1 Emissions of SOx and NOx: Calculated by multiplying their concentration and exhaust volume.

*2 PRTR Law: Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof.



Hitachi's Voluntarily Controlled Chemical Substances ▶ <http://www.hitachi.com/environment/data/chemical.html>



Enhancing Our Environmental Management System ▶

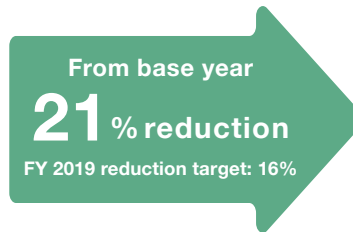
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Environmental Action Plan for 2021 Management Values >>>

■ Reduction in Atmospheric Emissions of Chemical Substances per Unit (Hitachi Group)

● FY 2010 (base year)

$$\frac{\text{Emissions } 4,982 \text{ t}}{\text{Activity amount}^{*1}} = 100\%$$

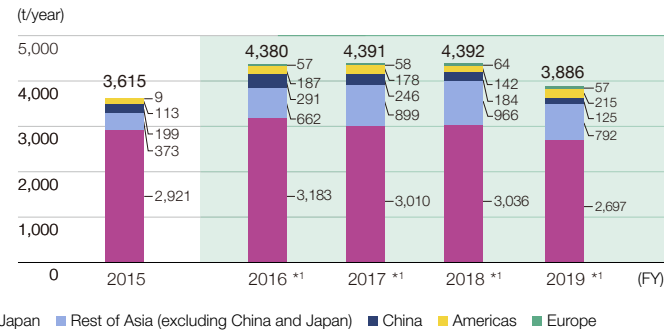


● FY 2019

$$\frac{\text{Emissions } 3,886 \text{ t}}{\text{Activity amount}} = 79\%$$

*1 A value closely related to atmospheric emissions of chemical substances at each business site (for example, substances handled, sales, and output).

■ Reducing Atmospheric Emissions of Chemical Substances (Hitachi Group)



*1 Since fiscal 2016, the scope of controlled chemical substances has been expanded from 41 to 50 substances.
Note: Atmospheric emissions of VOCs and other chemical substances are calculated from the content rate included in the ingredients.

Reducing Chemical Substances in Our Business Activities

Case Study

| Project | Department, Group company | Activity |
|------------------------|--------------------------------|--|
| Reducing VOC emissions | Hitachi Construction Machinery | Reduction of VOC emissions by changing paints for construction machinery and installing new systems in China |
| | Hitachi Automotive Systems | Reduction of atmospheric emissions of VOCs by installing a VOC emissions treatment unit |

<https://www.hitachi.com/environment/casestudy/2019/case10.html>

<https://www.hitachi.com/environment/casestudy/2019/case11.html>

Preserving Ecosystems

Initiatives to Preserve Ecosystems

Approach

Activities

304-3

306-5

At Hitachi, we seek to reduce the burden (negative impact) on natural capital caused by business activities and to promote the positive impact, such as by undertaking social contribution activities to protect nature and providing products and services that help preserve the ecosystem, thereby minimizing our impact on natural capital by fiscal 2050 and realizing a harmonized society with nature.

Hitachi created an Ecosystem Preservation Activities Menu citing the specific activities to be undertaken to promote the preservation of the ecosystem, including not only CO₂ emission reductions, resource recycling, and chemical substances management but also activities that are difficult to quantify but are nonetheless important, such as the protection of rare species and efforts to make biodiversity a criterion when making investment decisions. Each business site sets its goals and promotes initiatives based on the Ecosystem Preservation Activities Menu.

Ecosystem Preservation Activities Menu

| Category | | Activities taken | No. of menu items |
|---|---|--|-------------------|
| Business sites | Production | Reducing use of resources that cannot be reused | 4 |
| | Transportation | Using packaging that takes ecosystem into consideration | 7 |
| | Collection, disposal, and recycling | Reducing hazardous materials in products | 2 |
| | Product planning, development, and design | During R&D, estimating impact on biodiversity during a product's life cycle and implementing, if needed, mitigation measures | 3 |
| | Site management | Using native species, setting up biotopes | 17 |
| | Water use | Using rainwater | 1 |
| Value chain | Investment and acquisition | Confirming impact on biodiversity when investing in or acquiring a business, and implementing measures to minimize such impact | 1 |
| | Market entry and expansion | Including biodiversity as an investment criterion | 1 |
| | Business development | Developing products and services to purify water, air, and soil and expanding such businesses | 1 |
| | Procurement | Preferentially procuring paper and other office supplies that take biodiversity into consideration | 17 |
| | Transportation | Implementing ballast water measures during marine transportation | 2 |
| | Sales | Implementing sales expansion of products that take biodiversity into consideration | 9 |
| | Collection, disposal, and recycling | Reusing and recycling components | 7 |
| | Entire value chain | Promoting the use of renewable energy | 1 |
| Community | Engagement | Promoting employee activities outside the company | 3 |
| | Social contribution | Implementing desert greening and afforestation activities | 12 |
| Water use that takes watershed ecosystem into consideration | Water intake | Observing and collecting biota information (impact on ecosystem depending on intake volume) | 14 |
| | Water discharge | Setting up biota management indicators and making observations (species and numbers of inhabiting organisms) | 14 |

Promoting Ecosystem Preservation

Case Study

| Project | Department, Group company | Activity |
|----------------------------------|---|---|
| Mangrove planting in Indonesia | Hitachi Construction Machinery and Hexindo Adiperkasa | Planting of 2,811 mangrove seedlings in Indonesia |
| Araihamara reforestation project | Hitachi Industrial Equipment Systems (Nakajo business office) | Reforestation of areas damaged by the pinewood nematode |

 <https://www.hitachi.com/environment/casestudy/2019/case12.html>

 <https://www.hitachi.com/environment/casestudy/2019/case13.html>