

**KIOXIA**

# **Sustainability Report 2023**



**Kioxia Holdings Corporation**

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# Sustainability Reporting Policy

We report on sustainability issues that are a priority for Kioxia Group\* and our stakeholders.

In updating the Sustainability website of Kioxia Holdings Corporation, we have taken into consideration and incorporated issues that are material for both the Group and our stakeholders.

In FY2022 these were the following:

1. Top-level commitment from the executive officer in charge of sustainability to engage in sustainability activities on behalf of Kioxia Group.
  - > Messages to Stakeholders
2. Reporting on sustainability material issues that have been identified
  - > Sustainability Materiality
3. Group performance in the area of sustainability
  - > Environment
  - > Social
  - > Governance

\* Kioxia Group is a corporate group consisting of Kioxia Holdings Corporation and its subsidiaries, including Kioxia Corporation.

## Organizations covered in this report

In principle, Kioxia Group is covered in this report, but individual entities are referenced in cases where the information provided does not apply to the whole Kioxia Group.

Note: "Kioxia Group in Japan" refers to Kioxia Holdings Corporation and its consolidated subsidiaries in Japan. "Kioxia Group overseas" refers to consolidated subsidiaries overseas. Organizations which were combined within recent years may not be covered.

## Reporting period

This report focuses on the results of activities in FY2022 (April 1, 2022 to March 31, 2023).

It also includes some details of activities initiated prior to FY2022 as well as more recent ones.

## Publication

Current issue: December 2023 (next issue scheduled for October 2024; previous issue: October 2022)

## Reference Guidelines

- GRI (Global Reporting Initiative)  
This report contains standard disclosures from the GRI Sustainability Reporting Standard.
- SASB (Sustainability Accounting Standards Board)
- United Nations Global Compact [COP (Communication of Progress) Advanced level]
- ISO 26000

# Company Information

## Company Outline

Name	Kioxia Holdings Corporation
Address	3-1-21, Shibaura, Minato-ku, Tokyo 108-0023, Japan
Establishment	March 1, 2019 Kioxia Holdings Corporation was established as the holding company for our corporate group by means of a share transfer from Toshiba Memory Corporation (now Kioxia Corporation.)
President and CEO	Nobuo Hayasaka
Capital	10 billion yen
Shareholders	Toshiba Corporation (40.64%) BCPE Pangea Cayman, L.P. (25.92%) BCPE Pangea Cayman2, Ltd. (14.96%) BCPE Pangea Cayman 1A, L.P. (9.37%) BCPE Pangea Cayman 1B, L.P. (5.99%) Hoya Corporation (3.13%) Total 100.00%  * Note: Above shows the voting shareholding ratio as of August 27, 2020. * The ratio of voting rights owned to the voting rights of all shareholders is rounded to two decimal places. However, the total number is rounded off to one decimal place.
Business	Group strategy formulation and management oversight
Employees	Non-consolidated: approx. 120, Consolidated: approx. 15,300 (As of March 31, 2023)

## KIOXIA Group History

1987	Invention of world's first NAND flash memory
1992	Yokkaichi Plant established
2007	World's first 3D flash memory technology announced
April 2017	Toshiba Memory Corporation established
December 2017	Toshiba Memory Iwate Corporation (currently KIOXIA Iwate Corporation ) established
March 1, 2019	Toshiba Memory Holdings Corporation established
October 1, 2019	Changed company name to Kioxia Holdings Corporation
July 2020	Acquired LITE-ON Technology's SSD Business, Solid State Storage Technology Corporation
April 2021	KIOXIA Corporation absorbed Kioxia Advanced Package Corporation through an absorption-type merger
June 2022	Kioxia Corporation completed acquisition of Chubu Toshiba Engineering Corporation (currently Kioxia Engineering Corporation)

» Standards of Conduct/Policies

## Management

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### Directors

Representative Director	Nobuo Hayasaka
Director	Stacy J. Smith
Director	Yuji Sugimoto
Director	David Gross-Loh
Director	Hiroshi Suzuki
Director	Michael R. Splinter

### Statutory Auditors

Statutory Auditor	Isao Morita
Statutory Auditor	Koichi Hatano
Statutory Auditor	Masashi Suekane

### Executive Officers

President and Chief Executive Officer	Nobuo Hayasaka
Executive Chairman	Stacy J. Smith
Executive Vice Chairman	Lorenzo A. Flores
Executive Vice President and Executive Officer	Tomoharu Watanabe
Senior Managing Executive Officer (Chief Financial Officer )	Hideki Hanazawa
Managing Executive Officer (General Manager, Legal Affairs Division)	Takahiro Asakura
Managing Executive Officer (General Manager, Human Resources and Administration Division)	Kyota Okishiro
Executive Officer (Chief Information and Security Officer)	Toshiaki Kawabata
Executive Officer (Chief Strategy Officer)	Junichiro Yaguchi

### Financial Results (Consolidated)

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FY2022 ended March 31, 2023

Revenue	1,282.1 billion yen
Operating Profit (Loss)	(99.0) billion yen
Net Income (Loss)	(138.1) billion yen

# Global Network

Kioxia Group is the world leader in memory solutions, dedicated to the development, production and sale of flash memory and solid state drives (SSDs). Kioxia Group comprises Kioxia Holdings, its 21 subsidiaries (6 in Japan and 15 overseas) and 6 affiliated companies (4 in Japan and 2 overseas).



## Kioxia Corporation

### ➤ Kioxia Corporation □

Research, development, design, production and marketing of memory and SSD products

## Subsidiaries and Affiliates (Japan)

### ➤ Kioxia Iwate Corporation □

Production of flash memory products

### ➤ Kioxia Systems Co., Ltd. (Japanese website) □

Design and development of memory products, and customer support

### ➤ Kioxia Engineering Corporation (Japanese website) □

Engineering services related to semiconductor development, design and manufacturing  
Development and operation of semiconductor CIM systems

### ➤ Kioxia Etoile Corporation □

Cleaning and employee health & wellness services, contract work related to farm production, and clerical & administrative work

### ➤ Kioxia Energy Management Corporation □

Energy management business

## Subsidiaries and Affiliates (Overseas)

### ➤ Kioxia America Inc. □

Research, development and marketing of memory and SSD products

### ➤ Kioxia Europe GmbH □

Sales and marketing of memory and SSD products

### ➤ Kioxia Asia, Limited □

Sales and marketing of memory and SSD products

### ➤ Kioxia Singapore Pte. Ltd. □

Sales and marketing of memory and SSD products

### ➤ Kioxia Taiwan Corporation □

Sales and marketing of memory and SSD products

### Kioxia Semiconductor Taiwan Corporation

Management of subcontracted production

### ➤ Kioxia Korea Corporation □

Research and development of memory products, and marketing of memory and SSD products

### ➤ Kioxia (China) Co., Ltd. □

Sales and marketing of memory and SSD products

### Kioxia Israel Ltd.

Software development for SSD products

### Kioxia Technology UK Ltd.

SSD Product Development

### ➤ Solid State Storage Technology Corporation □

Design, development, manufacturing and marketing of SSD products

## Mission & Vision

### Mission

Uplifting the World with "Memory"

By evolving "memory," we create uplifting experiences and change the world.

