

IHI Corporation

Transition Bond Framework



March, 2022

## 1. Introduction

### 1) Framework Overview

The IHI Group formulated the following Transition Bond Framework to raise funds for strategic investments that support a shift to a decarbonized economy through Transition Bonds based on the Framework and to engage in dialogue with investors and diverse market participants. The following will guide IHI Group's efforts to raise funds through transition bonds.

- a) Climate Transition Finance Handbook 2020 (published by International Capital Market Association) and Basic Guidelines on Climate Transition Finance 2021 (published by Financial Services Agency, Ministry of Economy, Trade and Industry, and Ministry of the Environment)
- b) Adherence to four core components of the 2021 Green Bond Principles of the International Capital Market Association. These are the use of proceeds, the process for project evaluation and selection, the management of proceeds, and reporting.

### 2) About IHI Group

The IHI Group's history extends back to the establishment of Ishikawajima Shipyard, Japan's first modern shipbuilding facility, in 1853. The IHI Group has continuously developed original technologies for each era, and contributed to the development of society by providing products and services that are the foundation of daily life including by leveraging its shipbuilding technology in new areas, such as heavy machinery manufacturing, bridge building, plant construction and aero-engine production.

The IHI Group is deeply committed to contributing to society through technology, combining diverse engineering capabilities to meet expanding global needs for energy, urbanization and industrialization, and transportation efficiency.

### 3) Overview of Business

IHI and its affiliated companies (hereinafter, "IHI Group") operate four main businesses: Resources, Energy and Environment; Social Infrastructure and Offshore Facilities; Industrial Systems and General-Purpose Machinery; and Aero Engine, Space and Defense.

Resources, Energy and Environment	: Minimizing Environmental Impact
To maintain the stable supply of energy essential to industrial progress and comfortable lifestyles and to contribute to prevent global warming, the IHI Group provides products and services through total lifecycles which generate best mix energy for earth and human by our extensive know-how and original technologies in areas of coal, natural gas, nuclear power and renewable energy. Main businesses, products and services: Power systems (power systems plants for land use and power systems for ships), Carbon solutions (boilers, storage facilities, chemical plants), Nuclear energy (components for nuclear power plants)	
Social Infrastructure and Offshore Facilities	: Underpinning the Essentials of Modern Living
In social infrastructure, offshore and urban development, as well as in other areas, the IHI Group build infrastructure using the technical skill and strong sensibility developed through our many years of achievements that underpins society and ensures people can live in safety and security. This allows us to contribute to the growth of nations and societies, promote offshore development and ensure safety and security.	

Main businesses, products and services: Bridges and water gates, Transport systems, Shield systems, Concrete construction materials, Urban development (real estate sales and rental)

**Industrial Systems and General-Purpose Machinery : Transforming the World's Industrial Infrastructure**

To help the IHI Group's customers enhance manufacturing processes and create more sophisticated products that will satisfy their customers in the years ahead, The IHI Group evolves industrial infrastructure around the world and support the future of "Monozukuri" by offering ceaseless technological innovative systems and optimal solutions skills.

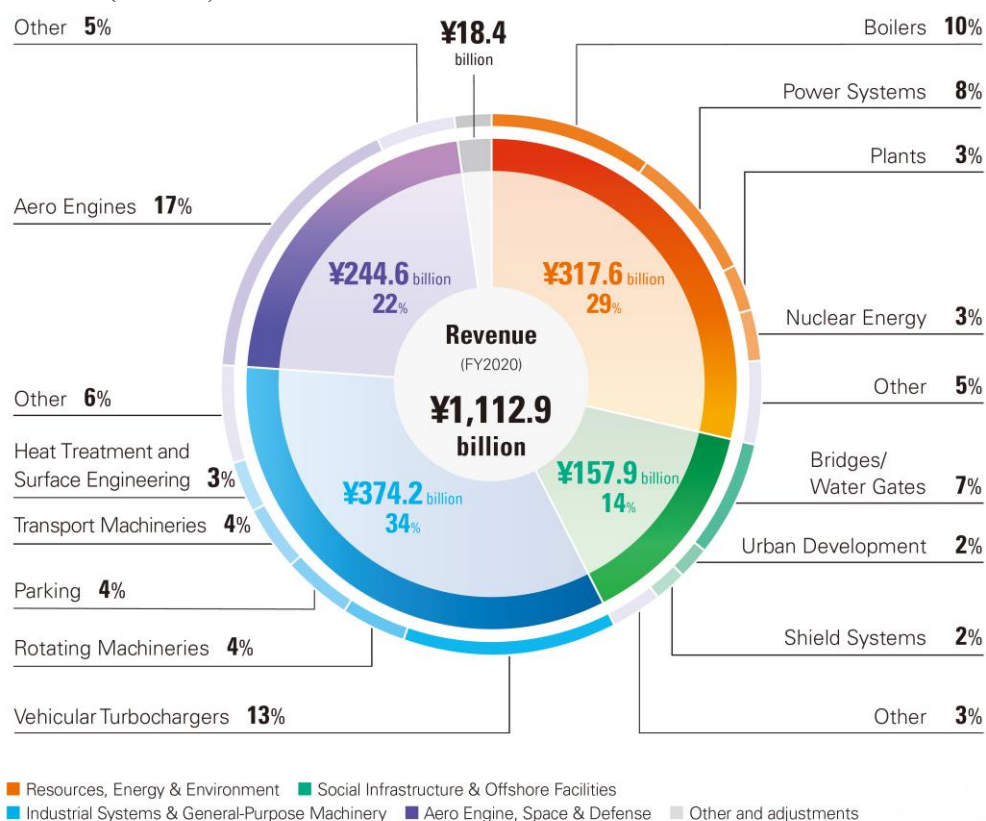
Main businesses, products and services: Vehicular turbochargers, Parking, Rotating machineries (compressors, separation systems, turbochargers for ships), Heat treatment and surface engineering, Transport machineries, Logistics and industrial systems (logistics systems, industrial machineries)

**Aero Engine, Space and Defense : Opening New Horizons**

In the aero engine and space business unit, the IHI Group draws on our range of state-of-the-art technologies and organizational skills to open up new possibilities in the sky and outer space. This allows us to contribute to develop systems that help make air travel and transport more comfortable, safer and better for the environment, and to expanding space utilization and development to help spread related services and software to benefit humankind.

Main businesses, products and services: Aero engines, Rocket systems and space utilization systems, Defense systems.

<Revenue (FY2020)>



#### 4) Evaluation by Third Parties

Various third-party agencies have evaluated the sustainability initiatives of the IHI Group worldwide.



## 2. Management Philosophy and Environmental Policy

### 1) Management Philosophies and IHI Group Vision

The IHI Group positions being a good corporate citizen who develops together with society as our primary objective and fulfills our social mission through the below visions based on our management philosophies of “Contribute to the development of society through technology” and “Human resources are our single most valuable asset”.

#### <IHI Group Vision>

##### 1. IHI Group Aims

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, the IHI Group 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.

##### 2. IHI Group Business Areas

- Resources, Energy and Environment
- Industrial Systems and General-Purpose Machinery
- Social Infrastructure and Offshore Facilities
- Aero Engine, Space and Defense

##### 3. Business Areas Aims

###### <Resources, Energy and Environment>

In line with resource and energy trends, the IHI Group is applying our unique technologies to systems for development, manufacture, storage and transport; the reduction of environmental load; more energy-efficient fossil fuel and renewable energy combustion and utilization systems; and key hardware for nuclear power generation.

###### <Social Infrastructure and Offshore Facilities>

The IHI Group manages infrastructure projects from design to after-service, supported by our industry-leading products and systems. This allows us to contribute to the growth of nations and societies, promote offshore development and ensure safety and security.

###### <Industrial Systems and General-Purpose Machinery>

The IHI Group offers industrial systems that underpin manufacturing processes. In particular, the IHI Group caters to fields where manufacturing models have not yet been established or where processes require

<p>continual refinement. The IHI Group supplies general-purpose machinery delivering exceptional performance and efficiency. These offerings help customers enhance productivity and conserve energy and resources. The Company will secure leading product and model positions in market volume zones.</p>
<p>&lt;Aero Engine, Space and Defense&gt;</p> <p>The IHI Group constantly heightens the sophistication of our precision manufacturing technologies to secure a leading position in the aero engine business. The IHI Group also contributes to the development of the space industry, focusing in particular on propulsion technologies.</p>
<p>4. IHI Group Employees</p>
<p>1. The IHI Group employees shall share the vision of contributing to society through technology, focusing on "Monozukuri" technology.</p> <p>2. The IHI Group employees shall share passion, knowledge and skills regardless of each individual business operation the employee belongs to.</p>
<p>5. Employees' Aims</p>
<p>In order to create value for the customer, the IHI Group employees must aim to work as distinguished professionals, striving to excel as a global company in "Monozukuri" and engineering technologies with world-renowned product quality.</p>

## 2) Basic Code of Conduct for the IHI Group

The IHI Group is 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 keeping an awareness of global issues. By doing so, the IHI Group aims to enhance the existential value as we move forward into the future and realize our Group's management principles of "Contribute to the development of society through technology" and "Human resources are our single most valuable asset."

