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MATERIALITY BOOK 2022

Materiality 2022

Hitachi High-Tech's Materiality

The Hitachi High-Tech Group has identified five themes as materiality to be addressed to solve social issues, based on the Sustainable Development Goals (SDGs), which are positioned as common rules and goals to be achieved by the international community.
To respond to changes in the social environment and continue to be a company that is needed by society, it is essential to accelerate our efforts to address materiality, and in January 2022 we formulated the "Sustainability 2030" declaration*.

*Published externally in June 2022.

Sustainability 2030

We, the Hitachi High-Tech Group, will contribute to the realization of "a sustainable global environment", "healthy, safe, secure lives", and "sustained development of science and industry". We will keep growing with our customers and partners by utilizing our Observation, Measurement, and Analysis systems on the basis of a sound management foundation which enables diverse human resources to actively participate and thrive.

Hitachi High-Tech's Five Areas of Materiality

Materiality 1
Contributing to a sustainable global environment

Materiality 2
Contributing to healthy, safe, secure lives

Materiality 3
Contributing to the sustained development of science and industry

Materiality 4
Establishing a sound management foundation

Materiality 5
Developing and utilizing diverse human resources

Materiality, Activity Goals and related SDGs

Materiality	Activity Goals	Related SDGs
1 Contributing to a sustainable global environment	1 Realize a decarbonized society 2 Realize a recycling-oriented society 3 Realize a society in harmony with nature	13 CLIMATE ACTION
2 Contributing to healthy, safe, secure lives	1 Expand access to preventive medicine 2 Ensure the safety of water and food 3 Ensure the safety of social infrastructure	3 GOOD HEALTH AND WELL-BEING 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
3 Contributing to the sustained development of science and industry	1 Development of science and technology 2 Achieving resilience at production sites	4 QUALITY EDUCATION 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
4 Establishing a sound management foundation	1 Realize sound governance 2 Ensure product safety 3 Realize a CSR-based supply chain	12 RESPONSIBLE CONSUMPTION AND PRODUCTION 17 PARTNERSHIPS FOR THE GOALS
5 Developing and utilizing diverse human resources	1 Promote diversity management 2 Promote diverse cultivation of human resources 3 Ensure healthy, safe workplace environments	5 GENDER EQUALITY 8 DECENT WORK AND ECONOMIC GROWTH

Note: Of the 17 goals and 169 targets of the SDGs, we have selected those to which the activity goals of Materiality can contribute directly. We will also contribute indirectly to other goals.

Process of Identifying Materiality

STEP 1
Identifying Social Issues

Prepare a list of social issues taking into account the SDGs, ISO 26000*1 and results of in-house surveys, etc.

STEP 2
Evaluating the Importance of Social Issues

Prioritize social issues identified in Step 1 from the perspective of societal demands and their importance to business.

STEP 3
Preparing the Draft Materiality

Collate and prioritize the social issues and prepare a draft of materiality that the Hitachi High-Tech Group should address, incorporating a social issue orientation and a view to what is optimal for the Group.

STEP 4
Assessing the Validity of the Draft Materiality

To ensure objectivity of draft materiality, conduct an exchange of opinions with outside experts in assessing its validity

STEP 5
Identifying Materiality

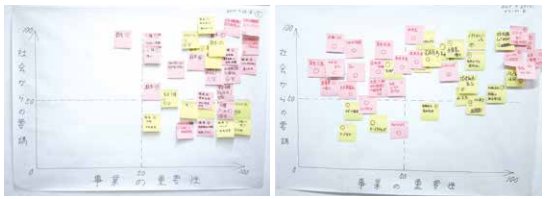
Submit the draft materiality to the CSR Promotion Committee*2, in which management participates, and identify Materiality.

Formulation of "Sustainability 2030" declaration in 2022

[Participants in the discussion sessions]

The heads of each business group, planning and development divisions, and the general managers and managers of other relevant corporate divisions

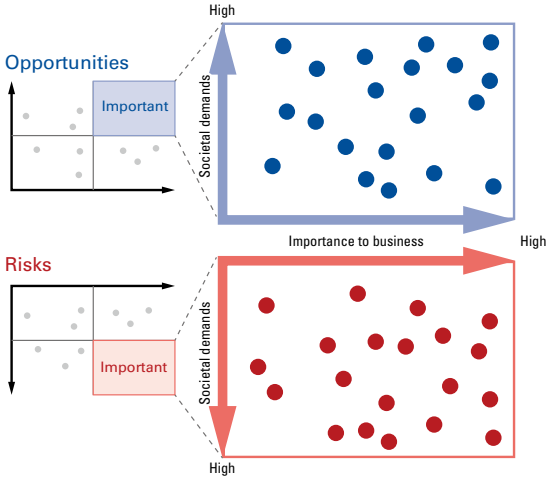
Discussion session



Examples of materiality evaluation maps organizing social issues made by groups in terms of opportunities and risks

[Participants in the discussion sessions]

The general managers and managers of the strategy divisions of each business group and relevant corporate divisions



The materiality evaluation maps created in Step 2 were discussed again, with social issues identi¬fied as particularly important in terms of opportunities and risks serving as the base for preparing the draft materiality.

Sustainability 2030

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Hitachi High-Tech's Five Areas of Materiality

- **Materiality 1**: Contributing to a sustainable global environment
- **Materiality 2**: Contributing to healthy, safe, secure lives
- **Materiality 3**: Contributing to the sustained development of science and industry
- **Materiality 4**: Establishing a sound management foundation
- **Materiality 5**: Developing and utilizing diverse human resources

Identified materiality

*1 ISO 26000: An international standard regarding the social responsibilities of organizations, published by the International Standards Organization (ISO) in 2010.

*2 CSR Promotion Committee: The committee responsible for discussing the Hitachi High-Tech Group's CSR activities in general and deliberating CSR measures.