### The origin of the name "KIOXIA"

### Vision

With progressive memory technology at the core, we offer products, services, and systems that create choice and define the future.



On October 1st 2019, we made a fresh start as KIOXIA Holdings Corporation. The name KIOXIA is a combination of the Japanese word *kioku* meaning "memory" and the Greek word *axia* meaning "value."

The concept of *kioku*, which underpins our mission and vision, goes beyond the notion of memory as mere data to more broadly encompass experiences, emotions and ideas.

## Messages to Stakeholders

### Message from the President and CEO

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**Uplifting the world with "memory," Kioxia Group continues to deliver value to society**

Nobuo Hayasaka  
President and CEO  
Kioxia Holdings Corporation

Global issues such as climate change, finite natural resources, the spread of infectious diseases and various forms of social inequality are becoming more pressing. If we want to bequeath a sustainable world to future generations, we will need to find transformational solutions that address these and many other issues.

Advanced technologies are addressing some of these challenges today. Innovations in AI, IoT and Big Data are expected to play a key role as we move forward. Kioxia's memory solutions will play an indispensable role in our efforts to build a sustainable future.

Our business environment is becoming increasingly challenging. Climate change, the effects of which are becoming more severe, as well the need to promote diversity and respect for human rights and respond to the geopolitical risks arising from escalating international tensions, have all acquired greater significance.

In the midst of these societal changes, Kioxia Group is treating sustainability as a critical area of focus within our business strategy. Throughout FY2022, we have been formulating key performance indicators we see as essential for addressing priority sustainability issues. These KPIs are being integrated into our mid-term management plan alongside our financial metrics and business plans.

In particular, to help address the urgent global challenge of realizing a decarbonized society, we set a new target in April 2023 of achieving net-zero greenhouse gas emissions resulting from our business activities and purchased energy usage by the year 2050. Furthermore, we are intensifying our efforts in areas such as human rights due diligence, demand for which has been growing within the business community, and human capital management. We see these initiatives as essential for the sustainability and development of our business.

Aligned with our mission to "uplift the world with 'memory,'" I will lead our sustainability activities working with our partners to transform and enrich the lives of people everywhere and help build a more creative and inspiring world.

## Message from the Executive Officer in Charge of Sustainability

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We are boosting the sustainability of Kioxia Group operations in order to continue to be of value to society

Tomoharu Watanabe  
Executive Officer in Charge of Sustainability  
Executive Vice President  
Kioxia Holdings Corporation

Kioxia Group provides semiconductor memory products that are essential for a wide range of electronic devices such as smartphones and servers that make life more convenient for people all over the world. Our technologies, innovations, and value-added products and services will continue to meet the constantly evolving needs of society and help ensure sustainability on a global scale.

There are, however, various challenges in society that need to be addressed, such as global warming and respect for human rights. In line with this, there is growing expectation and demand for companies to reduce their greenhouse gas emissions, as stipulated in the Paris Agreement and the Sustainable Development Goals (SDGs) adopted by the United Nations. Collaboration with organizations like the Task Force on Climate-Related Financial Disclosures (TCFD), established by the Financial Stability Board and the Responsible Business Alliance (RBA), an alliance of companies promoting social responsibility in global supply chains, is also gaining prominence.

At Kioxia Group, we are actively pursuing sustainability initiatives in accordance with RBA guidelines, both within our own operations and throughout our supply chain. Recognizing climate change as a significant social issue, we joined the above-mentioned TCFD Consortium in June 2022. At our manufacturing facilities, we have been proactively installing equipment that limits the emission of PFCs and other gases. Furthermore, at our new manufacturing facilities, we have implemented highly efficient energy-saving production processes through the use of cutting-edge equipment and the introduction of AI and IoT technologies, aiming to reduce our environmental impact. Additionally, to promote the use of renewable energy, we introduced rooftop solar power generation systems at Kioxia Corporation's Yokkaichi Plant in June 2023 and Kioxia Iwate Corporation's Kitakami Plant in January 2023. These installations are among the largest class of their kind at any semiconductor plant in Japan.

We comply with all relevant laws, regulations and social norms, and will continue to aspire to be a Kioxia Group that is trusted by all our stakeholders, proactively undertaking sustainability initiatives to create value for society through "memory."

# Kioxia Group's Sustainability Efforts

**Sustainability Management**

**Major Sustainability Issues and Initiatives in the Value Chain**

**Stakeholder Engagement**

**Kioxia Group Initiatives in Support of the Achievement of SDGs**

Kioxia Group's Contribution to Addressing Social Issues through its Business Activities

SDG-Related Topics

# Sustainability Management

Based on our corporate mission of “uplifting the world with ‘memory,’” the Kioxia Group pursues sustainability management aiming to enrich people’s lives through our products and services and to broaden society’s possibilities. Through communication and collaboration with a range of stakeholders including customers, suppliers, employees and their families, we aspire to gain an understanding of issues that affect them and build relationships with them founded on trust.

## Sustainability Management Structure

To strengthen and further advance company-wide sustainability management, we have created two conferencing bodies. The Sustainability Committee, with the executive officer in charge of sustainability as chair, comprises the heads of each of the business units and corporate divisions at Kioxia Corporation, who come together to discuss sustainability issues. The Sustainability Strategy Meeting, chaired by the President and CEO, is where executive officers deliberate and decide on measures to address those issues. The status of our sustainability promotion efforts is reported regularly to the Board of Directors, who review any key issues. The Sustainability Division serves as the secretariat for these meetings and is responsible for operating them.

We have set up appropriate task forces under these conferencing bodies as necessary to debate key sustainability issues, to implement measures to address these, and manage progress.

### Kioxia Group's Sustainability Management Structure



In FY2022, we continued discussions on KPIs that will be key in terms of addressing our sustainability issues (Sustainability Materiality) and in addition to the 11 existing indicators, we defined 18 new indicators. We have also incorporated these non-financial indicators into our medium-term management plan, which is integrated into our financial indicators and overall business plan.

## Third-party Sustainability Certification

Kioxia Group has acquired certification by the International Organization for Standardization (ISO) in the categories of Quality, Environment and Occupational Health and Safety Management Systems, and we work to retain these certifications on an ongoing basis.

In July 2021, Kioxia Holdings Corporation joined the Responsible Business Alliance (RBA). We accordingly fulfil the responsibilities specified in the RBA Code of Conduct, undertaking our own CSR activities and requiring our suppliers to do the same. Kioxia Corporation's headquarters and manufacturing sites, Yokkaichi Plant, Kioxia Iwate Corporation and Solid State Storage Technology Corporation, conduct self-assessments based on the questionnaire published annually by the RBA to ensure that internal controls in the areas of workforce, safety, environment, ethics, and management systems are appropriate. In addition to this, our manufacturing sites voluntarily undergo third-party audits by the RBA once every two years to assess the soundness of their business activities.