<p>Fundamental and Universal Principles of the Entire IHI Group</p>
<p>&lt;Respect for the rule of law and ethical conduct&gt;</p> <p>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.</p>
<p>&lt;Respect for human rights&gt;</p> <p>We fully recognize the importance of, and always strive to respect, human rights during our business activities.</p>
<p>&lt;Promotion of mutual understanding&gt;</p> <p>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.</p>
<p>Responsibilities toward People, Society, and the Environment</p>
<p>&lt;Responsibilities toward people connected with the IHI Group via our products and services&gt;</p> <p>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.</p> <p>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</p>

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.
<p>&lt;Responsibilities towards those with whom we work&gt;</p> <p>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.</p>
<p>&lt;Responsibilities toward local and international communities&gt;</p> <p>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.</p> <p>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.</p> <p>3 We take a resolute attitude against organizations and forces that threaten social order and safety.</p>
<p>&lt;Responsibilities toward the global environment&gt;</p> <p>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.</p>
<b>Roles and Responsibilities of Senior Management</b>
<p>&lt;Roles of Senior Management&gt;</p> <p>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.</p> <p>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.</p>
<p>&lt;Responsibilities of Senior Management&gt;</p> <p>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.</p>
<b>IHI Group Code of Action</b>
<p>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.</p> <p>1. We truly understand and will comply with any and all applicable rules.</p> <p>2. We do not engage in any wrongdoing.</p> <p>3. We respect human rights.</p> <p>4. We make safety and quality for our customers a top priority.</p> <p>5. We enter into fair and legitimate transactions.</p> <p>6. We never impair the safety of ourselves or our colleagues.</p> <p>7. We strictly manage and control information.</p> <p>8. If we discover an issue, we report it immediately.</p>

### 3) Sustainable Development Goals (SDGs) Initiatives

The IHI Group perceives contributing to the success of the SDGs as an expectation of society, thus we identify and incorporate each target of the SDGs in Group management as material issues.

The IHI Group aligns the direction of each business area with SDGs targets to contribute to the success of the SDGs through our businesses, in order to ultimately realize a sustainable society

#### <IHI Group Business Area Direction>



### 4) IHI Group Material Issues

Environment - Reduce Environmental Impact -	
Climate Change	The IHI Group sees climate change as one important management issue and is doing everything possible to combat it. We became a Task Force on Climate-related Financial Disclosures (TCFD) signatory in May 2019 by resolution of the Board of Directors. The TCFD has defined an information disclosure framework as a tool for disclosing information on governance, strategy, risk management, and metrics and targets. The IHI Group is using this framework to not only strengthen risk management but also cultivate business opportunities.
Circular Economy	The IHI Group strives to realize circular economies as a step towards sustainable society. We properly manage and dispose waste while always advocating reduction, reuse, and recycling (3Rs). Our water resource initiatives manage water use and strive to prevent any pollutants from reaching water resources.
Environmental Protection	The IHI Group always takes steps to prevent pollution and protect our global environment. All of our business activities both adhere to environmental laws and regulations and make efforts to reduce the environmental impact such as by preventing water and soil pollution, strictly managing hazardous substances, or suppressing emissions of chemical substances into the air. The IHI Group cooperates with each local community in regions where we do



	business to advance environmental conservation activities according to their unique needs. The IHI Group is building an environmental management system to systematically oversee these efforts.
Social - Materialize an Affluent Society -	
Human Rights	The IHI Group is hastening efforts to raise awareness about human rights by taking a global Group perspective and by supporting, respecting the United Nations Guiding Principles on Business and Human Rights. The IHI Group established the IHI Group Human Rights Committee to nurture a corporate culture that respects human rights through human rights training. In 2020, the IHI Group enacted the IHI Group Human Rights Policy.
Customer Relationships	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. The IHI Group not only provides training on quality and product safety to all of our officers and employees but also conduct customer satisfaction surveys, assess products during development, and provide information on our products and services. These efforts strive to heighten customer satisfaction.
Diversity and Inclusion	<p>The IHI Group must unify under common values to build workplaces and systems that empower employees to reach their full potential. The IHI Group Human Resource Management Policy defines the basic approach shared by the entire Group. This management policy expands various recruitment, assignment, development, and evaluation measures according to group, global, and diversity attributes for ideal human resources.</p> <p>The IHI Group is expanding diversity as part of management strategy and one of the key aspects in the Group Human Resource Management Policy. We actively promote diversity by empowering women, employees from abroad, people with disabilities, and employees past retirement age, and support the work-life balance of employees raising children or taking care of sick family. The IHI Group is also inclusive of all people regardless of sexual orientation. The IHI Group established the Group Human Resource Management Policy as part of its human resource development initiatives. We formulate education programs and draft individual training plans at each workplace to provide position-specific training centered upon our ideal human resources. We not only endeavor to train global human resources but also strive to pass down engineering skills to others.</p>

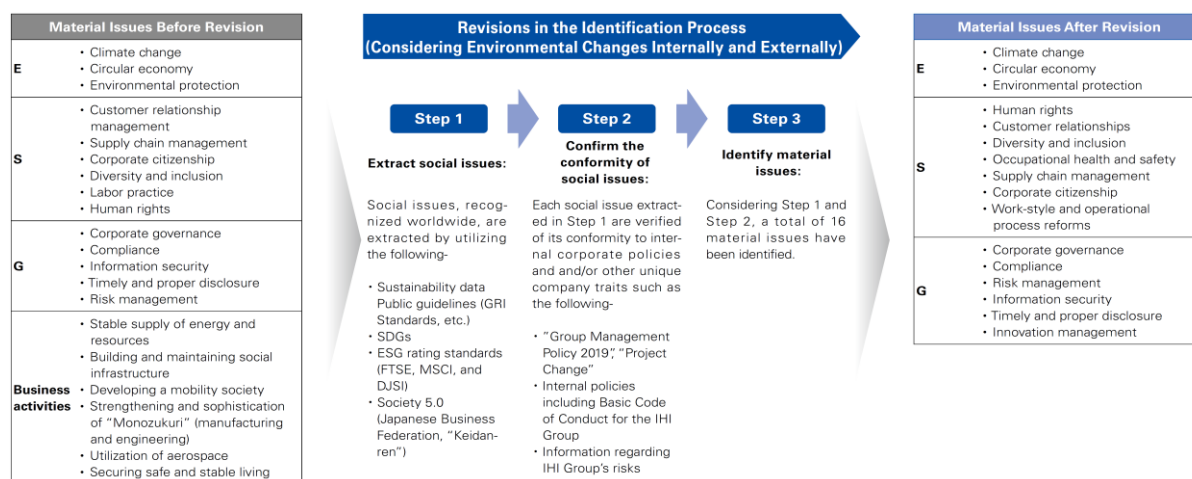


Labor Practice (Occupational Health and Safety)	The IHI Group sees occupational health and safety as one material management issue. We enhance safe and healthy workplaces for each person working in the Group according to the IHI Health and Safety Policy to ensure all Group employees to reach their full potential. Our occupational health and safety education strives to raise awareness about occupational health and safety management.
Supply Chain Management	The IHI Group Procurement Policy guides procurement activities around pillars of practicing fair and impartial procurement, establishing mutually beneficial partnerships, and responding to legal compliance and social needs. Compliance is only one aspect of supply chain management. Our Group are promoting CSR procurement throughout the Entire Supply Chain by providing thorough and comprehensive employee training on consideration towards human rights and the environment, conflict minerals and various other issues as well as requesting cooperation to our business partners.
Corporate Citizenship	The IHI Group strives to contribute to society based on the belief that corporate social responsibility means living up to the expectations of society. Coexistence with local communities, development of next-generation professionals, and environmental protection are priority subjects in our social contribution activities that we must address. The IHI Group encourages every employee to see themselves as a member of society and to respond to social expectations through various social contribution activities.
Reform work practices and operational processes	In April 2021, the IHI Group established the Smart Work Empowerment Division. The mission of the Smart Work Empowerment Division is to promote new work practices (“smart work”) in the IHI Group that will ensure the motivation of all employees, with the goals of achieving growth for the IHI Group and enriching the lives and growth of individuals. In addition to