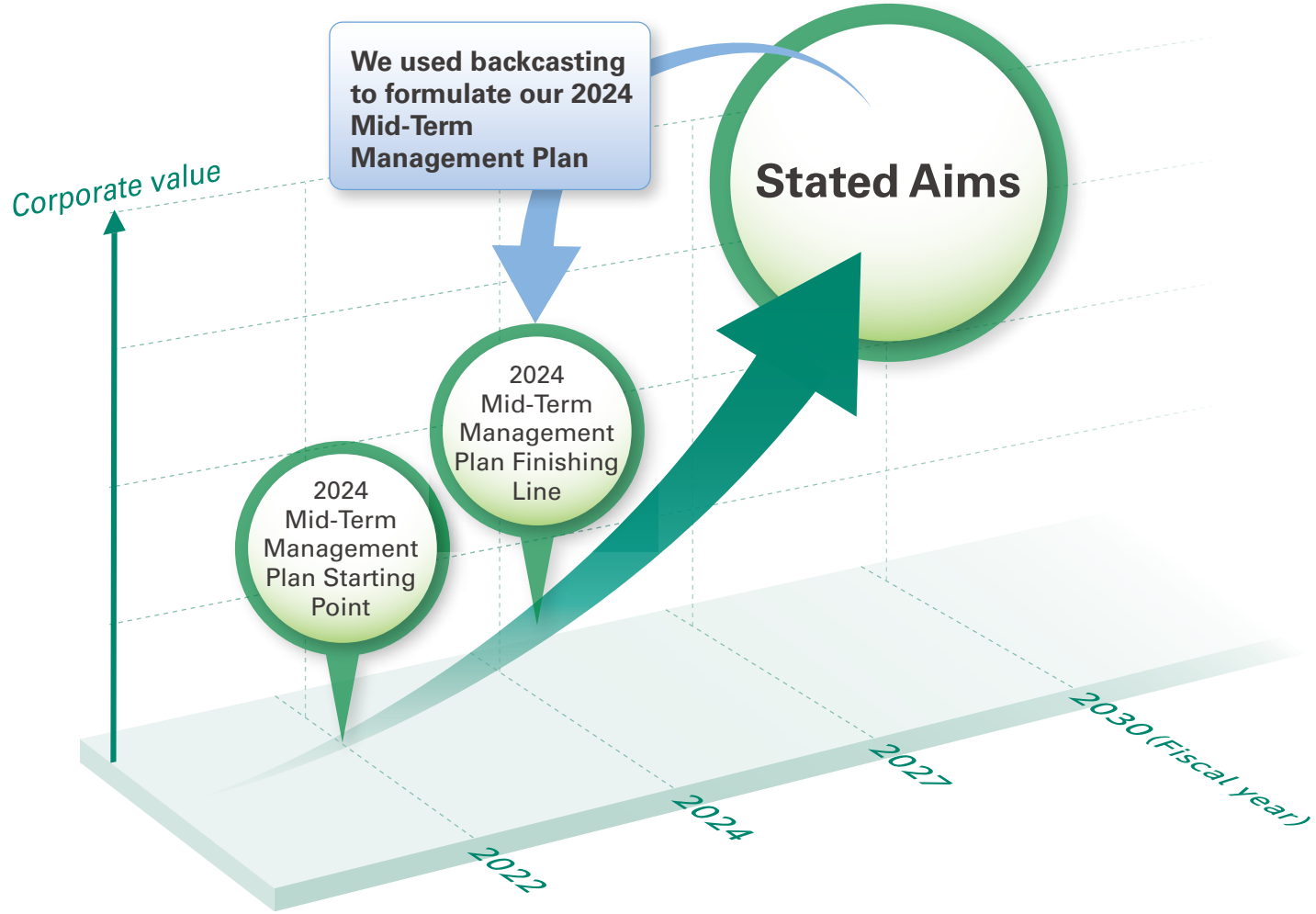
Concepts Underlying Our Formulation of the 2024 Mid-Term Management Plan

Based on the "Sustainability 2030" declaration, the Hitachi High-Tech Group has formulated the 2024 Mid-Term Management Plan, backcasting from its Stated Aims in 2030. We will continue to contribute to the realization of a sustainable society by solving social issues through our core technologies of Observation, Measurement, and Analysis.

Background to Our Formulation of the 2024 Mid-Term Management Plan

The importance of solving social issues pertaining to the "environment, resilience, and safety and security," such as the increasing threat of climate change, pandemics, and geopolitical risks, is growing more intense. In light of these circumstances, we at Hitachi High-Tech believe that the need for our strengths in Observation, Measurement, and Analysis technologies will continue growing in the future, and that these strengths will be indispensable to solving social issues.

In line with these changes in our social environment and expansion in business opportunities, we at Hitachi High-Tech upheld our "Sustainability 2030" declaration to clarify our future stated aims and to demonstrate our stance of creating value driven by social issues. We formulated this 2024 Mid-Term Management Plan by backcasting from our Stated Aims for 2030.



Stated Aims in Each Business Segment

Sustainability 2030

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Stated Aims for 2030 in Each Business Segment

Analytical & Medical Solutions

As the demand for improved quality of medical care and early treatment increases toward 2030, Hitachi High-Tech will provide molecular diagnostic solutions that make full use of genetic testing and genome information analysis technology in addition to biochemical and immunological testing in in-vitro diagnostics. Our aim is to improve the value of medical care from the patient’s perspective and advance the diagnosis of cancer and other intractable diseases, thereby contributing to improving the quality of life.

Nano-Technology Solutions

There is demand for higher performance and lower power consumption of semiconductors as well as a reduction in power consumption during manufacturing. as digitalization progresses in all industries and the use of semiconductors continues to grow. As it moves toward 2030, Hitachi High-Tech will provide solutions for semiconductor manufacturing and reduce its environmental impact, thereby contributing to the advancement of the digital society and the realization of a decarbonized society.

Value Chain Solutions

We will solve the issues faced by the engineering chain and the supply chain in various industrial fields as we move toward 2030 and the need to build a circular economy, in other words, a circular value chain. We will contribute to the realization of a circular and decarbonized society by leveraging our front office capabilities and co-creating with customers.

Core Technology Solutions

Hitachi High-Tech will strengthen its fundamental and core technologies as molecule management becomes increasingly important in all industries. We will continue to create measurement and inspection solutions to solve customer issues, thereby contributing to the provision of social and environmental value.

Designing a chain of business/operational indicators that lead to contribution to society

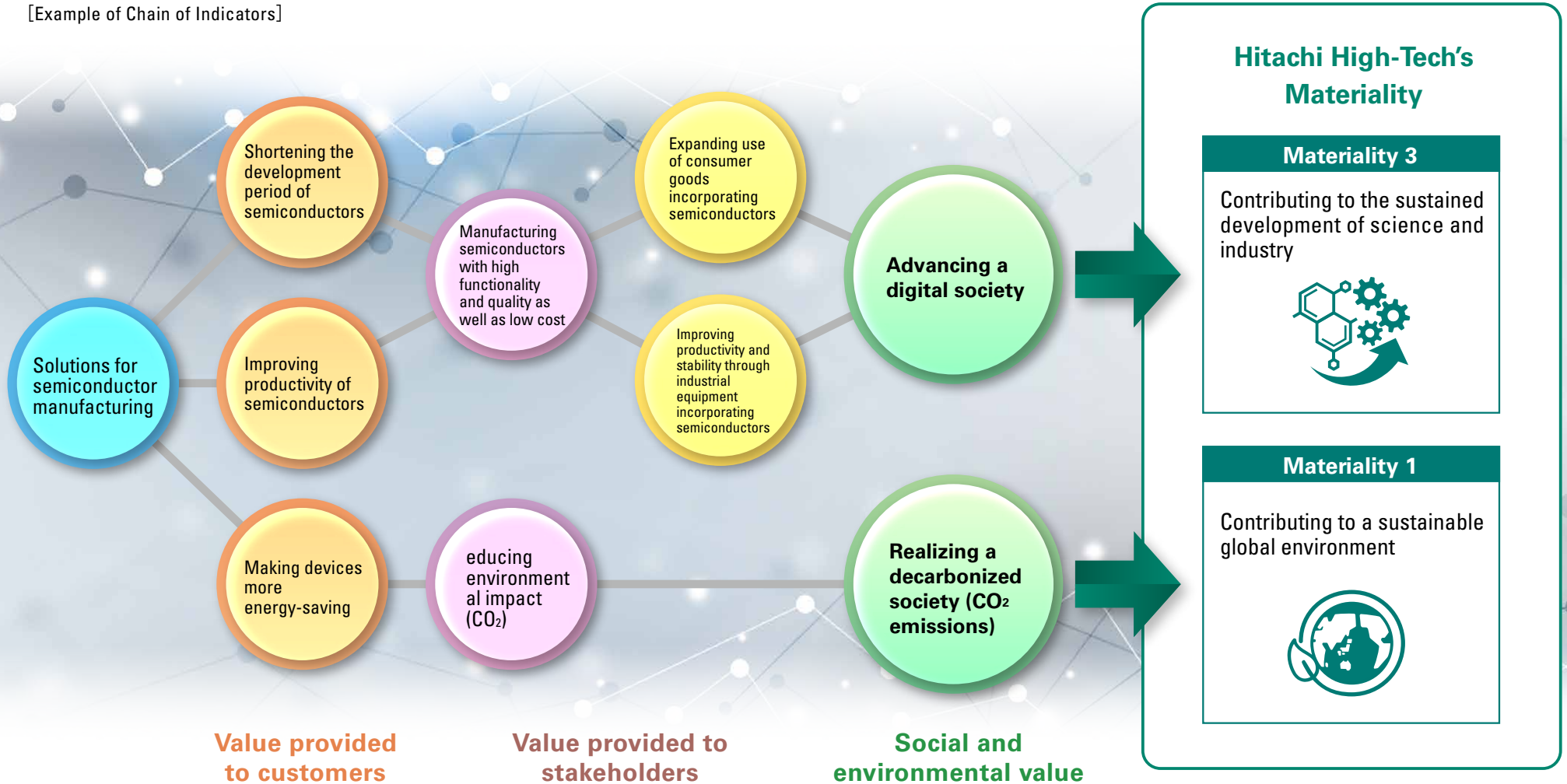
Chain of Indicators → 2024 Mid-Term Management Plan

