

IHI Sustainability Data Book 2020


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Principled Corporate Management

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Editorial Policy

The IHI Sustainability Data Book 2020 is a comprehensive annual report to share information such as our sustainability policies, approaches, frameworks, and performance.

The IHI Sustainability website provides the most up to date information about our sustainability.

• Scope of Data Book

IHI Corporation and its consolidated subsidiaries (However, the report includes some non-consolidated information about IHI Corporation as well as details with a more specific scope.)

• Reporting Period

FY2019 (April 1, 2019 to March 31, 2020)

However, the report includes some information from before fiscal 2018 and forecasts of fiscal 2020 and later.

• Publication Date

September 2020

(The previous Sustainability Data Book was published in September 2019, and the next Sustainability Data Book will be tentatively set for release in 2021.)

• Reference Guidelines

Global Reporting Initiative (GRI) Sustainably Reporting Standards

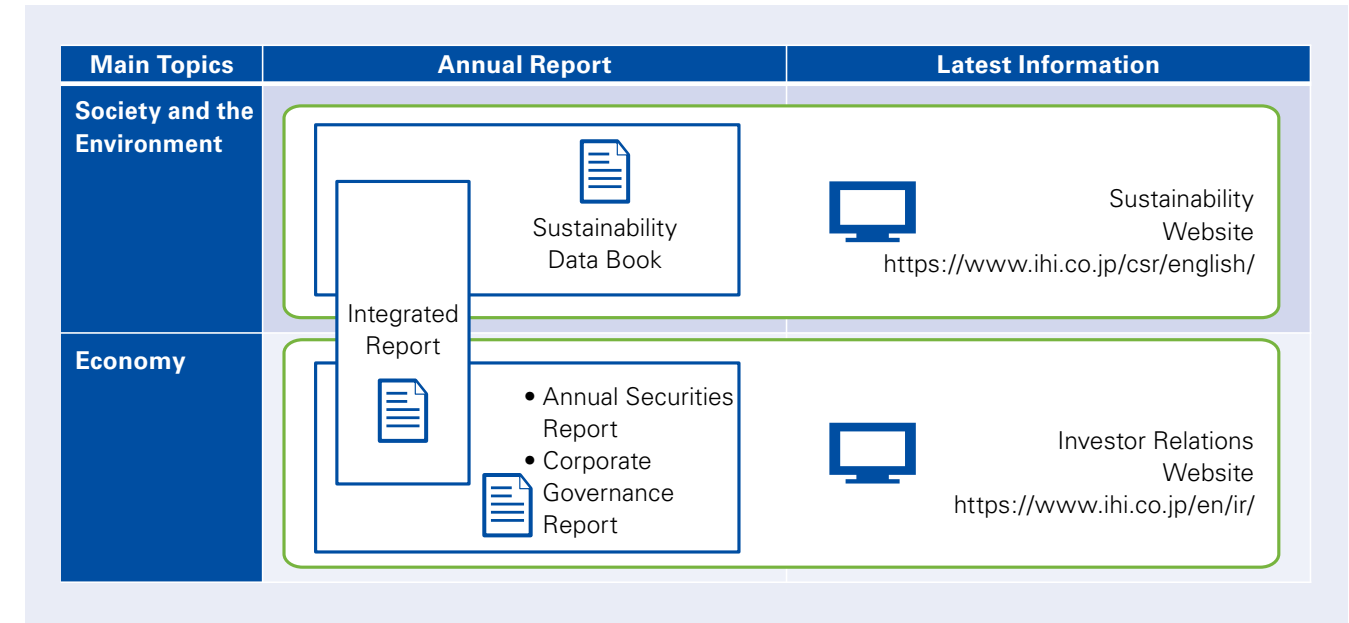
Sustainability Accounting Standards Board (SASB)

Environmental Reporting Guidelines (2018), Ministry of the Environment

Task force on Climate-related Financial Disclosures (TCFD)

Main Sustainability Disclosure

The IHI Group responds to the requests of stakeholders and discloses information through several avenues.



• Scope of Data

The scope of data covered in this report is as follows: Principled Corporate Management and Materialize an Affluent Society includes specific non-consolidated data for each topic.

Reduce Environmental Impact: IHI Corporation and its consolidated subsidiaries (However, some data have a more specific scope.)

• Disclaimer

The IHI Sustainability Data Book 2020 not only contains facts about the past and present but also business plans and forecasts as well as management plans and policies in place at the time of publication. The projections are assumptions and decisions made based on information available at that time of publication. These forecasts, plans and policies are subject to change as the results of future business activities and circumstances change. The reader should consider the factors above when reviewing the information in this report.

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Basic Information

About IHI

Company Name	IHI Corporation
Head Office	Toyosu IHI Building, 1-1, Toyosu 3-chome, Koto-ku, Tokyo 135-8710, Japan
President	Hiroshi Ide, COO
Year of establishment	December 5, 1853
Capital	107.1 billion yen
Net sales (Non-Consolidated)	620.2 billion JPY (Fiscal year 2019 ended March 31, 2020)
Net Sales (Consolidated)	1,386.5 billion JPY (Fiscal year 2019 ended March 31, 2020)
Employees (Non-consolidated)	7,741 (as of March 31, 2020)
Employees (Consolidated)	28,964 (as of March 31, 2020)
Works	6
Branches in Japan	8
Overseas Representative Offices	14
Group Companies	Affiliated Companies in Japan 65 (47 Subsidiary companies and 18 affiliated companies) Overseas Affiliates 151 (128 affiliated companies and 23 associated companies)

web Business

web Global Expansion

Basic Information

Management Philosophy and Group Vision

The IHI Group first and foremost acts as a good corporate citizen that grows together with society. Our Group Vision strives to fulfill our duty to society according to two management philosophies.

Management Philosophy

“Contribute to the development of society through technology”
“Human resources are our single most valuable asset”

IHI Group Vision

The IHI Group seeks to solve the various environmental, industrial, social, and energy related problems of the 21st century, through using engineering expertise to focus on “Monozukuri” technology. In striving towards these goals, IHI is becoming a global enterprise offering the safety and security for the benefit of both the environment and humanity.

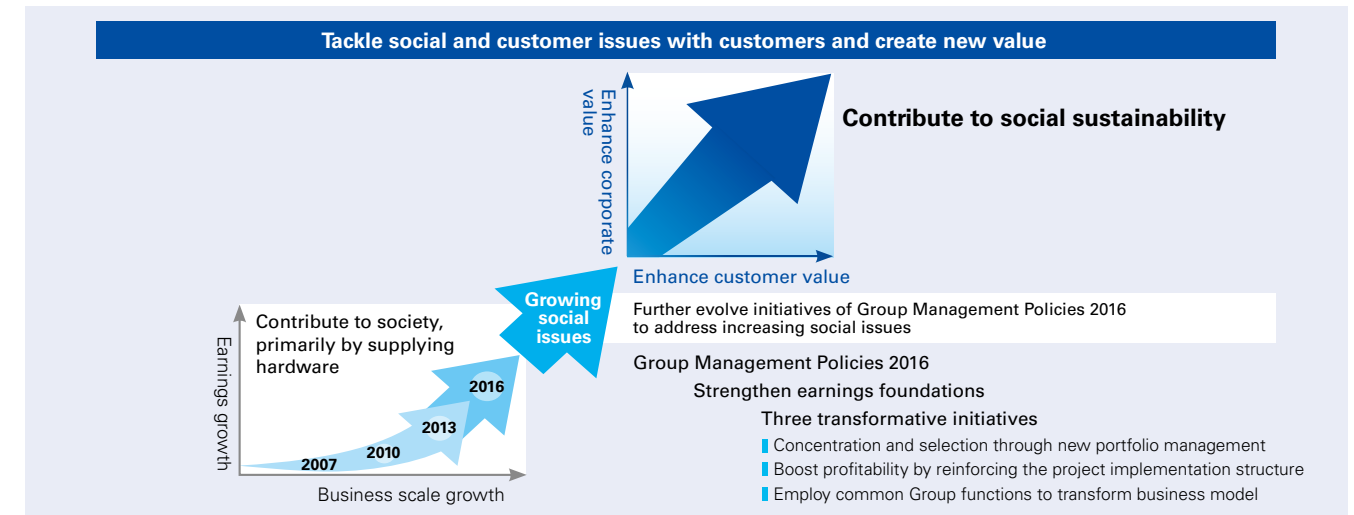
“Monozukuri” Technology means the technology used to improve the competitiveness of products and services offered, by strengthening the capabilities required in development, design, supply, manufacture and construction.

Group Management Policies 2019

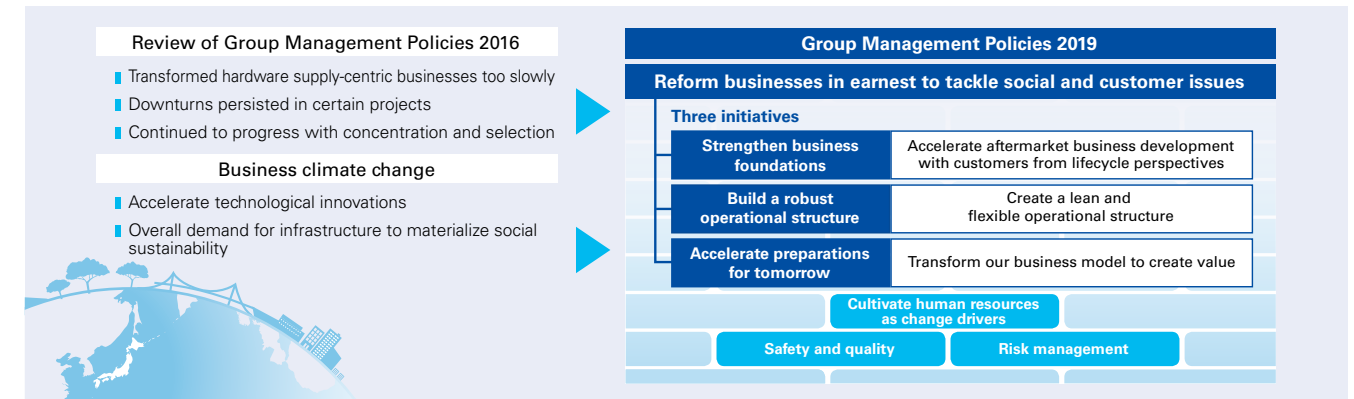
The IHI Group launched the Group Management Policies 2019 in April 2019 as mid-term management policies. The Group Management Policies 2019 aim to contribute to social sustainability from a long-term perspective as a

three-year plan which will fully transform our Group into an enterprise that creates new value by tackling customer challenges and social issues.

Long-Term Approach Under Group Management Policies 2019



Initiatives Under Three Years of Group Management Policies 2019



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Basic Code of Conduct for the IHI Group

The IHI Group knows living up to stakeholder expectations and earning their trust is vital to drive the sustainable growth of both customers and society. The Basic Code of Conduct for the IHI Group defines the practices necessary to embody this belief.

Basic Code of Conduct for the IHI Group

We at the IHI Group are committed to implementing what is necessary to meet the expectations and gain the trust of not only our customers, business partners, shareholders and colleagues, but also the local and international communities, while maintaining an awareness of global issues. By doing so, we aim to enhance our existential value as we move forward into the future and realize our Group's management philosophies of “Contribute to the development of society through technology” and “Human resources are our single most valuable asset.”

Fundamental and Universal Principles of the Entire IHI Group

Respect for the rule of law and ethical conduct

We strictly observe laws and ordinances based on a clear understanding of their meaning. We also act sincerely and fairly and in accordance with high ethical standards so that we do not violate social rules or international norms.

Respecting human rights

We fully recognize the importance of, and always strive to respect, human rights during our business activities.

Promotion of mutual understanding

In order to promote mutual understanding with those around us, we strive to disseminate information on our business activities, explain the effects of these activities on the surrounding environment, and engage in an exchange of opinions with our broader communities on a daily basis.

Responsibilities toward People, Society, and the Environment

Responsibilities toward people connected with the IHI Group via our products and services

- 1 We establish relationships of mutual trust with the people

with whom we are involved in the course of our business, help solve social issues in a variety of fields by using our abilities to the utmost, and develop and provide products and services to assure more comfortable lives for people around the world.

- 2 We pay full attention to the safety of the products and services we develop and provide and constantly strive to raise the quality level of our products and services by confirming whether they satisfy customers and users.
- 3 We deal appropriately with other parties in our business transactions and seek profit fairly, while at the same time we strive to establish fair and mutually-productive relationships with our customers and business partners.

Responsibilities toward those with whom we work

We strive to respect mutually the character and individuality of all people with whom we work and maintain a safe, supportive, and comfortable environment in which we can work easily.

Responsibilities toward local and international communities

- 1 With an awareness that each one of us is a member of society, we actively take part in initiatives to solve the problems faced by society.
- 2 No matter the region of the world where we conduct our business, we understand the value of the culture unique to each region and strive to meet the expectations of people living there.
- 3 We take a resolute attitude against organizations and forces that threaten social order and safety.

Responsibilities toward the global environment

Based on our recognition that the global environment provides the foundation for the existence of all societies and cultures, we take care so as not harm that which also will be needed by future generations and strive to protect, and reduce the

burdens on, the global environment, not only in the course of our provision of products and services but also in all other aspects of our business activities.

Roles and Responsibilities of Senior Management

Roles of Senior Management

- 1 Senior Management recognizes that their role is to ensure the realization of this Code of Conduct and takes the initiative to demonstrate leadership in order to put the purposes of this Code of Conduct into practice.
- 2 Senior Management ensures that this Code of Conduct is known to all people with whom they work and constantly strives to establish, maintain, and improve effective internal systems and to enhance our corporate value.

Responsibilities of Senior Management

If a violation of this Code of Conduct occurs, Senior Management will strive to take the initiative to solve the problem, discover its cause, and prevent the recurrence of similar violations. They also will promptly disclose accurate information to society, clarify the responsibilities and scope of the authority of the persons involved, and impartially take disciplinary action even upon themselves.

IHI Group Code of Action

In order to comply with this Code of Conduct, we establish “IHI Group Code of Action” as the code prescribing how directors, officers and employees of the IHI Group should make decision and take action in their daily work.

P25 IHI Group Code of Action

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Third-party Evaluation

S&P/JPX Carbon Efficient Index

The S&P/JPX Carbon Efficient Index selected the IHI Group as a brand satisfying environmental information disclosure and carbon efficiency (carbon emissions per unit of revenue) standards according to their constituent selection and weighting process.



CDP

Disclosure Insight Action (CDP) is a non-profit charity established by responsible investors worldwide. The CDP sends an annual questionnaire to companies and local governments and releases the results in an effort to encourage more action on climate change. The IHI Group responds to this questionnaire every year. In 2019, the CDP evaluated our Group with a B: Management Level score.



Kurumin Certification

The Minister of Health, Labour and Welfare recognized the IHI Corporation as a company that supports child raising and granted us the Kurumin certification.



Eruboshi Certification

The Minister of Health, Labour and Welfare certified the IHI Corporation as an Eruboshi Company (2nd level) for excellence in efforts to promote the participation and advancement of women in the workplace.



Health & Productivity Companies 2020 (White 500)

The Ministry of Economy, Trade and Industry and the Nippon Kenko Kaigi (Japan Health Council) launched the White 500 program to recognize excellence in employee health management from a corporate management standpoint. The White 500 program recognized ten IHI Group companies as Health & Productivity Companies in 2020: IHI Corporation, IHI Scube, IHI Plant Services Corporation, IHI Power Systems, IHI Jet Service, NICO Precision, IHI Infrastructure Systems, IHI Aerospace, IHI Castings, and IHI Finance Support.



Resilience Certification

The IHI Group renewed the Resilience Certification acquired in 2016 with the aim of improving its business continuity as a company that supports social infrastructure. Resilience Certification is a certification system of the Association for Resilience Japan based on the guidelines for the certification of organizations contributing to national resilience. This certification certifies business operators that endorse the ideas of strengthening national resilience published by the Cabinet Secretariat's National Resilience Promotion Office and proactively work to ensure their business continuity.



PRIDE Index Gold Award 2019

work with Pride (wwP) awarded the IHI Corporation the PRIDE Index 2019 Gold Award, its highest honor, for the second consecutive year since 2018. wwP is a private organization in Japan that advocates and helps establish LGBT diversity management practices. The goal of the PRIDE Index is to help build working environments friendly to LGBT and other gender minorities. This index evaluates company initiatives via categories for the code of conduct, gender minority communities, enlightenment programs, personnel policies and programs, social contributions and public relation practices. wwP recognized the IHI Corporation for the second consecutive year because of its human resource policies for LGBT, launch of a consultation desk, expansion of an ally program, and training to promote greater understanding about gender minorities.



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IHI Group Material Issues

Approach

• Identifying Material Issues

The IHI Group defined the Group Management Policy 2019 for the purpose of contributing to sustainable society from a long-term perspective. We have identified two material issues in these policies: pursuing material issues as the foundation of business operations and pursuing material issues through business operations.

• Material Issues Identification Process

The IHI Group identifies material issues through the following process in an effort to achieve a sustainable society and sustainable Group growth.

Material Issues Identification Process

Step 1 Extract material issues

We meticulously extracted 51 issues from the guidelines on disclosure of non-financial information such as the GRI Standards, SDGs, and a variety of other resources.

Step 2 Assess relevance to our businesses

We aligned and refined issues based on domestic challenges, various IHI Group policies, and relevance to our business activities.

Step 3 Identify material issues

We categorized the issues refined in Step 2 into two categories for consideration by the CSR Committee led by the President as chairperson to identify IHI Group material issues.

1. Pursuing material issues as the foundation of our business
2. Pursuing material issues through business activities

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IHI Group Material Issues

• Pursuing material issues as the foundation of our business

The IHI Group divides 14 material issues into environmental, social and governance categories as a foundation of our business. The IHI Sustainability Data Book 2020 provides a breakdown of our activities to address each material issue.

Environment – Reduce Environmental Impact – [P.61](#)

Climate change	P.67
Circular economy	P.72
Environmental protection	P.74

Society – Materialize an Affluent Society – [P.37](#)

Human rights	P.38
Customer relationship management	P.40
Diversity and inclusion	P.43
Labor practice	P.50
Supply chain management	P.55
Corporate citizenship	P.58

Governance – Principled Corporate Management – [P.16](#)

Corporate governance	P.17
Compliance	P.25
Risk management	P.32
Information security	P.35
Timely and proper disclosure	P.12, P.40

• Pursuing Material Issues Through Business

The IHI Group set following nine issues and themes for each issue to address through business. These themes are updated as necessary as we strive to solve social issues through our business activities.

web Contributing to Solving Social Issues

Material Issues	Priority Activities
Climate change	<ul style="list-style-type: none"> • Increase energy efficiency • Control and reduce consumption of fuels • Control and reduce greenhouse gas emissions, including CO₂
Circular economy	<ul style="list-style-type: none"> • Control and reduce consumption of natural resources
Environmental protection	<ul style="list-style-type: none"> • Expand anti-pollution measures (seven types of pollution) • Prevent chemicals in products from being released into the atmosphere • Protect native species
Stable supply of energy and resources	<ul style="list-style-type: none"> • Contribute to balancing of environmental consideration and stable energy supply • Develop and utilize resources replacing fossil fuels and rare metals
Building and maintaining social infrastructure	<ul style="list-style-type: none"> • Renew and extend life of aged infrastructure • Disaster recovery support • Improve infrastructure of each country • Compact, functional urban development
Developing a mobility society	<ul style="list-style-type: none"> • Optimize the mobility of people and materials
Strengthening and sophistication of “Monozukuri” (manufacturing and engineering)	<ul style="list-style-type: none"> • Evolution of industrialization • Evolution of products and services • Utilization of IoT/ICT, AI
Utilization of aerospace	<ul style="list-style-type: none"> • Efficient and reliable means of aerospace transportation • Utilization and application of acquired data
Securing safe and stable living	<ul style="list-style-type: none"> • Alleviate safety and security issues

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Approach

The IHI Group defined our approach in the Group Management Policy 2019 that adapts to changes in the social environment from long-term perspectives. This flexibility will contribute to a sustainable society. We will also create new value by tackling social and customer issues.

Structure

• Sustainability Promotion System

• CSR Committee

The IHI Group established a CSR Committee led by the President as chairperson and Officer in charge of CSR as deputy chairperson with the presidents of business areas and corporate general managers serving as committee members. The primary task of the Committee is to build and operate a Sustainability Promotion System. The CSR Committee convenes once a year for senior management to discuss sustainability policies and measures based on social issues and stakeholder expectations.

We share and promote specific policies and measures put in place by the CSR Committee through a CSR Liaison Group made up of managers from business areas and head office divisions.

Sustainability Promotion System



Chairperson	President
Deputy Chairperson	Officer in charge of CSR
Members	Board directors, presidents of business areas, general managers of headquarters, general managers of head office divisions, and general managers of the head office nominated by the chairperson
Secretariat	Corporate Planning Division
Meetings convened in 2019	1

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• Dialogue with Stakeholders

The IHI Group deems customers, business partners, shareholders, investors, government agencies, local communities and employees with a large influence over ongoing corporate activities as primary stakeholders. We value and engage in a broad dialogue with these stakeholders. The Integrated Report and Sustainability Data Book act as tools for this dialogue. We report topics thought particularly important to the Management Committee and Board of Directors in order to reflect these ideas in corporate strategy.