	establishment of remote work that is dependent on neither proximity nor location, and expanded use of electronic approval, various measures, such as the introduction of a common Group platform to automate business processes and work, are being taken.
Governance - Corporate Management -	
Corporate Governance	The IHI Group's corporate governance system improves management efficiency as a way to fully leverage our unique capabilities, thereby ensuring sustainable growth and maximizing corporate value. The IHI Group has separated corporate governance functions into management supervision and business execution, which heightens the efficiency and aptness of internal decision-making and lays a foundation to put internal rules into practice. This approach ensures proper business conduct.
Compliance	<p>The IHI Group strives for sound compliance founded in the Basic Rules of Compliance for IHI Group. In light of inadequate quality inspections discovered in 2019, we created the IHI Group Code of Action as a set of rules that all of our directors, officers and employees should follow and conduct compliance education to embed the Code of Action. The IHI Group do everything in its power to adhere to competition laws and anti-corruption laws as well as foreign exchange acts and foreign trade acts.</p> <p>The IHI Group reaffirms the basic approach in engineering and manufacturing, action and mindset towards quality, and states the stance of prioritizing safety and quality in the IHI Quality Declaration. The declaration was announced to all the officers and employees in the Group. We then established the IHI Group Quality Committee as a Group-wide committee to enhance our quality assurance system and evolve our quality management system.</p>
Risk Management	The IHI Group is strengthening risk management initiatives throughout the entire Group because risk management is one of the top material issues of management. The core purpose of risk management is to ensure business continuity and the safety of everyone in the IHI Group and their families as well as secure management resources and social trust. The IHI Group has rolled out a crisis management structure, response procedures, and Business Continuity Plan (BCP) to manage risk in emergency situations.
Information Security	The IHI Group put in place the IHI Group Information Security Policy in an effort to maintain and strengthen proper information management and security. This policy protects a wide range of information from the confidential customer and partner information to information about corporate management as well as technology. The IHI Group is particularly focused on maintaining a higher level of information security at divisions and affiliated companies involved in sensitive national projects. They undergo annual reviews to renew the ISO 27001 international information security certification.
Timely and Proper Disclosure	The IHI Group builds stronger relationships based on trust with all shareholders and other investors by recognizing accurate, timely disclosure of corporate information as a core principle of a sound financial instruments

	market, which is why we actively engage in communication efforts. Our basic policy is to promote a highly transparent management throughout the entire Group. The IHI Group always discloses accurate and fair information on vital management and business matters in a timely manner from the perspective of investors in capital markets.
Innovation Management	The IHI Group fully leverages its strengths in a wide range of fundamental technologies to drive innovation. This approach not only helps us directly take on the SDGs challenges but also helps achieve a comfortable future society. We aim to quickly commercialize technologies which can become new growth businesses. To achieve this aim, we incorporate open innovation and design thinking as well as accelerate technology development to adapt to an ever-changing society.

#### <Identification Process of Material Issues>



### 3. Transition Strategies and Goals

#### 3.1 Issuer's Climate Transition Strategy and Governance (Transition Finance Handbook Element 1)

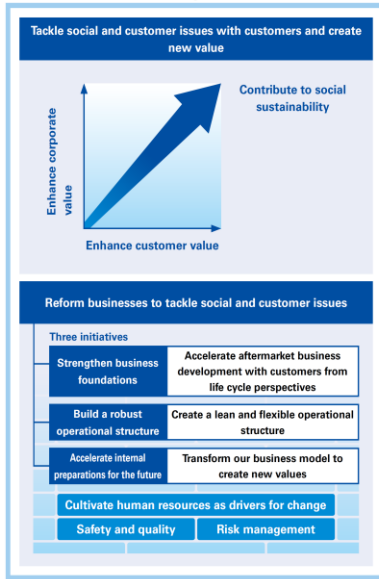
##### 1) Project Change

The IHI Group launched the "Group Management Policy 2019" in April 2019 as our "Medium-term Management Plan". In response to the subsequent COVID-19 pandemic, we further built on this policy by establishing "Project Change" in November 2020 as a initiative which secures a three-year period from 2020 to 2022 to prepare and implement business reforms adapting to the ever-changing business climate.

Key goals of this initiative are to strengthen our earnings foundations, return to a growth trajectory by expanding lifecycle businesses, and resolve social issues from climate change. The IHI Group has defined three growth businesses. The first is "Carbon solutions" that lead to carbon-free, circular economics and secure and decentralized communities. The second is "maintenance, disaster prevention and disaster mitigation" from developing a robust economic and eco-friendly social infrastructure. The third is "air transportation systems" that are safe, comfortable, economical, and eco-friendly. The IHI Group will leverage these growth businesses to help societies become carbon-free, prevent and mitigate disasters, and fulfill lifestyles, thus creating a economies in which nature and technology are in harmony.

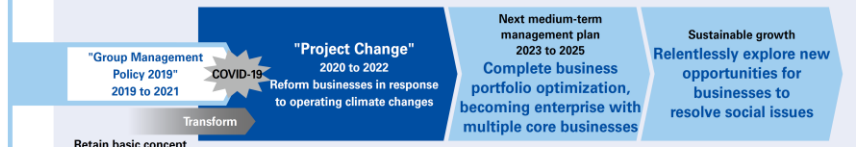
## <Project Change>

### Overview of "Group Management Policy 2019"



### Overview of "Project Change"

#### ● Positioning



#### ● "Project Change" emphases: Management which embraces ESG values

##### Return to growth trajectory

- Further strengthen earnings foundations
- Expand life cycle businesses

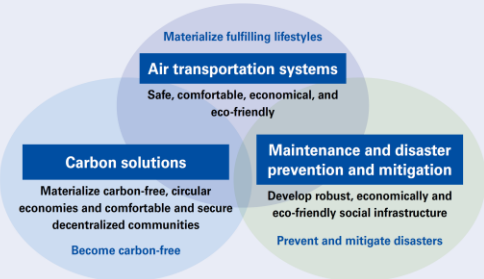
##### Overcome operating environment changes to drive value creation

- Reallocate personnel
- Pursue diversity and inclusion
- Adopt new work practices

##### Financial strategies

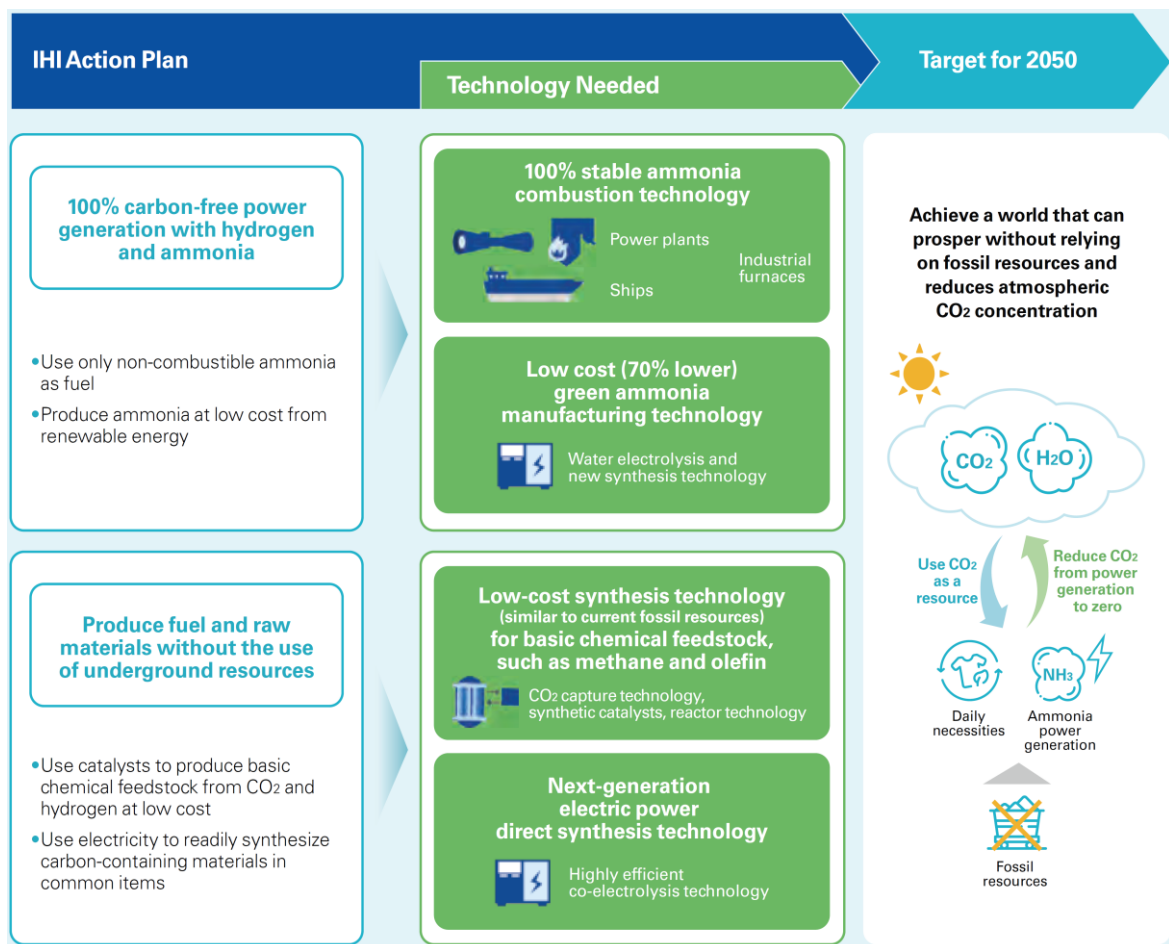
- Strengthen cash flow generation
- Allocate funds optimally
- Build solid financial position