In the most recent audits, all manufacturing sites (Yokkaichi Plant, Kioxia Iwate Corporation and Solid State Storage Technology Corporation) secured Platinum Status (maximum rating) certifying their labor and safety standards as well as their environmental protection measures; this additionally confirmed that the management and operation of these facilities observe the highest ethical standards.

## Encouraging Employees to Adopt a Sustainability Mindset

To raise sustainability awareness across the entire Kioxia Group, President and CEO, and other senior executives of each company communicate our management vision and emphasize the importance of good sustainability management practices in corporate strategy meetings at the beginning of each half semester.

In addition, sustainability-related education is provided for new graduates and those newly appointed to managerial positions, as well as in role-specific training for employees in sales, procurement and other departments.

In April 2022, the “KIOXIA Group Sustainability Handbook” was published, aiming to help educate employees and encourage active dialogue with stakeholders, and was distributed widely amongst Group employees. In addition, our internal newsletters proactively pick up on sustainability-related topics—everything from women’s career advancement to the installation of solar panels—to keep employees informed about these topics.

In May 2022, we conducted a survey for employees of Kioxia Group in Japan to assess their understanding of the contents of the Sustainability Handbook and their level of interest in our sustainability initiatives. We are using the results of the survey to inform the measures we take to raise employee awareness of our sustainability activities.

In addition, in FY2022 we provided an e-learning program for our executives and employees to deepen their understanding of our sustainability management.



KIOXIA Group Sustainability Handbook (Japanese / English)

# Major Sustainability Issues and Initiatives in the Value Chain

As the structure of our various business segments differs and their value chains and stakeholders vary, Kioxia Group performs mapping and analyzes sustainability challenges and risks for each segment, doing our utmost to avoid and mitigate risks.

Value chain	Relevant stakeholders	Major sustainability issues	Kioxia Group's Approach
Mining of raw materials	Local communities	<ul style="list-style-type: none"> <li>&lt;Sustainability issues concerning human rights and labor relations&gt;           <ul style="list-style-type: none"> <li>• Responsible Minerals Sourcing</li> <li>• Respect for human rights</li> <li>• Child labor, forced labor</li> <li>• Occupational health and safety</li> </ul> </li>   <li>&lt;Sustainability issues concerning environmental relations&gt;           <ul style="list-style-type: none"> <li>• Consideration for biodiversity</li> <li>• Sustainable resources</li> </ul> </li> </ul>	<span style="color: green;">A</span> Action on Responsible Minerals Sourcing
Manufacture of components and materials	Suppliers Local communities	<ul style="list-style-type: none"> <li>&lt;Sustainability issues concerning human rights and labor relations&gt;           <ul style="list-style-type: none"> <li>• Respect for human rights</li> <li>• Occupational health and safety</li> <li>• Child labor, forced labor</li> </ul> </li>   <li>&lt;Sustainability issues concerning environmental relations&gt;           <ul style="list-style-type: none"> <li>• Proper management of chemical substances</li> <li>• Reducing greenhouse gas emissions</li> <li>• Sustainable use of water resources</li> <li>• Consideration for biodiversity</li> </ul> </li>   <li>&lt;Other sustainability issues&gt;           <ul style="list-style-type: none"> <li>• Anti-corruption</li> </ul> </li> </ul>	<span style="color: green;">B</span> Monitoring suppliers
R&D, Product planning, Product design	Employees	<ul style="list-style-type: none"> <li>&lt;Sustainability issues concerning human rights and labor relations&gt;           <ul style="list-style-type: none"> <li>• Respect for human rights</li> <li>• Occupational health and safety</li> <li>• Labor management</li> <li>• Diversity promotion</li> </ul> </li>   <li>&lt;Other sustainability issues&gt;           <ul style="list-style-type: none"> <li>• Protection of intellectual property</li> <li>• Product safety</li> <li>• Information security management</li> </ul> </li> </ul>	<span style="color: green;">C</span> Promoting the career development of female employees
Product manufacture	Employees Resellers	<ul style="list-style-type: none"> <li>&lt;Sustainability issues concerning human rights and labor relations&gt;           <ul style="list-style-type: none"> <li>• Respect for human rights</li> <li>• Occupational health and safety</li> <li>• Labor management</li> <li>• Diversity promotion</li> </ul> </li>   <li>&lt;Sustainability issues concerning environmental relations&gt;           <ul style="list-style-type: none"> <li>• Proper management of chemical substances</li> <li>• Efficient use of energy</li> <li>• Sustainable use of water resources</li> <li>• Reducing greenhouse gas emissions</li> </ul> </li>   <li>&lt;Other sustainability issues&gt;           <ul style="list-style-type: none"> <li>• Protection of intellectual property</li> <li>• Quality control</li> <li>• Information security management</li> </ul> </li> </ul>	<span style="color: green;">C</span> Promoting the career development of female employees
Sales	Resellers Customers	<ul style="list-style-type: none"> <li>&lt;Other sustainability issues&gt;           <ul style="list-style-type: none"> <li>• Antitrust and fair trade practices</li> <li>• Protection of customer and personal information</li> <li>• Export control</li> <li>• Advertising expressions</li> <li>• Providing information about product safety</li> </ul> </li> </ul>	
Distribution	Resellers	<ul style="list-style-type: none"> <li>&lt;Sustainability issues concerning human rights and labor relations&gt;           <ul style="list-style-type: none"> <li>• Occupational health and safety</li> </ul> </li>   <li>&lt;Sustainability issues concerning environmental relations&gt;           <ul style="list-style-type: none"> <li>• Reducing greenhouse gas emissions</li> </ul> </li> </ul>	
Use	Customers	<ul style="list-style-type: none"> <li>&lt;Sustainability issues concerning environmental relations&gt;           <ul style="list-style-type: none"> <li>• Reducing greenhouse gas emissions</li> </ul> </li>   <li>&lt;Other sustainability issues&gt;           <ul style="list-style-type: none"> <li>• Response to product accidents</li> <li>• Customer service and support</li> </ul> </li> </ul>	
Disposal	Customers	<ul style="list-style-type: none"> <li>&lt;Sustainability issues concerning environmental relations&gt;           <ul style="list-style-type: none"> <li>• The products recycle</li> <li>• Reducing environmental impact when disposing products</li> </ul> </li> </ul>	

- A: Action on Responsible Minerals Sourcing
- B: Monitoring Suppliers
- C: Promoting the Career Development of Female Employees
- D: Reducing the Environmental Impact of Manufacturing Sites

# Stakeholder Engagement

Kioxia Group's business activities involve relationships with diverse stakeholders, as outlined below.

Here we clarify our responsibility to our major stakeholders, the relationship between Kioxia Group and each stakeholder, the points of dialogue, and examples of communication.

## Major Stakeholders

\*Table can be scrolled horizontally.

