Climate Change and Natural Capital

For detailed disclosure in line with the TCFD recommendations, please refer to the website below.
https://www.ihi.co.jp/en/sustainable/environmental/climatechange/

Approach

Approach to climate change and natural capital (Conservation of the Global Environment・Circular Economy)

The IHI Group implements management that embraces ESG values (ESG management) based on the desire to "Create a World where Nature and Technology Work in Unity." The Group's environmental initiatives continue to work to reduce the environmental impact on society at large in an effort to combat Climate Change, Conservation of the Global Environment, and Circular Economy. In particular, the IHI Group sees taking measures against Climate Change as a particularly important issue in ESG management and is doing everything possible to accomplish this. Climate change has an enormous social and economic impact and is a vital social issue for companies to address in order to realize sustainability and one that the IHI Group believes it should focus on.

Governance

Structures for implementing initiatives to become carbon neutral

The IHI Group deliberates on and determines approaches and important matters concerning Climate Change countermeasures through the Environment Committee, a Group-wide body.

In fiscal 2021, the Group established a task force comprising members from different divisions to promote initiatives to become carbon-neutral throughout the entire value chain. Task force activities are reported and discussed at the Environment Committee, and then reported to the ESG Management Promotion Committee, and feedback received from management is disseminated throughout the Group.

Amid discussions at these committees and meetings, matters related to important management decision-making are deliberated on by the Management Committee, and are then submitted to the Board of Directors.

Structures for initiatives to natural capital (Conservation of the Global Environment・Circular Economy)

The IHI Group deliberates and decides on the approach and important matters concerning Conservation of the Global Environment, and Circular Economy also through the Environment Committee, a Group-wide body. Each office, plant, and business establishment has set up an environment committee to draft policies tailored to the needs of each region based on Group-wide policy.

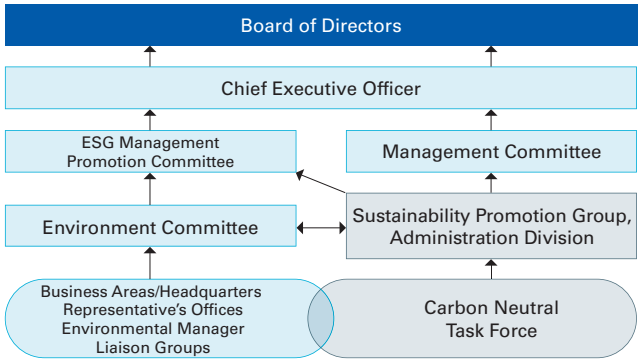
Strategy

IHI Carbon-Neutral 2050

The IHI Group supports the Paris Agreement's 1.5°C target of "holding the global average temperature increase to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels," and is working to achieve this under its "IHI Carbon-Neutral 2050" initiative.

The Group aims to halve direct and indirect greenhouse gas emissions (Scope 1, 2) from its business activities compared to fiscal 2019 by fiscal 2030 and achieve effectively zero emissions by 2050. As short-term measures, the Group established the IHI Group Environment Action Plan 2023 (FY2023–FY2025) and set targets of reducing total Scope 1 and 2 emissions by 12,000 t-CO_2e compared to fiscal 2022 through capital investment. As of fiscal 2024, the Group has reduced these emissions by 9,000 t-CO_2e. In fiscal 2025, we aim to reduce this further by 3,000 t-CO_2e. We have set a target of reducing energy intensity (energy consumption per unit of sales) by 3%.

System for achieving carbon neutrality



The Group also aims to achieve effectively zero greenhouse gas emissions released in upstream and downstream processes (Scope 3) by 2050. The Group formulated the Scope 3 Emissions Reduction Roadmap and will reduce emissions with a focus on category 11 (use of sold products) and category 1 (purchased products and services), which have particularly large emissions, to achieve carbon neutrality across Scopes 1, 2, and 3. Possessing decarbonization technology, the IHI Group will take the lead in contributing toward the realization of a global carbon-neutral society through its efforts in achieving this goal.

Risk and opportunity due to climate change

The IHI Group conducted simple scenario analyses of four business domains significantly impacted by climate change: the energy business, bridge and water gate business, vehicle turbocharger business, and the civil aero engine business. See the table to the right for the results of our analyses.

In the future, the IHI Group will enhance its ability to leverage scenario analyses in business strategy through efforts, such as assessing the financial impact of climate change.