##### Create growth businesses which address social issues



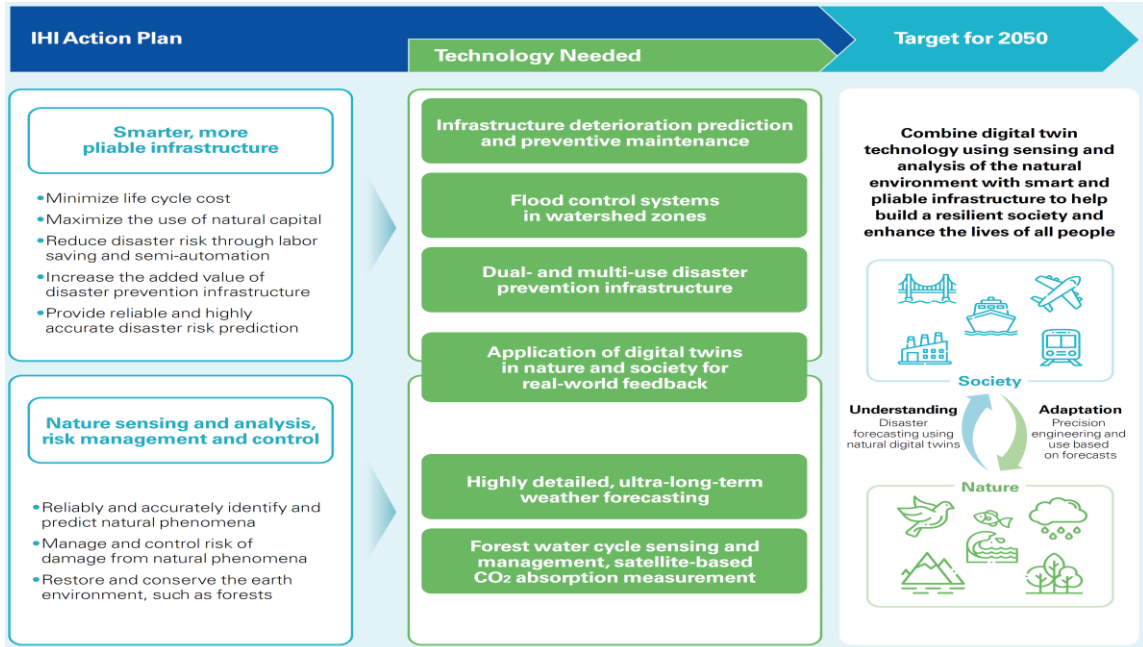
## Carbon Solutions

- The IHI Group strives to develop and implement leading edge technologies which allow carbon to be recycled, enable the use of hydrogen, ammonia, and renewable energy sources, and offer energy management for decentralized local production for local consumption to realize carbon-free in energy and industrial machinery areas and materialize local production and consumption infrastructures.
- Ammonia is free of CO<sub>2</sub> emissions and can serve as a safe and cost-effective hydrogen carrier. Combustion stability, however, has been an issue. The IHI Group was the first in the world to demonstrate commercial-scale ammonia co-firing with coal. It has also verified co-firing technology in gas turbines.
- The IHI Group successfully demonstrated the world's first 70% liquid ammonia co-firing on a 2 MW-class gas turbine leveraging its unique combustion technologies for aircraft engines. We have also launched joint research and development projects for practical application of the world's first ammonia-fueled tugboat to achieve zero emissions from ships.



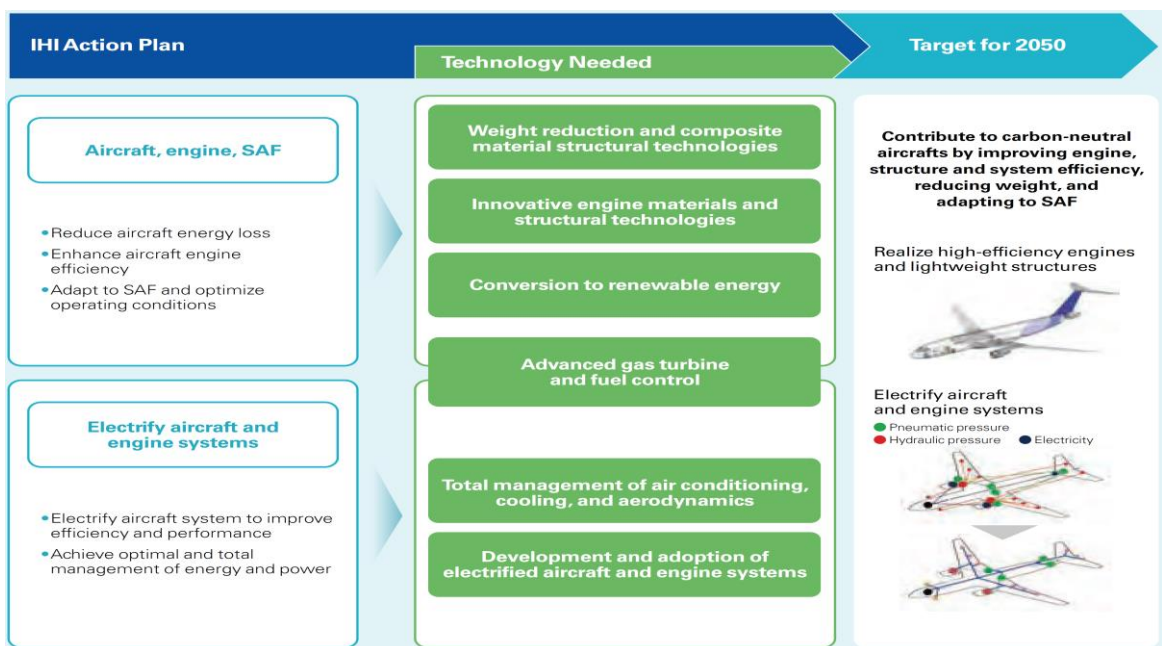
## Maintenance, Disaster Prevention and Disaster Mitigation

- The IHI Group is also advancing the technology development for optimization of power plant operation by remote monitoring with ICT, for maintenance of bridges, watergates and other vital social infrastructure, and for disaster prevention and mitigation technologies against ever increasing natural disasters due to climate change.