Results of Dialogue with Stakeholders

Stakeholders	Main Purpose of Dialogue	Example of 2019 Engagement	Frequency	Reference
Customers	<ul style="list-style-type: none"> Contribute to solving social issues and customer challenges Ensure product safety 	• Conduct customer satisfaction surveys	As necessary	<p>P40 ➔ Customer Relationship Management</p>
		• Television commercials, newspaper advertisements, and IHI websites	As necessary	
		• Provide product safety information	As necessary	
Business partners	<ul style="list-style-type: none"> Engage in fair and impartial business dealings Cultivate mutually beneficial partnerships with our business partners 	• Make requests of business partners based on the IHI Group Procurement Policy	Regularly	<p>P55 ➔ Supply Chain Management</p>
		• Commend outstanding suppliers	Once per year	
Shareholders & investors	<ul style="list-style-type: none"> Disclose accurate information in a timely manner Strengthen relationships based on trust Enhance corporate value 	• Convene the General Meeting of Shareholders	Once per year	<p>web ➔ IR</p>
		• Hold financial results briefings and telephone conferences	Four times per year	
		• Hold business area briefings	Once per year	
		• Attend one-on-one meetings	As necessary	
		• Offer plant tours for shareholders	Two times per year	
Government organizations	<ul style="list-style-type: none"> Form partnerships with government organizations 	• Participate in policy boards	As necessary	<p>P14 ➔ Innovation Management</p>
		• Participate in joint development and projects with government organizations	As necessary	
Local communities	<ul style="list-style-type: none"> Recognize ourselves as a member of society Contribute to solving social issues 	<ul style="list-style-type: none"> Hold community events Hold school visits 	As necessary	<p>P58 ➔ Corporate Citizenship</p>
Employees	<ul style="list-style-type: none"> Recruit and develop human resources as the most vital management asset 	• Conduct employee training	As necessary	<p>P41 ➔ Managing Human Resources</p>
		• Conduct employee-awareness surveys	Once per year	<p>P48 ➔ Diversity and Inclusion (Human Resource Development)</p>
		• Operate a compliance hotline	Regularly	<p>P25 ➔ Compliance</p>

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Sustainable Development Goals (SDGs) Initiatives

Approach

The United Nations adopted the Sustainable Development Goals (SDGs) in 2015. The IHI Group sees the success of the SDGs as an expectation of society. We identify and incorporate each target of the SDGs in Group management as material issues.

The Group Management Policy 2019 is our mid-term management policy that began in 2019. These policies align the direction of each business area with the targets of the SDGs so that we may contribute to the success of the SDGs through our businesses in the hope of realizing a sustainable society.

IHI Group Business Area Direction

Create new value needed for social sustainability



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Technology & Intelligence Integration

Approach

The IHI Group creates new value with greater speed through technology and intelligence integration centered upon social issues and customer challenges. We anticipate various societal changes to evolve our technology so that we can universally respond to any change. The IHI Group promotes open innovation to build a new ecosystem that integrates technology and intelligence and provide solutions quickly.

Structure

The IHI Group runs the IHI Tsunagu Lab. (opened 2014), i-Base in IHI Group Yokohama Labs; i-Base (opened 2019), and the IHI Launch Pad (opened 2018) as bases for open innovation. These three facilities nurture shared inspiration and co-creation.

We also accelerate development and commercialization of technology through industry-university partnerships worldwide. These partnerships differ from conventional industry-university partnerships. We place emphasis on incorporating and commercializing technology from a medium- to long-term perspective. The IHI Group also enters into business partnerships with government organizations for large projects which may be difficult to commercialize independently. These partnerships diversify risk—especially capital risk—and shorten turnaround.

We have been partnering with start-up companies as well through venture capital investments in Silicon Valley since 2014. The IHI Group encourages collaboration that aims to create new value through technology attaché activities at each of our bases in the United States, Europe, Singapore, and China.

Education/Awareness Building

The IHI Group nurtures innovative minds by incorporating design thinking, service design, art thinking, liberal arts, foresight, and other new approaches through our relationships with various universities. These partnerships enhance new value creation.

In particular, we hold workshops underpinned by the products and challenges of the IHI Group and cooperate broadly in tasks that include the existing product and technical publication designs. The IHI Group also works to examine multiple scenarios that anticipate various societal changes.

Initiatives

• Initiatives with Partner Companies

The IHI Corporation ensures ongoing sustainable growth by participating in international collaborative projects particularly in aero-engine business as our key business. As a result, we have been able to secure a 60% to 65% market share of the aero-engine market in Japan.

• Initiatives with Startup Companies

The IHI Corporation and IHI Logistics & Machinery Corporation partnered with American-based startup Boston Dynamics (formerly Kinema Systems) to take advantage of logistics recognition technologies that use Artificial Intelligence (AI). We were able to develop and start sales of a depalletizing system that requires no prior image data registration or teaching. This system can flexibly adapt to changes in logistic needs to enhance processing performance by 30%.

• Industry-University Initiatives

In Japan, the IHI Corporation entered into a comprehensive industry-university partnership agreement with Yokohama National University. As a part of this partnership, we opened a joint AI research course in Research Center for Artificial Intelligence, Yokohama National University.

Overseas, we entered into comprehensive partnership agreements with Tsinghua University and Shanghai Jiao Tong University. Together, we are steadily advancing various research and development projects.

• Public-Private Sector Initiatives

The IHI Corporation partnered with the Advanced Remanufacturing and Technology Centre of the Singapore Agency for Science, Technology and Research to develop leading-edge manufacturing technology.

We have also participated in a variety of other research endeavors through multiple projects from metal laminated molding technology (additive manufacturing) and surface treatments to robotics and machining technology. Our joint development project for automated masking solution joint development project adapted and improved Sankei Eagle products to IHI needs. The transition from manual to automated operations reduced the amount of materials used for masking by 50%. Our energy business participated in the Callide Oxyfuel Project to shift toward a low-carbon, recycle-oriented society. This large-scale Japan-Australia public-private joint project took place at Callide coal-fired thermal power station in Australia. This was the world's first project to verify the operation of a CO₂ liquefaction and capture unit in a thermal plant through oxygen combustion and a consistent CO₂ capture process.

Innovation Management

Intellectual Property

Policies

The IHI Group promotes intellectual property activities as both management policy and technological strategy. We have a diverse business environment made up of IHI divisions and affiliate companies. Each has unique intellectual property needs. Our Intellectual Property Department drafts a Basic Policy on IHI Group Intellectual Property each year. Each division and affiliated company refers to this policy when establishing their own intellectual property policies tailored to their unique business, technology and development environment. The Basic Policy on IHI Group Intellectual Property in 2019 emphasized measures to acquire intellectual property for portfolio success, leverage intellectual property in business, quickly discover and reduce intellectual property risks, and provide comprehensive intellectual property education.

Education/Awareness Building

• Intellectual Property Education

The IHI Group uses e-Learning to teach first- to fifth-year employees about intellectual property. Each business division and affiliated company also provides all-inclusive training on intellectual property that includes patent audits and rights acquisition policies, copyrights and trademark naming.

In 2019, we held a lecture on intellectual property for the entire group by inviting a guest speaker to share their expertise, which heighten our awareness about intellectual property.

Training Participants

(Unit: People; Scope: IHI)

Item	2016	2017	2018	2019
STEP 1 (First-year employees)	374	290	168	167
STEP 2 (Second-year employees)	318	351	271	154
STEP 3 (Third-year employees)	296	291	314	246
STEP 4 (Fourth-year employees)	251	284	270	281
STEP 5 (Fifth-year employees)	230	217	269	249

Results

Change in Owned Patents by Region

(Unit: Patents; Scope: IHI)

Item		2016	2017	2018	2019
Owned Patents	Domestic patents	4,157	3,915	4,120	4,150
	Total	2,744	2,598	3,047	3,502
	United States	535	539	591	724
	Europe	936	792	1,037	1,240
	China	439	437	499	561
	Korea	225	174	193	199
	BRICs	126	116	137	142
	Other	483	540	590	636

Initiatives

• Protecting Intellectual Property

The IHI Group makes a strict distinction between rights acquisition through patent filings and the confidentiality of knowledge through concealing when protecting intellectual property. The IHI Group files necessary patent applications worldwide based on global business expansion. We carefully select countries to file patent applications through the forecasts in business, technology and development plans.

We also respect third-party intellectual property rights. We research the patent filings of other companies as well as patent acquisition trends to reduce any business risks.

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Corporate Governance

Corporate Governance

Basic Views

Our corporate governance system improves management efficiency as a way to fully leverage our unique capabilities and in turn ensure sustainable growth and maximize corporate value. As a means to this end, we have separated management supervision and business execution functions, which heightens the efficiency and aptness of internal decision-making and lays a foundation to draft and put internal rules into practice. This approach ensures proper business conduct throughout the entire Group.

IHI consistently enhances corporate governance to earn long-standing trust and support from all or our shareholders and other stakeholders.

We strive to further corporate governance according to the following basic policies.

- (1) Respect shareholder rights and ensure equal treatment.
- (2) Strive to maintain proper working relationships with shareholders and other stakeholders.
- (3) Proactively disclose accurate corporate information, ensure transparency, and remain accountable to our stakeholders.
- (4) Clarify the roles and responsibilities of the Board of Directors and Audit & Supervisory Board to enable members to fulfill management, audit, and supervisory functions.
- (5) Engage in constructive dialogue with shareholders whose investment policy aligns with medium- to long-term shareholder interests.

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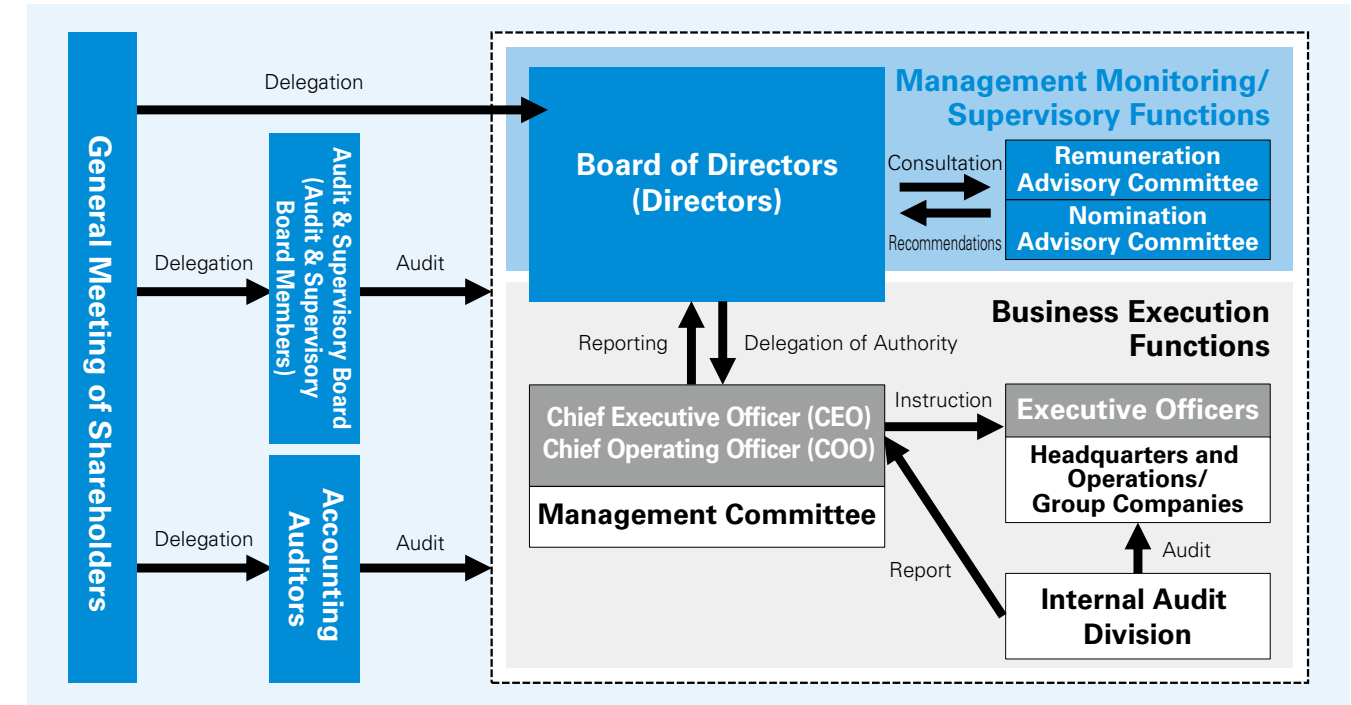
Structure

The IHI Corporation has established an Audit & Supervisory Board by appointing five board members—three of whom are outside auditors—to supervise directors in the execution of their duties. The Board of Directors is made up of 12 directors—four of whom are outside directors—with the Chairman of the Board serving as the chairperson. The Board of Directors makes decisions on important management matters concerning the IHI Corporation and the Group, and it oversees the business execution of directors. The IHI Corporation nominates persons with extensive and multifaceted experience, broad knowledge, and high-level expertise as outside directors. These nominees can contribute to the decision-making of the Board of Directors from a standpoint independent of the management involved in business execution.

• Executive Officer System

The IHI Corporation has adopted an executive officer system to strengthen decision-making and supervisory functions of the Board of Directors, as well as improve efficiency of business execution. The Company appoints executive officers by resolution of the Board of Directors. The Chief Operating Officer (COO) serves under the Chief Executive Officer (CEO) to direct and supervise the duties of executive officers. The executive officers follow the directions from the Chief Operating Officer to execute their assigned duties. The CEO also appoints members to the Management Committee to assist in decision-making and business execution.

Corporate Governance Management Structure



• Remuneration Advisory Committee and Nomination Advisory Committee

We have established and convened a Remuneration Advisory Committee and Nomination Advisory Committee as independent committees.

The Remuneration Advisory Committee determines the suitability and objectivity of the remuneration brought up by the Board of Directors. This six-person committee is made up of three outside directors, one outside Audit & Supervisory Board member, the Director in charge of human resources, and the Director in charge of finance and accounting with an outside director acting as chairperson.

The Committee convened five times with no absentees in 2019.

The Nomination Advisory Committee oversees and advises the Board of Directors on appropriate officer nominations. This five-person committee is made up of the President and four outside directors with the President acting as chairperson. The Committee convened five times with no absentees in 2019.

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Appointment of Officers

Policies and Procedures

The Board has defined ideal officer attributes for the Board of Directors. We have also drafted Independence Criteria for Outside Officers in accordance with the Tokyo Stock Exchange independent officer requirements to ensure the independence of outside directors and auditors.

The Board of Directors has formulated a basic policy to appoint corporate officers who can best ensure sustainable growth and enhance medium- to long-term corporate value throughout the IHI Group according to these ideal attributes and the Independence Criteria for Outside officers.

IHI strengthens the independence, objectivity, and accountability of the Board of Directors through a process that goes beyond the legal requirements for corporate officer appointments. We have established a Nomination Advisory Committee as a voluntary advisory body comprised of the President and all independent outside officers to make sure outside Directors actively oversee and advise on appointment procedures.

The Board of Directors also promptly determines whether to dismiss a member of senior management or an executive officer according to dismissal criteria.

• Ideal Officer Attributes

IHI nominates officers who are both sound in mind and body and possess all the following attributes:

- Deep understanding and empathy with the management philosophy and vision
- The ability to address social issues, foster sustainable growth and enhance medium- to long-term corporate value in accordance with the IHI Group vision
- Outstanding foresight, excellent insight, and the ability to make proper IHI Group management decisions
- A high ethical compass
- Extensive management experience or expert knowledge combined with broad global perspective and discernment

• Independence Criteria for Outside Officers

IHI determines the independence of officers according to the following criteria in addition to the Tokyo Stock Exchange requirements for independent officers.

1. Major shareholders
An independent officer shall not hold 10% or more voting rights in the IHI Corporation, or serve as a director, audit and supervisory board member, operating officer, executive officer or employee of a major corporate shareholder.
2. Major business partners
An independent officer shall not have served as an executive director, operating officer, or executive officer in the past or currently serve as a director, audit and supervisory board member, operating officer, executive officer, or employee of a major IHI business partner defined as:
 - A major client of the IHI Group whose business equates to at least 2% of consolidated net sales in the most recent fiscal year
 - A major supplier of the IHI Group whose business equates to at least 2% of consolidated net sales in the most recent fiscal year

- A lender to the IHI Corporation listed as a major lender in the business report for the most recent fiscal year

3. Special service providers
An independent officer shall not be a special service provider, such as an attorney at law, certified public accountant, or consultant, who receives 10 million yen or more in money or other assets annually from IHI in addition to the officer salary.
4. Accounting auditors
An independent officer shall not serve as a representative partner or employee of an IHI accounting auditor.
5. Mutual exchange of officers, etc.
An independent officer shall not be assigned to a company with a relationship of mutually exchanging directors or auditors.
6. Close relatives
An independent officer shall not be a spouse or relative within two degrees of kinship of a director, Audit & Supervisory Board member, executive officer or other executive-level employee of the IHI Group. In addition, an independent officer shall not be a spouse or relative within two degrees of kinship of any person* in 1 through 4 above.

*If a major shareholder or business partner is a corporate entity, the above only applies to relatives of directors, audit and supervisory board members, operating officers, executive officers, and other executive-level employees of said company. IHI also nominates candidates as outside officers with consideration to age, concurrent positions, term of office, and other relevant criteria.

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Corporate Governance

• Members of the Board of Directors (as of July 1, 2020)

Name Position at the Company	Reasons for nomination	Attendance at Board of Directors meetings in 2019	Term in office	Company shareholding	Appointments to advisory committees	
					Remuneration Advisory Committee	Nomination Advisory Committee
Tsugio Mitsuoka Chairman of the Board	Tsugio Mitsuoka has lead IHI Group management since April 2016, by actively carrying out the selection and concentration of business operations and the transformation of the business model in response to the changing business environment. He has also built stronger earnings foundations for the Group by bolstering risk management and ensuring compliance. Since April this year, he has been working to further strengthen corporate governance as Chairman of the Board. We believe his abundant experience and insight as corporate manager will be utilized in the management of the IHI Group.	18 of 18	6 years	10,400 shares	—	—
Hiroshi Ide President	Hiroshi Ide has accumulated a great deal of knowledge mainly in the overseas marketing division for the energy plant business. As Managing Director of an overseas subsidiary and subsequently as the manager responsible for a business area, he has formulated business strategies and carried out business operations with a long-term perspective for the realization of a carbon-free recycling-oriented society. Since April this year, he has led the IHI Group management as Chief Operating Officer. We believe his abundant international experience, accomplishments, and insight will be utilized in the management of the IHI Group.	—	Since June 2020	1,300 shares	—	Chairperson
Takeshi Yamada Executive Vice President	Takeshi Yamada has accumulated a great deal of knowledge mainly in the finance and accounting field as well as corporate planning, and lead the Group finance and accounting. Since April 2019, he has worked on Group financial strategies and improvement in the financial condition as Executive Vice President. We believe his high level of insight into overall Group business management will be utilized in the management of the IHI Group.	18 of 18	3 years	1,600 shares	Committee Member	—
Tomoharu Shikina Executive Vice President	Tomoharu Shikina has accumulated a great deal of knowledge in the aero-engine technology development field. He has been responsible for managing the global aero engine, space, and defense business and striven to grow the business. We believe his abundant accomplishments, experience, and insight will be utilized in the management of the IHI Group.	18 of 18	4 years	4,700 shares	—	—
Masafumi Nagano Director	Masafumi Nagano has accumulated a great deal of knowledge mainly in human resources. He has worked on the transformation of a business model centering on the life-cycle business in the industrial systems and general-purpose machinery business. Since April this year, he has been involved in planning management strategies, drawing on his experience in both corporate and business divisions. We believe his extensive experience, accomplishments, and insight will contribute to the growth of the IHI Group.	18 of 18	2 years	4,100 shares	Committee Member	—
Kouichi Murakami Director	Kouichi Murakami gained experience in the research and development of materials as well as overall technological management in technology and Intelligence integration. After being the manager responsible for a business division, he has led the technology and intelligence integration as well as engaged in creating new businesses, drawing on his high level of insight across all technologies. We believe his extensive experience, accomplishments, and insight will be essential for the growth of the IHI Group.	18 of 18	2 years	4,600 shares	—	—

Name Position at the Company	Reasons for nomination	Attendance at Board of Directors meetings in 2019	Term in office	Company shareholding	Appointments to advisory committees	
					Remuneration Advisory Committee	Nomination Advisory Committee
Takeshi Kawakami Director	Takeshi Kawakami has accumulated a great deal of knowledge mainly in the bridge design and construction divisions. He served as the manager responsible for many domestic and overseas projects, and subsequently as President of a company formed through IHI acquisitions of major operations in Japan, which engages in the bridge and water gate business. He has striven to grow the social infrastructure-related business within the Group. We believe his abundant accomplishments, experience, and insight will contribute to the growth in the social infrastructure and offshore facilities business area and the IHI Group as a whole.	—	Since June 2020	1,400 shares	—	—
Yasuhiro Shigegaki Director	Yasuhiro Shigegaki has accumulated a great deal of knowledge mainly in technology and intelligence integration. In addition to having served as Chairman of the Board of an overseas entity that IHI acquired for the heat and surface treatment business, he has actively pursued global expansion by leading domestic and overseas Group companies engaged in businesses to achieve growth. We believe his extensive experience, accomplishments, and insight will contribute to the growth of the IHI Group, including the industrial systems and general-purpose machinery business.	—	Since June 2020	1,400 shares	—	—
Taketsugu Fujiwara Outside Director	Taketsugu Fujiwara gained extensive experience and broad insight at the helm of a general chemicals manufacturer, where he implemented diversified management. We aim for these qualities to be reflected in IHI management, and acknowledge his proven ability in performing management oversight and monitoring functions from an independent perspective.	17 of 18	5 years	0 shares	Chairperson	Committee Member
Kazuhiko Ishimura Outside Director	Kazuhiko Ishimura gained extensive experience and broad insight at the helm of a comprehensive materials manufacturer. We aim for these qualities to be reflected in IHI management, and acknowledge his proven ability to perform management oversight and monitoring functions from an independent perspective.	18 of 18	3 years	1,200 shares	Committee Member	Committee Member
Yoshiyuki Nakanishi Outside Director	Yoshiyuki Nakanishi has gained extensive experience and broad insight as the corporate manager of a global chemical manufacturer by implementing various measures to respond to the changes in the business environment. We aim to reflect these qualities in IHI management, and expect he can carry out management oversight and monitoring functions from an independent perspective.	—	Since June 2020	0 shares	Committee Member	Committee Member
Chieko Matsuda Outside Director	Chieko Matsuda has gained abundant knowledge in business strategy and finance strategy through her research and studies, and broad insight through her experience as an outside director of several companies. We aim for these qualities in IHI management, and expect she can carry out management oversight and monitoring functions from an independent perspective.	—	Since June 2020	0 shares	—	Committee Member