The IHI Group will proactively incorporate the concepts pursued by TCFD signatories in management policies and business strategies, contributing not only to the sustainable development of our Company, but society as a whole.

Scenario analysis process

Step 1 Set independent scenarios
The IHI Group referred to external scenarios* to set independent Group scenarios in anticipation of the world in 2050.
❶High-transition risk scenario
❷High-physical risk scenario

Step 2 Identify risks and opportunities
The IHI Group identifies risk and opportunities for the two scenarios created in Step 1.

Step 3 Evaluate the business impact
The IHI Group assigns point values for the potential of occurrence and scale of impact for each risk and opportunity identified in Step 2. The intersection between both define the impact and estimate the influence the risks and opportunities have on our businesses.

Step 4 Formulate countermeasures
The IHI Group formulates measures to respond to these risks and opportunities to foster resilient businesses.

* External reference scenarios:
- A carbon-neutral world
  IEA 2DS (qualitative assessment based on the ETP2017 Global technology penetration in LDV stock by scenario, global electricity generation, etc.)
- A world greatly impacted by climate change
  RCP 8.5 (qualitative assessment based on the portions relating to wind and flood damage risk of IPCC AR5 WG2)

Main risks, opportunities, and countermeasures specific to each business (four main business domains)

	Energy Business	Bridge and Water Gate Business	Vehicle Tubochargers Business	Civil Aero-Engine Business
	(1) Risks, Opportunities, and Main Countermeasures in a Carbon-neutral World			
Risks	•Declining demand for large fossil fuel power generation equipment	•Increasing procurement costs (carbon tax, etc.) for materials with high CO_2 emissions (concrete, steel, etc.)	•Declining demand for combustion engine vehicles unable to address carbon-neutral requirements and a falling demand for existing turbochargers	•Declining demand for aircraft due to carbon-neutral requirements and standardization of alternative highspeed means of transportation
Opportunities	•Increasing demand for fuel conversion, carbon capture and storage (CCUS), and other decarbonization technologies •Increasing demand for regulated power supplies, storage energy, and Power-to-X to provide a stable energy supply as renewable energy becomes the standard	•Increasing demand for roads(bridges and tunnels) to provide a more efficient transportation network •Increasing demand for railway construction due to expansion of railway systems overseas	•Potential to secure market competitiveness and leverage an increase in demand for turbochargers by being first to market with new turbocharger products (electric products in addition to existing models) for carbon-neutral electric vehicles (PHEV, HEV, FCV, etc.)	•Increasing demand for the development of aircraft engines supporting carbon neutral requirements and a rise in opportunities due to electrification of engines and utilization of advanced material technologies.
Main countermeasures	•Rapidly deploy carbon-neutral technologies to society •Promote technological development to stabilize the energy supply •Expand the lifecycle business through remote monitoring and other Internet of Things (IoT) technologies	•Reduce construction schedules and labor costs by labor-saving, remotization, and improving construction methods through promoting digital transformation (DX)	•Rapid development and commercialization of turbochargers for electric vehicles that comply with carbon-neutral requirement trends	•Early commercialization of electric engines and advanced technologies such as advanced composites.
	(2) Risks, Opportunities, and Main Countermeasures in a World Greatly Impacted by Climate Change			
Risks	•Extreme delays due to on-site construction stoppages or disasters caused by frequent severe weather	•Extreme delays due to on-site construction stoppages or disasters caused by frequent severe weather	•Suspension of production due to disrupted supply chains caused by frequent severe weather	•Suspension of production due to disrupted supply chains caused by frequent severe weather
Opportunities	•Contributing to early recovery of equipment damaged in severe weather •Increasing demand for digital technologies to promote labor saving and remote operation	•Increasing demand to build robust national infrastructure •Contributing in early recovery of infrastructure damaged in severe weather	•No opportunities unique to our business	•No opportunities unique to our business
Main countermeasures	•Expand the lifecycle business through www monitoring and other Internet of Things (IoT) technologies	•Expand business beyond lifecycle business with wider perspective to include disaster prevention business •Create technologies and systems that contribute to maintenance, disaster prevention, disaster mitigation, and quick recovery of infrastructure	•Strengthen supply chains	•Strengthen supply chains