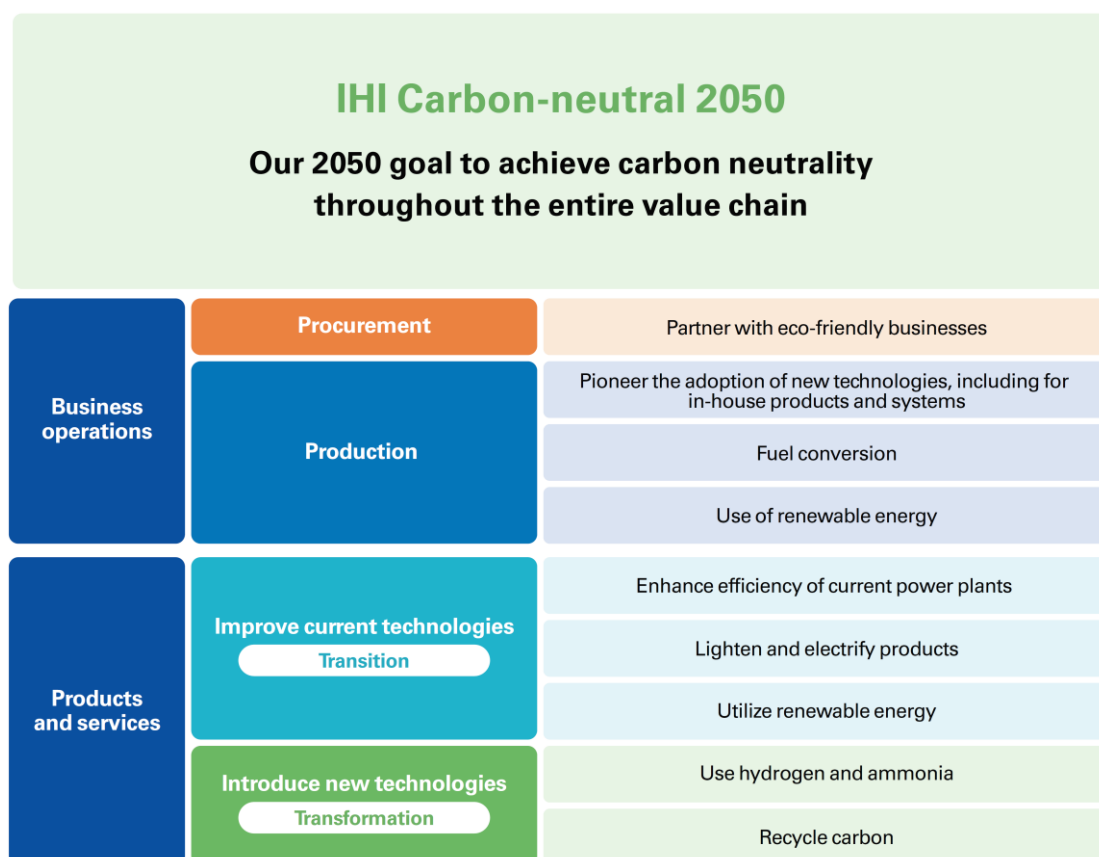
## Air Transportation Systems

- The IHI Group strives to reduce CO<sub>2</sub> of entire aviation industry by furthering development to realize lighter, more efficient engines as well as pioneering electrification technologies including engine embedded electric machines and aircooling systems.
- The IHI Group has developed bio-jet fuel produced from microalgae to help reduce CO<sub>2</sub> emissions from aircraft engines. The bio-jet fuel received an international standard certification and was supplied to regular commercial flights in Japan. These results are important steps toward practical use.



## 2) IHI Group's ESG Management

The IHI Group has pledged to make its complete value chain carbon-neutral by 2050 in “IHI Group's ESG Management” which was announced in 9<sup>th</sup> November 2021. (IHI Carbon-neutral 2050)



### <Achieving the Goals through Business>

The IHI Group is seeking to make our business activities carbon-neutral by actively introducing our products, systems, and other new technologies to reduce CO<sub>2</sub> emissions from our production operations and by converting to fuels with low or zero CO<sub>2</sub> emissions. We are also promoting the use of renewable energy. We are actively partnering with suppliers with environmentally friendly operations and working to achieve carbon neutrality throughout the value chain.

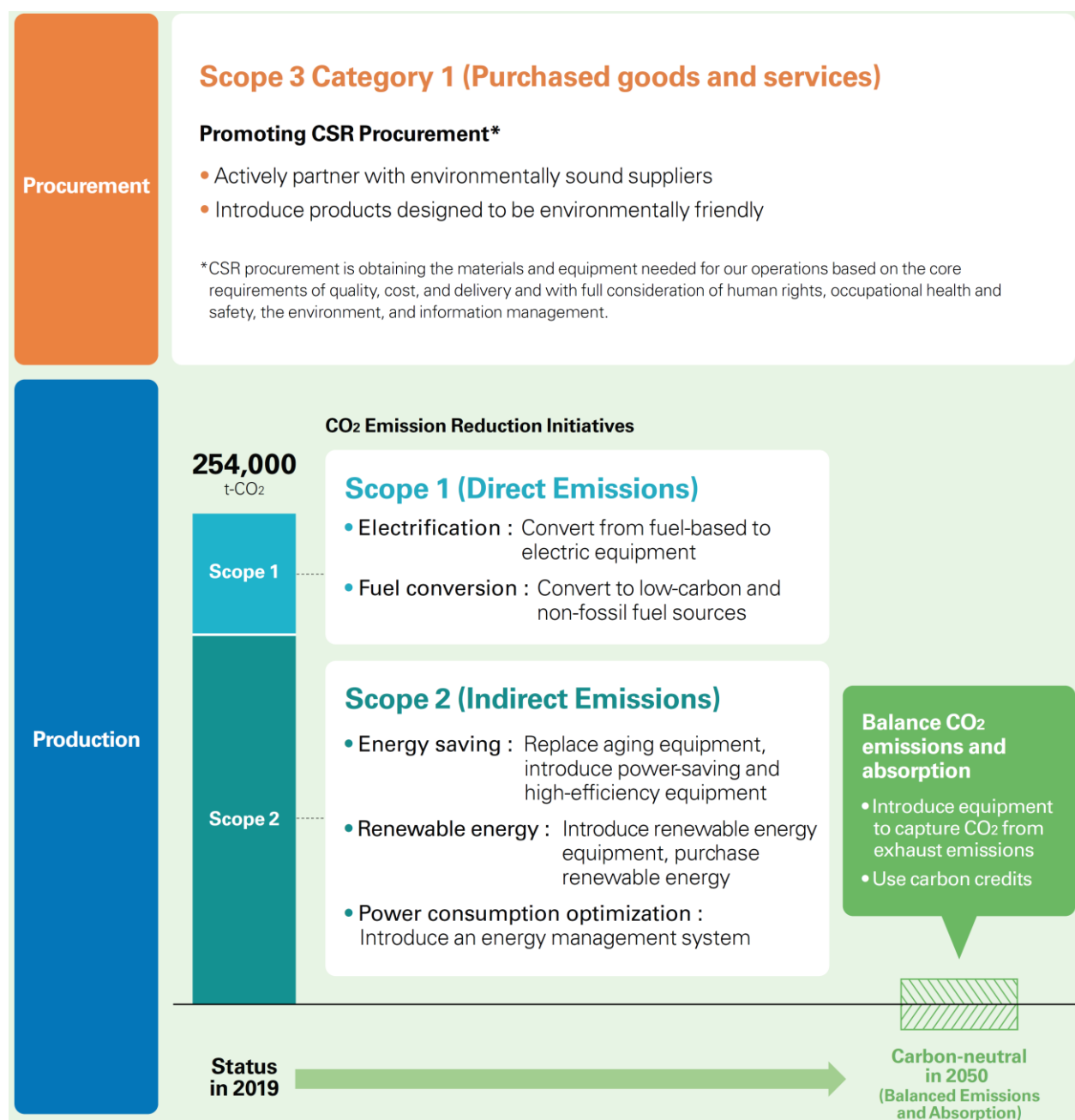
### <Achieving the Goals by Providing Products and Services>

The IHI Group will pursue carbon neutrality by providing products and services that draw on “transition”, which covers our existing technologies, and “transformation”, which encompasses new ones.

There are three “transition” components. The first is to increase the efficiency of existing power plants, such as by using advanced maintenance technologies to upgrade operations. The second is to lighten and electrify products, noteworthy examples being lighter, more heat-resistant aircraft parts and electric turbochargers. The third is to tap renewable energy sources.

There are two transformation elements. The first is to use hydrogen and ammonia, such as by transitioning to ammonia co-firing with coal-fired power plant boilers and establishing an ammonia value chain. The second is to minimize or eliminate CO<sub>2</sub> emissions through carbon recycling, which covers methanation and carbon capture, usage, and storage, and direct air capture.



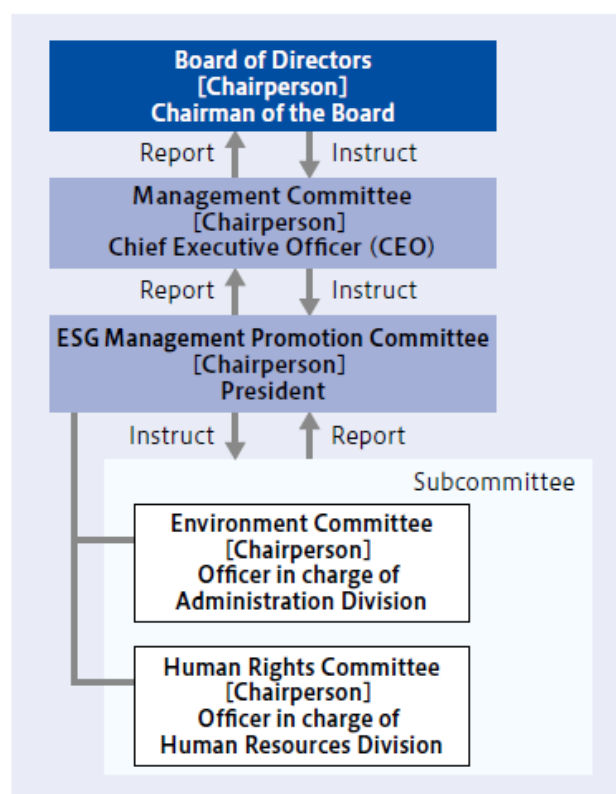


The IHI Group aims to reduce direct and indirect (Scope 1, 2) CO<sub>2</sub> emissions from our plants and offices by fiscal 2030 in line with the Japanese government's targeted 46% decrease in such emissions by that year from fiscal 2013. Under the next medium-term management plan, the IHI Group is formulating more active decrease plan to attain carbon neutrality across our entire value chain by 2050.