Stakeholders	Relationship with Kioxia Group
▼ Customers 	We sell a wide range of memory and SSD products around the world. These are mainly used in smartphones, laptop PCs, data centers, and data servers.
▼ Shareholders/Investors 	<ul style="list-style-type: none"><li>• Toshiba Corporation (40.64%)</li><li>• BCPE Pangea Cayman, L.P. (25.92%)</li><li>• BCPE Pangea Cayman2, Ltd. (14.96%)</li><li>• BCPE Pangea Cayman 1A, L.P. (9.37%)</li><li>• BCPE Pangea Cayman 1B, L.P. (5.99%)</li><li>• Hoya Corporation (3.13%)</li></ul> <p>Total 100.00%</p> <p>* Note: Above shows the voting shareholding ratios as of August 27, 2020. * The ratio of voting rights owned to the voting rights of all shareholders is rounded to two decimal places. However, the total number is rounded off to one decimal place.</p>
▼ Suppliers 	We deal continuously with some 700 suppliers worldwide (as of March 31, 2023)
▼ Employees 	Approx. 120 in Kioxia Holdings Corporation, approx. 15,300 in consolidated (As of March 31, 2023)
▼ Local Communities 	In carrying out our business operations, we respect the cultures, history and customs of people in each country or region.
▼ Governments/Public Bodies 	We observe the laws and regulations of the respective countries and regions in which we do business.
▼ NPOs/NGOs 	We cooperate with NPOs and NGOs in areas such as the environment, human rights and our contribution to society, and always endeavor to engage in constructive dialogue with them.
▼ Global Environment 	We are tackling climate change and other environmental challenges so that the habitats of diverse life-forms, including our own descendants, can be maintained.

## Customers



<b>Key responsibilities</b>	<ul style="list-style-type: none"><li>• Providing safe, secure products and services that offer great value</li><li>• Providing appropriate product information</li><li>• Offering excellent customer relations and support</li></ul>
<b>Major means of identifying stakeholders' views and requests</b>	<ul style="list-style-type: none"><li>• Routine sales activities</li><li>• Call center contact (phone, email, etc.)</li></ul>
<b>Stakeholder point of contact</b>	Sales & Marketing Headquarters and each division, Kioxia Corporation

### Communication Method and Case Study

#### Sharing and Reflecting on Customer Feedback

We receive comments and requests for products and services in our daily operations; these are shared among relevant personnel including top management and used to improve product quality and improve after sales services.

## Shareholders/Investors



<b>Key responsibilities</b>	<ul style="list-style-type: none"><li>• Disclosing information in a timely and appropriate manner</li></ul>
<b>Major means of identifying stakeholders' views and requests</b>	<ul style="list-style-type: none"><li>• Press releases</li></ul>
<b>Stakeholder point of contact</b>	Legal Affairs Division, Corporate Strategy Division, Corporate Communication Division and IR Division, Kioxia Holdings Corporation

## Suppliers



<b>Key responsibilities</b>	<ul style="list-style-type: none"><li>• Selecting suppliers fairly and engaging in fair trading practices</li><li>• Respecting human rights, promoting labor and environmental management in the supply chain</li></ul>
<b>Major means of identifying stakeholders' views and requests</b>	<ul style="list-style-type: none"><li>• Routine procurement activities</li><li>• CSR survey, audit, guidance</li><li>• Business Partner Hotline</li></ul>
<b>Stakeholder point of contact</b>	Procurement Division, Kioxia Corporation

### Communication Method and Case Study

#### Requesting Suppliers to Undertake Sustainability Management

We ask suppliers to undertake their sustainability practices through our daily procurement operations. We also conduct surveys of suppliers based on the RBA\* Code of Conduct to confirm the status of their compliance.

\* RBA: Responsible Business Alliance

#### ► Sustainable Supply Chain

## Employees

	<b>Key responsibilities</b>	<ul style="list-style-type: none"><li>• Respecting human rights</li><li>• Maintaining appropriate employment and labor-management relations</li><li>• Conducting fair assessment, treatment, and development of human resources</li><li>• Respecting diversity</li><li>• Supporting diverse working styles</li><li>• Ensuring occupational health and safety</li></ul>
	<b>Major means of identifying stakeholders' views and requests</b>	<ul style="list-style-type: none"><li>• Dialogue, information exchange meetings</li><li>• Labor-Management Congress</li><li>• Employee engagement survey</li><li>• Whistleblower System</li></ul>
	<b>Stakeholder point of contact</b>	Human Resources & Administration Division and Legal Affairs Division, Kioxia Corporation

### Communication Method and Case Study

#### Messages from Top Executives

In FY2022, President and top-level executives of Kioxia Corporation shared videos with employees outlining our management vision and strategies; they were shown via online conferences and via our intranet at the beginning of each half semester.

The aim was to maintain and improve employee motivation by directly delivering emails in a timely manner to all employees in order to share accurate information about management decisions that affect the whole company.

#### Promoting Employee-Management Dialogue

Kioxia Group respects internationally recognized human rights to the fullest extent, including the International Bill of Human Rights (Universal Declaration of Human Rights and International Covenants on Human Rights) and the core labor standards specified by the International Labor Organization, and we support the basic principles of the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises, and we work to ensure that our employees enjoy fundamental labor rights. The labor agreement concluded with the Labor Union of Kioxia Corporation stipulates that the Labor Union has three basic rights—the right to association, the right to collective bargaining, and the right to act collectively.

At the Kioxia Labor-Management Congress held every six months, Kioxia Corporation discusses its business policies with representatives of the Association of Kioxia Unions in Japan.

Moreover Kioxia and representatives of the Association of Kioxia Union in Japan hold negotiation in every spring, consequently Kioxia pays higher than legal minimum wage and fair treatments to employees.

Kioxia Group companies overseas hold similar discussions with their labor unions or employee representatives in accordance with the laws and regulations of the countries and regions in which they operate.

#### Employee Engagement Survey and Disclosure of Results

Kioxia Corporation regularly conducts employee engagement surveys in order to solicit feedback from employees, and to periodically monitor the level of employees' understanding of, and royalty to the company's policies.

We share the survey results with employees, and our presidents of each company sends a message addressing and commenting on these; in this way we leverage the survey to create a more open corporate culture.

- Respect for Human Rights
- Talent Development
- Diversity Promotion
- Health and Safety

## Local Communities

	<b>Key responsibilities</b>	<ul style="list-style-type: none"><li>• Stimulating local economies</li><li>• Respecting diverse customs and cultures</li><li>• Contributing to cultivating the scientists and engineers of the future</li><li>• Engaging in social contribution activities in local communities</li><li>• Preventing accidents and disasters at business sites</li></ul>
	<b>Major means of identifying stakeholders' views and requests</b>	<ul style="list-style-type: none"><li>• Dialogue, information exchange meetings</li><li>• Science classes, research grants</li><li>• Factory visits</li><li>• Holding summer festivals to promote communication with residents and to revitalize communities</li><li>• Providing opportunities for community workshops to sell their products</li><li>• Employee participation in community activities</li></ul>
	<b>Stakeholder point of contact</b>	Administration division's of each business site and group companies

### Communication Method and Case Study

#### Supporting Local Community Development

Kioxia Group sees it as our responsibility as a good corporate citizen and as a member of the local communities to not just leverage our business activities to address issues faced by those communities, but to engage in business activities that are rooted in the area, such as promoting local employment and trade with local companies.