*Independent directors as stipulated by the Tokyo Stock Exchange, and directors satisfying IHI's 'Independence Criteria for Outside Officers'

(Unit : %)

Average attendance of outside directors	2016	2017	2018	2019
Board of Directors meetings	96.2	95.3	98.6	98.1

Corporate Governance

Members of the Audit & Supervisory Board (as of July 1, 2020)

Name Position at the Company	Reasons for nomination	Attendance at Board of Directors meetings in 2019	Term in office	Appointments to advisory committees	
		Attendance at Audit & Supervisory Board meetings in 2019		Remuneration Advisory Committee	Nomination Advisory Committee
Taizo Suga Standing Audit & Supervisory Board Member	Taizo Suga has accumulated a great deal of knowledge mainly in the finance and accounting field since joining IHI. He was appointed as the President and Chief Executive Officer of IHI ASIA PACIFIC PTE. LTD. We believe his high degree of specialist knowledge in financial management and wide ranging business experience in overall business management will be utilized in the effective auditing of the IHI Group.	18 of 18	3 years	—	—
		13 of 13			
Takashi Niimura Standing Audit & Supervisory Board Member	Takashi Niimura has accumulated a great deal of knowledge in the sales and marketing field since joining IHI. As the manager responsible for supervising domestic and overseas branches and affiliated companies, he has carried out sales strategies from a company-wide perspective, while globally expanding operations and managing risks according to the situation in each country. We believe his abundant accomplishments, experience, and insight will be utilized in the effective auditing of the IHI Group.	—	Since June 2020	—	—
		—			
Tomomi Yatsu ^{*1} Outside Audit & Supervisory Board Member	Tomomi Yatsu has accumulated extensive experience and insight by responding to various corporate challenges as an attorney at law and a certified public accountant and has been carrying out the auditing functions of IHI management from an independent perspective.	18 of 18	3 years	—	—
		13 of 13			
Toshio Iwamoto ^{*1} Outside Audit & Supervisory Board Member	Toshio Iwamoto has gained extensive experience and broad insight as a corporate manager. We expect he will strengthen corporate governance and use these qualities and his independent perspective in IHI management auditing functions. As a company involved in transforming the business model, we believe he will utilize his extensive IoT knowledge and experience in system development and other operations.	14 of 14 ^{*2}	1 year	Committee Member	—
		10 of 10 ^{*2}			
Aiko Sekine ^{*1} Outside Audit & Supervisory Board Member	Aiko Sekine has accumulated abundant experience and insight as a corporate representative and President of JICPA. We expect these qualities and her independent perspective to be reflected in the management auditing functions. Although she has not been involved in company management, we believe she will adequately execute her duties as an outside Audit & Supervisory Board Member.	—	Since June 2020	—	—
		—			

^{*1} Independent directors as stipulated by the Tokyo Stock Exchange, and outside audit & supervisory board members satisfying IHI's 'Independence Criteria for Outside Officers'

^{*2} Shows attendance status to the audit & supervisory board meetings held after appointment as audit & supervisory board member.

(Unit : %)

Average attendance of outside Audit & Supervisory Board Members	2016	2017	2018	2019
Board of Directors meetings	92.3	96.0	92.6	100.0
Audit & Supervisory Board meetings	93.0	100.0	100.0	100.0

Corporate Governance

Remuneration for Officers

Policy on Determination of Remuneration for Officers

• Basic Policy on Determining of Remuneration for Officers

Officer remuneration provides powerful motivation for IHI Officers to achieve specific management goals by encouraging business execution founded in the Management Philosophy, Group Vision, and Group Management Policy for the purpose of fostering sustainable growth and increasing medium- to long-term corporate value of the IHI and IHI Group.

A fixed salary is only one part of officer remuneration. IHI also sets appropriate annual bonuses linked to fiscal performance in addition to medium- to long-term performance-based incentives tied to the corporate value and medium- and long-term performance. This ensures officers share the same risk and reward as our broad range of stakeholders. This remuneration system acts as a driving force for sound entrepreneurship. We know human resources are our single most valuable asset as stated in our Management Philosophy. Therefore, we also determine salaries appropriate to IHI officers in consideration of factors such as the management environment as well as the social role and responsibility of our Group.

• Remuneration Standards and Payout Ratio

The IHI Corporation regularly reviews objective market data on remuneration from a third-party research institute to set appropriate levels of remuneration. We also consider factors such as IHI business conditions and the effectiveness of incentives and set remuneration proportionately at 60%, 20% and 20% between the (1) base amount, (2) annual bonuses paid for meeting performance targets, and (3) medium- to long-term performance-based incentives.

• Procedures for Determining Remuneration

IHI determines the remuneration for directors and executive officers through deliberation and recommendations from the Remuneration Advisory Committee with the final decision made by the Board of Directors. This process ensures fairness and objectivity.

• Remuneration of Outside Directors and Audit & Supervisory Board Members

IHI only provides a fixed amount to outside directors that take into account their duties.

We also only provide fixed salary to outside Audit & Supervisory Board members based on their duty to oversee business execution throughout the entire IHI Group. IHI determines the specific amount of remuneration together with the Audit & Supervisory Board.

• Calculation Method for Incentives

We calculate incentives using consolidated ROIC and consolidated operating profit margin as performance evaluation indicators because these are important management indicators under the Group Management Policy 2019.

Remuneration types	Performance-linked stock remuneration	Payment amount calculation method	
Performance-based share remuneration (Medium- to long-term incentives)	Stock	<div>No. of issued shares = <div>Basic points corresponding to job title ranking × Performance evaluation payout rate corresponding with consolidated ROIC × Percentage obtained by dividing the months of enrollment by 12</div> × 1/2</div> <div>Fluctuation from 0 to around 150 Level of accomplishment at end of performance evaluation period (upcoming 3 business years)</div>	
	Cash	<div>Amount of monetary payment = <div>No. of confirmed points¹ - No. of issued shares</div> × Current value of IHI shares on the day rights are finalized</div> <div>1. 1 finalized point is equivalent to 1 IHI share.</div>	
Performance-based bonuses (Annual incentives)	Cash	In the case of representative director	
		<div>Performance-based bonuses = <div>Standard payment amount corresponding to titles and positions</div> × <div>Performance evaluation payout rate corresponding to the current net income attributable to owners of parent² × 50/100 + Performance evaluation payout rate corresponding with consolidated operating profit margin² × 50/100</div></div>	
Performance-based bonuses (Annual incentives)	Cash	In the case of directors	
		<div>Performance-based bonuses = <div>Standard payment amount corresponding to titles and positions</div> × <div>Performance evaluation payout rate corresponding to the current net income attributable to owners of parent² × 30/100 + Performance evaluation payout rate corresponding to consolidated operating profit margin^{2,3} × 50/100 + Payout rate based on individual performance evaluation² × 20/100</div></div> <div>2. Fluctuation from 0 to around 200 3. In the case of a director overseeing a business area, the performance evaluation payout rate corresponding to the consolidated operating profit margin of the said business area is used. 2020 adds cash flows (consolidated cash flow and consolidated operating profit margin of business areas in charge) as one performance evaluation indicator for the purpose of securing future investment funds and building a solid financial base. The consolidated cash flow is the sum of cash flows from operating activities and investing activities.</div>	

2. Fluctuation from 0 to around 200

3. In the case of a director overseeing a business area, the performance evaluation payout rate corresponding to the consolidated operating profit margin of the said business area is used.

2020 adds cash flows (consolidated cash flow and consolidated operating profit margin of business areas in charge) as one performance evaluation indicator for the purpose of securing future investment funds and building a solid financial base. The consolidated cash flow is the sum of cash flows from operating activities and investing activities.

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Results for 2019 Remuneration

Details of Director and Audit & Supervisory Board Members Remuneration (Unit: Million yen)

Category	Number of people remunerated	Total remuneration by type			Total remuneration
		Basic remuneration	Performance-based share remuneration	Performance-based bonuses	
Directors	12	434	117	12	565
Audit & Supervisory Board Members	6	108	–	–	108
Total (outside)	18 (8)	542 (75)	117 (–)	12 (–)	673 (75)

Note 1: Annual remuneration for directors is capped at 1,090 million yen, annual amount for audit & supervisory board members is capped at 120 million yen.

Note 2: The table includes one director and one audit & supervisory board member who retired at the conclusion of the Ordinary General Meeting of Shareholders held on June 20, 2019. As such, the figures are different from the figures as of March 31, 2020 (11 directors and five audit & supervisory board members).

Targets, results, and other data of performance evaluation payout rates

Type of remuneration	Performance evaluation indicator	Margin of performance evaluation payout rate	Target	Results	Performance evaluation payout rates
Performance-based share remuneration	Consolidated ROIC	0 - 150%	Maximum: 13% Target: 10% Minimum: 3.5%	5.7%	50%
Performance-based bonus	Current net income attributable to owners of parent	0 - 200%	Maximum: 60.2 billion yen Target: 45.2 billion yen Minimum: 30.2 billion yen	12.8 billion yen	0%
	Performance evaluation payout rate	0 - 200%	Maximum: 8.0% Target: 6.0% Minimum: 4.0%	3.6%	0%

Corporate Governance

Board of Directors Evaluation

IHI has been evaluating the performance of the Board of Directors annually in principles since 2015 to further its effectiveness.

We evaluate the Board of Directors specifically by:

- Conducting anonymous questionnaires for all directors and Audit & Supervisory Board members through a third-party consulting company. The questions cover everything from the Board composition and operation to risk management and Board culture.
- Collecting and analyzing questionnaires through a third-party consulting company.
- Interviewing all relevant officers about the questionnaire and result analysis. IHI also holds an informal discussion for an exchange of ideas mainly between outside directors.

We bundle this evaluation as a self-assessment of the Board of Directors and identify areas where improvements should be made.

The Board of Directors evaluation carried out in 2019 once again independently verified the effectiveness of the Board of Directors.

However, we were able to identify several new risk factors from a broader view, including a need to strengthen oversight and monitoring of business execution and prevent the spread of the COVID-19. IHI affirmed these measures will deepen discussions and enhance the effectiveness of the Board of Directors even further. We plan to carry out the next Board of Directors evaluation during 2020.

Others

• Corporate Governance Report

Please see our Corporate Governance Report for more information about IHI corporate governance.

web

Corporate Governance Report

Cross shareholdings

Approach

• Purpose of cross shareholdings

IHI engages in substantial dialogue with companies who have interlocking stockholding in an effort to reduce cross shareholdings. Although our policy does not limit holding shares of strategic partners for business alliances, joint research, or other purposes to increase our mid- to long-term growth and corporate value.

• Management of cross shareholdings

The Board of Directors verifies the intention and economical rationality to hold shares in the medium- to long-term based on its ownership policy described above for all cross shareholdings every year and determines if the share should be held or not.

Results

In 2019, out of the 57 cross shareholding stocks, including 26 stocks funded to the retirement benefit trust, seven stocks were all sold and two stocks were partially sold.

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Compliance

Policies

The IHI Group strives for sound compliance founded on the Basic Rules of Compliance for IHI Group and other guidelines.

These activities conducted not only to address legal compliance but also to respond to the needs of the society with having full grasp of the ever-changing values and expectations of the society.

In response to a quality issue in 2019, we focused on strengthened our compliance and quality assurance systems as part of the risk management activities to prevent recurrence. For example, we established the IHI Group Code of Action with reference to the Basic Code of Conduct for the IHI Group as a guiding light for all IHI Group employees in their day-to-day work in 2019.

We will continue to ensure uncompromising compliance and prevent recurrence by finding the root causes of the quality issue in an effort to rebuild trust.

IHI Group Code of Action

1. We truly understand and will comply with any and all applicable rules.
2. We do not engage in any wrongdoing.
3. We respect human rights.
4. We make safety and quality for our customers a top priority.
5. We enter into fair and legitimate transactions.
6. We never impair the safety of ourselves or our colleagues.
7. We strictly manage and control information.
8. If we discover an issue, we report it immediately.

Basic Rules of Compliance for IHI Group

Compliance is the foundation for companies to do business in society.

The IHI Group shall act as follows in accordance with the Basic Code of Conduct for the IHI Group:

- Observing strictly all laws, internal rules, and other regulations.
- Act in a fair and responsible manner as business people.

•Tax Compliance**IHI Group Global Tax Policy**

The IHI Group enacts the Global Tax Policy in accordance with “Basic Code of Conduct for the IHI Group”, for the purpose of developing global tax compliance, and aims at growing sustainably and enhancing corporate value over the future.

1. Respect for The rule of law

The IHI Group observes the laws and ordinances on taxes of each country or region based on a clear understanding of their meaning. The IHI Group also acts sincerely and fairly with high ethical standards so that it does not violate social rules or international norms.

2. Transfer pricing

The IHI Group, by assessing transfer pricing in accordance with the laws and ordinances of each country or region and The International Transfer Pricing Guidelines, is committed to appropriately allocating income commensurate with the contribution of each Group company and to making proper tax payment in each country and region.

3. Tax planning

The IHI Group does not engage in tax planning for the purpose of tax avoidance.

4. Relationships with The tax authorities

The IHI Group, by providing information in the course of tax administration procedures and tax audits appropriately and in a timely manner, strives to maintain a sound relationship with the tax authorities of each country or region.

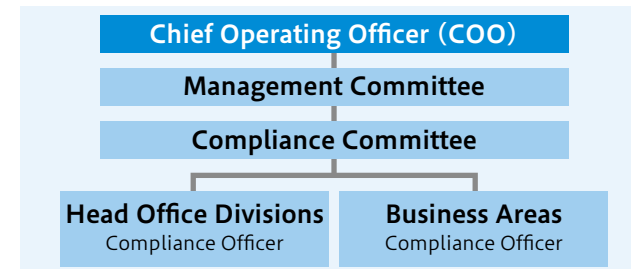
Compliance

Structure

• Compliance Committee

The IHI Group established the Compliance Committee as a Group-wide committee on compliance. Made up of compliance officers from each division with the Chief Compliance Officer acting as chair, the Compliance Committee deliberates and drafts important policies on compliance as well as promotes compliance activities. Compliance Committee members roll out the decisions made by the Committee to each division by adapting and implementing the measures into compliance activities according to each business category. Compliance officers also use a PDCA cycle for compliance activities and share the progress of each division with the Compliance Committee. The Legal Division acts as a secretariat to plan and execute compliance activities in accordance with the policies set forth by the Compliance Committee while also monitoring the progress of compliance activities in each division to provide any necessary guidance and support.

Compliance Structure



Chairperson	Chief Compliance officer
Secretariat	Compliance Group of the Legal Division
Committee members	Compliance officer of each division
Meetings convened in 2019	5

• Compliance Hotline

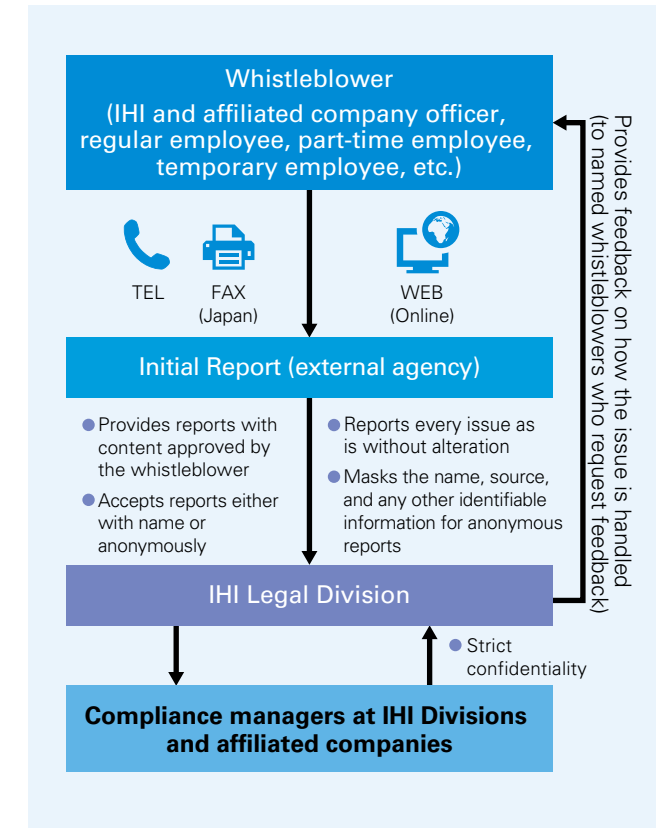
The IHI Group runs the Compliance Hotline as an internal reporting system to prevent or quickly identify any actions that violate or potentially violate laws, internal regulations, or internal and external rules by IHI officers or employees in order to find and take the proper steps to rectify any issues. This system prohibits unfavorable treatment or harassment of whistleblowers, and violators will be disciplined in accordance with its employment regulations.

IHI officers and employees can directly report or consult with third-party experts outside of their chain of command via this hotline.

We also launched the Compliance Hotline in the United States in 2017 and in Asia Pacific, China, Taiwan, and Korea in 2018.

Preparations were already underway in 2019 to launch hotlines in Europe, Turkey and Russia. Anyone can file a report in the main language spoken in each country.

Framework of the Compliance Hotline



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Education/Awareness Building

• Quality & Compliance Training

IHI Group Code of Action was newly established to ensure that the entire IHI Group practices uncompromising compliance as a basic rule in light of inadequate inspection in the Civil Aero Engineer Maintenance Business. We also conducted Quality & Compliance training and follow-up support to nurture an even greater awareness about compliance in all IHI Group directors, officers and employees.

• Line Manager Training

The IHI Group provides compliance training to line managers who lead our employees in day-to-day tasks. The training in 2019 highlighted the key points to prevent compliance violations, the importance of cultivating an organizational climate with high occupational pride, and the policies for management in the future. A total of 977 line managers have taken part in this training since its inception in 2006.

• e-Learning

The IHI Group also provides compliance training with annual themes through an e-learning platform. In 2019, our e-Learning program focused on a theme aiming to realize a workplace without harassment. We conducted this training at IHI Group companies worldwide.

Number of Compliance Training Participants

(Unit: People)

Item		Scope of Data	2016	2017	2018	2019
Officer training		IHI and subsidiary companies in Japan	55	50	47	–
Line Manager Training		IHI and subsidiary companies in Japan	73	83	75	72
Quality & Compliance Training		IHI and subsidiary companies in Japan	–	–	–	27,866
		Affiliated companies overseas	–	–	–	1,774
e-Learning	Japan	IHI and subsidiary companies in Japan	18,859	18,020	18,234	18,164
	Overseas	Affiliated companies overseas	1,392	1,261	1,126	1,214

Results

Number of Compliance Hotline Reports

(Unit: Reports)

Item	2016	2017	2018	2019
Reports	218	209	238	239

Scope of Data

2016: IHI and subsidiary companies in Japan

2017: IHI, subsidiary companies in Japan, and some affiliated companies overseas (USA and Brazil)

2018, 2019: IHI, subsidiary companies in Japan, and some affiliated companies overseas (USA, Brazil, Asia, China, and Korea)

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Security Trade Control

Structure

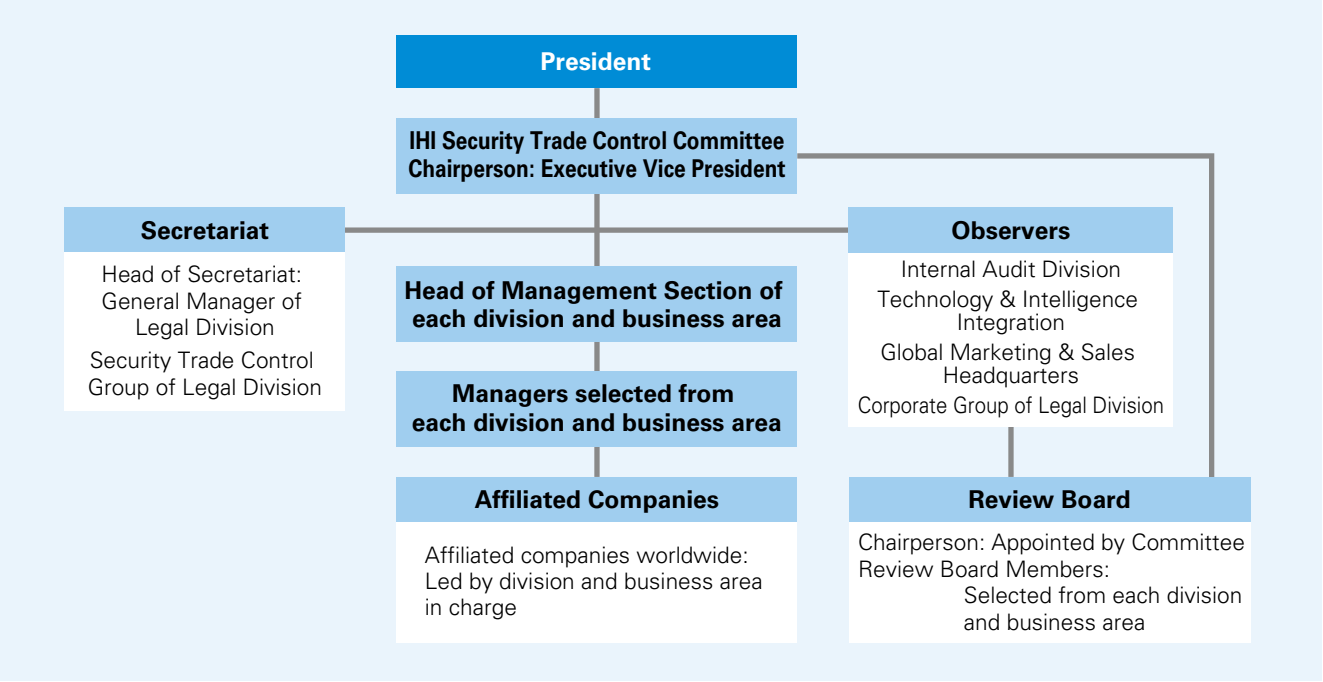
• IHI Security Trade Control Committee

The IHI Group has established internal security trade control rules and set up the IHI Security Trade Control Committee. Under these rules, the Committee works to manage risk and ensure compliance with the Foreign Exchange and Foreign Trade Acts.