Main risks and countermeasures shared across all businesses

	Main Items	Main Countermeasures and Transitioning to Opportunities
	(1) Transition Risks and Countermeasures for a Carbon-neutral World	
Policy and legal	•Introduction of carbon taxes, stronger industrial waste regulations, raising costs due to the adoption of renewable energy and energy-efficient equipment, etc.	•Reduce costs in business activities through efficient production and distribution as well as the proper management of energy consumption
Technology	•Raising costs due to research to realize carbon-neutral products and services, failed technological development, etc.	•Concentrate investments in technological development while staying acutely aware of policies, technologies, markets, and other social trends
Market	•Declining demand for products and services with high CO_2 emissions, etc.	•Actively draft and promote business plans that always anticipate multiple business scenarios to adapt to dramatic changes in market structures
Reputation	•Lost opportunities due to poor evaluations of our response to climate change, declining social credibility, etc.	•Disseminate easy-to-understand information about products and services that can help both mitigate and adapt to climate change
	(2) Physical Risks and Countermeasures in a World Greatly Impacted by Climate Change	
Acute/ Chronic	•Ceased business activities due to damaged offices and business sites caused by typhoons, floods, or other natural disasters, etc.	•Incorporate the response to climate change into the business continuity plans of plants and offices to ensure the safety of Officers and employees and strengthen the supply chain •Draft, execute, and manage advance measures in anticipation of foreseeable flood damage

Strategy for Conservation of the Global Environment (pollution prevention and biodiversity conservation)

The IHI Group has set zero violations of environmental laws and regulations and zero accidents as environmental targets, and compliance with environmental laws and regulations, as well as the prevention of environmental accidents, are positioned as the top priorities for environmental activities at offices and plants.

Regarding the conservation of biodiversity, the Group believes that the sustainable use of natural capital is crucial for the continuation of business, and accordingly, it is focusing on measures to address climate change, which has a major impact on biodiversity. At offices and plants, they are implementing measures linked to the 2030 global targets specified in the Kunming-Montreal Global Biodiversity Framework (GBF), which was formulated at COP15.

Strategy for Circular Economy

The IHI Group aims to create a resource recycling-oriented society, thereby helping drive the transition to a Circular Economy. Therefore, in its business activities, the Group is working to reduce waste emissions through the 3Rs (reduce, reuse, and recycle) and to reduce water withdrawal and water consumption. Also, in addition to providing resource-efficient products using minimal quantities of resource input and consumption, the Group is working to expand its business of providing comprehensive services that include reuse, repair, and maintenance throughout the entire product lifecycle.

Risk management

In addition to short-term business risks, the IHI Group also manages sustainability-related risks that affect the medium- to long-term business environment as a risk to conducting business. In particular, the IHI Group assesses the medium- to long-term impact of these risks to the Group and converts them into short-term business risks. The Group has clarified the roles and responsibilities of its Internal Audit Division, corporate divisions, business areas, and business divisions (including affiliated companies), which are managed under a multi-layered risk management framework.

Metrics and targets

The IHI Group aims to achieve carbon neutrality throughout its entire value chain by 2050.

In FY2023, the Board of Directors adopted a resolution setting a goal of halving the Group's FY2019 GHG emissions from plants, offices, and other business establishments (Scope 1 and 2) by FY2030.