Kioxia Group offers internships to enable students to experience working and the enjoyment of manufacturing.

#### Contributions to Society

As a good corporate citizen, Kioxia Group strives to build better relationships with the communities where we conduct our business. For example, we communicate with local communities about our environmental efforts by means of such initiatives as factory visits and by holding classes at elementary schools. We do this so that a wide range of stakeholders, such as the communities around Yokkaichi Plant—including schools, students, customers, and other companies—can learn about Kioxia Group's activities.

At the eco-charity bazaar that our Yokkaichi Plant has been hosting since 2007, we recycle unwanted household goods and donate all profits from the bazaar to the Yokkaichi City Greening Fund.

In FY2022, we collected and donated 33,709 contact lens cases through an activity promoting corneal transplants.

#### ➤ Supporting Local Community Development

## Governments/Public Bodies



<b>Key responsibilities</b>	<ul style="list-style-type: none"><li>• Complying with laws and regulations, and paying taxes</li><li>• Supporting government policies that address social issues</li></ul>
<b>Major means of identifying stakeholders' views and requests</b>	<ul style="list-style-type: none"><li>• Dialogue and proposals via economic associations and industry bodies</li></ul>
<b>Stakeholder point of contact</b>	Each Group Companies and Corporate Strategy Division, Kioxia Corporation

### Communication Method and Case Study

#### Job Creation and Tax Contribution

Kioxia Group is expanding its business around the world. The jobs we create help support local communities, especially production facilities that employ large numbers of local people.

By paying taxes in accordance with national laws and regulations, Group companies and their employees make an economic contribution to the countries and regions where they operate.

#### Participation in Industry Associations

Kioxia actively participates in the activities of industrial associations to help address various social issues.

##### Kioxia Holdings Corporation

- TCFD Consortium
- Responsible Business Alliance

##### Kioxia Corporation

- Keidanren (Japan Business Federation)
- Japan Electronics and Information Technology Industries Association

## NPOs/NGOs



<b>Key responsibilities</b>	<ul style="list-style-type: none"><li>• Collaborating on and helping to solve global social issues</li><li>• Collaborating on local community development</li></ul>
<b>Major means of identifying stakeholders' views and requests</b>	<ul style="list-style-type: none"><li>• Dialogue through collaboration</li></ul>
<b>Stakeholder point of contact</b>	Sustainability Division, Kioxia Corporation and Group Companies

## Global Environment



<b>Key responsibilities</b>	<ul style="list-style-type: none"><li>• Mitigating climate change</li><li>• Reducing waste discharge</li><li>• Reducing release of chemicals</li><li>• Conserving biodiversity</li></ul>
<b>Major means of identifying stakeholders' views and requests</b>	—
<b>Stakeholder point of contact</b>	Environment Planning Promotion Group, Production Technology Promotion Division, Kioxia Corporation

#### ➤ Yokkaichi Plant - Environmental Initiatives ➤

# Kioxia Group Initiatives in Support of the Achievement of SDGs

The 2030 Agenda for Sustainable Development was unanimously adopted at the United Nations headquarters in New York in September 2015. The agenda calls for no one to be left behind and stipulates 17 Sustainable Development Goals (SDGs) as important guidelines aimed at driving the international community's realization of sustainable development and the elimination of poverty by 2030.



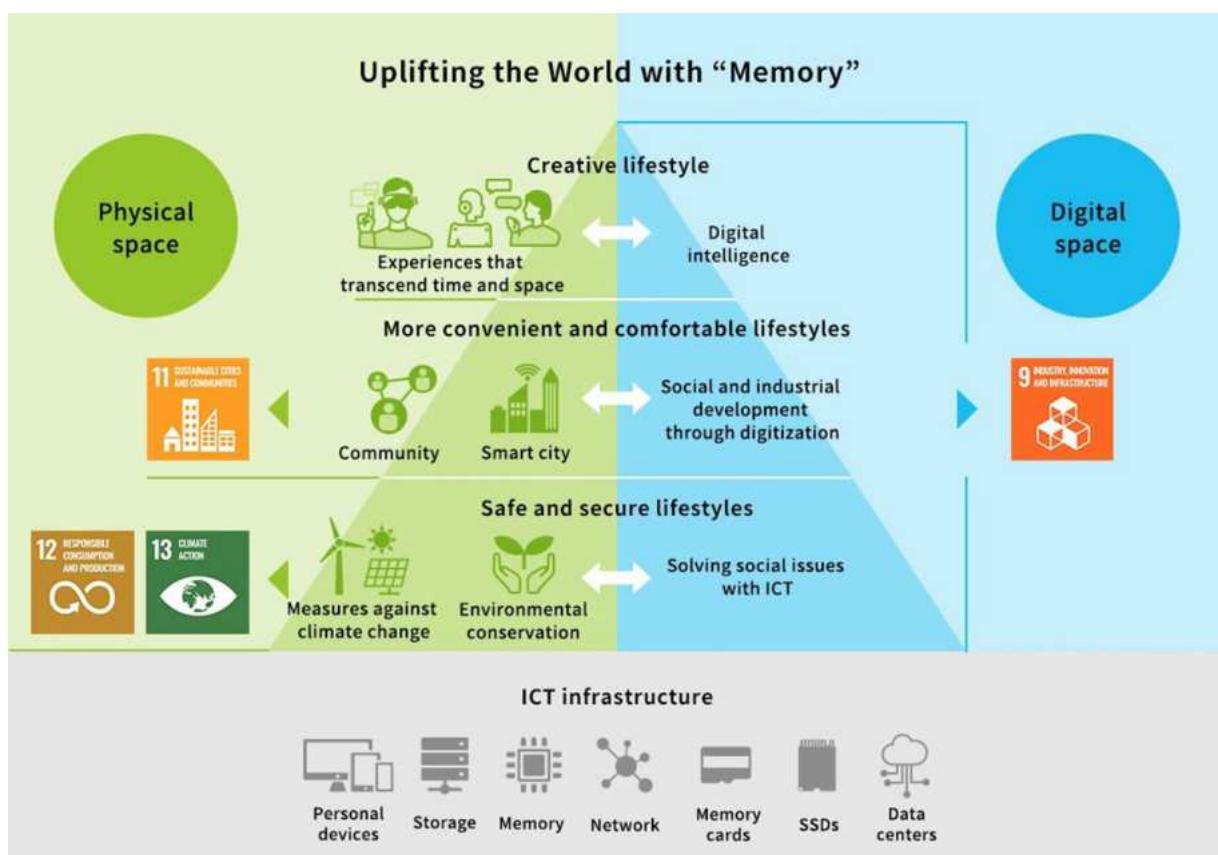
## Contribution to the Solving of Social Issues through Our Business

Humanity is facing a variety of issues on a global scale including global environmental problems; climate change; the water crisis; an increasing population; shortages of energy, resources, and food caused by industrialization; and disparity of wealth. The 2030 Agenda for Sustainable Development was adopted at the United Nations Summit in September 2015. In order to address various social issues, companies are required to contribute to the development of a sustainable society by demonstrating creativity and innovation in order to create business opportunities from a long-term perspective.