The IHI Security Trade Control Committee is a Group-wide body led by an Executive Vice President as chair with the Legal Division acting as secretariat. The members are made up of managers selected from each division and business area as well as review board members. The Committee audits overseas business proposals from each division internally, independently assesses the progress of security trade control, shares relevant legal and regulatory information, raises awareness, and provides training.

We will continue to improve the business operations in each division based on the points and issues raised in these self-assessments in an effort to enhance the quality of our security trade control.

Security Trade Control Structure



Chairperson	Executive Vice President
Secretariat	Security Trade Control Group of Legal Division
Committee members	Head of Management Section of each division and business area
Meetings convened in 2019	1

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Quality Compliance

Approach

The IHI Group introduced the following Group-wide quality measures in an effort to return to the core principles of our corporate ethics after discovering inadequate quality inspections in the Civil Aero Engine Maintenance Business in 2019.

1. Draft and Deploy an IHI Group Code of Action and Quality Declaration
2. Strengthen the compliance structure

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Compliance

3. Strengthen the quality assurance and quality management systems
4. Create workplaces where everyone has a voice
5. Strengthen risk management

P32

Risk Management

• IHI Group Code of Action and Quality Declaration

The IHI Group established the Code of Action in 2019 to define standards that every officer and employee must adhere to in daily tasks. Expanding on the Basic Code of Conduct for the IHI Group, the Code of Action further clarifies proper conduct and evaluation criteria. We have also made safety and quality a top priority in the IHI Group Quality Declaration. The Quality Declaration reaffirms and clarifies the mindset and quality-oriented actions that are the basis for our approach to manufacturing.

We quickly deployed the Code of Action and Quality Declaration across the entire IHI Group once drafted. Our training program also helps raise awareness about these policies and helps ensure proper daily business practices.

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IHI Group Code of Action

IHI Group Quality Declaration

We, the IHI Group shall:

1. Always put quality first.
2. Continue improving quality via Sangen-Shugi and communication.
3. Listen sincerely to issues, swiftly take Action and share accurate Information.
4. Provide quality assurance through compliance with rules and working appropriately.
5. All strive for the satisfaction of our customers.

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Quality Compliance

Structure

• Strengthening Quality Assurance and Quality Management Systems

The IHI Group established the IHI Group Quality Committee as a Group-wide committee on quality. The Committee deliberated and drafted important quality policies as well as promoted activities with the officer in charge of overall Group Quality Assurance as chair. The members are made up of the President of a business area, Executive in charge of Quality for business area, and Executive of Head Office Division.

Quality Improvement Promotion System



Chairperson	Officer in charge of Overall Group Quality Assurance
Secretariat	Monozukuri System Strategy Planning
Committee members	President of a business area, Executive in charge of Quality for business area, and Executive of Head Office Division
Meetings convened in 2019	1

Education/Awareness Building

P.27

Quality & Compliance Training

Initiatives

• Creating Workplaces Where Everyone Has a Voice

Our president and other senior management visit worksites to engage in a dialogue where top management and employees have an equal standing for an active exchange of ideas.

In 2019, we launched Quality Assurance (QA) teams made up of members from design, technology and quality departments at our plants in Japan to address any problems or issues faced on-site. IHI promotes ideal workplaces where employees can work in good health by solving problems from a Quality Assurance (QA) rather than Quality Control (QC) perspective based on communication and facts about the situation unique to each site.

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Risk Management

Policies

The IHI Group considers and engages in risk management as the top material issue of management. The basic objectives of risk management are ensuring business continuity, ensuring the safety of executives, employees and their families, protecting managerial resources, and maintaining public trust in IHI Group companies. We manage risk in accordance with the following action guidelines based on the Basic Code of Conduct for the IHI Group.

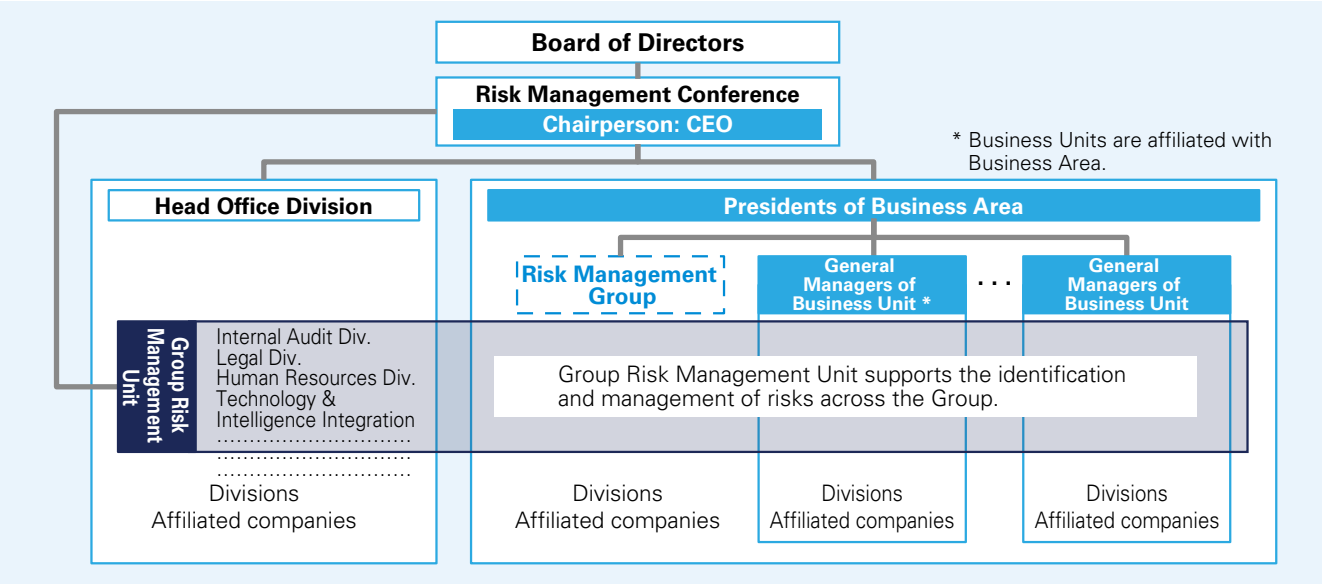
1. Ensure the continuity of the IHI Group’s business operations.
2. Improve the public reputation of the IHI Group.
3. Protect the IHI Group’s managerial resources.
4. Avoid jeopardizing stakeholders’ interests.
5. Achieve recovery from damage as soon as possible.
6. Take responsible action when an issue arises.
7. Meet public requirements regarding risks.

Structure

The IHI Group established the Risk Management Conference chaired by the CEO as a body to review policy initiatives, annual plans, corrective measures and other matters important to overall risk management. We formulated the IHI Group Key Risk Management Policies to prioritize risks that need to be addressed. Each IHI division and Group company worldwide move forward with independent risk management in accordance with these policies.

Some risks though are common throughout the entire IHI Group. Therefore, the Group Risk Management Unit made up primarily of head office divisions share information and provide education to take advantage of expert knowledge and support risk management activities of each Group division. The Internal Audit Division also strives to secure a suitable level of risk management by assessing the readiness and progress of the Group risk management structure.

Risk Management Structure



Chairperson	Chief Executive Officer (CEO)
Secretariat	Corporate Planning Division
Attendees	General Managers of each Group Risk Management Unit, Presidents of each Business Area, and others nominated by the Chairperson
Meetings convened in 2019	4

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Initiatives

IHI built a three-level risk management structure in FY2019 to realize uncompromising risk management through multiple defensive lines. We have also been conducting initiatives to strengthen risk management along the key themes.

P25 **Compliance**

P30 **Quality Compliance**

• Key Risk Management Policies in 2020

Today, the business environment around the IHI Group is changing significantly. To accelerate business transformation while responding to the significant change, IHI must thoroughly identify the risks accompanied by the ever-evolving business climate, strengthen rapid response capabilities, and spearhead uncompromising risk management through the PDCA cycle. That is why our efforts emphasize the key risk management themes included on the right.

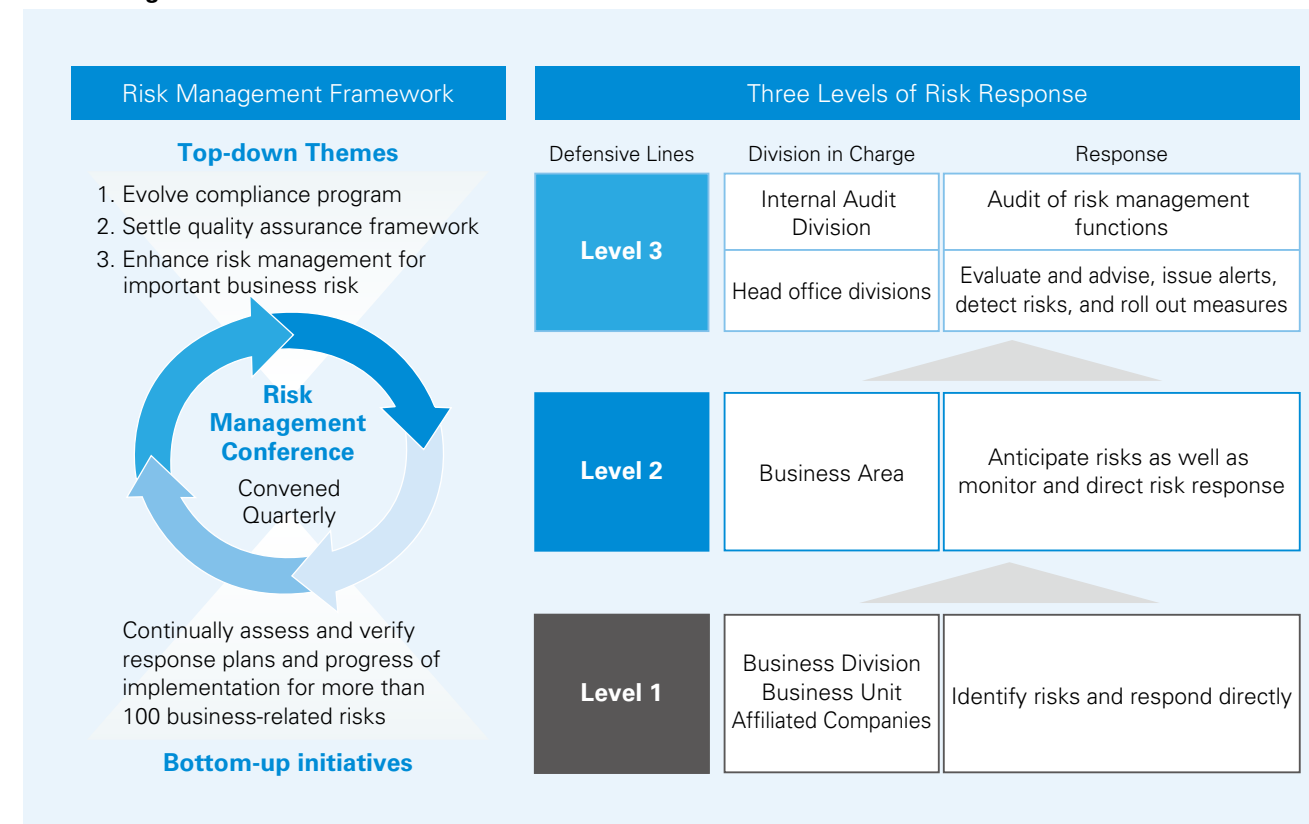
• Risk Management Initiatives to Plan and Promote Risk Management Plans for Top-down Themes

1. Evolve compliance program
2. Settle quality assurance framework
3. Enhance risk management for important business risk

• Risk Management Initiatives to Comprehensively Identify Risks Inherent to Business Activities as well as Plan and Promote Risk Management Plans

1. Thoroughly implement and strengthen safety management.
2. Strengthen Compliance
3. Reform quality and operation systems
4. Respond to changes in management environments and competitive environments, and promote environmental management.
5. Properly respond to risks associated with the execution of global strategy.
6. Transition to robust project implementation and risk management structures.
7. Ensure information security.
8. Develop adequate Business Continuity Plans (BCP) in case of disasters/accidents.
9. Ensure the appropriateness of large-scale investments.
10. Improve operational productivity through work-style reforms and build workplaces where diverse human resources can actively participate.
11. Prevent leaks of confidential business information, personal information, and vital technical information.
12. Maintain and improve trusting relationships with stakeholders.
13. Implement thorough measures against harassment.
14. Promote further improvement of diversity
15. Promote education on human rights and activities to raise awareness.

Risk Management Framework



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Crisis Management

Approach

We have defined a crisis management structure, response procedures, and Business Continuity Plans (BCP) for the entire IHI Group to respond to emergency situations as part of the Basic Rules of Crisis Management for IHI Group. The IHI Group formed the Crisis Management Headquarters to take the necessary steps to minimize damage of an emergency situation with the potential to gravely impact corporate management and business activities.

Initiatives

• Preventing the Spread of the Novel Coronavirus (COVID-19)

The IHI Group understands that responding to various situations including state of emergency is vital as an organization that supports social infrastructure. Therefore, we ensure business continuity of the Group by flexibly adapting to all social and economic changes. We responded to the spread of the Novel Coronavirus (COVID-19) by urgently setting up a Crisis Management Headquarters led by the President as chief. As we continue our business activities, the Headquarters takes the steps necessary to prevent the spread of the virus by prioritizing the health and safety of our customers as well as officers and employees and their families above all else.

We have primarily taken the following steps:

1. Provide a work system to prevent infection.

Administrative departments have increased the ratio of employees that work from home. Our works and other production bases have taken steps to reduce the risk of infection as much as possible when commuting and while at work. These measures include fewer on-site staff, alternative work schedules, and encouraging employees to commute using personal vehicles rather than public transportation. IHI also checks on the health of not only officers and employees but also their families every day and take measures such as instructing employees that may be infected to not attend the workplace.

2. Securing Items for Infection Prevention.

We have even secured stable procurement routes for masks, disinfectant alcohols, and other items for infection prevention to distribute and stockpile at each site.

3. Examine new work styles.

We are revising traditional work processes and system while considering new work styles to enable prevention the spread of infection and continuing our business as

well as responding flexibly to the evolving business environment.

• Disaster Prevention Initiatives

The IHI Group prepares for severe disasters and has built a system to ensure both employee safety and business continuity.

More specifically, we have formulated preparation procedures and other internal rules as well as drafted Business Continuity Plan (BCP) for each representative office, division and affiliated company. These efforts have earned IHI the Resilience Certification from the Cabinet Secretariat of Japan.

In addition to capital investments, such as earthquake proofing of works and offices, the IHI Group enters into disaster prevention and readiness agreements and steadily builds other cooperative relationships with local governments in case disaster strikes.

• Drafting and Strengthening Business Continuity Plans

The IHI Group not only reviews the BCP to maintain and strengthen the effectiveness of the BCP but also consistently updates the risk maps for each site and promoting officers and employees to register to the safety confirmation system.

Every March, IHI conducts Group response training for severe disasters with the participation of the President and other management executives. This training varies the day, time, and estimated damage of a disaster each year to test the effectiveness of our BCP from various angles. Our affiliated companies also conduct training to test their BCP in an effort to enhance disaster prevention capabilities.

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Policies

The IHI Group has put in place the IHI Group Information Security Policy and strives for proper information management while maintaining and improving information security in order to certainly protect confidential information of customers and business partners as well as corporate management and technical information.

IHI Group Information Security Policy

The IHI Group hereby sets the following IHI Group Information Security Policy for the purpose of ensuring the security of information assets in its possession and thereby further solidifying its trust-based relationship with customers, users and society.

(Basic Activities)

1. The IHI Group will take appropriate measures with technology, organization and employees, in order to protect information assets against any leakage, theft, loss, destruction, illegal access, and disaster. In the event of any security problem regarding this information, the IHI Group will locate the cause as quickly as possible, and exert every possible effort to minimize the damage incurred.

(Information Assets)

2. “Information assets” refer to the information the IHI Group handles in the course of business activities, regardless of the type of media, and the equipment, facilities and services necessary for handling such information.

(Scope)

3. This Information Security Policy applies to all those using the information assets of the IHI Group, including but not limited to officers and employees

of the IHI Group companies and temporary staff.

(Compliance with Laws, Regulations, etc.)

4. The IHI Group will strictly observe the laws, regulations and codes pertaining to the protection of information assets, and the requirements and obligations regarding information security provided for in the agreements with the customers.

(Education)

5. The IHI Group companies will provide all those using the information assets of the IHI Group with the necessary education on information security to enhance and maintain their awareness thereof.

(Management of Information Security)

6. The IHI Group companies will establish a mechanism of implementing and managing information security by taking measures such as establishing rules concerning information security and appointing persons in charge of information management, thereby conducting, maintaining and improving information security activities on a continual basis.

(Responsibilities of Senior Management)

7. The Senior Management of the IHI Group will set

the example of enforcing this Information Security Policy. In the event of any infringement of this Policy, senior management will address the situation properly by defining their authorities and responsibilities, and do their utmost to resolve the problems, diagnose their causes, and prevent their recurrence.

(Punishment)

8. Any action in violation of the rules of information security will incur punishment according to the employment regulations of IHI Group companies.

(Announcement)

9. This Information Security Policy will be announced and notified to all those using the information assets of the IHI Group as well as being announced to the public.

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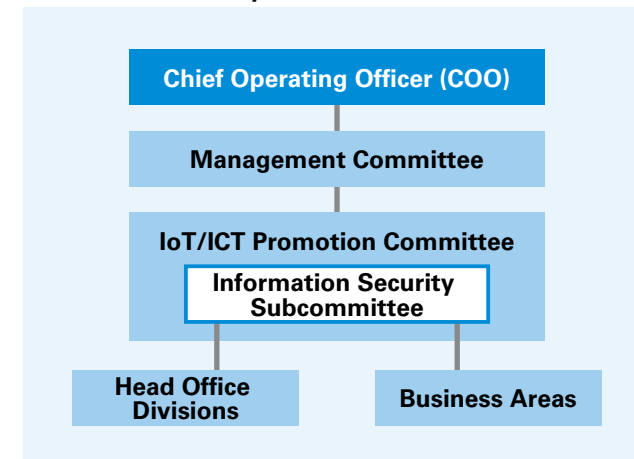
Performance Objectives

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Management Framework

The IHI Group has put in place an Information Security Promotion Framework with a Chief Information Security Officer (CISO) in charge of managing information security of the IHI Group. We have established the Information Security Subcommittee under the IoT/ICT Promotion Committee as an organization to promote information security activities. Each of Information Security General Managers is appointed from IHI Head Office Divisions, Business Areas, Business Units and group companies.

Information Security Promotion Framework



Information Security Subcommittee

Chairperson	General Manager of Intelligent Information Management Headquarters
Secretariat	Information Security Department of Intelligent Information Management Headquarters
Subcommittee members	Business Areas, Business Units and Head Office Divisions
Meetings convened in 2019	3

• Information Security Management System

The IHI Group convenes the Information Security Subcommittee three times a year to plan, implement and evaluate information security measures in an annual cycle.

In 2019, we built a three-stage auditing framework for information security consisting of 3 types of audit by different auditors as a means to strengthen checks (C) in the PDCA cycle. We conducted internal audits by IHI divisions and group companies, on-site audits by each Business Area and document audit by the Information Security Department. The on-site audits evaluated 6 affiliated companies while each Business Area provided guidance on corrective actions for any issues that were found.

We strive for a high level of information security. Divisions and group companies involved in sensitive national projects in the IHI Group must undergo annual reviews to renew the ISO 27001 international information security certification by an external expert agency.

Education/Awareness Building

• Employee Education

The IHI Group provides e-Learning every year designed to maintain and raise information security awareness in an effort to further officer and employee understanding about the information security rules and tools.

Rate of Participation in e-Learning

(Unit: %, Scope: IHI)

Item	2016	2017	2018	2019
Rate of Participation in e-Learning	98.5	98.0	96.8	83.0

Results

• Information Security Measures

The IHI Group takes steps to address information security risks from three perspectives: rules, tools and education. We have stipulated rules that include the IHI Group Information Security Policy, Information Security Countermeasure Standards and Information System User Rules. We have adopted antivirus software and other security tools, which are always kept up to date.

• Evaluation of Information Security Measures

We assess the information security measures of the entire IHI Group quantitatively every year based on the benchmark for information security measures implemented by companies offered by the Information-technology Promotion Agency, Japan (IPA). The level of information security measures in 2019 was 3.2 out of 5. We will continue to improve our level of information security in 2020 with the goal of achieving a score of 4.