### 3) Management Structure to Materialize Transition Strategy

In fiscal 2021, the IHI Group began considering basic ESG management policies and measures, consequently establishing the ESG Management Promotion Committee for the purpose of evaluating and improving the progress of the policy and measures implemented. The ESG Management Promotion Committee replaces our CSR committee as a member body that discuss basic sustainability policies and measures. The IHI Group is further building onto our sustainability promotion system which originate from the ESG Management Promotion Committee.

<FY2021 Sustainability Promotion System>



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 to play a role as a tool to formulate strategies able to strengthen risk management and cultivate business opportunities. The IHI Group also conducts uncompromising risk management to fully and rapidly respond to any risks found by carefully identifying changes around business operations. The IHI Group is integrating TCFD Task Force activities and the risk management systems to create a PDCA cycle for climate change risks.

### 4) Significance and Goals of Issuing Transition Bonds

The IHI Group believes that our transition strategy is consistent with the greenhouse gas emissions reduction and other targets of Japan's Sixth Strategic Energy Plan and will help materialize Paris Agreement goals.

The IHI Group will leverage its transition bonds to fund efforts to materialize its transition strategy and convey its ESG management initiatives to stakeholders. These include business partners, shareholders and other investors, governments, communities, and employees. The IHI Group will endeavor to deepen

stakeholder engagement by disseminating information in issuing bonds, helping reach Sustainable Development Goals and ultimately contributing to a sustainable economy.

### **3.2 Business Model Environmental Materiality (Transition Finance Handbook Element 2)**

#### **1) Environmentally Material Business Activities**

In “Project Change”, the IHI Group strives to create “economies in which nature and technology are in harmony” in the near future. By setting this goal, the social issues we need to address along with the values we aim to provide have been clarified. Our material issues have been re-identified and revised according to each of its significance in social issues of “Project Change”: Becoming carbon-free, disaster prevention and mitigation, and fulfilling lifestyles. Thus far, our material issues have been categorized as those “founded upon business operations” and those “pursued through business operations”; however, both categories have been mutualized as material issues which shape what the IHI Group envisions to achieve. 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 CO<sub>2</sub> emissions throughout the entire life cycle. The IHI Group monitors the environmental impact from business activities at our plants, offices and other business establishments to help us reduce CO<sub>2</sub> emissions.

#### **2) Identifying Material Businesses**

The IHI Group set a carbon-neutral world as the highest transition risk and 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). Based on the two scenarios, the IHI Group identified risk and opportunities of four business domains (the energy business, vehicle turbocharger business, bridge and water gate business, and the civil aero engine business) and assessed the impact each business has. At last the IHI Group drafted countermeasures according to our findings.

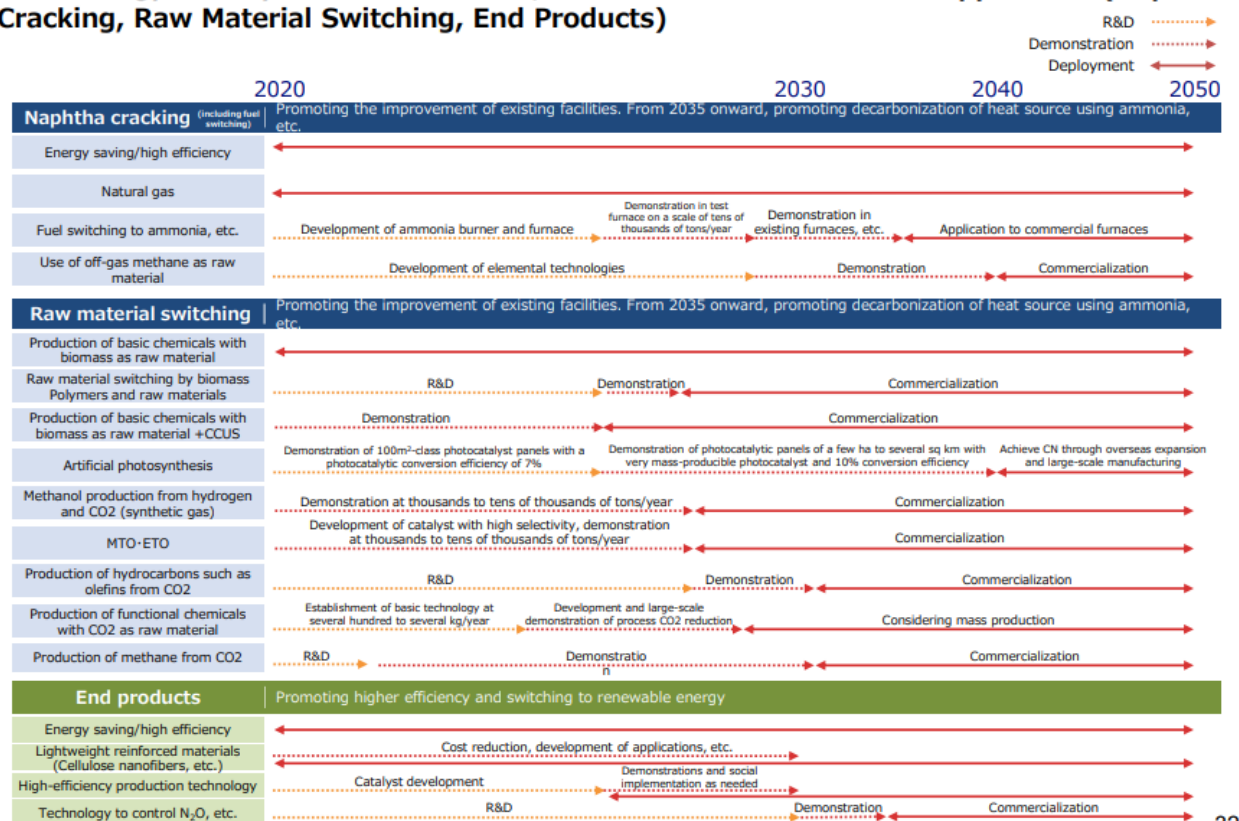
The IHI Group will proactively incorporate the concepts pursued by TCFD signatories in management policies and business strategies. These policies and strategies will contribute to the development of a sustainable corporate group and society at large.

### **3.3 Climate Transition Strategy to be Science-Based Including Targets and Pathways (Transition Finance Handbook Element 3)**

Under IHI Group ESG Management, which the IHI Group announced in November 2021, we seek to make our entire value chain carbon-neutral by 2050. Our CO<sub>2</sub> reduction target is science-based and in line with the technology roadmap for the chemical sector for transition finance that the Ministry of Economy, Trade and Industry formulated in December 2021, the Transition Roadmap for Decarbonization of the Electricity Sector that this ministry produced in December 2021, and the ministry’s technology roadmap for transition finance in the gas sector. It is also in keeping with International Shipping Zero Emissions Roadmap, which the Ministry of Land, Infrastructure, Transport and Tourism formulated in March 2020, a Process Chart for Decarbonizing of Aircraft (Conference on Reducing CO<sub>2</sub> in the Aircraft Operation Field) formulated in December 2021. Our approach is also consistent with the roadmap (Net-Zero Carbon Emissions by 2050 resolution that the International Air Transport Association adopted in October 2021 in keeping with Paris Agreement targets.

<Technology Roadmap for "Transition Finance" in Chemical Sector>

3. Technology Pathways to Decarbonization | Reference: Flow to Practical Application (Naphtha Cracking, Raw Material Switching, End Products)



<Transition Roadmap for the Electricity Sector : Ministry of Economy, Trade and Industry>