In October 2019, the Kioxia Group changed its name and made a fresh start. The name "KIOXIA" reflects our strong determination to change the world by storing "memories" ("kioku" in Japanese) created by society and using them to create new "value" ("axia" in Greek). Our mission is to uplift the world with "memory."

The Kioxia Group, which provides the value of "memory" to society through products such as flash memory and solid state drives (SSDs), will continue to develop a sustainable society by contributing to the SDGs through its business.

Based on a full understanding of its mission and its role as a global company, the Kioxia Group contributes to achieving goals 9, 11, 12 and 13 of the SDGs through its main business. In addition to contributing via our existing business, we are investigating technology development in new business sectors with a focus on future social issues.



## Kioxia Group Enriches People's Lives by Uplifting the World with "Memory"

The Kioxia Group wants to achieve a world where many people can experience an "uplifting" human culture. However, to do so, we must first create the lifestyle infrastructure that allows people to acquire a minimum level of food, clothing and shelter and to live peaceful lives. The groundwork for this safe and secure lifestyle infrastructure cannot be laid unless global environmental problems are solved. The Kioxia Group is helping to lay this groundwork by implementing measures against climate change and ensuring the effective use of resources in the course of its business activities. Furthermore, with our flash memory and SSD products, we are helping people achieve convenient and comfortable lifestyles where internet access is available anytime and anywhere. In addition, we believe that once such lifestyles have been achieved, we can provide people with more creative lifestyles through "memory."

The Kioxia Group has a history of leading the industry in the development of products such as NAND flash memory and 3D flash memory. Going forward, we will continue to change the world by remaining a leader in cutting-edge technology.

When we look at the environment surrounding us, in addition to the physical space in which people live, the advancement of technology has also provided digital space. As digital technology advances, it will lead to the realization of environmental conservation, smart cities, the ability to provide people with creative experiences that transcend time and space, and more. The Kioxia Group supplies storage products that serve as the foundation for a digital society, and we continue to pursue further research and development. In addition, we aim to contribute to future society by undertaking digital technology research and development through a process of 'backcasting' from the perspective of various envisaged future social issues in the physical environment.

### Related Links

Introduction to the Kioxia Group's SDG Initiatives

Kioxia Group's Contribution to  
➤ Addressing Social Issues through its  
Business Activities

➤ SDG-Related Topics

➤ Research and Technology Development 

# Kioxia Group's Contribution to Addressing Social Issues through its Business Activities

## Helping to Address Social Issues through our Business

The Kioxia Group's mission is to "Uplift the world with memory." By pushing the boundaries of "memory," we create uplifting experiences, add new value and change the world.

With progressive memory technology at our core, we offer products, services and systems that create choice and define the future. Based on this mission and vision, we aim to launch a new era of memory with cutting-edge technology and continue evolving as our world evolves.

Under this policy, we are undertaking activities that help achieve the UN's Sustainable Development Goals (SDGs) in the belief that our business operations themselves have a substantial impact on society.

### Kioxia Group Initiatives in Support of the Achievement of SDGs

## SDGs which the Kioxia Group Helps Achieve through its Business



The Kioxia Group's business activities can contribute to achievement of the SDGs in a wide variety of ways. The four SDGs that we are focusing on contributing to are Goal 9 (Industry, Innovation and Infrastructure), Goal 11 (Sustainable Cities and Communities), Goal 12 (Responsible Consumption and Production), and Goal 13 (Climate Action).

We are taking proactive measures to drive the achievement of the SDGs through our business activities, thereby advancing the development of a sustainable society.

### Goal 9: Accelerating Innovation with Cutting-Edge Technology

#### Social Issues

Accompanying the globalization of recent years, technological advances in fields such as AI and IoT are expected to accelerate, with disruptive innovation in various fields bringing about changes in occupational structures and the way people live and work.

Additionally, these technological innovations promise to pave the way for solutions that help address various social issues (including global warming, energy consumption, the concentration of populations in large cities, food and water-related issues, and medical and health-related issues).

#### Reference

- United Nations Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation [□](#)



#### SDG-Related Topics

- Technological Developments that Support Cutting-Edge Science
- Technological Developments that Support the Information and Communications Era

#### Kioxia Group's Contributions to a Solution

As a leader in flash memory and SSDs, the Kioxia Group has created various technologies that are the first of their kind in the world. With the expansion of AI and the advent of the 5G high-speed wireless communications era, the amount of data being generated, stored and used has increased exponentially. The Kioxia Group is focusing on developing state-of-the-art storage technology to respond to the rapidly increasing need for high-capacity, high-performance storage, and high-speed data processing systems. In addition to storage technology, we are also pursuing new areas of research and development, perceiving future social issues as business opportunities.

## Goal 11: Contributing to the Development of Sustainable Cities

### Social Issues

Since 2007, more than half the world's population has been living in cities, and that share is projected to rise to approximately 60% by 2030<sup>1</sup>. Under these circumstances, there is a need to create resilient cities that have a low environmental impact and allow people to safely maintain a high quality of life. In addition, the concentration of populations in urban areas has led to the depopulation of surrounding rural areas and led to lifestyle differences between the two. Furthermore, there is a need to create cities that can counteract threats such as pandemics and respond to fresh changes in the social environment.

#### Reference

- **United Nations Goal 11: Make cities inclusive, safe, resilient and sustainable** 

<sup>1</sup> [2018 Revision of World Urbanization Prospects published by United Nations](#) 



### SDG-Related Topics

- Making Every Bit of Data More Widely Available
- Leveling Up the World with Every Bit of Data
- Enriching New Ways of Life with Bits

### Kioxia Group's Contributions to a Solution

By supplying flash memory and SSD products, we have contributed to the widespread use of internet-connected devices, the development of data centers, and access to high-quality telecommunications. This has given rise to internet access that is available anytime and anywhere, changing the lifestyles of people all over the world.

Today, flash memory and SSDs have become indispensable products in people's lives. By developing various cutting-edge technologies to increase the capacity and performance of these, the Kioxia Group will help more people lead more convenient and comfortable lives.

## Goal 12: Sustainable Consumption and Production

### Social Issues

It is said that the world's population will reach 9.7 billion by 2050 (roughly a 30% increase over current levels)<sup>2</sup>, and that we will need three planets' worth of resources to maintain our current lifestyles. Companies are required to efficiently manage natural resources, produce products with low environmental impact, and reduce waste and chemical substance emissions. Accordingly, companies are required to regularly disclose information about their sustainability efforts to stakeholders.