Evaluation of Information Security Measures

(Unit: Score, Scope: IHI and consolidated subsidiaries)

Item	2016	2017	2018	2019
Evaluation of Information Security Measures (Out of 5)	–	3.0	2.9	3.2

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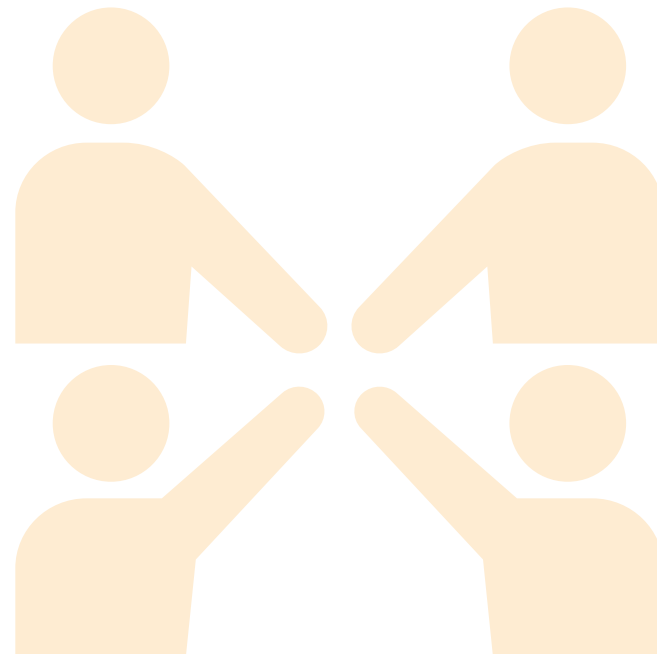
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Human Rights

Approach

The IHI Group works to raise awareness about human rights by taking a global Group perspective in line with the United Nations Guiding Principles on Business and Human Rights. We aim to nurture a corporate culture which respects human rights as a basic guiding principle in business activities. In 2020, as part of these initiatives, we will declare an IHI Group Human Rights Policy. We will respond to a wide range of human rights issues in good faith, from various forms of harassment, the human rights of people who have contracted COVID-19 and those around them to the human rights of everyone in online environments.

Management Framework

• IHI Group Human Rights Committee

We established the IHI Group Human Rights Committee as a Group-wide committee. The Committee led by the officer in charge of human rights as the chairperson with members from the Head Office Divisions and Business Areas deliberates and plans important policies and promotes initiatives related to human rights. This body reports on important human rights activities at the Management Committee as a way to consistently instill the importance of promoting human rights throughout the Group.



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Education/Awareness Building

• Employee Education

The IHI Group promotes initiatives to raise awareness about human rights. Over 5,000 employees participated in stratified training, on-site training, and external training in 2019 to raise awareness about topics from human rights and compliance to harassment.

Number of Human Rights Training Participants

(Unit: People, Scope: IHI and affiliated companies in Japan)

Item	2016	2017	2018	2019
New and Third-year Employee Training (Group Stratified Training)	715	686	624	569
Instructor and Main Participants (Group Stratified Training)	690	637	679	784
Leader and Middle Manager Training (Group Stratified Training)	660	612	670	576

Initiatives

• Human Rights Due Diligence

The IHI Group began human rights due diligence to fully understand the risks related to our businesses. In 2019, we conducted a questionnaire on the progress of human rights initiatives at 42 affiliated companies in Japan and 38 affiliated companies overseas.

• Building an Inclusive Workplace Regardless of Sexual Orientation or Gender Identity

As part of support for LGBTQIA+, the IHI Group ensures that employment systems, welfare benefits, and various other programs are not affected by the employee's sexual orientation or gender identity. LGBT Ally Action consistently recruits and distributes information to allies (supporters) of gender minorities. This initiative is working to eradicate discrimination based on sexual orientation or gender identity.

• Installing Multipurpose Toilets

The IHI Group has installed Multipurpose Toilets that take advantage of a universal design to meet the special needs of every employee regardless of whether a sexual minority or person with a disability.

• Offering Harassment Consultation Services

The IHI Group has hired two to three harassment counselors in each region. These counselors undergo special training before being assigned to their post. IHI also sets up investigative committees as necessary to look into the facts of any incident. These inspectors and counselors keep all matters of concerned parties strictly confidential.

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Approach

The IHI Group fosters business growth through an approach that provides safe products and services which not only satisfy customer needs and earn trust but also contribute to the development of society. The quality of our products and services forms a bond of trust between the IHI Group, customers, and society. Therefore, quality assurance is a social mission and a fundamental foundation of our existence.

Education/Awareness Building

• Employee Education

The IHI Group has put in place quality management and assurance systems to improve customer satisfaction according to our management philosophy that “human resources are our single most valuable asset.” We conduct stratified training mandatory for all employees as education and training to heighten awareness about product safety and improve skill level.

The new employee training program teaches the importance of a customer-oriented perspective at an early stage. Second-year employee training focuses on quality, the PDCA cycle, and work procedures. Third-year employee training emphasizes ethics, the environment, and safety as a manufacturing company. IHI raises awareness about internal rules and important laws and regulations through regular e-learning programs. Each business area also provides their own independent training systems.

We have also designed systems to raise questions about legal compliance for the purpose of raising employee awareness. These systems also strive to mitigate risk. In 2019, IHI conducted quality professional training to cultivate quality leaders.

Number of Training Participants

(Unit: People, Scope: IHI and affiliated companies in Japan)

Item	2018	2019
Internal auditor training	105	74
Third-year employee training on quality management and product safety	352	314
Training seminars for newly-appointed foremen and assistant foreman of manufacturing divisions focuses on solving problems and achieving issues in quality management	101	316
Quality and product safety training (Three courses with a total of six classes)	472	354
Professional quality training	—	6

Initiatives

• Surveying Customer Satisfaction

The IHI Group surveys customers' satisfaction through questionnaires and other avenues to gain customer feedback. We determine and inquire about aspects distinct to each business, and then analyze and share our findings with all relevant divisions. This information helps us adapt efforts to improve in order to further heighten customer satisfaction.

• Ensuring Product Safety

The IHI Group considers the product life cycle to adopt systems that guarantee product safety. Through risk assessment that takes into account the product life cycle during development, we are able to build in measures that reduce risks as much as possible. Only then can we provide customers with information about any residual risk.

• Disclosing Product and Service Information

The IHI Group shares information about products and services through various mediums, such as television and newspaper advertisements and the company homepage. This information helps familiarize the public at large about IHI. We cooperate with all relevant internal departments to provide accurate factual information in accordance with copyrights, trademarks and all other relevant laws and industry regulations. IHI evaluates the effectiveness of these campaigns to find opportunities to improve.

Number of Law Violations

(Unit: Incidents, Scope: IHI and consolidated subsidiaries)

Item	2016	2017	2018	2019
Laws/regulations relating to PR activities	0	0	0	0

• Emerging Market Initiatives

• Providing Products Tailored to Emerging Markets

The IHI Group has been working with the Tsinghua Environmental Engineering Design & Research Institute to develop water processing technology since 1999. This new technology tackles water pollution in rivers, lakes, and marshes, which has become a severe problem in China. Research Institute for Environmental Innovation(suzhou), Tsinghua was founded for the purpose of spearheading practical applications of environmental technology, and it is currently helping us in our goal to commercialize this venture in the early 2020s. In 2018, we established IHI SOLID BIOMASS MALAYSIA SDN. BHD. (ISBM) in Malaysia to drive the manufacture, export and sale of EFB pellets—a solid biomass fuel—derived from palm Empty Fruit Bunches (EFB). In the two years since its founding, ISBM has striven to not only provide a stable supply of solid biomass fuel but also effectively use waste palm oil production processes and reduce the environmental impact.

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Policies

The IHI Group recruits and trains human resources as the most vital management resource. Our management philosophy ensures that we contribute to the development of society and states that human resources are our single most valuable asset. We strive to realize a healthy, safe, work-friendly environment where everyone respects one another and prospers.

• Group Human Resource Management Policy

The Group Vision lays the foundation as a global company to devise reliable and convenient solutions that bring benefit to humanity and the environment. As a means to this end, we must unify under common values to reform corporate culture as well as build workplaces and systems that empower people to reach their full potential. We drafted the Group Human Resource Management Policy to embed this basic approach to human resource management in the entire Group. This management policy expands various recruitment, assignment, development, and evaluation measures according to key group, global and diversity attributes for ideal human resources.

Group Human Resource Management Policy

The IHI Group aims to create customer value by using engineering expertise to focus on manufacturing technology in line with the management philosophy and IHI Group Vision through the following:

1. IHI will define and raise awareness about ideal human resources shared by all Group employees to become an enterprise of professionals with excellent skills from perspectives of global manufacturing and engineering technologies as well as high quality products and services renowned worldwide.
2. IHI will establish and carry out human resource management measures based on ideal human resources and provide Group employees with growth opportunities.
3. IHI will provide a work environment where people of diverse backgrounds are in tune with the management philosophy and Group Vision of IHI and can reach their full potential.

Ideal Human Resources

Integrity and Trust

For Customers and Society

Innovation and Creation

Team Work

World-class Professional

Keywords

Group

Global

Diversity

Initiatives

• Equal Wages for All New Employees Worldwide

The IHI Group strives for fair and equal treatment according to position and responsibilities. We will never discriminate based on gender.

• Employee-awareness Surveys

The IHI Group conducts employee-awareness survey targeting all employees once a year to grasp the status of the employee engagement. Results of the survey are analyzed for each department and employee status to highlight the strengths and issues, reflect them in human resource measures, and improvement of operational processes.

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Results

Number of Employees

(Unit: People, Scope: IHI and consolidated subsidiaries)

Item		2016	2017	2018	2019
Consolidated Number of employees		29,659	29,706	29,286	28,964
IHI	Number of employees	8,630	8,256	8,011	7,741
	Male	7,625	7,245	6,994	6,730
	Female	1,005	1,011	1,017	1,011
	Ratio of female employees	11.6%	12.2%	12.7%	13.1%

Number of Employees by Region

(Unit: People, Scope: IHI and consolidated subsidiaries)

Item	2016	2017	2018	2019
Japan	22,752	22,667	21,862	21,700
Asia Pacific	3,856	3,888	4,213	4,141
USA	1,166	1,244	1,352	1,292
Europe, Middle East, and Africa	1,885	1,907	1,859	1,831

Number of Employees by Business Area

(Unit: People, Scope: IHI and consolidated subsidiaries)

Item	2016	2017	2018	2019
Resources, Energy & Environment	7,744	7,579	6,467	6,812
Social Infrastructure & Offshore Facilities	2,493	2,290	2,359	2,399
Industrial Systems & General-Purpose Machinery	9,677	9,946	10,220	10,079
Aero Engine, Space & Defense	6,348	6,463	6,660	6,684
Other	2,406	2,458	2,619	2,014
Entire company (common)	991	970	961	976

Number of Employees by Age

(Unit: People, Scope: IHI)

Item	2016	2017	2018	2019
Under 30	2,073	1,930	1,780	1,612
30 to 39	2,296	2,285	2,277	2,198
40 to 49	2,432	2,274	2,171	2,119
50 to 59	1,252	1,290	1,389	1,462
60 and over	577	477	394	350

Number of Employees by Employment Status

(Unit: People, Scope: IHI)

Item	2016	2017	2018	2019
Regular employees	8,180	7,938	7,678	7,410
Re-hires	182	83	84	88
Second by other companies	268	235	249	243
Constants and contract employees	222	131	83	91
Part-time employees	472	470	498	496
Fixed-term employees	73	43	106	101
Temporary employees	1,307	1,322	1,325	1,330

Turnover Rate

(Scope: IHI)

Item	2016	2017	2018	2019
Total turnover rate	3.9%	4.0%	4.3%	3.5%
Rate of retirement due to personal reasons	1.4%	2.0%	2.0%	2.0%
Turnover rate within 3 years of joining the company	5.8%	5.7%	7.4%	6.8%

Average Years of Service

(Unit: Year, Scope: IHI)

Item	2016	2017	2018	2019
All employees	14.5	14.8	14.9	15.8
Male	14.8	15.1	15.1	16.0
Female	12.2	12.5	13.2	14.5

Ratio of Answered Employee-awareness Surveys

(Scope: IHI and affiliated companies)

Item	2016	2017	2018	2019
Ratio of answered employee-awareness surveys	87.6%	90.9%	91.7%	91.4%

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New graduate recruitment results

(Unit: People, Scope: IHI)

Item	2016	2017	2018	2019
Total	288	245	155	153
Male (Engineers)	208	174	110	95
Female (Engineers)	21	19	7	16
Male (Administrative)	40	36	25	28
Female (Administrative)	19	16	13	14
Female recruitment rate	13.9%	14.3%	12.9%	19.6%

Mid-career recruitment results

(Unit: People, Scope: IHI)

Item	2016	2017	2018	2019
Mid-career recruitment	153	29	78	37

Recruitment ratio of people with disabilities*1

(Scope: IHI)

Item	2016	2017	2018	2019
Ratio of employees with disabilities	2.14%	2.03%	2.21%	2.39%

*1 As of June 1 each year

Re-employment rate

(Scope: IHI)

Item	2016	2017	2018	2019
Re-employment rate of employees at retirement age	84%	87%	84%	81%

Female officers*2

(Unit: People, Scope: IHI)

Item	2016	2017	2018	2019
Total	18	19	17	16
Female officers (outside)	1 (1)	3 (3)	4 (3)	3 (2)
Ratio of female officers	6%	16%	24%	19%

*2 As of July 1 each year, members of the board of directors and audit & supervisory board.

Female managers*3

(Unit: People, Scope: IHI)

Item	2016	2017	2018	2019
Total	2,630	2,626	2,643	2,767
Female managers	66	68	74	83
Ratio of female managers	2.5%	2.6%	2.8%	3.0%
Ratio of female general managers	0.7%	0.8%	0.8%	0.8%
Ratio of female section managers	1.8%	1.8%	2.0%	2.2%

*3 As of April 1 each year

Ratio of employees from abroad

(Scope: IHI)

Item	2016	2017	2018	2019
Ratio of employees from abroad	1.0%	1.1%	1.0%	1.0%

Local managers at overseas sites*4

(Unit: People, Scope: China, Singapore, and USA)

Item	2016	2017	2018	2019
Total	20	23	22	23
China	1	1	4	4
Singapore	10	12	8	7
United States	9	10	10	12

*4 As of April 1 each year

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Participants in training to cultivate local managers at overseas sites

(Unit: People, Scope: China and Asia Pacific region)

Item	2016	2017	2018	2019
Participants	33	25	36	42

Training Participants

(Unit: People, Scope: IHI and affiliated companies in Japan)

Item	2016	2017	2018	2019
Return to work training for employees taking childcare leave	–	–	34	32
Work-life balance seminars for managers raising children	–	–	–	102
Gender diversity seminar	–	–	120	–
Diversity challenge seminar*	–	–	–	160
Network leader training	23	33	21	21

*Scope: Only IHI

Leave Acquisition Rate

(Unit: People, Scope: IHI)

Item	2016	2017	2018	2019
Employees who have used the reduced work hour program	149	159	158	161
Employees who have taken childcare leave	674	677	689	779
Employees who have taken parental leave	89	111	113	132
Percentage of employees who return to work after parental leave	100%	100%	100%	99.2%
Employees who have taken nursing care leave	11	18	6	7

Average Annual Paid Vacation Days Taken

(Unit: Days, Scope: Non-IHI)

Item	2016	2017	2018	2019
Average annual paid vacation days taken	16.50	17.63	18.36	19.40

Monthly Average Overtime

(Unit: Hours, Scope: IHI)

Item	2016	2017	2018	2019
Monthly average overtime	23.90	22.90	22.50	21.10

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Initiatives

The IHI Group employs people regardless of nationality, gender, and age to secure a diverse workforce. We select candidates with aptitude and skills that fit the ideal human resource attributes outlined in the Group Human Resource Management Policy. IHI trains employees involved with interviews and other employment processes on fair and impartial recruitment practices.

- **Hosting a Diversity Challenge Seminar**

IHI held a Diversity Challenge Seminar in 2019 at the large training room in the IHI Toyosu Head Office. This seminar was broadcast live to other offices with a total of approx. 160 people from employees with disabilities to their managers and general employees participating. This diversity seminar provided an introduction to the Accessibility Consortium of Enterprises (ACE)*¹, which IHI is a member, a talk by Ayako Ozawa who has progressive muscular dystrophy and works in the IBM Japan HR department, an activity report from the Head Office operational support team, and a UD Talk*² overview. Participants praised this experience as a great chance to learn about the work of employees with disabilities as well as ways to better interact with staff who have disabilities.

*1 The ACE is a consortium of 32 major companies that aim to establish new employment models for people with disabilities.

*2 Text-to-speech software for employees with hearing impairments.

- **Recruiting Female Employees**

IHI actively recruits women through publishing pamphlets for women, featuring stories about female employees on the recruiting homepage, and holding employment seminars specifically for women.

- **Supporting Female Employees and Cultivating Female Managers**

IHI offers workshops, seminars and a variety of other activities to encourage the active participation of female employees. A network leadership program is one example used to provide a system that supports female employees in each region. In addition to raising awareness about development training by superiors, we also hold seminars taught by guest instructors every year to help forge a path for female managers. These seminars help female employees develop their careers while considering major life events. IHI employees have access to internal and external opportunities to broaden experience and open minds. These include human resource assignments throughout the entire Group and third-party training programs.

- **Recruiting Persons with Disabilities**

IHI actively recruits persons with disabilities for the purpose of fostering a workplace friendly to everyone. We not only actively accept interns from schools and the employment service center of Japan but also focus on assigning persons with disabilities to a broader range of tasks once appointed to a position.

- **Recruiting Foreign Nationals**

The IHI Group recruits professionals from around the globe to employ diverse human resources who can actively participate anywhere in the world. We hire foreign exchange students in Japan as well as seek out potential candidates at schools abroad. To date, we have held recruitment seminars for people in the United States, the United Kingdom, Korea and Singapore. IHI has extended its internship program to universities in emerging countries as well. We have concluded a Memorandum of Understanding (MOU) with the Bandung Institute of Technology in Indonesia to welcome one to two interns every year. We also joined the Shibaura Institute of Technology Global Technology Initiative (GTI) Consortium and have been offering plant tours to students from King Mongkut's University of Technology Thonburi in Thailand.

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• Empowering Local Employees Overseas to Cultivate Upper Management Candidates

The IHI Group is accelerating global expansion. Overseas, we recruit and nurture human resources with roots in the community according to the ideal human resource attributes outlined in the Group Human Resource Management Policy while considering the unique labor market and practices of each country.

We also provide human resource development training to cultivate local managers as a way to help develop the careers of our employees in emerging countries. Our Group puts particular emphasis on training global procurement officers. We are even furthering training programs for local staff at overseas Group companies. In 2019, we held training seminars in China as well as Asia and Oceania regions. IHI strives to provide a comprehensive training curriculum in addition to human resource policies that heighten the motivation of local employees. This training includes educational opportunities, such as training for local employees in Japan.

• Recruiting Mid-Career Candidates

IHI actively pursues mid-career candidates. We consider strategically appointing human resources that have the required capabilities is crucial in the current ever changing business environment. As such, in addition to the regular recruitment, we recruit human resources with experience, knowledge, and capabilities strategically and in a timely manner.

• Hiring Temporary Employees as Regular Salaried Employees

IHI has put in place a system to hire temporary workers as regular salaried employees. This program lays a path for temporary employees who satisfy certain criteria to become regular salaried employees.

• Employing People Over 60

IHI provides a program for each employee to decide when to retire between the ages of 60 to 65. We also offer a wide range of work-style seminars for employees in their 50s to help sustain motivation in their 60s. Today, more than 80% of our employees over the age of 60 have stayed actively involved in their current roles.

• Work-Life Balance

• Enhancing Programs

The IHI Group strives to provide comprehensive work-life balance programs to achieve a work-friendly environment where every employee can find balance between their personal and professional lives.

Some of these programs include a flextime policy, work from home long-term leave programs to use for annual paid vacation, various policies to help support child and nursing care*, and no overtime days. The IHI Group has also designated November as a month of diversity promotion. We encourage everyone in the company to take advantage of these programs by distributing information in many different forms. For instance, IHI hands out leaflets to all Group employees about childcare leave for men.

* These programs are available to both seasonal and part-time employees.

• Managing Work Hours

The IHI Group has defined policies to manage annual working hours in the hope of realizing a better work-life balance through work-hour reforms. We strive to promote flexible work styles free from traditional approaches. For example, each division drafts action plans to reform the way in which work is done, actively leverages ICT, and takes full advantage of all employment programs. We also work to encourage employees to take annual leave, encourage male employees to take childcare leave, and ensure enough rest between work days.

