

# Circular Economy

## Approach/Policies

The IHI Group properly manages waste and water resources and strives to enhance resource efficiency and reduce the environmental impact to realize a sustainable society.

We advocate the reduction, reuse, and recycling (3Rs) of waste and properly manage and dispose of any waste produced by each environmental management center.

Our water resource initiatives carefully manage water use and work to prevent any pollutants from reaching water resources through a deliberate water supply from stable water resources and proper equipment maintenance.

The IHI Group has laid out chemical substance initiatives in the Basic Policy on Chemicals Information Management. The goal of this policy is to identify prohibited and controlled substances regulated by both legal and customer requirements in each region and country where our products and services are available. The impact of IHI Group products and services on human health and the environment can be reduced by identifying and managing the chemical substances contained in products along the supply chain.

## ● IHI Group's Basic Policy on Chemicals Information Management

### Basic Activities

1. The IHI Group independently manages chemical substance data by not only complying with the laws, regulations, and standards on the management of chemical substances in Japan and overseas but by also clearly grasping trends of global chemical management. Minimizing the health and environmental impact of IHI Group products and services enhances the competitiveness of our products.

### Scope

2. All IHI Group business activities

### Education

3. The IHI Group provides the necessary information and training on laws and regulations to heighten legal and regulatory awareness among all Officers as well as IHI and partner company employees.

### Management System, etc.

4. The IHI Group sets regulations regarding chemical substance information management, putting measures into place, and the continual implementation of activities including both maintenance and improvement.

## Structure

The IHI Group deliberates and decides on the approach and important matters of circular resources through the Environment Committee, a Group-wide body chaired by the Officer in charge of Group ESG.

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## Targets and Results

## ● Waste Emissions and Water Withdrawal Targets and Results (IHI Group Environmental Action Plan 2019)

(Scope: IHI and consolidated subsidiaries)

Action Plans	Target	KPI	FY2018 Results (Base Year)	FY2021 Results		FY2022 Results	
				Reduction Rate	Reduction Rate		
Reduce the environmental impact in plants, offices, etc.	Generate less waste each year between FY2019 and FY2022 than that generated in FY2018	Waste generated (tons)	29,010	23,633	18.5%	23,044	20.6%
	Reduce the amount of water withdrawal* each year between FY2019 and FY2022 than that used in FY2018	Water withdrawal (1,000 m <sup>3</sup> )	4,182	4,195	-0.3%	4,037	3.5%

\* Changed from amount of water consumption to amount of water withdrawal since fiscal 2019.

## ● Waste Emissions and Water Withdrawal Targets (FY2023–2025)

Action Plans	Target	KPI
Establishing a circular economy	Reduce generated waste by 3% or more in FY2025 from that in FY2022	Waste generated (tons)
	Review the definition of recycling rate and determine the amount of final disposal (more than 90wt% of all waste)	Recycling rate (%)
	Reduce water withdrawal volume by 3% or more in FY2025 from that in FY2022	Water withdrawal (1,000 m <sup>3</sup> )

## ● Waste Emissions and Water Withdrawal/Waste Water


(Scope: IHI and consolidated subsidiaries)

Item	FY2019	FY2020	FY2021	FY2022	Presence/Absence of Third-party Verification	
Waste	Waste generated (tons)	27,564	20,912	23,633	23,044	○
	Toxic waste generated (tons)	164	182	255	156	○ (Domestic only)
	Amount recycled*1 (tons)	61,799	15,067	16,164	17,869	○
Water	Water withdrawal*2 (1,000 m <sup>3</sup> )	4,251	4,008	4,195	4,037	
	Public water (1,000 m <sup>3</sup> )	750	651	664	670	
	Industrial water (1,000 m <sup>3</sup> )	868	799	792	737	○
	Groundwater (1,000 m <sup>3</sup> )	1,948	1,731	1,691	1,451	
	Rainwater, rivers, lakes, etc. (1,000 m <sup>3</sup> )	685	827	1,047	1,180	
Waste water (1,000 m <sup>3</sup> )	—	3,373	3,265	3,181	○	

\*1 Waste reclaimed as valuable resources.

\*2 The total value for each item is rounded off and may not match the figures in the breakdown.