Please refer the website of Ministry of Economy, Trade and Industry

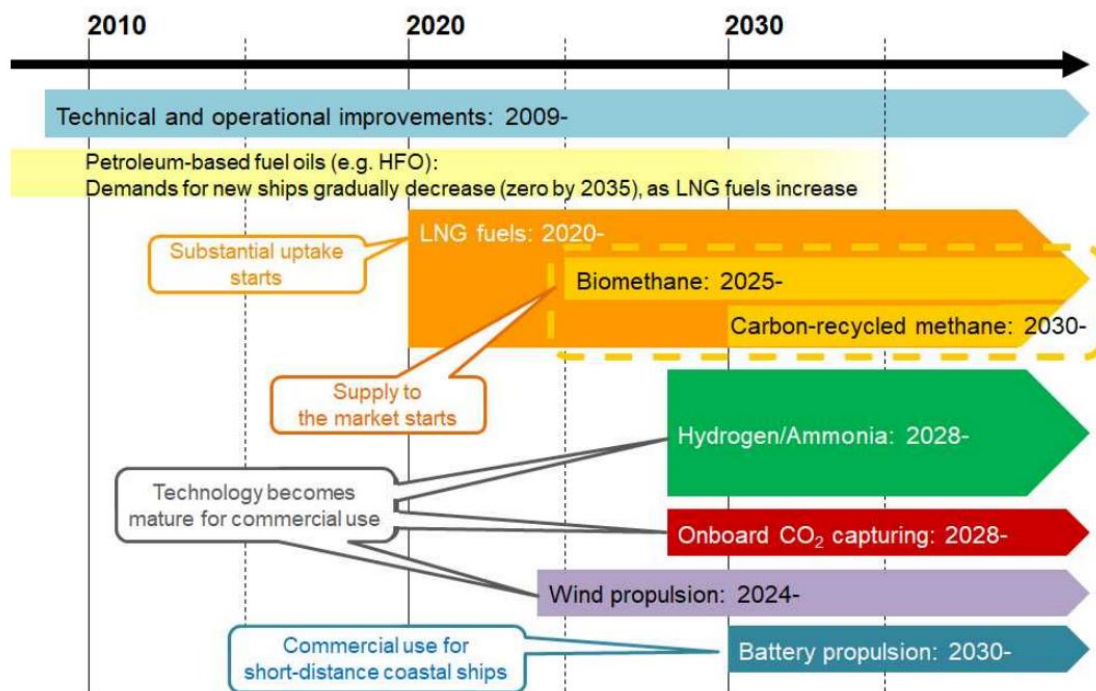
[https://www.meti.go.jp/policy/energy\\_environment/global\\_warming/transition/transition\\_finance\\_roadmap\\_electric\\_jpn.pdf](https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_roadmap_electric_jpn.pdf) (P21, Japanese)

<Technology Roadmap for "Transition Finance" in Gas Sector : Ministry of Economy, Trade and Industry>

Please refer the website of Ministry of Economy, Trade and Industry

[https://www.meti.go.jp/policy/energy\\_environment/global\\_warming/transition/transition\\_finance\\_roadmap\\_gas\\_jpn.pdf](https://www.meti.go.jp/policy/energy_environment/global_warming/transition/transition_finance_roadmap_gas_jpn.pdf) (P69-70, Japanese)

<Roadmap to Zero Emission from International Shipping (Assumptions about changes in the fuel used by ships) : Ministry of Land, Infrastructure, Transport and Tourism>



<Process Chart for Promoting Decarbonization of Aircraft (Conference on Reducing CO<sub>2</sub> in the Aircraft Operation Field) :Ministry of Land, Infrastructure, Transport and Tourism>

Please refer the website of Ministry of Land, Infrastructure, Transport and Tourism

<https://www.mlit.go.jp/common/001445923.pdf> (Japanese)

## <Net zero carbon 2050 resolution: IATA (The International Air Transport Association.)>

### Milestones towards net zero

The below table illustrates a potential set of estimated milestones towards net-zero, including the mix of abatement measures ('pathways') and some noteworthy actions envisaged.

DATE	AMOUNT OF CO <sub>2</sub> ABATEMENT	PATHWAY	ACTION
2025	<b>381 megatonnes (Mt)</b> (2021-2025)	97% offsets, 2% SAF, 1% improvements above business as usual (BAU)	ICAO agree long-term goal for international aviation (2022); energy sector commits to at least 6 million tonnes SAF production; agreement of full implementation of Article of Paris Agreement
2030	<b>979 Mt</b> (2026-2030)	93% offsets; 5% SAF, 2% Improvements above BAU	Use of 100% SAF on aircraft, ANSPs fully implement ICAO Aviation System Block upgrades to deliver fuel efficiency improvements of 0.3% by 2030
2035	<b>1,703 Mt</b> (2031-2035)	77.5% offsets, 17.5% SAF, 3% improvements above BAU, 2% Carbon Capture Utilization and Storage (CCUS)	Evolutionary technology achieving 30% reduction in fuel burn, electric/hydrogen aircraft for regional markets (50-100 seats, 30-90 min flights) become available
2040	<b>3,824 Mt</b> (2036-2040)	44.5% offsets, 40% SAF, 7.5% non drop-in fuel (new propulsion technologies), 5% CCUS, 3% improvements above BAU	Feasibility of new aircraft such as blended-wing bodies demonstrated with full-scale working prototypes, electric/hydrogen for short-haul markets (100-150 seats, 45-120 min flights) become available.
2045	<b>6,153 Mt</b> (2041-2045)	55% SAF, 24% offsets, 10% non drop-in fuel, 8% CCUS, 3% improvements above BAU	Necessary infrastructure for new energy requirements (low carbon electricity/hydrogen) becomes available
2050	<b>8,164 Mt</b> (2046-2050)	65% SAF, 13% non drop-in fuel, 11% CCUS, 8% offsets, 3% improvements above BAU	Commercially viable annual SAF production of 449 billion litres available



### 3.4 Implementation Transparency (Transition Finance Handbook Element 4)

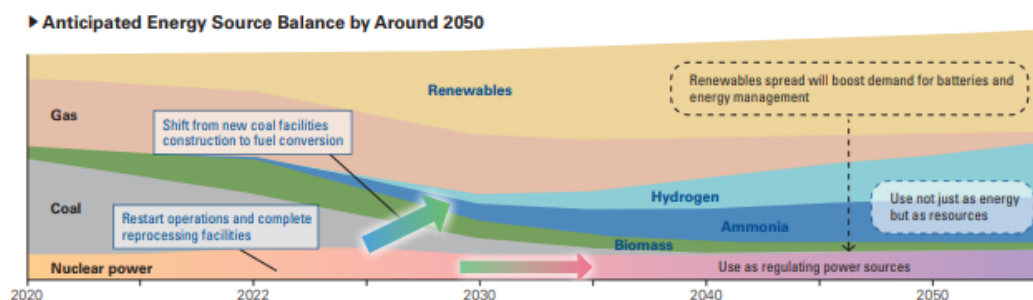
The IHI Group plans to invest a total of around ¥380 billion over three years from fiscal 2020. We will allocate more than 30% of that amount to create growth businesses, such as to develop hydrogen- and ammonia-related and electrification technologies. We have based that approach on business environment forecasts, (notably for balancing energy sources, automobile unit sales, and aviation technologies) in light of a range of external scenarios (including for the International Energy Agency and the Basic Energy Plan). In fiscal 2021, for example, the New Energy and Industrial Technology Development Organization provided grants to JERA Co., Inc., and the IHI Group to launch a demonstration project for technology to increase the ammonia co-firing rate at the Hekinan Thermal Power Station and to the IHI Group to develop a wholly liquid ammonia-fueled gas turbine that is free of CO<sub>2</sub> emissions. In electrification technology development, we signed a technical collaboration agreement with Graz Austria-based AVL LIST GmbH to develop an electric turbocharger for fuel cell systems. The first step under that accord will be to install an IHI electric turbocharger in the Hytruck\* fuel cell system for commercial vehicles AVL is developing. To help reduce aircraft CO<sub>2</sub> emissions, the IHI Group proposed More Electric Architecture for Aircraft and Propulsion, which encompasses both equipment and engine electrification, as part of efforts to slash fuel consumption by optimizing aircraft systems.

\*Name of Austrian government-supported AVL development project

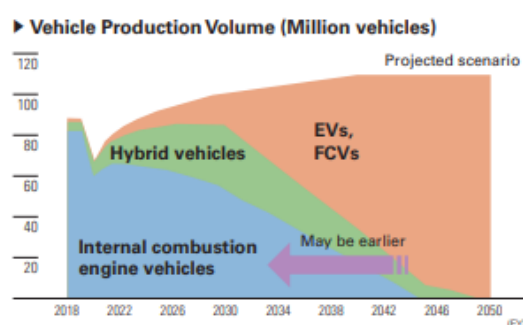
<3-year investment plans (Fiscal 2020 to 2022)>



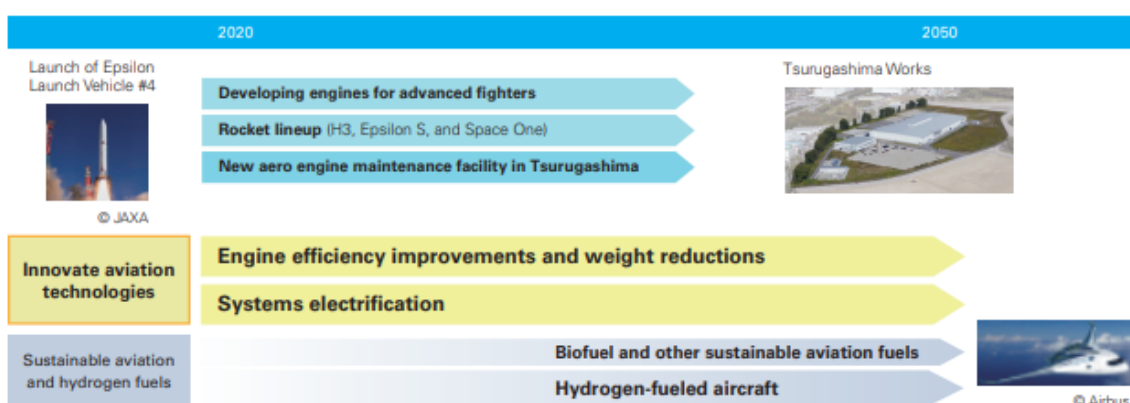
<Business Environment Outlook①: Energy Source Balance>



## <Business Environment Outlook②: Vehicle Sales Volume>



## <Business Environment Outlook③: Aircraft-Related Technology>



At this juncture, the IHI Group does not expect any of these investment areas to impede fair transitions. We will disclose information as needed if requiring future investments equivalent to the just transition .