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Approach

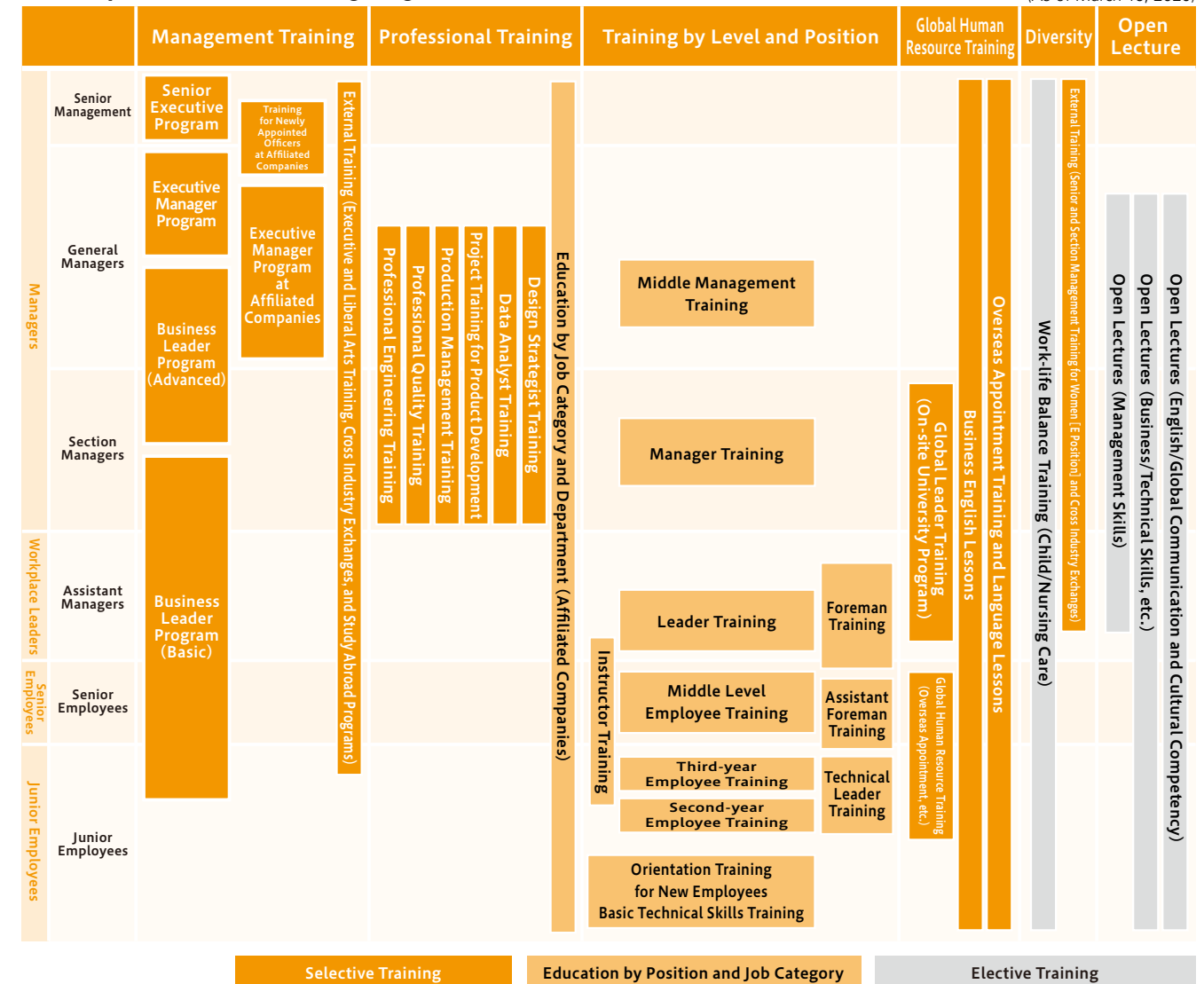
The IHI Group believes professionals grow most through day-to-day work. Human resource development requires effort on the part of both the employee and company. Each professional must work to better themselves in daily tasks while the company must strive to offer opportunities for human resources to grow. The IHI Group established the Group Human Resource Development Policy with reference to the Group Human Resource Management Policy. This policy divides human resource development into responsibilities for employees and the company while clarifying the role of superiors, departments and HR divisions in providing development opportunities to define an educational framework and training curriculum for employees as well as a unique development path for each person in their department.

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Managing Human Resources

IHI Group Education and Training Programs

(As of March 16, 2020)



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Results

Participants in Main Training Courses and Total Number of Training Hours

(Scope: IHI and affiliated companies in Japan)

Item	2016	2017	2018	2019
Stratified Training				
Participants	3,300	2,900	3,300	3,276
Training Hours	112,000	101,000	112,000	106,208
Open Lectures				
Participants	5,800	5,800	6,200	3,343
Training Hours	46,000	44,000	47,000	25,073
Average Annual Training Hours per Employee				
Training Hours	17.4	16.7	16.7	19.8

Employees Certified as Master Artisans

(Unit: People, Scope: IHI)

Item	2016	2017	2018	2019
Total	45	42	37	35*
Welding	6	5	2	—
Assembly	6	7	10	—
Machining	14	13	9	—
Testing/ Inspection	10	10	9	—
Maintenance	3	2	2	—
Other	6	5	5	—

* As of June 30, 2020

Initiatives

• Career Development Program (CDP)

IHI introduced a Group-wide Career Development Program (CDP) in 2019 as a training system tailored to the needs of each employee. This program encourages independent career development, accelerated growth, and lifelong learning. IHI considers interviews and coaching by superiors is important and issued coaching guide and hold seminars. The purpose of coaching is to bring out employee motivation and active participation in the organization. The IHI Group regards coaching as one of the most important skills for managers. In the future, we will take advantage of our stratified training to improve coaching skills.

• Developing Human Resources

The IHI Group determines educational frameworks and curriculum according to the ideal human resource attributes laid out in the Group Human Resource Management Policy. This becomes the foundation of stratified training throughout the entire Group whether a junior employee or newly appointed general manager. IHI also provides other various training programs to groom professional human resources at the core of management and business activities as well as cultivate global human resources and female managers. We even offer elective open courses as a tool to heighten operational expertise. We ensure human resource development remains consistent with evaluations and appointments by holding interviews with all employees three times a year to provide feedback about the assessment results from the person who made the evaluation. These evaluators indicate assessment and improvement points to help build the skills of each individual.

• Developing Global Human Resources

The IHI Group is passionate about global human resource development. We offer opportunities to systematically experience major business activities at overseas manufacturing sites and projects as well as various training that complement them. In 2019, we sent 7 trainees to Malaysia and 14 to India to learn on-site overseas. This training aims to not only provide trainees with better cultural and diversity understanding but also teach independence, initiative, and a global mindset. Our training programs in Japan have also introduced online foreign languages classes for employees to improve their English or another chosen language. 176 people took part in these online language classes in 2019. IHI also held six open seminars in 2019 to help build language skills and cultural understanding. We use the I-STEP Shonan IHI Human Resources Development & Communication Center (Yokosuka City, Kanagawa) which are joined by over 12,000 people from around the world each year. The Center is an active communication and learning base where colleagues from each corner of the globe can come together to share our corporate philosophy and values.

• Passing Down Skills to Others

IHI strives to pass down welding, machining, and other core skills at each plant, which are the foundation of our manufacturing expertise. Many of our employees are experts in each of these fields. IHI has introduced a master artisan program to encourage employees certified as master artisans to pass on their skills to new up-and-comers. In 2019, IHI expanded the scope of certification for that program.

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Policies

One extremely important management issue is ensuring health and safety. Every month, IHI briefs all officers on the progress of Group-wide occupational health and safety as well as health management. We actively strive to build a work-friendly environment where all Group employees can reach their full potential. The initiatives on the right are undertaken according to the IHI Health and Safety Policy as a way to ensure a safe and healthy workplace for all employees.

IHI Health and Safety Policy

1. The "Five Safety Principles" will be taken as a principle shared throughout the Group and managers as well as all employees will engage in safety and health activities to prevent accidents.
[Five Safety Principles]
 - Safety is our first priority
 - Never do or let anyone else do anything dangerous
 - Eliminate potential hazards
 - Strictly follow the rules
 - Make a real effort
2. We will endeavor to prepare facilities and provide opportunities to promote and maintain the mental and physical health of our employees, and create ideal workplaces in which employees can work in good health.
3. While complying with relevant laws and regulations on safety and health, we will give full consideration to how our business activities affect local communities and endeavor to ensure safety and health as a member of society.

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IHI Group Health Management Declaration

The IHI Group will implement management that values the health of employees based on the management philosophy of “Human resources are our single most valuable asset.”

We will support the proactive improvement of employee health and aim to energize the organization by maximizing employee vitality and capabilities. By doing this, we will contribute to the development of society through the growth of the IHI Group.

July 1, 2020
Hiroshi Ide
President and Chief Operating Officer
IHI Corporation

Specific Initiatives

The IHI Group will work on both corporate health management and work style reforms. We will actively cooperate with labor unions and health insurance associations to spearhead the key measures below.

IHI asks every employee to strive to better their own health and take part in building an enthusiastic working environment.

1. Reduce individual and organizational health risks.
 - (i) Enforcement of working conditions according to the results of medical check-ups.
 - (ii) Ensure the implementation of reactive mental healthcare measures.
(Improve the working environment through stress checks and a clear response to illnesses.)
 - (iii) Encourage employees to stop smoking and prevent second-hand smoking.
2. Improve individual and organizational health to invigorate the working environment.
 - (i) Assist each person to actively manage their own health.
 - (ii) Proactively implement active mental healthcare measures.
(Build a working environment where enthusiasm and professional growth is felt so that everyone cultivates an enduring spirit.)
3. Promote better health for both employees and their families.
 - (i) Expand activities to better health of employees and their families.
 - (ii) Increase employee participation in medical check-ups and health guidance.

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Management Framework

• IHI Group Health and Safety Committee



Chairperson	Officer in charge of Health and Safety
Deputy Chairperson	President of Aero Engine, Space & Defense Business Area and President of Social Infrastructure & Offshore Facilities Business Area
Members	President of Resources, Energy & Environment Business Area, President of Industrial Systems & General-Purpose Machinery Business Area, General Manager of Technology & Intelligence Integration, General Manager of Human Resources Division and other persons nominated by the chairperson
Secretariat	Labor & Safety Group of Human Resources Division
Meetings convened in 2019	1

Education/Awareness Building

• Employee Education

The IHI Group provides education on health and safety to everyone from new employees to management in the stratified training program.

On-site work employees undergo Supervisor Safety Training (SST) to learn about health and safety when promoted to assistant foreman or foreman.

Design and development employees on construction sites undergo Construction Safety Standard Training (CSST) to learn the ins and outs of construction health

and safety at each stage of employment whether new and senior employees or group leaders and management. Employees who are candidates for construction site director or supervisor undergo Site Manager Safety Training (SMST) to learn about on-site health and safety. We also provide follow-up training thereafter to expand knowledge about health and safety. The IHI Group also cultivates trainers for the SST, CSST, and SMST programs.

IHI Group Health and Safety Training System

Position		Training Hours (Estimate)			
		New Employees	→ Senior Employees →	Section Managers	General Managers, etc.
On-site Work Employees		New Employee Training	SST-I Assistant Foreman Health and Safety Training SST-II Foreman Health and Safety Training, etc.	New Manager Training	Managers Follow-up Training, etc.
Construction	Design, Development, etc.		CSST Senior Employee Training Course CSST Group Leader Training Course	Basic CSST Manager Training Course	CSST Business Area President/General Manager Training Course
	Director/supervisor (On-site)	New Employee Training CSST New Employee Training Course	Basic SMST Training Course (Newly appointed foremen/inspectors) Group-wide SMST Follow-up Training Course (Basic training course taken the following year) SMST Follow-up Training Course (Once every one to three years)	Basic SMST Manager Training Course	

Note: SST stands for Supervisor Safety Training.

CSST stands for Construction Safety Standard Training.

SMST stands for Site Manager Safety Training.

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Training Participants

(Unit: People, Scope: IHI and affiliated companies in Japan)

Item	2016	2017	2018	2019
Foreman training	30	33	26	48
Assistant foreman training	69	85	83	103
Technical leader training	–	–	33	165
Basic Site Manager Safety Training (SMST) Course (Graduates)	215	246	260	169
Supervisor Safety Training (SST) and SMST Training Course (Graduates)	25	13	31	18

Targets and Results

Occupational Health and Safety Targets

Item	Targets	Target Year
Total injuries frequency rate	Under 1.1	2019
Lost time injuries frequency rate	Under 0.2	2019

Health Management

(Scope: IHI and 34 affiliated companies)

Item	2016	2017	2018	2019
Participation rate of medical check-ups	70%	69%	70%	71%
Participation rate of stress checks	90%	91%	96%	94%
Absenteeism (Employees who take three or more months of leave)	0.9%	0.9%	0.9%	1.0%
Presenteeism (Employees with restricted hours)	2.1%	1.6%	1.7%	1.6%
Smoking rate	29%	28%	28%	27%

Lost Time Injuries Frequency Rate*1

(Unit: Incidents, Scope: IHI and 30 affiliated companies)

Item	2016	2017	2018	2019
IHI Group Average	0.33	0.57	0.26	0.40
National average in manufacturing industry*2	1.15	1.02	1.20	1.20

*1 Fatalities or injuries caused by occupational accidents per million working hours (excluding injuries with no time lost)

*2 Scope: Business sites with at least 100 people (sample survey)

Total Injuries Frequency Rate*3

(Unit: Incidents, Scope: IHI and 30 affiliated companies)

Item	2016	2017	2018	2019
Total injuries frequency rate	1.31	1.64	1.11	1.49

*3 Fatalities or injuries caused by occupational accidents per million working hours

Rate of Occupational Diseases*4

(Unit: Incidents, Scope: IHI and 34 affiliated companies)

Item	2016	2017	2018	2019
Rate of occupational diseases	–	–	0.165	0.165

*4 People suffering from occupational diseases per million working hours

Occupational Accidents*5

(Unit: Incidents (figure inside parentheses indicates fatal incidents), Scope: IHI and 30 affiliated companies)

Item	2016	2017	2018	2019
Total	68(1)	87(1)	55(0)	71(0)
Employees	41(0)	52(0)	28(0)	42(0)
Temporary employees	0(0)	4(0)	4(0)	4(0)
Partners	27(1)	31(1)	23(0)	25(0)

*5 Fatalities caused by occupational accidents

Labor Practice (Occupational Health and Safety)

Employee Union Membership Rate

(Unit: %, Target: IHI and 6 consolidated subsidiaries)

Item	2016	2017	2018	2019
Employees union membership rate	73	74	73	73

Number of Labor Complaints Received

(Unit: Reports, Scope: IHI)

Item	2016	2017	2018	2019
Number of Labor Complaints Received	0	0	0	0

Initiatives

- **Extensive Health and Safety Management**
 - **Health Management**

The IHI Group believes building a working environment where employees can work with both motivation and enthusiasm helps improve personal productivity and invigorates the workplace. We strive for both physical and mental health management.

Our mental health education takes both reactive approaches, such as detailed follow-up with individuals suffering from mental illness, programs to help employees return to work, and reintegration programs, as well as active approaches, such as education to teach mental toughness to improve motivation and performance. These educational programs aim to build an enthusiastic workplace for everyone from new employees to senior management.

We also provide additional health measures to improve lifestyle habits and prevent metabolic syndrome, smoking and other such lifestyle illnesses.

- **Health and Safety Management**

The IHI Group is committed to eradicating occupational accidents through Five Safety Principles that act as a Group-wide code of conduct.

We assess risk at our works and construction sites to identify and mitigate potential hazards through strict verifiable countermeasures. We conduct regular safety training for all of our employees to eradicate occupational accidents. We give support to outside contractors at works and construction sites to improve health and safety management in a cooperative effort to ensure safe working environments.

We carry out these health and safety initiatives as part of the occupational health and safety management system.

- **Addressing Labor Complaints**

IHI quickly and fairly responds to labor complaints from employees. We established a committee in accordance with labor agreements for the purpose of realizing harmonious working environments.

- **Preventing the Spread of the Novel Coronavirus (COVID-19)**

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Policies

The IHI Group Procurement Policy guides procurement activities around three main pillars: practicing fair and impartial procurement, establishing mutually beneficial partnerships, and responding to legal compliance and societal needs.

The procurement of materials or equipment necessary for our corporate activities involves not only legal compliance but also awareness about human rights, the environment and conflict minerals*. IHI must respond to these societal needs. We fully educate directors, officers and employees on procurement matters and promote our business partners to adhere to legal and social norms as well as ensure human rights, proper labor conditions, and occupational health and safety. Our Group also strongly encourages everyone involved with procurement to consider Quality, Cost and Delivery (QCD) while strengthening competitiveness, respecting the environment, and disclosing appropriate information. The IHI Group used the IHI Group Procurement Policy as reference to define the Basic Rules on Procurement for IHI Group. These rules define a basic procurement philosophy, fundamental knowledge base and business criteria for each department involved in procurement.

* Conflict minerals refer to minerals from conflict regions which may inadvertently fund armed insurgents and fuel regional disputes.

IHI Group Procurement Policy

Basic Policy

1. Fair and Impartial Procurement
We provide business opportunities in an open manner to business partners from around the world, and welcome working with creative and competitive business partners.
We also evaluate and select business partners in a comprehensive and fair manner based on factors such as quality, price, delivery schedule, technology and financial conditions.
2. Mutually Beneficial Partnership with Our Business Partners
We regard our business partners as value creators, and through seeking to realize optimal levels for quality, price and delivery, together with procurement reliability, we aim to establish relationships of trust with our business partners and bring about the mutual enhancement of competitiveness and prosperity with them.
3. Approach to Compliance and Social Needs
We comply with the related laws that govern our local and global businesses. In addition, we promote procurement activities that prioritize factors such as the environment, human rights, labor conditions, occupational safety and health, and information management.

Requests to Our Business Partners

The IHI Group works on the following values to promote our business activities. We ask for the co-operation and understanding of our business partners with regard to the promotion of these values

- (1) Compliance
- (2) Paying Attention to Human Rights, Labor Conditions, and Occupational Safety and Health
- (3) Ensuring Optimal Quality, Cost and Delivery Conditions
- (4) Enhancement of Competitiveness
- (5) Respect for the Environment
- (6) Information Disclosure

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• Prohibiting Conflict Minerals

The IHI Group formulated an IHI Group Policy on Conflict Minerals as part of the IHI Group Procurement Policy to prohibit all conflict minerals in procurement activities. We will never procure raw materials, parts, or products that contain conflict minerals from the Democratic Republic of the Congo and neighboring countries. IHI shares this policy with our major business partners and asks for their cooperation in disclosing information on conflict minerals with our clients.

• IHI Group Policy on Conflict Minerals

In the Democratic Republic of the Congo and neighboring countries, armed groups engaged in conflict have committed grave human rights violations and acts of environmental destruction. This serious issue has been the subject of worldwide attention. It is understood that certain minerals (namely, tin, tantalum, tungsten, gold), which produced in this regions fund these groups (hereinafter, “Conflict Minerals”). IHI Group policy is to avoid procuring raw materials, parts and products that contain Conflict Minerals. Based on this policy, IHI Group is moving forward with initiatives to avoid becoming complicit in the human rights violations and environmental destruction that result from the armed groups profiting from trade in Conflict Materials. We will continue to tackle this issue together with our business partners.

Education/Awareness Building

The IHI Group prioritizes training and oversight related to relevant procurement laws to continually strengthen compliance.

We hold annual professional procurement training with 22 courses on 13 subjects for both procurement divisions as well as departments with a need to understand subcontracting and construction laws.

We divide our e-Learning program into curriculum for all Group directors, officers and employees and curriculum for procurement staff to teach the knowledge necessary for day-to-day tasks from subcontracting and construction laws to import declarations and proper subcontracting systems.

Each IHI Group procurement division voluntarily reviews and verifies subcontracting laws and import declarations to ensure proper practices and to improve. Internal audits also provide guidance on areas where we can do better.

• Developing Global Procurement Professionals

The IHI Group is cultivating relationships with new suppliers worldwide to build the best possible supply chain as business expands globally. Internally, IHI focuses on nurturing global procurement staff. We train Group employees in Japan in overseas procurement and develop employees from overseas Group companies as local procurement managers through a core talent program.

Overseas Procurement Network



Participants in Procurement Training (2019)

(Unit: People, Scope: IHI and affiliated companies in Japan)

Item	2019
Professional procurement training	643

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• Responding to Anti-social Forces and Anti-corruption

The IHI Group contractually requires business partners to prohibit any and all relationships with anti-social forces, commit no acts of bribery whether toward government officials overseas prohibited by the Penal Code and Unfair Competition Prevention Act or against the laws enacted in each country. We ensure any business partner found guilty of such acts cooperates in the reporting and investigation process.

• Commending Outstanding Suppliers

The IHI Group commends suppliers who have shown particular excellence to further strengthen these outstanding partnerships. In 2019, we presented an Appreciation Award to the following company.

• Beipiao Shimamura Machinery, Co. Ltd. (China)

Beipiao Shimamura Machinery has high-level casting capabilities and conducts consistent production and quality management from the molds and materials to the machining and pressure tolerance testing. The IHI Group consistently receives high-quality casted parts primarily for compressors, motors and presses.

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




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Approach

The IHI Group strives to contribute to society based on the belief that corporate social responsibility means living up to the expectations of society. The Group Management Policy 2019 sets targets selected from the Sustainable Development Goals (SDGs) for each business area. These targets define the material issues for social contribution activities in each region where the IHI Group has business and construction sites. We encourage every directors, officers and employees to see themselves as a member of society and to proactively respond to social expectations through these social contribution activities.

Material Issues of Social Contribution Activities

Material Issues	Relevance to Business	Sustainable Development Goals (SDGs)
Coexistence with local communities	Establishing and maintaining good relationships with local communities is essential for smooth business expansion.	 
Development of next-generation professionals	The development of the next-generation of professionals in manufacturing and support of research in future science and technology fields are essential to solidify the foundation for coming industries, drive IHI brand recognition, and guarantee business continuity.	  
Environmental protection	Support of activities that preserve the ecosystem, measures to combat extreme climate change, cultivation of natural bounties and protection of our planet are essential to sustainable business and helps raise employee awareness about environmental issues.	  

Targets and Results

Dedicate approximately 1% of ordinary income to social contribution activities. The IHI Group invested a total of ¥5.19 million—approximately 1.61% of ordinary income—into 2019 social contribution activities.