Upholding “Sustainability 2030” declaration and Creating Value Driven by Social Issues

Chain of Indicators

We outline below how each business and operational indicator creates value and leads ultimately to a contribution to society. We also show their linkage to materiality as well as the chain of elements in this process. Our aim is to depict a more concrete image of contributing to the realization of a sustainable society through the resolution of social issues.

[Example of Chain of Indicators]



Materiality

1

Contributing to a sustainable global environment

[Basic Ideas and Visions]

Corporate management in harmony with the global environment plays an important role in the sustainable development of society and companies. In addition to reducing resource and energy consumption as well as the environmental impact associated with business activities, the Hitachi High-Tech Group aims to achieve sustainable consumption and production through the provision of environmentally conscious products and services as well as initiatives throughout the value chain.

[Action Targets]

1 Realize a decarbonized society

To reduce CO_2 emissions from energy consumption associated with our business activities, we aim to achieve carbon neutrality at its sites by systematically investing in environmental equipment that has a meaningful impact on reducing CO_2 emissions and by actively promoting the use of renewable energy. We will also endeavor to reduce CO_2 throughout the value chain, including Scope 3 (CO_2 emissions from sites other than our own) emissions and our customers' contribution to CO_2 reduction.

2 Realize a recycling oriented society

Hitachi High-Tech strives to effectively use water, conserve resources, and reduce waste in its business activities. Specifically, we will reduce the amount of water used in factories and use fewer resources in the manufacture of products through the adoption of environmentally conscious design (eco-design) in products. In addition, with the aim of realizing a circular economy, we will work to develop and provide customers with solutions that contribute to resource recycling.

3 Realize a society in harmony with nature

In order to reduce the negative impact of business activities on natural capital, we will work to reduce the negative impact of chemical substance emissions, and aim to realize a rich future for both people and nature. We will work on biodiversity conservation activities such as forest conservation activities that will increase the positive impact.

[Action Plan]

	Content of Initiative	Social and Environmental Value	FY2022 Plan	FY2024 Plan	Activity Targets	Responsible Business Segment
1	Provide high-performance, low-cost semiconductor manufacturing and testing solutions	• Contribute to curbing CO_2 emissions increase due to the advance of digital society • Contribute to curbing CO_2 emissions increase due to power consumption in the manufacture and use of semiconductors	• Develop new equipment with improved power savings and processing capacity • Develop and apply replacement parts that can reduce power consumption of existing equipment that continues to be manufactured and sold	• Initiatives toward the release of new equipment that saves power and improves processing capacity • Reduce CO_2 emissions per wafer produced • Reduce the amount of discarded parts by extending the service life of periodically replaced parts	1	Analytical & Medical Solutions
2	Provide measurement and inspection solutions in the R&D of materials to help achieving carbon neutrality	• Contribute to the realization of a decarbonized society	• Continue to provide measurement and inspection solutions • Automate particle measurement and material analysis for batteries, catalysts, electronic materials, and contaminants • Collaborate with companies, universities, and research institutes in various countries on R&D of next-generation materials	• Expand the geographic reach of our solutions • Continue initiatives to improve automation of measurement and analysis functions		Value Chain Solutions
3	Provide solutions that contribute to manufacture of safe and inexpensive LiBs that drive electrification and development of next-generation LiBs	• Contribute to the spread of decarbonized mobility	• Develop LiB manufacturing facilities with high mass production performance • Reduce the defect rate, power consumption, and waste materials by detecting contaminants with high accuracy in the LiB raw material intake and manufacturing processes • Dispatched engineers to battery manufacturers aiming to develop next-generation LiBs to provide technical support	• Expand the range of LiB manufacturing equipment users • Significantly reduce the defect rate through DX-driven 100% inspection of the entire manufacturing process, including upstream processes • Develop next-generation LiB manufacturing facilities		Nano-Technology Solutions Core Technology Solutions
4	Develop and provide solutions to increase corporate value for customers in the value chain, including lithium-ion battery reuse/recycling and manufacturing for commercial EV fleet management operators and similar companies*1	• Promote the transition to EVs • Extend the life of lithium-ion battery resources • Make effective use of valuable metals • Reduce the environmental impact of production and recycling processes	• Develop remote degradation diagnostic services for on-board automotive lithium-ion batteries and propose solutions to customers • Identify customer issues and create solutions for the entire commercial EV vehicle value chain	• Together with partners on a global basis, provide these solutions to the value chain of EVs and lithium-ion batteries, including recycling and energy storage companies as well as car leasing companies and other fleet operators	1 2	Others
5	Develop and provide new manufacturing methods that enable the production of aluminum products using recycled materials	• Contribute to the realization of aluminum recycling in manufacturing	• Implement demonstration testing and commercialize a new aluminum sheet process method (aluminum hot stamping) that can withstand the use of 100% recycled materials • Apply 100% recycled aluminum sheet to products (including chairs, shovels, etc.)	• Expand products using 100% recycled aluminum sheet • Expand target products: EV and compact mobility (including two-wheeled vehicles) related body parts, door panels, etc. • Expand target customers and regions served	2	

*1 Transportation, bus, taxi, rental car, and leasing companies as well as and other businesses that operate a large number of vehicles for the purpose of moving people and goods.

Action Targets 1

Realize a decarbonized society

FY2021 Results

Hitachi High-Tech Group's initiatives to achieve carbon neutrality

Amid strong demand for measures to stem global warning and climate change, the Hitachi Group has set a carbon neutral goal of a state of zero CO_2 emissions from its factories and offices by FY2030.

We were one of the first in the Hitachi Group to achieve carbon neutrality at seven of our business sites. Two additional sites achieved carbon neutrality in FY2021: Hitachi High-Tech Solutions Mito Works and Hitachi High-Tech Manufacturing & Service (6th Branch Office). As a result, CO_2 emissions in FY2021 were 27,700 t-CO_2, a 35% reduction versus FY2019.