Initiatives

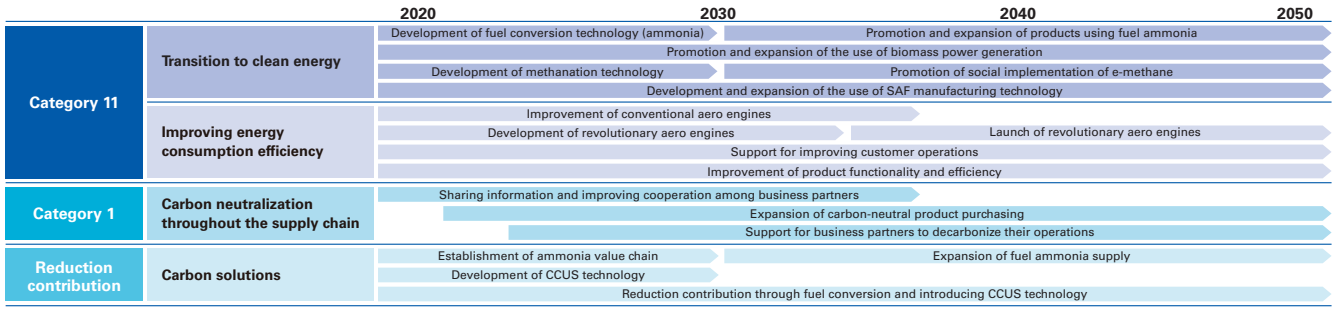
Reducing Scope 3 emissions

The majority of the IHI Group's Scope 3 emissions fell under category 11 (use of sold products) with coal-fired power plant boilers accounting for most of these emissions during fiscal 2023. However, new boiler construction will be completed by fiscal 2025, with emissions expected to decrease significantly from fiscal 2026 onwards. The Group also aims to significantly reduce emissions from other products included in category 11 by 2050 by converting to clean energy and improving energy consumption efficiency.

In order to achieve these goals, the IHI Group has devised a roadmap for reducing its Scope 3 emissions to net zero by 2050. Furthermore, the Group aims to reduce Scope 3 emissions by working to come up with carbon solutions to reduce its carbon footprint, such as building a fuel ammonia value chain and through carbon dioxide capture, utilization, and storage (CCUS).

Regarding civil aero engines, which serve as the IHI Group's main product, the Group is working with business partners to make its entire supply chain, including material

Scope3 Emissions Reduction Roadmap



procurement, carbon neutral. Additionally, the Group is making efforts to improve conventional aero engine fuel efficiency and develop revolutionary aero engines with the goal of improving aircraft energy efficiency as a whole. Moreover, the Group will be focusing on developing and expanding the use of sustainable aviation fuel (SAF) production technology, aiming for carbon neutrality across its entire value chain. We are also promoting the conversion to clean energy by improving the functionality and efficiency of other products.

In particular, the IHI Group has taken an interest in fuel ammonia. The Group plans to build a value chain by leveraging its strengths throughout each stage in the process, from fuel manufacturing, receiving, storage, and utilization. This will be beneficial toward expanding the use of fuel ammonia and contributing to reducing GHG emissions among society as a whole.

Initiatives to address climate change and create value from natural capital

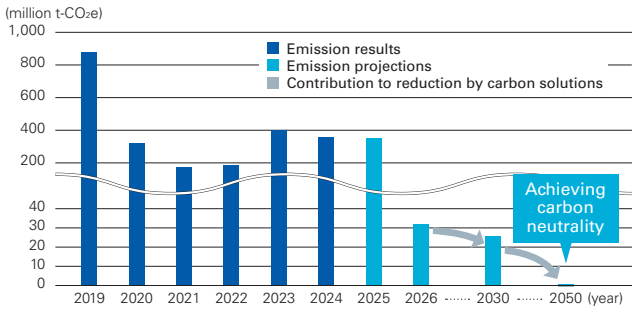
As part of its efforts to address climate change and natural capital issues, the IHI Group is developing and implementing integrated solutions centered on visualization and optimal management of the water cycle.

In recent years, climate change has led to a global shortage of water resources and increased risk of water-related disasters. As a result, securing and utilizing water resources has become an important issue for industry and social infrastructure. In addition to its long-standing water management infrastructure business, including dams and water gates, the IHI Group is strengthening its efforts to ensure the appropriate use of water resources in anticipation of future increases in water demand.

Our integrated water resource solutions monitor and control the water cycle from forests and farmland to cities, factories, and domestic water use, with the aim of achieving optimal water distribution throughout watersheds, including dams and agricultural land, and mitigating water-related disaster damage. Specifically, our solutions predict river flooding caused by rainfall and snowmelt, and promote the effective use of water resources through drainage adjustments in paddy fields and reservoirs, as well as reduce flood risks by utilizing natural capital. Furthermore, we will explore the development of new water management models that harmonize nature and technology, such as the prevention of forest fires caused by droughts through the conservation of tropical peatland forests. To achieve these, we are developing technologies for a system that identifies and makes predictions regarding water resources and their usage with high accuracy by integrating AI-driven short-term weather forecasting, using the core technology of atmospheric water vapor observation, with advanced simulation technologies such as land surface hydrology models and watershed water supply and demand prediction models.

In addition, we are committed to addressing natural capital issues through our business and are preparing to disclose information using the framework stipulated by the Taskforce on Nature-related Financial Disclosures (TNFD). Going forward, we will continue to mitigate risks caused by climate change and contribute to natural capital by balancing and integrating initiatives rooted in the local community with the development of advanced technologies.

Scope 3 emissions results and projections



Water resource identification and prediction system