#### Reference

- **United Nations Goal 12: Ensure sustainable consumption and production patterns** 

<sup>2</sup> [World Population Prospects 2022: Summary of Results published by United Nations](#) 



### SDG-Related Topics

- High-Efficiency Manufacturing
- Waste Reduction and Recycling

### Kioxia Group's Contributions to a Solution

In order to use resources effectively, the Kioxia Group has set targets for the amount of water it intakes and waste it generates, striving to ensure efficient production.

Specifically, we obtain information on chemical substances used during production and contained in products to ensure the appropriate use of chemical substances with minimal environmental impact. In addition, we are actively working to recycle chemical substances discharged after production, either at our workplaces or through outsourcing. Furthermore, wastewater discharged during manufacturing is recycled and reused at dedicated plants within our operations. Our environmental activities are disclosed in our reports to the CDP, the world's largest environmental information evaluation organization, our Sustainability Report, and other reports.

- Environment
- Environmental Evaluation by External Parties

## Goal 13: Addressing Climate Change

### Social Issues

The global effects of climate change, such as abnormal weather and rising sea levels, are becoming more apparent. Climate change affects not only the weather, but a whole range of areas, including the supply of food and drinking water, ecosystems, and infrastructure.



### Reference

- United Nations Goal 13: Take urgent action to combat climate change and its impacts [□](#)

### Kioxia Group's Contributions to a Solution

Kioxia Group is working to reduce the usage and emission of the greenhouse gases that cause climate change.

### SDG-Related Topics

- Greenhouse Gas Net-Zero Emissions
- Efforts to Improve Product Energy Consumption Efficiency

## Ripple Effect of 4 SDGs on 17 Related Goals

The Kioxia Group believes that all of the SDGs are interrelated and that its contribution to achieving these four goals will ripple out and help realize many related goals. To aid in the development of a sustainable society, the Kioxia Group will contribute to the achievement of the SDGs through its business activities.



### Future-Facing Efforts

The Kioxia Group's mission is to "Uplift the world with memory." Based on this mission, we are considering what kind of technological development and business opportunities might help us create a sustainable society.

- SDG-Related Topics: Helping to Create a Sustainable Society with Cutting-edge Technology
- Research and Technology Development [□](#)

# SDG-Related Topics

## Kioxia Group Businesses that Contribute to Society

Here, we will introduce specific examples that show how Kioxia Group's businesses have contributed to addressing social issues and achieving some of the UN's Social Development Goals.

### Making Every Bit of Data More Widely Available

Urban areas to which people are increasingly moving need to provide lifestyles that are safe and convenient and which allow them to maintain a high quality of life. To this end, the spread of flash memory and SSDs has helped provide people with internet access that is available anytime and anywhere. For example, the spread of the internet has made it possible for people to access a whole range of information on a smartphone even when they are outside; it also allows us to communicate with people all over the world from the home or office using a PC or tablet. In addition, recording technologies such as image authentication and dashboard cameras have improved safety and security.

By manufacturing flash memory and SSD with increased capacity and improved performance, the Kioxia Group is helping more people lead better lives.



### Leveling Up the World with Every Bit of Data

The worldwide concentration of populations in cities has led to the depopulation of surrounding rural areas and the emergence of lifestyle differences between the two. However, an environment offering internet access allows people to obtain the same information from anywhere using devices such as smartphones or tablets. The availability of internet access anytime and anywhere has led to an improved quality of life for people as well as increased opportunities for work and for children's education.



### Enriching a New Ways of Life with Bits

The global COVID-19 pandemic forced us to make major changes to our lifestyles. When commercial activity and people's movement were being greatly restricted worldwide, online communication became a means to connect people and things. An environment in which the internet is accessible anytime and anywhere also helps people to work remotely, and facilitates online classes and other alternatives that help realize a new way of life.



## Technological Developments that Support Cutting-Edge Science



Kioxia Corporation has been building signal processing systems for use in the field of neuroscience, in collaboration with Massachusetts Institute of Technology (MIT)

Research into the human brain requires high-speed analysis of large volumes of data. Kioxia Corporation helps promote brain research with its high-speed, large-capacity SSDs that are utilized for such analysis and help accelerate the research cycle.

### ➤ Challenging to the Brain with Data Storage □

## Technological Developments that Support the Information and Communications Era



To support the information and communications era, the Kioxia Group is pursuing cutting-edge research and development in fields such as self-driving vehicles, smart factories, robotics, and entertainment.

### ➤ Research and Development at Kioxia Group □



## High-Efficiency Manufacturing



During the manufacturing of flash memory, including BiCS FLASH™, the Kioxia Group collects huge amounts of real-time data from manufacturing equipment and transportation systems, and analyzes these using AI technologies such as deep learning in order to shorten turnaround times. In this way, we can reduce the consumption of energy and materials, thereby improving yield, and ensure a stable supply of high-quality products. The cutting-edge AI technologies supporting our smart factories have been developed not just through the use of Kioxia Group's proprietary technologies, but also through open innovation with our partners. The Kioxia Group will continue to utilize AI technologies to maintain and improve productivity, deploying smart factories that contribute to the development of a sustainable society.

### ➤ Smart Factory □



Yokkaichi Plant (Kioxia Corporation)



Kitakami Plant (Kioxia Iwate Corporation)



Transportation equipment inside the clean room

## Waste Reduction and Recycling



Kioxia Group's plants have been expanded in order to meet increasing demand from the market. As a result, the amount of waste we generate is rising every year. However, we are striving to make effective use of resources with the aim of reducing environmental impact throughout our supply chain. As an example, we are actively working to reduce the use of chemicals and gases by recovering and recycling waste generated during manufacturing, improving manufacturing processes, and using packaging that considers environmental impacts.

### ➤ Current Status of Environmental Impact and Environmental Targets and Outcomes

## Greenhouse Gas Net-Zero Emissions



At Kioxia Group, we prioritize initiatives aimed at reducing greenhouse gas emissions, seeing this as one of our key management objectives. By FY2050, we aim to achieve net-zero in terms of our Scope1 greenhouse gas emissions (direct emissions from our business sites), and in terms of Scope2 emissions (those resulting from our use of purchased energy).

In order to achieve these goals, we will continue to install equipment that will eliminate the emission of perfluorocarbons (PFCs)—gases with high global warming potential—at all of our manufacturing facilities constructed since 2011. As for measures related to purchased energy, the Group is procuring and installing energy-efficient manufacturing equipment and power equipment. In FY2022, we commenced the introduction of solar power generation systems at our plants. We are also moving forward with the procurement of renewable energy certificates in Japan. We will continue our efforts to address climate change.

### ➤ Climate Change

- Environmental Initiatives at Kioxia Corporation's Yokkaichi Plant □
- Environmental Initiatives at Kioxia Iwate Corporation □

## Efforts to Improve Product Energy Consumption Efficiency



As we believe that providing high capacity and energy-efficient flash memory and SSD products helps achieve a low-carbon society, we are making a range of efforts in this area.

We are making efforts to improve the energy consumption efficiency per 1GB processing of our products when they are in use. We are also working to reduce the amount of electricity and materials used during manufacturing.