Initiatives toward achievement of the 2024 Mid-term Management Plan

1 Provision of semiconductor manufacturing and inspection solutions

Contribute to the decarbonization of a digital society by working to reduce CO_2 emissions in semiconductor manufacturing

Hitachi High-Tech provides equipment for the processing, inspection, and measurement processes in semiconductor manufacturing. The semiconductor industry is currently facing the challenge of increasing CO_2 emissions, including higher power consumption, as demand for semiconductors grows. We are addressing these issues both for equipment that we are currently manufacturing and selling and for that under development. For existing equipment, we will reduce CO_2 emissions by developing replacement parts that can reduce power consumption. In new products, we will develop equipment with an emphasis on environmental load reduction from the development stage so as to curb power consumption. Another focus is to reduce CO_2 emissions per process by increasing productivity through measures such as extending the life of consumables, improving processing speed, and reducing maintenance time.

In addition to cutting CO_2 emissions during operation, Hitachi High-Tech's equipment contributes to the production of high-performance, low-cost semiconductors from a macro perspective, thereby helping to curtail CO_2 emissions associated with the advance of the digital society.

CG7300
FEB length measuring system for inspection and measurement of semiconductors

M-9010XT
Silicon etching equipment for semiconductor manufacturing

2 Provision of measurement and inspection solutions for carbon neutral materials

Support the development of next-generation materials to achieve carbon neutrality in a wide range of fields

Achieving carbon neutrality will require an unprecedented and drastic transformation. Turbines and engines have traditionally been used to generate electrical energy. Yet the development of materials controlled at the nano level is required to increase the power generation efficiency of solar cells that use natural energy and fuel cells that use hydrogen. In fuel cells, for example, which represent the next generation of energy, catalysts are indispensable in converting hydrogen and oxygen into water to generate electricity. We therefore provide electron microscopes for R&D of such catalysts. Other technologies that contribute to carbon neutrality, such as hydrogen, ammonia and methane utilization, and biomass promotion, require the development of micro- and nano-level materials.

Hitachi High-Tech utilizes its electron microscopes, technology, and knowledge to promote joint efforts with companies, universities, and research institutions in around the globe.

3 Provision of LiB manufacturing solutions

Promote the spread of EVs (electric vehicles) by contributing to providing safe LiBs (lithium-ion batteries) and development of next-generation LiBs through total solutions including R&D, manufacturing, and inspection processes

Gasoline and diesel vehicles are being replaced by EVs. For about 30 years, we have been providing manufacturing facilities for LiBs used as storage batteries for EVs and other applications. We are currently collaborating with equipment manufacturers to help make lower-priced EVs and increase battery capacity. We are also developing new LiB manufacturing facilities in cooperation with equipment manufacturers. In 2022, we started pre-engineering activities in which we dispatch our engineers to battery manufacturers who aim to develop next-generation LiBs to provide technical support. In LiB manufacturing, contamination by metallic particles accounts for the majority of defects and is an issue that also affects quality and safety. Defects also result in the disposal of rare metals and other raw materials. To address these issues, Hitachi High-Tech's electron microscopes and X-ray contaminant analyzers enable highly accurate raw material acceptance inspection and contaminant detection in the manufacturing process. Sampling inspections are the mainstream today, but in the future we aim to increase accuracy and conduct inspections throughout the entire production process, including all-unit inspections in the upstream processes.

Enhanced inspection accuracy will improve material yields, which is a currently a challenge. And a significant cut in the defect rate will translate to sharply reduced waste materials and lower costs, which in turn are expected to improve profitability and mass-productiveness. With its engineering and equipment development capabilities, Hitachi High-Tech will contribute to the diffusion of cheaper and safer EVs and the realization of a decarbonized and recycling-oriented society.

Roll press equipment used in the raw material process of LiB manufacturing
Hitachi Power Solutions Co., Ltd.

4 Lithium-ion Battery (LiB) Life Cycle Management

Provide DX solutions that enhance corporate value and create environmental value for customers in the value chain, starting with commercial EV fleet management operators, including LiB reuse/recycling and manufacturing

As demand for electrification of automobiles increases toward the realization of a global decarbonized society, the challenges are to promote the transition to EVs, extend the life of LiB resources, effectively use valuable metals, and reduce the environmental impact of LiB production and recycling processes. In particular, Hitachi High-Tech has developed "Remote Degradation Diagnostic Systems for On-board Automotive Lithium-ion Batteries," a service targeted at fleet management operators that handle commercial vehicles who view the realization of stable and efficient operation of LiBs as a looming issue for the transition to EVs. Two types of battery degradation diagnosis technologies developed by us (high-speed diagnosis and remote diagnosis) make it possible to monitor LiB degradation status, which has been difficult in the past. We aim to contribute to the overall battery life cycle by creating an environment in which end-of-life EV batteries can be reused and recycled into energy storage systems and other products. In addition to proposing this service to customers in Japan and around the world, we will uncover customer issues throughout the value chain, create solutions, and contribute to the realization of a decarbonized society.

Diagnosis of LiB degradation status

Action Targets 2 Realize a recycling oriented society

FY2021 Results

Reduction of water consumption and waste generation in the Group

As we seek to improve resource use efficiency, we have improved water consumption by 53% per unit and waste generation by 33% per unit. Our CDP*1 water risks continued to be "A- (leadership level)"*2 following on from FY2020.

Initiatives toward achievement of the 2024 Mid-term Management Plan

5 Provision of engineering services to recycle aluminum

Promote recycling business through aluminum hot stamping business using 100% recycled aluminum materials

Aluminum is used in various products and components. Together with one of its customers, Hitachi High-tech is testing a processing technology that enables an approximately 97% reduction in CO_2 emissions during alloy production by using recycled materials instead of new ingots as raw materials in the manufacture of aluminum sheets for use in presses. By developing a new aluminum hot stamping process technology (patent pending) that uses an aluminum sheet made of 100% recycled alloy and an aluminum press method to achieve the highest level of formability and dimensional accuracy, we will create aluminum products that are 100% recycled and significantly reduce CO_2 emissions in the manufacturing process. In addition, we will be proactively involved in building a value chain for these products, aiming to realize a circular economy that does not waste valuable resources by promoting the recycling business. In the future, we will promote commercialization, and in FY2022, we will first start by developing the product for daily necessities to gain public awareness, and in the future, we aim to expand it to automobiles (including EVs) and small mobility vehicles.

*1 CDP: A UK-based independent non-profit organization. It receives requests from investors around the world, and investigates, evaluates, and discloses information relating to companies' effects on climate change, water security, and forests.
*2 "A- (leadership level)": Discloses specific actions that recognize it as a leading company.

Action Targets 3 Realize a society in harmony with nature

FY2021 Results

Continue ecosystem conservation activities both in Japan and overseas, aiming to restore the richness of nature

We are working to create forests rich in biodiversity with the aim of realizing a society in harmony with nature. In FY2021, in the Woodlands of Hitachi High-Tech Science, a green space surrounding the R&D facilities at the Hitachi High-Tech Science Fuji Oyama Works, we conducted a survey of vegetation in each area and promoted the replacement of artificially planted cedar and cypress with heritage trees. Furthermore, an insect hotel has been established to provide a habitat for insects to make the area more habitable for living organisms. In China, we have been planting cherry trees on the premises of our business sites since April 2021 as part of a three-year plan and have also begun to improve the environment to make it more hospitable for a wide variety of living creatures.