Social Contribution Expenses

(Unit: Millions of Yen, Scope: IHI and consolidated subsidiaries)

	Item	2018	2019
Breakdown by Activity	Coexistence with local communities	502	382
	Development of next-generation professionals	56	104
	Environmental protection	16	16
	Other	61	17
Breakdown by Expenditure	Cash Investment	113	115
	Time Investment	162	187
	Goods Donations and Site Costs	360	217
Reference	Membership fees for local organization	10	13
	Operating Costs	121	109

Activity Results

(Scope: IHI and consolidated subsidiaries)

Material Issues	Indicators		2018	2019
Coexistence with local communities	Business interests*	Visitors to events	9,129	7,977
	Social/environmental interests*	Investments in local communities	5.02 million JPY	3.82 million JPY
Development of next-generation professionals	Business interests*	Participants in science (manufacturing) classes	2,664	1,628
	Social/environmental interests*			
Environmental protection	Social/environmental interests*	Environment protection area	11,605m ²	3,860,000m ²

*The above indicators for business and social/environmental interests are defined by RobecoSAM as follows:
 Business interests: Factors directly related to product development, brand improvement, human resource development and other such business interests
 Social/environmental interests: Factors linked to Sustainable Development Goals (SDGs) and other social/environmental interests

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Initiatives

• Coexisting with Local Communities

• Wheelchair Basketball Events

The IHI Group has been supporting the Japan Wheelchair Basketball Federation since 2015. We host events to introduce wheelchair basketball throughout Japan as well as social gatherings with players.

IHI held nine events in 2019. One such event held invited Nagano players to the Tatsuno Civic Center in the Kamiina district for an exhibition match and hands-on visitor experience. This exciting event attracted about 250 people from neighboring communities and the Kamiina IHI Group office.

• Tomioka Rocket Festival

IHI Aerospace has held the Tomioka Rocket Festival since 1998. Everyone from employees to local citizen take part in the festivities.

Upwards of 3,000 visitors came to the 22nd Tomioka Rocket Festival in 2019. Everyone who came had an opportunity to experience the world of rockets first hand from building and launching plastic bottle and model rockets to touring an exhibition of products and technologies used in space. This festival even hosted performances by the Gunma Symphony Orchestra and the local mascot for all to enjoy. The Tomioka Rocket Festival succeeded in bringing the IHI Group and the local community even closer together.

• Bonds of Tohoku Festival

In 2019, we held the Bonds of Tohoku festival in the atrium of the IHI head office building in Toyosu to spotlight the Tohoku area and help support revitalization of the region after the Great East Japan Earthquake. We welcomed nearly 3,000 visitors to the two-day event, including employees and their families as well as people from the local community.

This festival introduced the industrial and tourist development of each Tohoku prefecture while providing booths selling local goods and introducing traditional customs. There was even a buffet offering a feast of food made using ingredients from Tohoku.

We also took this chance to share the deep bonds between the IHI Group and the Tohoku region. Everyone who came said the Bonds of Tohoku festival was a wonderful chance to feel and enjoy Tohoku.

• Disaster Support Volunteer Activities

Typhoon Hagibis devastated Nagano City in October 2019. 60 employees from IHI Aero Manufacturing located near Nagano volunteered their time every weekend for almost four months to support the disaster recovery. These volunteers helped the local community as it struggled with many flooded homes as well as power and water outages during the typhoon, and help restore the apple orchards. In the future, the IHI Group will continue to support disaster recovery efforts together with local communities.

• IHI Atrium Concert

IHI uses the atrium at its head office in Toyosu to host a variety of orchestral concerts. These concerts are enjoyed by a broad audience young and old.

We held a spring and fall concert in 2019. We welcomed about 500 of our neighbors to each concert. The fall concert was the 10th in the IHI Atrium Concert series.

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- **Development of Next-generation Professionals**
- **Providing Science Lessons at Elementary and Junior High Schools**

The IHI Group teaches classes at elementary and junior high schools in the hope of sparking interest to nurture the next-generation of science professionals. We hold these classes jointly with Ochanomizu University through a curriculum that shares how science and technology help society to evoke interest in the sciences and encourage science studies in school.

In 2019, the classes focused on jet engines as part of the educational curriculum for five elementary and junior high schools near the head office. All of the students learned about the construction and principles through a video before conducting their own experiments. The survey after the class showed higher student interest in the sciences.

- **Toyosu Mirai Project**

The Toyosu Mirai Project launched in 2019 as a cooperative network of citizens, companies, and universities in Toyosu to build a bright future for the Toyosu children.

Total of four program were held by SCSK Corporation, Shibaura Institute of Technology, and IHI, which all base in Toyosu, with the participation of about 100 children. The program brought a deeper interest in science and technology through constant creation and experimentation. We will continue to hold and expand this program from 2020.

- **Environmental Protection**

- **Aioi Works Initiatives**

IHI Aioi Works is surrounded by a rich natural environment from the mountain forests to Aioi Bay. In the lush green grounds that make up 70% of our land area, we have verified the potential for biodiversity through various efforts up until now, including plant and animal surveys and green infrastructure.

In 2019, we conducted surveys from detailed topography of the mountain forest on our grounds to plant distribution. As a result, IHI has been able to digitalizes and centrally manage this information as cartographic information to sustain and improve the natural environment around Aioi Works.

In the future, we will use this data to create specific conservation plans and protect diverse and plentiful forest resources.

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Reduce Environmental Impact

**Environmental Management 062****Reduction of the Environmental Impact of Products
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Environmental Management

Policies

The IHI Group aims to create the new value pursued by a sustainable society in its Group Management Policies 2019. We continue to work to reduce the environmental impact on society at large in an effort to combat climate change and address other social issues. The Group Management Policies further clarify the ideal direction of environmental management to cultivate new business opportunities and pioneer innovative business models. Our Group will continue to comply with all environmental laws and regulations as well as endeavor to reduce the environmental impact of our plants and offices in local regions. We will also propose low-carbon and carbon-neutral businesses using CO₂ emissions throughout the entire life cycle of our products and services as a core metric.

IHI Group Basic Environmental Policy

Article 1. Establishment of Environmental Management System

To ensure continuous improvement of environmental management, the IHI Group establishes an environmental management system, sets specific objectives and executes an action and a performance evaluation.

Article 2. Complying with Environmental Laws and Regulations

The IHI Group complies with environmental-related laws and regulations/agreements, policies/plans in related industries, and strives to stipulate and apply independent management standards to enhance environmental management.

Article 3. Provision of Environmentally-friendly Products

The IHI Group provides the society with the products and services that contribute to reduce environmental burdens.

Article 4. Reduction in Environmental Burdens in Business Activities

The IHI Group strives to preserve environment and reduce the environmental burdens in its all business activities.

Article 5. Environmental Education

The IHI Group, through environmental education, raises awareness of all people engaging in operations, including officers, employees, and temporary staff of IHI Group companies, thereby they are able to act having concern with environmental problems on their own.

Article 6. Disclosure of Information

The IHI Group actively participates in the society, disclosure information, and communicates to commune with local communities and preserve regional environment.

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Management Framework

• Environment Committee

The IHI Group established the Environment Committee to take the lead on environmental activities throughout the entire Group. We promote and expand Environment Committee decisions at all Environmental Liaison Groups in each business area and business unit as well as with Group companies worldwide. Business areas and business units strive to reduce their environmental impact through environmental capital expenditures, legal compliance, energy saving, and waste reductions to mitigate environmental risk, which is one Group-wide risk management initiative. We draft action plans at the beginning of the year in line with each of these material subjects and track progress as well as provide support using a PDCA cycle. The IHI Group strengthened the Environment Committee in 2019 by separating reductions to its environmental impact into offensive strategies related to products and services and defensive strategies related to plants, offices and other business establishments. The Corporate Planning Division leads all offensives strategies while the Environment Group of the Administration Division takes charge of all defensive strategies.

* Business Units are section under the umbrella of each business segment affiliated with Business Area.

• ISO 14001 Environmental Management System

The IHI Group has put in place Environmental Management Systems (EMS) at primary production plants and other environmental management centers to manage environmental efforts with a PDCA cycle. Each of these environmental management centers is acquiring the ISO 14001 certification to ensure each EMS satisfies international standards for environmental management. To date, 75% of IHI Group environmental management centers with a certain level of production have acquired

this EMS certification. The system selects the review board most suitable for the business activities of each environmental management center to evaluate and certify each EMS.

Environmental Management Systems



Chairperson	Officer in charge of Administration
Secretariat	Environmental Group, Administration Division and Corporate Planning Division
Members	General environmental officers of business areas, headquarters representative's offices, and Head Office divisions nominated by the Committee chairperson
Meetings convened in 2019	4

• ISO 14001 Internal and External Audits

The IHI Group always strives to enhance the level of

environmental management through regular internal and external audits of each environmental management center. These audits evaluate the fitness and effectiveness of each EMS in accordance with ISO 14001 standards. External audits conducted in 2019 did not find deficiencies at any of the ISO 14001-certified environmental management centers and affirmed each EMS complied with the all of the ISO 14001 requirements.

• Collecting Environmental Data

The IHI Group collects environmental data related to the environmental management at all consolidated Group companies. Each Group company appoints both a general environmental officer and environmental management officer to oversee the decision making and expansion of environmental activities at their organization. As the smallest unit of environmental activities at each company, the environmental management centers appoint environmental managers to take charge of particular environmental activities. The Group companies encompassed by environmental management engage in a variety of different businesses. These entities include companies with production plants, companies overseeing engineering, and on-site construction work as well as companies focused on only administration. Each environmental management center verifies the flow of energy, water and other resources and builds systems to efficiently collect environmental data. The environmental data for 2019 is current as of August 31, 2020.

ISO 14001 Certification Rate

(Scope: IHI and consolidated subsidiaries)

Item	2019
ISO 14001 certification rate	75%

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Education/Awareness Building

• Providing Environmental Education

The IHI Group environmental education includes Group-wide education programs and training for everyone in charge of environmental management at each environmental management center. The Head Office leads and monitors these training and education programs. Group-wide education provides sustainability seminars and offers e-Learning about combat climate change, which is one of the most pressing issues. The Basics of a Manufacturing Company (Environment) stratified training program for employees up to their third year provides e-Learning that reaffirms the IHI Group approach to global environmental issues. We also conduct training on energy efficiency and waste management led by experts from outside the company as part of education at environmental management centers. This training enhances the expert knowledge of qualified persons and person in charge of management aiming to put efficient environmental activities into practice through uncompromising legal compliance. The IHI Group has also designated June as environment month. Our employees participate in an environmental quiz to heighten environmental awareness as well as education founded in EMS at each environmental management center.

Environmental Education and Training Participants

(Unit: People; Scope: IHI Corporation and affiliated companies in Japan)

Eligible Participants	Curriculum	2019
Employees	e-Learning*1	18,447
	Environmental Quiz	5,820
Environmental Officers	Group Energy Efficiency Training*2	36

*1 e-Learning participation rate is 83.4%

*2 The number of participants excluding the secretariat and instructors

Targets

The IHI Group drafts environmental action plans every three years and strives to engage in comprehensive environmental initiatives.

The IHI Group Environmental Action Plan 2019 creates three major pillars for environmental initiatives from 2019 to 2021: reduce the environmental impact of products and services, reduce the environmental impact of plants, offices, and other business establishments, and cultivate human resources to promote environmental management.

Results

Costs to Reduce the IHI Environmental Impact

(Unit: Millions of yen; Scope: IHI Corporation)

Item	2016	2017	2018	2019
Investments	864	713	696	652
Expenditures	73	79	143	78

IHI Group Environmental Action Plan 2019

Action Plans	Targets
Reduce the environmental impact of products and services	Reduce the CO ₂ emissions of products and services
Reduce the environmental impact in plants, offices, etc.	No major violation of environmental laws/regulations and environmental accidents
	Reduce CO ₂ emissions intensity by at least 3% by 2021 compared to 2018
	Reduce energy consumption intensity by at least 3% by 2021 compared to 2018
	Generate less waste than the amount generated in 2018 in 2019 and 2021
Cultivate human resources to promote environmental management	Use less water withdrawal* than the amount used in 2018 in 2019 and 2021
	Develop professionals who can carry out environmental management

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

Environment-related Capital Investments

(Unit: Millions of yen, Scope: Non-consolidated IHI plants and offices)

Category	Amount invested*1	Cost effect*2	Main items	Environmental impact mitigation*3	Risk mitigation*3
Energy-saving/ climate change measures	200	17	Adoption of independent air-conditioning systems at plants, etc.	Energy consumption and CO ₂ emission reductions	No major violation of environmental laws/regulations or environmental accident
Environmental risk measures	445	–	Renewal of aged equipment, etc.		
Total	645	17			

*1 Environmental-related capital investments for non-consolidated IHI plants and offices made in 2019

*2 Reductions in energy purchasing costs estimated over a year

*3 IHI Corporation will consider additional approaches and examine the effectiveness in the future

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Initiatives

• Environmentally Friendly Products Certification Program

The IHI Group uses an environmentally-friendly products certification scheme to promote reductions in the environmental impact of its products and services. This system certifies products and services as having outstanding environmental performance. Such products and services help protect the environment and reduce our environmental impact.

Environmentally-friendly products and services also contribute to reductions of the environmental impact on society at large, which in turn helps protect the environment.

• Certification Process

The Group-wide Environmental Committee evaluates the environmental performance of products and services based on IHI guidelines. We only certify products and services with outstanding environmental performance as environmentally friendly. This review process assesses whether products and services incorporate environmental performance measures throughout every stage of the life cycle.

Propose certification plan
for products and services

Evaluate environmental impact
of products and services



Energy efficiency

Enhance energy efficiency, recover and use exhaust energy, and level the energy load



Reduced
GHG emissions

Reduce, absorb, capture, store, and break down greenhouse gas emissions, generate renewable energy, and reduce fluorocarbons



Resource saving

Reduce and recycle natural resources necessary during manufacture, use and maintenance



Reduced
environmental
risks

Reduce waste, air, water, soil, noise, vibration, ground subsidence, and odor pollution as well as monitor and measure environmental protection data



Biodiversity
protection

Evaluate biomass resources and adapt installations to each location

Assessment and certification
(IHI Environment Committee)

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Results

• Environmentally Friendly Products

Products and services certified as environmentally-friendly products are listed in the table to the right. The website below also introduces both certified and non-certified IHI products and services.

[web](#) [IHI-WORLD](#)

Certified Products

Products and services	Evaluation Items				
	Energy efficiency 	Reduced GHG emissions 	Resource Saving 	Reduced environmental risks 	Biodiversity Protection 
Intake facility (Selective water withdrawal facility)					●
LRT (Light Rail Transit)	●	●	●	●	
Automated People Movers	●	●	●	●	
Active Noise Control System				●	
Silencer/Enclosure				●	
Noise/Vibration Consultation				●	
Diesel Engines	●	●	●	●	
Life Cycle Administrator (LC-A)	●		●	●	
TF-Detector	●		●	●	
MF-Detector	●		●	●	
Energy-saving Parking System NPC24H Tachikawa Midori-cho No.2 Parking Lot	●				
IHI IC Reactor	●		●	●	
ORC Power Generator HEAT INNOVATOR®		●	●	●	
LNG Smart Satellite	●	●	●		
Industrial photovoltaic power system		●			
Technology for cleaning, chipping and cutting surfaces without using water		●	●	●	
Cycle Management Systems	●	●	●		
Turbochargers for Vehicles	●		●	●	
ORC Power Generator Heat Recovery HR Series		●	●	●	
IWV-34C Vacuum Degreaser	●		●		
Toyosu Foresia Environmentally Friendly Building	●	●	●	●	

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Approach

Climate change has an enormous social and economic impact and is a vital social issue for companies to address in order to realize sustainability.

The IHI Group sees climate change as one important management issue and is doing everything possible to combat it.

Our products and services strive to reduce CO₂ emissions throughout the entire life cycle.

We monitor the environmental impact from business activities at our plants, offices and other business establishments to help us reduce CO₂ emissions. In May 2019, the IHI Group became a signatory to the Task Force on Climate-related Financial Disclosures (TCFD) by resolution of the Board of Directors. This framework plays a role as a tool to formulate strategies able to strengthen risk management and cultivate business opportunities.

Management Framework

The IHI Group engages in environmental initiatives that include measures to combat climate change centered upon the Environment Committee.

P62 Environmental Management

The IHI Group has put in place a TCFD Task Force directly under the President to fully utilize the framework as a strategic planning tool for proper disclosure of information as a TCFD signatory.

The TCFD Task Force is made up of members from the four business areas, Technology & Intelligence Integration, and the Corporate Business Development & Solution Headquarters with the Corporate Planning Division acting as the Secretariat.

The IHI Group also conducts uncompromising risk management to fully and rapidly respond to any risks found by carefully identifying changes around business operations. We are integrating TCFD Task Force activities and the risk management systems to create a PDCA cycle for climate change risks.

P32 Risk Management

TCFD Disclosure

The disclosure items on the page below are recommended by TCFD.

- **Governance**
p.62-64 Environmental Management
p.67 Climate Change
- **Strategy**
p.69-71 Climate Change
- **Risk Management**
p.32-34 Risk Management
p.67 Climate Change
- **Metrics and Targets**
p.68 Climate Change

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Targets and Results

The IHI Group aims to reduce CO₂ emissions from plants, offices and other business establishments in line with the Japanese government's policy target of a 26% reduction in 2030 (compared to 2013 levels) and an 80% reduction by 2050.

The IHI Group Environmental Action Plan 2019, a three-year plan for fiscal years 2019 to 2021, uses CO₂ emissions intensity and energy consumption intensity as indicators. The targets and results are indicated in the table on the right.

Initiatives

• Reducing CO₂ Emissions from Business Activities

The IHI Group makes every effort to reduce CO₂ emissions from plants, offices and other business establishments by both actively pursuing energy-efficient business practices and promoting the use of low-carbon energy. Our energy-efficient initiatives not only enhance operations but also make the necessary capital investments. We have put in place energy management standards to drive these operational improvements.

Action Plans	Targets	KPI	2018 Results (Base Year)	2019 Results
Reduce environmental impact in plants, offices, etc.	Reduce CO ₂ emissions intensity at least 3% by 2021 compared to 2018	CO ₂ emissions intensity (t-CO ₂ /100 million yen)	22.2	18.3
	Reduce energy intensity at least 3% by 2021 compared to 2018	Energy consumption intensity (TJ/10 billion yen)	39.3	17.8

(Scope: IHI and consolidated subsidiaries)					
Item		2016	2017	2018	2019
CO ₂	CO ₂ emissions (t-CO ₂)	316,914	330,162	329,602	254,227
	Scope 1 (t-CO ₂)	–	–	80,032	64,724
	Scope 2 (market-based) (t-CO ₂)	–	–	249,570	189,503
	CO ₂ emissions intensity (t-CO ₂ /100 million yen)	21.3	20.8	22.2	18.3
Energy	Energy consumption* (TJ)	6,015	6,087	5,828	2,468
	Fuel consumption (TJ)	–	–	–	1,044
	Electricity consumption (TJ)	–	–	–	1,398
	Steam consumption (TJ)	–	–	–	0
	Renewable energy used (TJ)	–	–	–	26
	Energy consumption intensity (TJ/10 billion yen)	40.5	38.3	39.3	17.8

* Changed the method of calculating energy consumption since 2019.

These standards aim to provide ideal operation conditions and criteria to review operational management. These standards also become a knowledge base to conduct training on energy efficiency through guest experts in an effort to heighten the management quality of the person in charge. Our capital investments systematically renew aged equipment with energy-efficient equipment. Another

aspect important to reducing CO₂ emissions is shipping and transport. The IHI Group strives to promote modal shifts through greater load efficiency and active use of marine vessels. We have added carbon intensity as a new evaluation indicator to further promote low-carbon initiatives, including a transition to fuels with a low CO₂ emission coefficient and the adoption of renewable energy.

Climate Change

• Climate Change Risks and Opportunities

• TCFD Initiatives

The IHI Group set simple scenario analyses of four business domains with a significantly large impact on climate change: the energy business, vehicle turbocharger business, bridge and water gate business, and the civil aero engine business.

The first step set (1) a carbon-neutral world as the highest transition risk and (2) a world greatly impacted by climate change as the highest physical risk in our own independent scenarios drafted with reference to external scenarios drafted by the International Energy Agency (IEA) and Intergovernmental Panel on Climate Change (IPCC). The second step identified risks and opportunities for all four business domains. The third step assessed the impact each business has. The fourth and last step drafted countermeasures according to our findings.

In the future, we will expand the scope of businesses included in these scenario analyses, review our scenarios, and assess the financial impact of climate change. In this way, the IHI Group will enhance its ability to leverage scenario analyses in business strategy.

The IHI Group will proactively incorporate the concepts pursued by TCFD signatories in management policies and business strategies. These policies and strategies will contribute to the development of a sustainable corporate group and society at large.

Scenario Analysis Process

Step 1 Set independent scenarios.

The IHI Corporation referred to external scenarios* to set independent Group scenarios in anticipation of the world in 2050.

- (1) High-transition risk scenario
- (2) High-physical risk scenario

Step 2 Identify risks and opportunities.

The IHI Corporation identifies risk and opportunities for the two scenarios set in Step 1

Step 3 Evaluate the business impact.

The IHI Corporation 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 defines the impact and estimates the influence the risks and opportunities have on our businesses.

Step 4 Formulate countermeasures.