## ● Third-party Verification of Data

JQA		Environmental Information Independent Verification Report		No.1811004585
<b>To: IHI Corporation</b>				
<b>1. Objective and Scope</b>				
Japan Quality Assurance Organization (hereafter, "JQA") was engaged by IHI Corporation (hereafter, "the Company") to provide an independent verification on "FY2022 IHI Group Environmental Data" (hereafter, "the Report"). The content of our verification was to express our conclusion, based on our verification procedures, on whether the statement of information regarding GHG emissions, energy consumption, water withdrawal, water discharge and waste discharge (hereafter, "the Environmental Information") in the Report was correctly measured and calculated, in accordance with the "FY2022 IHI Group Environmental Information Collection and Calculation Rule" (hereafter, "the Rule"). The purpose of the verification is to evaluate the Report objectively and to enhance the credibility of the Environmental Information.				
*The fiscal year 2022 of the Company ended on March 31, 2023.				
<b>2. Procedures Performed</b>				
JQA conducted verification in accordance with "ISO 14064-3" for GHG emissions, and with "ISAE3000" for energy consumption, water withdrawal, water discharge and waste discharge respectively. The organizational boundaries of this verification include the head office of IHI Corporation, sixty-three domestic sites and thirteen overseas sites of the IHI Group. The scope of this verification assignment covers Scope 1 & 2 GHG emissions, energy consumption, water withdrawal, water discharge, general waste discharge, industrial waste discharge, hazardous waste discharge and valuables for domestic sites, and Scope 1 & 2 CO <sub>2</sub> emissions, energy consumption, water withdrawal, water discharge, waste discharge and valuables for overseas sites. The verification was conducted to a limited level of assurance and quantitative materiality was set at 5 percent of each subject of the Environmental Information in the Report.				
Our verification procedures include:				
<ul style="list-style-type: none"> <li>Performing validation of integrated functions to check the Rule prior to the on-site assessment.</li> <li>Conducting on-site verification at the Company's four domestic sites: IHI AEROSPACE Tomioka Plant, IHI Soma No.1 Aero-Engine Works, IHI Soma No.2 Aero-Engine Works and IHI Castings Soma Plant. The location of sampling sites for on-site assessment were selected by the Company.</li> <li>On-site assessment to check the Reports' scope and boundaries; monitoring points of energy consumption, water withdrawal and discharge; GHG emission sources; waste discharge; and monitoring and calculation system.</li> <li>Vouching: Cross-checking the activity data against evidence.</li> </ul>				
<b>3. Conclusion</b>				
Based on the procedures described above, nothing has come to our attention that has caused us to believe that the Environmental Information in the Report is not materially correct or has not been prepared in accordance with the Rule.				
<b>4. Considerations</b>				
The Company was responsible for preparing the Report, and JQA's responsibility was to conduct verification of the Environmental Information in the Report only. There is no conflict of interest between the Company and JQA.				
 Sumio Asada, Board Director For and on behalf of Japan Quality Assurance Organization 1-25, Kanda-sudacho, Chiyoda-ku, Tokyo, Japan July 25, 2023				

## Circular Economy

### Initiatives

#### Waste

The IHI Group strives to reduce waste by improving production yield at plants as well as sorting and recovering resources from waste.

To ensure that all waste is disposed of properly, the Group's waste management initiatives also review collection, transportation, and waste disposal contracts, verify final disposal through digital manifests, and confirm circumstances on-site at intermediate and final waste disposal sites.

#### Cooperation with Third Parties to Reduce Waste

The IHI Group works with expert consultants to operate a waste management system to reduce the amount of waste generated at its plants and offices. By thoroughly understanding the quantity and type of waste, the Group ensures compliance with laws and regulations which leads to waste reduction.

#### Water Resources

The IHI Group primarily uses public and industrial water as water resources. In regions with abundant underground and river water resources, the Group uses these resources in combination with public water carefully to reduce its risk of obstruction to stable water withdrawal. Therefore, each plant and office considers the water quality and quantity necessary for its use and chooses the best resource to withdrawal water.

In particular, the Group purifies and distributes underground water through a relatively easy manner in regions with potable underground water. Cooling water for heat treatment furnaces and other equipment uses river or sea water instead of potable water. The Group also uses heat exchangers to avoid pollution risks during water discharge. In addition, sprinklers on its grounds reuse water processed through tertiary treatment as an alternative to public water as much as possible.

#### Water Risk Survey (On-site Surveys)

In fiscal 2022, the IHI Group conducted various surveys centered on water risks at five different sites. Water risks refers to risks of waste water from its plants, offices, and other business establishments contaminating public waters. By conducting site surveys, the Group is working to confirm that water is being managed appropriately and to raise awareness of water risks.

#### Specific Efforts to Reduce Water Use

The IHI Group creates a graph of the monthly water intake at each environmental management center and compares it over time to raise awareness about reducing water consumption. By monitoring the monthly changes in water withdrawal, it expects the data will help the Group discover any leakage quickly.

#### Chemical Substances

The IHI Group strictly manages the chemical substances used in its plants in order to reduce the risk of soil, water, and air pollution due to leaks, etc. The Group must not only safely manage their use but also in every process, from warehousing to disposal.

The Group prevents leakage of chemical substances during procurement and transport and regularly verifies and inspects the retaining storage walls, deterioration on interior walls, and corrosion of transfer pipes. It regularly repairs equipment with any deterioration or aging found during these inspections.

Each of its plants is updating of Safety Data Sheets (SDS: a document that describes the hazards of chemical substances) in accordance with changes to laws and regulations regarding regulated substances.

#### Chemical Substances Contained in Products

The IHI Group responds to the addition of regulated substances, changes in control values, and strengthening of rules based on laws and regulations or customer requirements in the case of chemical substances contained in products. The Group aggregates data about the chemical substances contained in products throughout the supply chain and confirms whether any chemicals are prohibited or exceed acceptable levels. It is also furthering a system to provide customers with information on the chemical substances contained in IHI products.