Initiatives toward achievement of the 2024 Mid-term Management Plan

Aiming for a rich future for both people and nature, we will continue and expand our efforts and raise employee awareness

In FY2022, based on the survey conducted last year, we will start planting native species of trees in various locations where our activities are targeted. We will continue our tree planting activities and expand the area. Currently, it is said that 17% of the world's land and 10% of its oceans are protected, but there is a movement to raise this to 30% as a shared global goal. For this reason, national governments are encouraging conservation activities in green spaces and other areas owned and managed by companies. Companies that promote such activities are eligible for certification as "other effective area-based conservation measures" (OECMs). Hitachi High-Tech also supports this initiative and aims to become OECM certified. In the future, we intend to increase the participation and awareness of more employees by providing them with opportunities to participate in activities both in person and from home or other locations away from their workplaces in the post-COVID era. This is also expected to raise employees' awareness of the need to review their work and businesses in terms of biodiversity and global environmental conservation.

Materiality

2

Contributing to healthy, safe, secure lives

[Basic Ideas and Visions]

"Healthy, safe and secure lives" is a common desire for all people. By further mastering the "Observation, Measurement, and Analysis" (measurement and analysis technology) that we have cultivated up until now, the Hitachi High-Tech Group will contribute to a future where people can continue to live healthy and fulfilling lives, centered on three fields of medicine, water/food, and social infrastructure.

[Action Targets]

1 Expand access to preventive medicine

By developing and providing testing systems that enable highly-efficient diagnoses, we will help to shorten testing times, increase the number of people who receive health checkups, and reduce testing fees. In addition, by developing and providing clinical analyzers and genetic analysis systems, we will respond to the higher needs for personalized medicine and contribute to the promotion of preventive medicine and to curbing medical expenditures.

2 Ensure the safety of water and food

We will help prevent the accumulation of hazardous substances in water, food, the human body, and elsewhere by developing and providing testing systems specialized for specific markets. In addition, we will supply safe water and support people's safe lives by providing measurement systems for filtered water and drainage in water and sewage systems.

3 Ensure the safety of social infrastructure

By realizing non-destructive rapid diagnosis and predictive diagnosis for structures such as roadways, tunnels, railways, and airports, we will contribute to ensuring the safety of social infrastructure and support the safe lives of people.

[Action Plan]

	Content of Initiative	Social and Environmental Value	FY2022 Plan	FY2024 Plan	Activity Targets	Responsible Business Segment
1	Provide molecular diagnostic testing services and equipment that contribute to the diagnosis and treatment of intractable diseases (e.g., cancer)	• Contribute to the realization of both improvement of the quality of medical care and reduction of medical costs	• Collaborate with testing service companies to begin providing testing services to hospitals and laboratories. • Consider new testing equipment	• Launch a new inspection system and expand new inspection items with the system.	1	
2	Provide equipment and services to detect hazardous substances in products and materials	• Contribute to the prevention of the spread of substances that pose health hazards	• Continue to provide equipment and services for screening and testing for substances restricted under the RoHS Directive	• Develop and provide equipment and services to enable screening tests for additional (prospective) substances restricted under the RoHS Directive	2	
3	Provide engineering services for photonic integrated circuits (PICs) used in large-scale data centers and core communication networks	• Contribute to the development and heightened stability of telecommunications infrastructure	• Design, develop and provide PICs to meet new trends in high-speed and long-distance transmission equipment	• Design, develop and provide PICs used in various fields by utilizing new design technology	3	

Analytical & Medical Solutions
Nano-Technology Solutions
Value Chain Solutions
Core Technology Solutions

Action Targets 1

Expand access to preventive medicine

FY2021 Results

Providing products and services that support more efficient and faster inspection operations

We promoted the provision of testing equipment for small and medium-sized hospitals, which were launched in FY2020. This contributed to simplifying and streamlining testing, thereby contributing to prompt diagnosis. In FY2021, our immunoanalyzers continued to be used to detect antibodies of COVID-19 and are contributing to the prevention of the spread of the COVID-19 pandemic. In collaboration with Fujita Academy, we also continue to coordinate research that contributes to finding solutions for issues of technology, devices, and operational efficiency in the front lines of healthcare.

Clinical test devices used at hospitals, testing organizations, and so on

Initiatives toward achievement of the 2024 Mid-term Management Plan

1 Provide molecular diagnostic testing services and equipment

Contributing to the diagnosis and treatment of intractable diseases (cancer, etc.) by providing testing services and equipment in molecular diagnostics

Clinical trials are becoming increasingly important as information necessary for proper diagnosis of diseases and selection of therapeutic agents to tackle the social issues of ever-increasing medical costs and maintenance of the national health insurance system. Hitachi High-Tech is entering the molecular diagnostics business to address these challenges. As part of this effort, in May 2022, we began partnering with Invivoscribe, Inc., a US inspection service company. We will also continue our collaboration with Nabsys Inc. of the United States in the field of structural analysis of the human genome. In the future, we will not only continue to provide high-precision testing equipment for genes and proteins, but also test services that provide physicians and patients with test results that show the suitability and effectiveness of treatment and medication for individual patients. Hitachi High-Tech will also provide new value in the healthcare field through the fusion of leading-edge analysis and automation technology and digital technology.

Topic

Infectious Disease Testing Support Solutions

Aiming for early determination of treatment plans with less physical burden, where patients can receive appropriate and adequate doses of medication

The emergence of drug-resistant bacteria due to the abuse of anti-microbials and the repeated development of further new drugs, resulting in pandemics, is a worldwide problem. The Ministry of Health, Labor and Welfare has also announced that drug-resistant bacteria is projected to be the leading cause of death in 2050, so there is an urgent need to address this issue. Hitachi High-Tech's scanning electron microscopes enables it to capture minute changes in the shape of the bacteria in a short time and quickly identify whether the bacteria are resistant or not. The earlier the pathogens are identified, the sooner a treatment plan can be determined and appropriate and adequate drugs can be administered, thereby reducing the physical burden and life-threatening effects of disease for both humans and livestock. Hitachi High-Tech will continue to promote the use of scanning electron microscopes to accelerate drug resistance testing and will continue its initiatives to make medical care that reduces the physical burden and time required to treat infectious diseases a reality.

Action Targets 2

Ensure the safety of water and food

FY2021 Results

Providing equipment and services to detect hazardous substances to help prevent accumulation of hazardous substances in soil, water, and humans

Hazardous substances contained in electrical and electronic equipment are regulated by EU regulations known as the RoHS Directive and other laws and regulations in each country. Hitachi High-Tech contributes to preventing the spread of substances that pose a health hazard through its equipment that detects hazardous substances at the product inspection and material acceptance inspection stages. In FY2021, we developed an equipment data collection system compliant with RoHS applications. This was connected to our IoT service portal ExTOPE® and then to analyzers at each of our customers' sites to achieve real-time and centralized management of data. This connectivity enables more efficient management and prompt investigation of the cause and countermeasures in the event of a product or part failure, thereby supporting the launch of safe and secure products that do not emit hazardous substances.