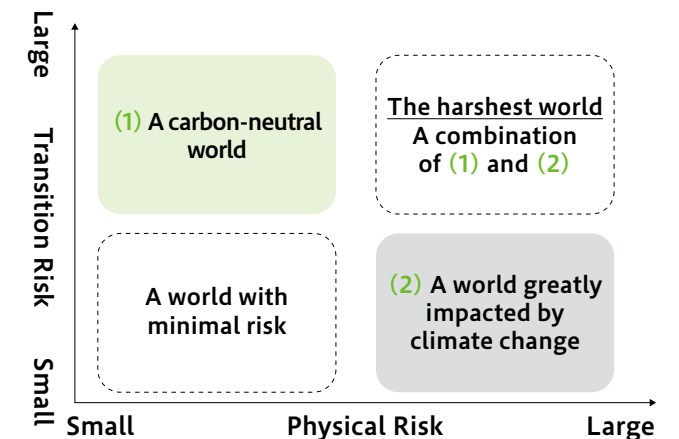
The IHI Corporation formulates measures to respond to these risks and opportunities to foster resilient businesses.

*External reference scenarios:

A carbon-neutral world
 IPCC RCP 2.6, IEA 2DS Scenario, etc.
 A world greatly impacted by climate change
 IPCC RCP 8.5, etc.

IHI Group scenarios:

- (1) High-transition risk scenario
 This scenario presents (1) a carbon-neutral world where society at large shifts to mitigate climate change to stop all greenhouse gas emissions.
- (2) High-physical risk scenario
 This scenario presents (2) a world greatly impacted by climate change that needs to adapt to the physical impact to directly confront drastic devastation by natural disasters.



Countermeasures set to address the two extreme worlds anticipated by these IHI scenarios enhance the resilience of IHI Group businesses against future risks. The IHI Group can also reduce risks against the harshest world facing both these scenarios at the same time by integrating the countermeasures for each.

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The IHI Corporation divides the risks and opportunities identified for each of the four business domains and the countermeasures into two categories: **1. risks, opportunities, and countermeasures specific to each business** and **2. risks, opportunities, and countermeasures shared across all businesses**.

Risks, opportunities, and countermeasures in 1. are shown in the table below while those in 2. are shown in the table on the next page.

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

	Energy business	Vehicle turbocharger business	Bridge and water gate business	Civil aero engine business
(1) Risks, opportunities and main countermeasures in a carbon-neutral world				
Risks	<ul style="list-style-type: none"> Declining demand for large fossil fuel power generation equipment 	<ul style="list-style-type: none"> Declining demand for combustion engine vehicles unable to address carbon-neutral requirements and a falling demand for existing turbochargers 	<ul style="list-style-type: none"> Increasing procurement costs (carbon tax, etc.) for materials with high CO₂ emissions (concrete, steel, etc.) 	<ul style="list-style-type: none"> Declining demand for aircrafts due to carbon-neutral requirements and standardization of alternative high-speed means of transportation
Opportunities	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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.) 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Increasing demand for the development of aircraft engines supporting carbon-neutral requirements and opportunities raise due to electrification of engines and utilization of advanced material technologies.
Main Countermeasures	<ul style="list-style-type: none"> Rapidly deploy carbon-neutral technologies to society Promote technological development to stabilize the energy supply Expand the life cycle business through remote monitoring and other Internet of Things (IoT) technologies 	<ul style="list-style-type: none"> Rapid development and commercialization of turbochargers for electric vehicles that comply with carbon-neutral requirement trends 	<ul style="list-style-type: none"> Reduce construction schedules and labor costs by labor-saving, remoteization, and improving construction methods through promoting digital transformation (DX) 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Extreme delays due to on-site construction stoppages or disasters caused by frequent severe weather 	<ul style="list-style-type: none"> Suspension of production due to disrupted supply chains caused by frequent severe weather 	<ul style="list-style-type: none"> Extreme delays due to on-site construction stoppages or disasters caused by frequent severe weather 	<ul style="list-style-type: none"> Suspension of production due to disrupted supply chains caused by frequent severe weather
Opportunities	<ul style="list-style-type: none"> Contributing in early recovery of equipment damaged in severe weather Increasing demand for digital technologies to promote labor saving and remote operation 	<ul style="list-style-type: none"> No opportunities unique to our business 	<ul style="list-style-type: none"> Increasing demand to build robust national infrastructure Contributing in early recovery of infrastructure damaged in severe weather 	<ul style="list-style-type: none"> No opportunities unique to our business
Main Countermeasures	<ul style="list-style-type: none"> Expand the life cycle business through remote monitoring and other Internet of Things (IoT) technologies 	<ul style="list-style-type: none"> Strengthen supply chains 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Strengthen supply chains

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2. Main risks and countermeasures shared across all businesses

(1) Transition Risks and Countermeasures for a Carbon-neutral World

Category	Main Topics	Main Countermeasures and transitioning to Opportunities
Policies, Laws and Regulations	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
Technologies	Rising 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
Markets	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

Category	Main Topics	Main Countermeasures
Acute/Chronic	Ceased business activities due to damaged offices and plants 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

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Approach

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. We have identified prohibited and controlled substances regulated by both legal and customer requirements in each region and country where our products and services are available. Our supply chain also pinpoints and properly manages the chemical substances contained in products for the purpose of minimizing the impact IHI Group products and services have on human health and the environment.

Management Framework

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 administration.

P63 Environmental Management

Targets and Results

Action Plans	Targets	KPI	2018 Results (Base Year)	2019 Results
Reduce the environmental impact in plants, offices, etc.	Generate less waste than the amount generated in 2018 in 2019 and 2021	Waste generated (ton)	29,010	27,564
	Use less water withdrawal* than the amount used in 2018 in 2019 and 2021	Water withdrawal* (1000 m³)	4,182	4,251

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

(Scope: IHI and consolidated subsidiaries)

Item		2016	2017	2018	2019
Waste	Waste generated (ton)	30,531	28,691	29,010	27,564
	Toxic waste generated* ¹ (ton)	–	–	–	164
	Amount recycled* ² (ton)	–	–	–	61,799
Water	Water withdrawal (1,000m³)	4,169	3,776	4,182	4,251
	Public water (1,000m³)	–	–	–	750
	Industrial water (1,000m³)	–	–	–	868
	Groundwater (1,000m³)	–	–	–	1,948
	Rainwater, rivers, lakes, etc. (1,000m³)	–	–	–	685

*1 Total of specified hazardous wastes and infectious wastes within specially-controlled industrial wastes

*2 Waste turned in to valuable resources

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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 all waste is disposed of properly, our 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.

•Water Resources

The IHI Group creates deliberate plans for the use of public water, industrial water, river water, groundwater, and water from other stable resources at our plants, offices and other business establishments. We also monitor and manage the amount of water used from each water resource by these sites. Our maintenance and renewal plans strive to keep underground piping and waste water treatment systems up to date in order to prevent soil contamination caused by leak of waste water or polluting public waters caused by leak of pollutants. In 2019, the IHI Corporation audited the water usage management progress and water risks at 13 different sites.

Water risks in this report refer to risks of waste water from our plants, offices and other business establishments contaminating public waters. These audits verified proper water management by visiting each site, interviewing the people in charge and conducting physical on-site inspections. We also share the findings of these audits to raise awareness about water risks. In the future, the IHI Group plans to audit whether plants which did not undergo on-site audits in 2019 present any risk to public waters.

•Chemical Substances

The IHI Group strictly complies with every law and regulation controlling the chemical substances contained in products. We aggregate data about the chemical substances contained in products throughout the supply chain and confirm whether use of any of these chemicals is prohibited. The IHI Group is also furthering a system to provide this same data to customers. Regulations to control the chemical substances contained in products are becoming more stringent than ever not only in the EU but also North America and Asia. Our Group pays extremely close attention and responds accordingly to regulations that apply to each product as one business risk.

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Approach

The IHI Group has set compliance to environmental laws and regulations and the prevention of environmental accidents as the highest priorities of environmental activities in business. We have also set the reduction of the environmental impact from our business activities as a priority subject in our environmental targets designated for each Group site. We emphasize cooperation with the local communities in each region where IHI does business to advance environmental conservation activities according to the unique needs of each. These efforts include agreements to prevent pollution with local government agencies and residents. Many of our offices, plants and other business establishments are located near water sources. Therefore, initiatives to prevent any pollutants from reaching these water sources are imperative. Measures and proper disposal to prevent soil contamination from oil, chemical and other leakage used at offices, plants, and other business establishments are also vital. The IHI Group is building an environmental management system to sustain and manage these activities. We constantly enhance environmental activities through periodic internal audits, environmental patrols, and third-party evaluations.

Management Framework

The IHI Group deliberates and decides on the approach and important matters of environmental conservation through the Environment Committee, a Group-wide body chaired by the officer in charge of administration. 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.

P63 Environmental Management

Targets and Results

Action Plans	Targets	2019 Results
Reduce the environmental impact in plants, offices, etc.	No major violation of environmental laws/regulations and environmental accidents	0

• Compliance with Environmental Laws and Regulations

The IHI Group properly investigates any environmental incident that occurs on a Group site and evaluates the severity and underlying factors to reduce environmental accidents and legal violations as well as to prevent recurrence. In 2019, our Group had no major environmental incidents or legal violations.

(Unit: Incidents, IHI and consolidated subsidiaries)

Item	2016	2017	2018	2019
Significant environmental accidents	0	0	0	0
Major violation of environmental laws/regulations	0	0	0	0
No. of cases IHI paid fines, penalties, etc.	0	0	0	0

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Initiatives

• Preventing Water Pollution

The IHI Group monitors the quality of water discharged from offices, plants and other business establishments to sustain the water quality of oceans, rivers, and other public waters in accordance with waste water standards. We must not only maintain wastewater treatment facilities but also regularly renew aged equipment, devices, meters and other instruments.

The IHI Group also prioritizes measures to prevent leaks from unseen underground pipes as a key issue. Our other initiatives include measurements of the amount of water used in specific areas, creation of underground piping blueprints, and periodic replacement of underground piping.

• Preventing Soil Contamination

The IHI Group identified specific areas at offices, plants and other business establishments that use hazardous substances and other chemicals. We strive to prevent leaks of chemical substances by establishing operational procedures and periodic patrols. We manage 68 old factory sites and production bases via a database compiling survey results for the usage history of specific harmful substances* and oils. This survey data also acts as a starting point for initial reviews when restructuring plant operations.

*Harmful chemical substances refers to lead, hexavalent chromium, mercury and other substances listed in Article 2 of the Japan Soil Contamination Countermeasures Act

• Hazardous PCB Waste

The IHI Group is furthering its response to properly dispose of hazardous PCB waste by organizing a specialized team led by the Head Office. As of March 31, 2020, we have successfully disposed of 99.8% of electrical equipment containing a high-concentration of PCBs and 95.6% with a low-concentration of PCBs. However, the IHI Group currently holds a large number of fluorescent lamps waiting for disposal. To date, we have successfully disposed of 45.7%.

• Chemical Resources

The IHI Group identifies and manages emissions of chemicals regulated by the PRTR Law into the air, public waters, soil, sewers and waste. We are also suppressing emissions of Volatile Organic Compounds (VOC) into the atmosphere in accordance with the Voluntary Action Plan for Establishing a Sound Material-Cycle Society by the Japan Society of Industrial Machinery Manufacturers.

• Biodiversity

The IHI Group strives to recover and preserve the surrounding environment through environmental protection activities driven by cooperation between offices, plants and other business establishments and local communities. We also have set an environment month for officer and employee enlightenment to raise awareness about biodiversity conservation.

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Material issues	Theme	Index		Scope of data	Results			
					2016	2017	2018	2019
Governance – Principled Corporate Management –								
Corporate governance	Corporate governance	Average attendance rate of outside directors	Board of Directors meetings (%)	IHI	96.2	95.3	98.6	98.1
		Average attendance rate of outside Audit & Supervisory Boardmembers	Board of Directors meetings (%)	IHI	92.3	96.0	92.6	100
			Audit & Supervisory Board meetings (%)	IHI	93.0	100	100	100
Compliance	Legal compliance	Number of law violations / Number of guidance cases	Competition laws	IHI and consolidated subsidiaries	0	0	0	0
			Anticorruption laws	IHI and consolidated subsidiaries	0	0	0	0
			Laws/regulations relating to PR activities	IHI and consolidated subsidiaries	0	0	0	0
		Expenditure to organizations	Political organizations (Millions of yen)	IHI	10	10	10	10
			Economic organizations (Millions of yen)	IHI	41	42	48	56
			Other major industry organizations (Millions of yen)	IHI	55	55	101	120
		Number of Compliance Hotline reports	Compliance Hotline reports	*1	218	209	238	239
		Number of compliance training participants	Officer training	IHI and subsidiary companies in Japan	55	50	47	–
			Line Manager Training	IHI and subsidiary companies in Japan	73	83	75	72
			Quality & Compliance Training (Japan)	IHI and subsidiary companies in Japan	–	–	–	27,866
			Quality & Compliance Training (Overseas)	Subsidiary companies overseas	–	–	–	1,774
			e-Learning (Japan)	IHI and subsidiary companies in Japan	18,859	18,020	18,234	18,164
			e-Learning (Overseas)	Subsidiary companies overseas	1,392	1,261	1,126	1,214
Risk management	Intellectual property protection	Patents held by region	Patents in Japan	IHI	4,157	3,915	4,120	4,150
			Patents overseas	IHI	2,744	2,598	3,047	3,502
Information security	Information security measures	Information security measures level evaluation (out of five) (score)		IHI and consolidated subsidiaries	–	3.0	2.9	3.2

*1 IHI and affiliated companies in Japan in 2016. IHI, affiliated companies in Japan, and some affiliated companies overseas (USA and Brazil) in 2017. IHI, affiliated companies in Japan, and some affiliated companies overseas (USA, Brazil, Asia Pacific, China, and Korea) in 2018 and 2019.

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					2016	2017	2018	2019
Society – Materialize an Affluent Society –								
Managing human resources	Number of employees	Consolidated number of employees		IHI and consolidated subsidiaries	29,659	29,706	29,286	28,964
		Number of employees (IHI)		IHI	8,630	8,256	8,011	7,741
			Male	IHI	7,625	7,245	6,994	6,730
			Female	IHI	1,005	1,011	1,017	1,011
			Ratio of female employees (%)	IHI	11.6	12.2	12.7	13.1
	Average years of service	All employees		IHI	14.5	14.8	14.9	15.8
			Male	IHI	14.8	15.1	15.1	16.0
			Female	IHI	12.2	12.5	13.2	14.5
	Turnover rate	Total turnover rate		IHI	3.9	4.0	4.3	3.5
			Rate of retirement due to personal reasons (%)	IHI	1.4	2.0	2.0	2.0
			Turnover rate within 3 years of joining the company (%)	IHI	5.8	5.7	7.4	6.8
	Employee-awareness surveys	Ratio of answered employee-awareness surveys (%)		IHI and affiliated companies	87.6	90.9	91.7	91.4
Diversity and inclusion	Employment	Number of new graduate recruitment		IHI	288	245	155	153
			Male	IHI	248	210	135	123
			Female	IHI	40	35	20	30
			Female recruitment rate (%)	IHI	13.9	14.3	12.9	19.6
		Number of mid-career employment		IHI	153	29	78	37
		Recruitment ratio of people with disabilities (%)		IHI	2.14	2.03	2.21	2.39
		Re-employment rate of employees at retirement age (%)		IHI	84	87	84	81
		Ratio of employees from abroad (%)		IHI	1.0	1.1	1.0	1.0
		Local managers at overseas sites		China, Singapore, and United States	20	23	22	23
	Gender diversity	Number of female officers		IHI	1	3	4	3
			Ratio of female officers (%)	IHI	6	16	24	19
			Number of female managers		IHI	66	68	74
			Ratio of female managers (%)	IHI	2.5	2.6	2.8	3.0
			Ratio of female general managers (%)	IHI	0.7	0.8	0.8	0.8
			Ratio of female section managers (%)	IHI	1.8	1.8	2.0	2.2

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					2016	2017	2018	2019
Diversity and inclusion	Work-life balance	Employees with reduced work hours		IHI	149	159	158	161
		Employees who have taken childcare leave		IHI	674	677	689	779
		Employees who have taken parental leave		IHI	89	111	113	132
		Percentage of employees who return to work after parental leave (%)		IHI	100	100	100	99.2
		Employees who have taken nursing care leave		IHI	11	18	6	7
		Average annual paid vacation days taken		IHI	16.50	17.63	18.36	19.40
		Monthly average overtime (hours)		IHI	23.90	22.90	22.50	21.10
	Human resource development	Stratified training	Participants	IHI and affiliated companies in Japan	3,300	2,900	3,300	3,276
			Training hours	IHI and affiliated companies in Japan	112,000	101,000	112,000	106,208
		Open lectures	Participants	IHI and affiliated companies in Japan	5,800	5,800	6,200	3,343
			Training hours	IHI and affiliated companies in Japan	46,000	44,000	47,000	25,073
		Average annual training hours per employee		IHI and affiliated companies in Japan	17.4	16.7	16.7	19.8
		Employees certified as master artisans		IHI	45	42	37	35
	Occupational health and safety	Participation rate of medical check-ups (%)		IHI and 34 affiliated companies	70	69	70	71
		Participation rate of stress checks (%)		IHI and 34 affiliated companies	90	91	96	94
		Absenteeism (Employees who take three or more months of leave) (%)		IHI and 34 affiliated companies	0.9	0.9	0.9	1.0
		Presenteeism (Employees with restricted hours) (%)		IHI and 34 affiliated companies	2.1	1.6	1.7	1.6
		Smoking rate (%)		IHI and 34 affiliated companies	29	28	28	27
		Lost time injuries frequency rate		IHI and 30 affiliated companies	0.33	0.57	0.26	0.40
		Total injuries frequency rate		IHI and 30 affiliated companies	1.31	1.64	1.11	1.49
		Rate of occupational diseases		IHI and 34 affiliated companies	–	–	0.165	0.165
		Occupational accidents*2		IHI and 30 affiliated companies	68 (1)	87 (1)	55 (0)	71 (0)
		Employees*2		IHI and 30 affiliated companies	41 (0)	52 (0)	28 (0)	42 (0)
		Temporary employees*2		IHI and 30 affiliated companies	0 (0)	4 (0)	4 (0)	4 (0)
		Partners*2		IHI and 30 affiliated companies	27 (1)	31 (1)	23 (0)	25 (0)
	Labor-management partnership	Employee union membership rate	Employees union membership rate (%)	IHI and 6 consolidated subsidiaries	73	74	73	73
		Number of labor complaints received		IHI	0	0	0	0
Corporate citizenship	Social contribution activities	Social contribution expenses (Millions of yen)		*3	206	331	635	519

*2 Figure inside parentheses indicates fatal incidents

*3 IHI and affiliated companies in 2016 and 2017. IHI and consolidated subsidiaries in 2018 and 2019.

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					2016	2017	2018	2019
Environment – Reduce Environmental Impact –								
Climate change	CO ₂	CO ₂ emissions (t-CO ₂)		IHI and consolidated subsidiaries	316,914	330,162	329,602	254,227
			Scope 1 (t-CO ₂)	IHI and consolidated subsidiaries	–	–	80,032	64,724
			Scope 2 (market-based) (t-CO ₂)	IHI and consolidated subsidiaries	–	–	249,570	189,503
		CO ₂ emissions intensity* ⁴ (t-CO ₂ /100 million yen)		IHI and consolidated subsidiaries	21.3	20.8	22.2	18.3
	Energy	Energy consumption* ⁵ (TJ)		IHI and consolidated subsidiaries	6,015	6,087	5,828	2,468
			Fuel consumption (TJ)	IHI and consolidated subsidiaries	–	–	–	1,044
			Electricity consumption (TJ)	IHI and consolidated subsidiaries	–	–	–	1,398
			Steam consumption (TJ)	IHI and consolidated subsidiaries	–	–	–	0
			Renewable energy used (TJ)	IHI and consolidated subsidiaries	–	–	–	26
		Energy consumption intensity* ⁴ (TJ/10 billion yen)		IHI and consolidated subsidiaries	40.5	38.3	39.3	17.8
	External evaluation	Evaluation of CDP climate change		IHI and consolidated subsidiaries	A- (Leadership)	B (Management)	B (Management)	B (Management)
Circular economy	Waste	Waste generated (ton)		IHI and consolidated subsidiaries	30,531	28,691	29,010	27,564
		Toxic waste generated (ton)		IHI and consolidated subsidiaries	–	–	–	164
		Amount recycled (valuable resources) (ton)		IHI and consolidated subsidiaries	–	–	–	61,799
	Water	Water withdrawal* ⁶ (1,000m ³)		IHI and consolidated subsidiaries	4,169	3,776	4,182	4,251
			Public water (1,000m ³)	IHI and consolidated subsidiaries	–	–	–	750
			Industrial water (1,000m ³)	IHI and consolidated subsidiaries	–	–	–	868
			Groundwater (1,000m ³)	IHI and consolidated subsidiaries	–	–	–	1,948
			Rainwater, rivers, lakes, etc. (1,000m ³)	IHI and consolidated subsidiaries	–	–	–	685
Environmental protection	Compliance with environmental laws and regulations	Significant environmental accidents		IHI and consolidated subsidiaries	0	0	0	0
		Major violation of environmental laws/regulations		IHI and consolidated subsidiaries	0	0	0	0
		Number of cases IHI paid fines, penalties, etc.		IHI and consolidated subsidiaries	0	0	0	0
	Costs to Reduce the IHI Environmental Impact	Investments (Millions of yen)		IHI	864	713	696	652
		Expenditures (Millions of yen)		IHI	73	79	143	78

*4 Net sales as the denominator.
*5 Changed the method of calculating energy consumption since 2019.
*6 Changed from amount of water consumption to amount of water withdrawal since 2019.

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Labor Practice (Occupational Health and Safety)

Supply Chain Management

Corporate Citizenship

Reduce Environmental Impact

Environmental Management

Reduction of the Environmental Impact of Products and Services

Climate Change

Circular Economy

Environmental Protection



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