## 4. Alignment with Four Elements of the Relevant International Capital Market Association Principles (for Bonds with Specific Proceeds Usages)

### 4.1 Use of Proceeds

#### 1) Eligible Projects


The IHI Group will use proceeds from its transition bonds for new and existing expenditures, (such as for technology and product development costs, capital expenditures, and capital investment spending) relating to qualified projects meeting the following four eligibility criteria. The refinancing of existing expenditure is limited that within two years of transition bond funding.





#### <Eligible Criteria>

	Criteria	Project	Overview
1	Electrification	Initiatives for Zero Emission Mobility	Promote the realization of environmentally friendly mobility through technological development and product development related to electrification and electrical systemization (Use of proceeds: Research and Development, Business Development, Capital Expenditure and miscellaneous cost relevant to above mentioned projects.

	Criteria	Project	Overview
2	Carbon Solutions	Initiatives for Ammonia Exclusive Firing and Establishment of an Ammonia Value Chain	Expanding the use of ammonia to realize early CO <sub>2</sub> reductions, and aiming to make power generation carbon neutral by developing green ammonia production technologies (Use of proceeds: Research and Development, Business Development, Capital Expenditure and miscellaneous cost relevant to above mentioned projects.)
		Realization of carbon recycling	Efficiently recycle carbon derived from non-fossil carbon sources, and aim to make fuel and raw materials carbon neutral by converting carbon into valuable resources, etc.
		Demonstration of Small Modular Reactor Technology through International Collaboration	Aiming to promote the basis of safe and secure nuclear power as a power source without CO <sub>2</sub> for the elimination of CO <sub>2</sub> (Use of proceeds: Capital Contribution)
3	Integrated Social Solutions for Maintenance and disaster prevention mitigation	Building Regional Solutions Based on Data Collaboration	Realize a sustainable local community by providing solutions including H/W from data collection for the challenges faced by local communities in each region, such as disaster prevention, aging, and industrial development (Use of proceeds: Research and Development, Business Development and Capital Contribution)
4	Reducing CO <sub>2</sub> Emissions in Business Operations (SCOPE1,2)	Reducing CO <sub>2</sub> Emissions in Business Operations	Promote low-carbon production by switching to fuels for heat source equipment at business sites, promoting electrification, and upgrading to energy efficiency equipment. (Use of proceeds: Capital expenditure and miscellaneous cost relevant to the projects)

<Alignment of Criteria with SDGs>

SDGs Goals and Targets			Criteria
	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	1 Electrification 2 Carbon Solutions
	7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3	By 2030, double the global rate of improvement in energy efficiency	
	7.a	By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	

SDGs Goals and Targets		Criteria
	<p>9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all</p> <p>9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities</p> <p>9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending</p>	<p>1 Electrification</p> <p>2 Carbon Solutions</p> <p>3 Integrated Social Solutions for Maintenance and disaster prevention mitigation</p>
	<p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p> <p>12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment</p> <p>12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</p>	<p>1 Electrification</p> <p>2 Carbon Solutions</p> <p>3 Integrated Social Solutions for Maintenance and disaster prevention mitigation</p> <p>4 Reducing CO<sub>2</sub> Emissions in Business Operations (Scope1,2)</p>
	<p>13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries</p>	<p>1 Electrification</p> <p>2 Carbon Solutions</p>
	<p>17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed</p> <p>17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships</p>	<p>1 Electrification</p> <p>2 Carbon Solutions</p> <p>3 Integrated Social Solutions for Maintenance and disaster prevention mitigation</p>

## 2) Possible Drawbacks and Approach

While the IHI Group does not expect any drawbacks from projects to which it allocates funds, its evaluation and selection processes for each of them reflect potential negative environmental and social impacts. It also confirms that facilities and projects are properly certified, licensed, and adhere to local environmental assessment procedural requirements where they are to be installed.

## 4.2 Project Evaluation and Selection Process

IHI's Finance & Accounting Division, after consultation with business areas, SBUs, the Corporate Planning Division, etc., selects eligible criteria described in "4.1 Use of Proceeds" and target project candidates, and the General Manager of Finance & Accounting Division makes a final decision. In the operation and implementation of projects, we will cooperate with the relevant divisions and regularly monitor them in PDCA cycle.

## 4.3 Procured Fund Management

Transition Bond funding and asset linkage, as well as the management of funding appropriations, are tracked and managed by IHI's Finance & Accounting Division throughout the internal management process. Tracking results are generally scheduled to be confirmed by the General Manager of the Finance & Accounting Division on a quarterly basis. Until the proceeds from the Transition Bonds are appropriated, they will be managed in cash or cash equivalents.

We confirm that appropriated and unused funds are properly balanced through quarterly internal audits and quarterly reviews by quarterly auditors and accounting audits, in addition to the tracking management within the IHI Group

## 4.4 Reporting

### 1) Fund Appropriation Reporting

With respect to funded status, we will disclose the funded status on our website once a year until the proceeds from the Transition Bonds are fully funded.

If, even after the completion of the funding, a project subject to the funding is subject to an event that differs from our initial assumptions, we will promptly disclose on our website the event and the status of the funding accrual.

### 2) Impact Reporting

Until the redemption of the Transition Bonds, we will announce the following once a year on our website.

	Project	Reporting
1	Initiatives for Zero Emission Mobility	Report the outline of technologies and products, outline and progress of R&D plans and participating projects, etc., and explanations of targeted effects, etc. to the extent possible for disclosure
2-1	Initiatives for Ammonia Exclusive Firing and Establishment of an Ammonia Value Chain	Report the outline of technologies and products, outline and progress of R&D plans and participating projects, etc., and explanations of targeted effects, etc. to the extent possible for disclosure
2-2	Realization of carbon recycling	Report the outline of technologies and products, outline and progress of R&D plans and participating projects, etc., and explanations of targeted effects, etc. to the extent possible for disclosure
2-3	Demonstration of Small Modular Reactor Technology through International Collaboration	Report to the extent that disclosure is possible, such as the outline of technologies and products, and the progress and results of the business
3	Building Regional Solutions Based on Data Collaboration	Report the outline of technologies and products, outline and progress of R&D plans and participating projects, etc., and explanations of targeted effects, etc. to the extent possible for disclosure

	Project	Reporting
4	Reducing CO <sub>2</sub> Emissions in Business Operations	Report on activities to reduce CO <sub>2</sub> and their effectiveness to the extent practicable.

### 3) Reporting on All Aspects of IHI's Business

The IHI Group began publishing the IHI Integrated Report, bringing together the Annual Report and CSR Report, in 2015. We also produce the IHI Sustainability Data Book, which discloses detailed and comprehensive information on Group sustainability policies, stances, structure, and performance.

- IHI Integrated Report  
[https://www.ihi.co.jp/en/ir/ir\\_library/annual/index.html](https://www.ihi.co.jp/en/ir/ir_library/annual/index.html)
- IHI Sustainability Data Book  
<https://www.ihi.co.jp/csr/english/download02/index.html>

### 4) Reporting on Financial Position

IHI discloses securities reports and results information on its website.

- Securities reports and results information  
[https://www.ihi.co.jp/en/ir/ir\\_library/index.html](https://www.ihi.co.jp/en/ir/ir_library/index.html)

#### <References>

- I. Green Bond Principles (International Capital Market Association, 2021)
- II. Green Bond Guidelines (Ministry of the Environment, 2020)
- III. Climate Transition Finance Handbook 2020 (International Capital Market Association, 2020)
- IV. Basic Guidelines on Climate Transition Finance (Financial Services Agency, Ministry of Economy, Trade and Industry, and Ministry of the Environment, May 2021)
- V. IHI Integrated Report 2021 (October 2021)
- VI. IHI Sustainability Data Book (August 2021)
- VII. Securities Report
- VIII. IHI website (<https://www.ihi.co.jp/en/>)