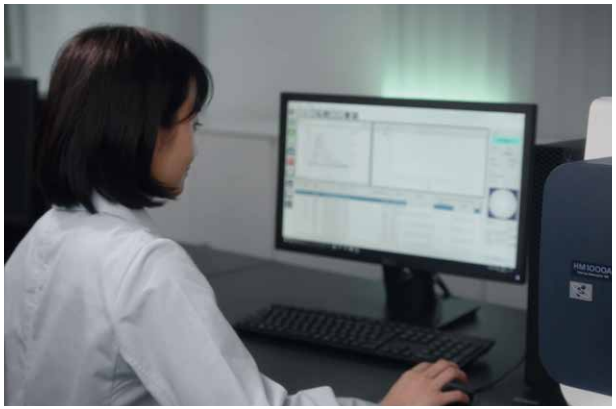
Initiatives toward achievement of the 2024 Mid-term Management Plan

2 Provide screening tests for hazardous substances

Contribute the control of the spread of hazardous substances, also complying with newly regulated substances

Hitachi High-Tech is currently developing equipment that can measure substances that are expected to be added to the RoHS Directive regulations regarding the restriction of the use of hazardous substances in electrical and electronic equipment. In addition to the RoHS Directive, we are also preparing to comply with laws and regulations regarding the

control of the diffusion of hazardous substances set forth by each country. In the realm of hazardous substance analysis, we not only develop analyzers, but also perform contracted analysis on behalf of our customers. Analysis of highly toxic chemical substances requires advanced techniques for pretreatment and measurement. So by contracting this work to Hitachi High-Tech, the presence and content of hazardous substances can be safely confirmed. These services help customers stem the risk of their products failing environmental regulations and of lost business opportunities. In this area, Hitachi High-Tech supports sustainable manufacturing and business growth, while also contributing to protecting a healthy global environment.



Screening for hazardous substances

Hazardous substances contained in fine materials and parts can also be detected

Action Targets 3

Ensure the safety of social infrastructure

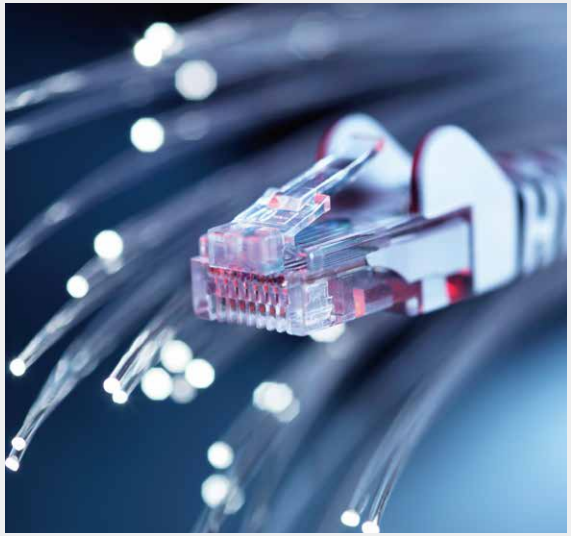
FY2021 Results

Contribute to the maintenance of a safe social infrastructure by providing hazardous material detection equipment

We continue to develop and provide devices that detect hazardous materials as a security measure in critical public infrastructure facilities, airports, and event venues, thereby contributing to the protection of community safety.

Contribute to the development and heightened stability of telecommunications infrastructure through the sale of optical communications components for use in highspeed, ultra-long-distance transmission equipment

We continued to sell optical communication components used in high-speed and long-distance transmission equipment. Our equipment is being adopted in next-generation high-speed communications equipment and contributed to ensuring the stability of the communications infrastructure and new lifestyles brought on by the COVID-19 pandemic.



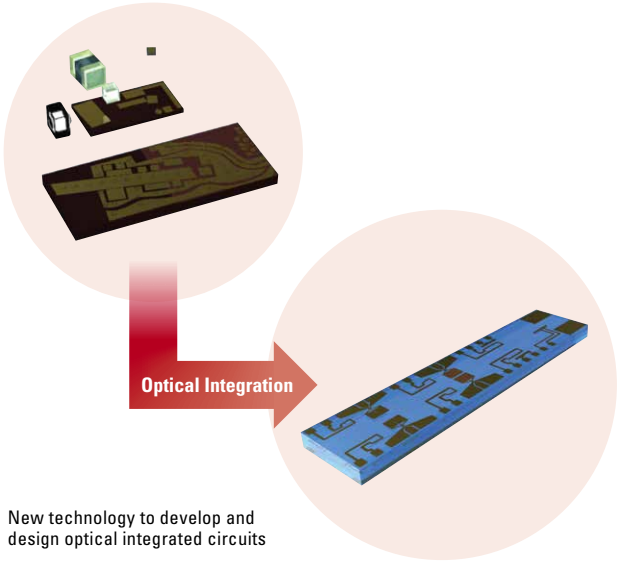
Contribute the construction of communication infrastructure in the event of a wide-area disaster and cloud environments necessary for remote working to support people's comfortable living

Initiatives toward achievement of the 2024 Mid-term Management Plan

3 Provide engineering services for photonic integrated circuits (PICs)

Began providing product development and design consulting services in response to new trends in the development of high-speed, long-distance transmission equipment, contributing to the development and heightened stability of telecommunications infrastructure

Hitachi High-Tech made an engineering company with new design technology for optical integrated circuits into a subsidiary and established a structure that enables it to provide total services from design to product development. This is in response to the demand for higher speed, smaller, and lower power consumption of high-speed and long-distance transmission equipment. In addition to continuing to adopt our products for large-scale data centers and core communication networks, we will continue to uncover new needs, aiming to contribute to areas such as autonomous driving and healthcare by utilizing our new design technology. Through these efforts, we will contribute to the development of social infrastructure, including telecommunications, and to further electricity conservation and reduction of CO_2 emissions.



New technology to develop and design optical integrated circuits

Materiality

3

Contributing to the sustained development of science and industry

[Basic Ideas and Visions]

To develop science and industry, advanced technology that supports them is essential. The Hitachi High-Tech Group supports the improvement of R&D and production sites productivity, as well as higher product quality by fully utilizing and advancing our “measurement and analysis technology”, “automation and control technology”, “manufacturing capabilities”, thereby contributing to the sustainable development of science and industry. In addition, we help develop the next generation by carrying out social contribution activities utilizing our products.

[Action Targets]

1 Development of science and technology

By developing and providing electron microscopes that enable high-precision observation and analysis, we will contribute to materials and device engineering and the advancement of testing and research of scientific theory. In addition, through science education support activities using tabletop electron microscopes, we will stimulate children’s interest in science and technology through the activity and will contribute to resolution of social issues such as the loss of interest in science and the advancement of science and technology.

2 Achieving resilience at production sites

Through core technologies related to observation, measurement, and analysis; digital technologies such as AI and IoT; and the analysis and utilization of data collected from each process, we will improve the efficiency of production sites and build a flexible and robust production system. We thus aim to contribute to the improvement of productivity and product quality of manufacturing companies.

[Action Plan]

	Content of Initiative	Social and Environmental Value	FY2022 Plan	FY2024 Plan	Activity Targets	Responsible Business Segment
1	Provide material development solutions that accelerate development speed and contribute to the development and provision of new materials	• Contribute to the verification of new knowledge and experiments to create new materials • Realization of a smart society on a global scale through the utilization of new materials • Raising the technical and production capabilities of small and medium-sized manufacturing companies	• Launch of the said solution • Users: Companies facing challenges in the development of materials and components, and companies that want to make effective use of experimental data for development	• Expand and start offering solutions that can solve a wider range of customer issues by linking with our analyzers and other equipment to enable customer data management	1	Others
2	Activities to support science education using tabletop microscopes	• Contribution to the development of next-generation researchers that will lead to the development of science, medical technology, etc.	• Provide learning opportunities globally through online promotion and expansion of classes • Provide information to support education (web content production, use of YouTube)	• Continue to offer classes and activities that support students and their research and the presentation of results and papers		Others
3	Provide manufacturing and inspection solutions that enable highly efficient semiconductor production	• Contribute to the advancement of the digital society by improving and stabilizing industry productivity	• Trial implementation at a semiconductor manufacturer of the “integrated solution” concept, which enables product inspection and equipment abnormality detection while manufacturing	• Enhance the “integrated solution” concept, expand connected devices and the number of customers to which they are offered	2	
4	Promote the SCPaaS (Supply Chain Platform as a Service) business, which contributes to operational efficiency and quality improvement through visualization of the entire supply chain	• Contribute to improvement of production site efficiency and product quality • Contribute to building a flexible and robust production system	• Prepare to provide high quality audit and inspection services targeting Hitachi Group suppliers on behalf of the Hitachi Group	• Begin providing services to companies outside the Hitachi Group		Others

Analytical & Medical Solutions
Nano-Technology Solutions
Value Chain Solutions
Core Technology Solutions

Action Targets 1

Development of science and technology

FY2021 Results

Global development of activities to support high-quality science education

Even amid the COVID-19 pandemic, we are continuing to support science education using our tabletop electron microscopes by promoting online classes. In FY2021, classes were provided to approximately 61,800 students globally, and the number of participants in the program increased globally, including Japan and Asia. Of note, the classes for students in the Republic of Azerbaijan was part of an exchange program commemorating the 30th anniversary of the establishment of diplomatic relations with Japan. In cooperation with the Japanese Embassy, we participated as representatives of Japan.

In FY2021, we started a new series of web content, "The World Through an Electron Microscope" featuring stories of students who went on to pursue careers in science after being exposed to tabletop electron microscopes lent to their schools by Hitachi High-Tech. Some of the schools to which we have loaned our equipment have won prizes in science and science education competitions, and we continue to promote our initiatives to communicate the fun of science.

Initiatives toward achievement of the 2024 Mid-term Management Plan

1 Provide material development solutions

Materials Informatics (MI) contributes to the validation of new findings and experiments as well as to the development and provision of new materials by accelerating development speed

MI with AI and simulation technology are expected to be find applications in response to the diversification of material development, such as plastic materials with low environmental impact. In FY2021, Hitachi High-Tech commercialized MI solutions in collaboration with Hitachi, Ltd., which was the first Japanese vendor to establish MI knowledge. MI makes it possible to present candidate formulations and combinations of materials that were not previously conceived, contributing to new knowledge and validating experiments, and enabling simulations that create new materials. Furthermore, MI reduces the raw materials, labor, number, cost, and duration of experiments in materials development. Not only cutting electricity consumption, it also reduces CO_2 emissions from upstream to downstream in the supply chain, including those generated from the procurement and transportation of raw materials used in experiments and from the disposal of waste materials generated. While leveraging its manufacturing capabilities and knowledge of resin materials, Hitachi High-Tech will contribute to improving the ability of manufacturers to develop new materials and components. It will also underpin improvement of the level of manufacturing in Japan and enhance productivity, including at small and medium-sized enterprises. In addition, we can provide flexible services, such as cloud-based systems that are easy to install and facilitate short-term contracts. In this manner, Hitachi High-Tech will make a broad contribution to the world by enabling a wide variety of companies to use its services.

2 Activities to support science education using tabletop microscopes

Online classes using tabletop electron microscopes and SDG-related teaching materials to provide a global learning environment

We have continued to support science education since the 1990s using our own tabletop electron microscopes. In the future, we will promote activities targeting regions and children who have been difficult to reach with our activities, such as schools on remote islands, free schools, and special-needs classes, and expand opportunities for more children to take classes. After 2022, our goal is to provide classes to 50,000 students per year worldwide, and new teaching materials are being produced to discuss disasters and disaster prevention caused by global environmental changes to encourage understanding of the SDGs. We will also seek to expand the geographic area served. In FY2022, the program will be implemented in three new countries and regions and will continue to be implemented in a total of 15 countries and regions globally from FY2022 onward. Hitachi High-Tech aims to contribute to the development of next-generation researchers who will lead the advancement of science and medical technology by stimulating interest in science and technology and supporting research activities in more countries and regions.

Remote delivery of classes

Topic

Contribute to medical technology with the TM-series tabletop electron microscopes

We are exploring the potential of applying our tabletop electron microscopes, which are used for quality inspections in LiB manufacturing, to the medical field. Transmission electron microscopes are now used to observe biopsy specimens of a patient's kidneys and other organs. While transmission electron microscopes provides high-resolution images, it requires advanced knowledge and techniques for sample preparation and image analysis, and it can take several weeks to confirm a diagnosis. Meanwhile tabletop electron microscopes are easy to operate and allow observation of biopsy sections for optical microscopes without special pretreatment. Taking advantage of this feature, if a tabletop electron microscope can be used for diagnosis, a significant reduction in examination time can be expected. Another advantage is that thicker specimens can be observed, allowing for a three-dimensional view of the shape and more detailed observation of microstructural changes. Tabletop electron microscopes offer the potential to quickly provide the information necessary for diagnosis. As such Hitachi High-Tech is working toward the application of tabletop electron microscopes technology in medicine at an early juncture.

Action Targets 2

Achieving resilience at production sites

FY2021 Results

Provide digital engineering solutions to improve productivity at manufacturing sites

By providing IoT systems and manufacturing execution systems (MES) to manufacturers, we help share information at design and manufacturing sites to improve the accuracy of pre-verification, improve equipment layout, and clarify work instructions. We also provide PLM solutions*1 that centrally manage data from manufacturing sites and contribute to operational efficiency on the factory floor. The Hitachi High-Tech Group is also developing an AR*2 solution to improve the efficiency of work instructions at overseas sites. When realized, this will enable work instructions to be presented in a way that is easy to understand by anyone, contributing to error reduction on the manufacturing front lines.

*1 PLM (Product Lifecycle Management): This refers to the management of information in a series of processes from product planning, design, production, sales, and disposal with the aim of maximizing profits.

*2 Augmented reality

Initiatives toward achievement of the 2024 Mid-term Management Plan

3 Provide manufacturing and inspection solutions that enable highly efficient semiconductor production

Establishment of US technology innovation support base for semiconductor manufacturing to promote solutions to customers' technological and management issues, contributing to improved semiconductor productivity

In the semiconductor field, which supports today's digital society, the production of advanced logic semiconductors has reached the realm of national strategy and security. To accelerate development, defect detection, analysis, and countermeasures must be carried out with certainty and speed. In the manufacture of semiconductors, Hitachi High-Tech provides equipment covering processing, inspection, and measurement processes. Currently, we are collaborating with customer semiconductor manufacturer to monitor data from each piece of equipment we provide in the semiconductor manufacturing process and are trialing an initiative to inspect products and detect equipment abnormalities while manufacturing. Once perfected, this integrated solution will reduce semiconductor development time, cost, and power consumption, while also improving productivity. In August 2022, we expect to complete construction of a new integrated development facility, the Process Engineering Center, in the United States. With the completion of this facility, we will further promote our integrated solution and contribute to the production of high-performance, low-cost semiconductors, thereby contributing to the advancement of the digital society by improving and stabilizing industrial productivity.

CG7300
FEB length measuring system for inspection and measurement of semiconductors

M-9010XT
Silicon etching equipment for semiconductor manufacturing

4 Promote the SCPaaS (Supply Chain Platform as a Service) business

Aiming to improve the efficiency of production sites and the quality of operations and the entire supply chain by providing high quality audits and inspections of manufacturing suppliers

Hitachi High-Tech is partnering with TRIGO Group, one of the world's most advanced quality providers, to improve the quality of audits and inspections of suppliers. In 2021, TRIGO dispatched its local staff to our suppliers in China to identify, audit, and inspect their operations. The advantage to Hitachi High-Tech of utilizing TRIGO is that audits and inspections are conducted from a third-party perspective based on clear audit criteria, allowing for standardization of operations and visualization of previously unseen costs. This will accelerate digitalization and improve management. It also contributes to production efficiency and product quality by reducing transportation costs and inspection processes that would otherwise be incurred in the case of returns. Furthermore, this relationship can flexibly address the issue of staffing resource shortages in the audit and inspection departments. The service will be introduced to other Hitachi Group companies in FY2023 and will be available to companies outside the Hitachi Group in FY2024. By improving the quality of our customers' suppliers, Hitachi High-Tech will contribute to improving the efficiency of its customers' production sites and product quality, as well as the operational and product quality of individual companies in the supply chain.

Materiality

4

Establishing a sound management foundation

[Basic Ideas and Visions]

Establishing a sound management foundation is essential for the sustainable growth of a company. In order to increase corporate value over the long-term, Hitachi High-Tech Group will strive to improve the effectiveness of corporate governance and aim to be a company that is trusted and needed by society.

[Action Targets]

1 Realize sound governance

We will strive to improve the effectiveness of corporate governance by bolstering the effectiveness of the Board of Directors and strengthening and enhancing internal controls. In addition, we will endeavor to achieve sustainable growth and increase society's trust in us by implementing initiatives such as compliance risk prevention measures and conducting education, and fostering a corporate culture that is open and compliant with laws.

2 Ensure product safety

Providing customers with safety and peace of mind is a corporate social responsibility. By providing products that comply with laws and regulations and by working to eliminate product accidents, the Group aims to provide highly-safe products and thereby enhance competitiveness and increase the level of trust from society.

3 Realize a CSR-based supply chain

By encouraging business operations with a strong awareness of corporate social responsibility, not only for the Group, but also for our partners and the entire supply chain, we aim to reduce environmental and human rights risks in the supply chain.

[Action Plan]

	Content of Initiative	FY2021 Results	Social and Environmental Value	FY2022 Plan	FY2024 Plan	Activity Targets
1	Initiatives to improve corporate governance, which is the foundation of the Hitachi High-Tech Group's fair business activities	• As a member of the Hitachi Group, established a new governance framework for the entire Hitachi High-Tech Group • Managed its system appropriately in accordance with the One Hitachi Compliance Program	• Contribute to the maintenance of a healthy and orderly society as a member of society	• Realign decision-making standards and rules in conjunction with becoming a wholly owned subsidiary of Hitachi • Enhance measures and systems to respond to global compliance risks/Initiatives to improve the effectiveness of each system and mechanism to enhance the level of confidence in the system and promote its operation	• Continue and consider deepening the initiatives listed on the left	1
2	Initiatives to ensure product safety	• Implemented product safety audits: Identified issues and provided guidance for improvement at 13 Hitachi High-Tech Group sites • Serious product safety accidents 0	• Provide safe and secure products and services	• Implement product safety audits • Undertake initiatives to prevent accidents related to long-term use products at customer sites • Identify trends in revisions and issuances of related laws and regulations and share them with relevant internal departments to speed up compliance with laws and regulations	• Continue to promote the FY2022 plan for product safety	2
3	Promote business operations throughout the Hitachi High-Tech Group's supply chain with a strong awareness of CSR	• CSR briefing sessions held for procurement partners in Japan • CSR-related accidents 0	• Contribute to the realization of CSR in the Hitachi High-Tech Group's supply chain • Continue business through stable shipments of our products	• Identify and undertake initiatives to reduce CO_2 emissions in upstream Scope 3 to achieve carbon neutrality (1) Support implementation of CO_2 emission reduction plans of procurement partners (2) Review the framework for evaluating procurement partner selection based on CO_2 reduction results • Conduct self-audits of new suppliers using the Procurement CSR Check Sheet • Convene CSR procurement briefings for ongoing suppliers	• Execute procurement partner selection based on CO_2 reduction results • Continue promotion of the initiatives listed on the left	3

Materiality

5

Developing and utilizing diverse human resources

[Basic Ideas and Visions]

It will be crucial to continuously provide creative and innovative values to customers and society in order to succeed against competitions in the global market while realizing sustainable growth. Hitachi High-Tech Group recognizes human resources responsible for providing value as one of the most invaluable management resources, and aims to foster reform-minded human resources who are able to create continuous innovation.

[Action Targets]

1 Promote diversity management

We enhance productivity and organizational strength by promoting reforms in working styles and increasing operational efficiency. In addition, by promoting female workplace participation and development and utilization of diverse human resources, we will secure and train talented human resources who have flexible ideas and advanced technical abilities and skills.

2 Promote diverse cultivation of human resources

We will aim to train human resources to compete in the global market by expanding diverse education and training systems and continuing to carry out education and training.

3 Ensure healthy, safe workplace environments

We strive to ensure a healthy, safe and comfortable working environment by working on occupational safety and health with the highest priority on workplace safety and maintaining and promoting the health of each employee.

[Action Plan]

	Content of Initiative	FY2021 Results	Social and Environmental Value	FY2022 Plan	FY2024 Plan	Activity Targets
1	Creating an organization in which diverse human resources can play an active role that leads to innovation	Creation of innovation through diverse human resources ● Average of 26.5 hours of overtime per person per month ● Take paid leave 17.2 days per person per year ● Women in managerial positions 5.2% ● Diversity in decision-making layer: 5 diverse board directors, executive officers and managing officers (including 2 women)* ● New graduate recruitment 26.5% female, 7.7% foreign nationals	● Human resources with various attributes (gender, nationality, background, etc.), skills, and knowledge play active roles	Creation of innovation through diverse human resources ● Average of 20 hours of overtime per person per month or less ● Take paid leave 20 days per person per year or more ● Women in managerial positions 6.6% ● New graduate recruitment 30% female, 5% foreign nationals ● Diversity in decision-making layer: 5 diverse board directors, executive officers and managing officers (including 2 women) ● Male employees taking childcare leave 100%	● Continue implementation of FY2022 plan to create an organization where diverse human resources can play an active role	1
2	Ongoing implementation of diverse education and training programs to develop human resources	Early development of global human resources ● Ratio of employees with overseas experience within 7 years of employment 51% ● Continued to dispatch trainees overseas despite the difficulties caused by the COVID-19 pandemic	● Contribute to the development of each country through the activities of the trained employees in each region	Early development of global human resources ● Ratio of employees with overseas experience within 7 years of employment 50% or more	● Implement plans to further strengthen early development of global human resources	2
3	Establish a workplace with zero accidents by raising awareness of health and safety	Initiatives for workplace safety and employee health maintenance ● Lost-workday accidents 2 ● Stress check implementation 90% ● Mental illness rate 12% deterioration from FY2019	● Employees are active in various areas of society through the enhancement of their mental and physical health	Initiatives for workplace safety and employee health maintenance ● Lost-workday accidents 0 ● Stress check implementation 100% ● Decrease in mental illness rate ● Maintain certification as Health & Productivity Management Outstanding Organization ● Steadily implement measures tailored to business sites and workplaces	● Continue to implement the FY2022 plan to achieve a better workplace environment	3

*The previous target for "Number of female board members" was revised in FY2021 to "Diversity in decision-making layer: Number of diverse board directors, executive officers and managing officers."

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