### ➤ How We Reduce the Impact of Our Products on the Environment

## Helping to Create a Sustainable Society with Cutting-edge Technology



Our mission is to uplift the world with "memory." This mission was established after discussion with both our management and our employees about the kind of company we want to create in the future.

Based on this mission, we will continue to work together with our partners to help more people lead convenient and comfortable lives, address a variety of social and environmental challenges, and contribute to the development of a sustainable society. In order to achieve this, we will further increase the capacity, performance and efficiency of our flash memory and SSD products together.

### Related Links



### ➤ Creating Social Value

We use our memory technology to innovate digital technology and help make people's lives safe, secure, convenient and comfortable, thereby creating value for society.

# **Sustainability Materiality:**

## **Priority Areas for the Group's Medium- to Long-term Growth**

### **Creating Social Value**

Building a Creative World through Memory Technology  
Contributing to Convenient and Comfortable Lifestyles  
Creating Safe and Secure Societies and Environments

### **Foundation for Value Creation**

# Sustainability Materiality: Priority Areas for the Group's Medium- to Long-term Growth

## Basic Philosophy

The Kioxia Group will continue to create value for society through our memory technology, based on our mission of "uplifting the world with 'memory.'" We will contribute to the development of a sustainable society by strengthening the foundations supporting the Group's medium- to long-term business activities, and by responding to the demands of our stakeholders as a member of global society.

## Process of Setting Materiality

Environmental issues such as climate change, energy and resource shortages due to industrialization, widening disparities of wealth, and the threat of new infectious diseases are just some of the growing challenges facing society. On the other hand, the development of digital technology continues to make people's lives more convenient than ever. Technological innovation brought about by AI, IoT and the use of big data has changed social and industrial structures and is expected to rapidly generate needs that have not been seen before.

Taking these social changes into account, there are rising expectations of the role the Group should play in the sustainable development of society; we have therefore decided there is an urgent need to further enhance our sustainability management and clearly set out our policies.

We have established themes we see as particularly important for governing the sustainable development of the Group and of society, which we call Sustainability Materiality.

## Overview of Sustainability Materiality

Sustainability Materiality comprises three domains.

### Creating Social Value

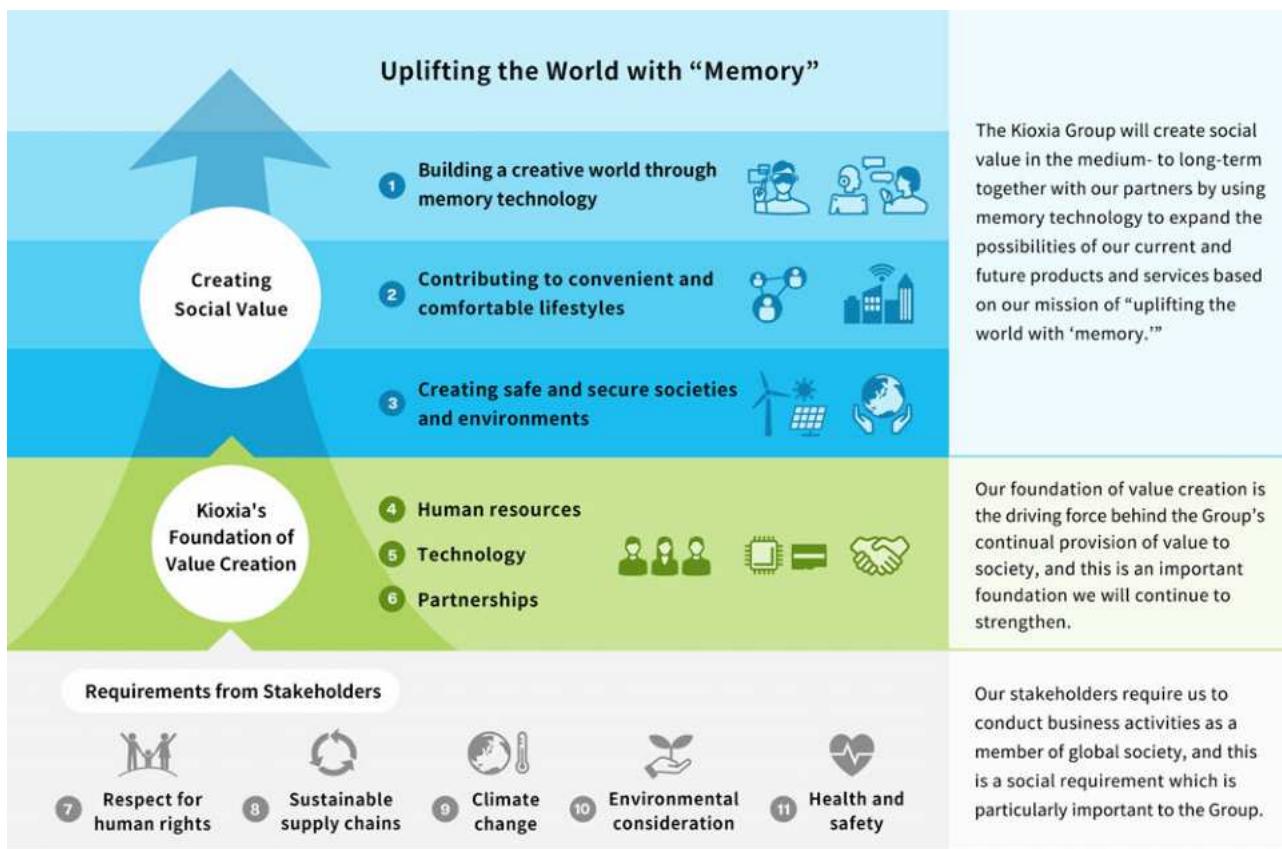
The Kioxia Group will create social value in the medium- to long-term together with our partners by using memory technology to expand the possibilities of our current and future products and services based on our mission of "uplifting the world with 'memory.'"

### Foundation of Value Creation

Our foundation of value creation is the driving force behind the Group's continual provision of value to society, and this is an important foundation we will continue to strengthen.

### Requirements from Stakeholders

Our stakeholders require us to conduct business activities as a member of global society, and this is a social requirement which is particularly important to the Group.



### Creating Social Value

#### Basic Philosophy

By using memory technology, we expand the possibilities of our current and future products and services and work with our partners to create value for society.

- We use memory technology to create digital innovations for a data-driven society, and contribute to solving social and environmental challenges.
- In addition to providing people with safety, security, convenience and comfort, we will help to build a more creative world.

This comprises the following three elements:



#### (1) Building a creative world through memory technology

Through memory technology we support value creation by working with partners to provide people with diverse experiences and creative means of expression and communication.



#### (2) Contributing to convenient and comfortable lifestyles

By enhancing flash memory with greater capacity, higher speed, lower power consumption and enhanced reliability, and by supplying more bits to more people, we will contribute to create a society in which more people can lead convenient and comfortable lives.



#### (3) Creating safe and secure societies and environments

Based on digital technology developments, we will contribute to solving social and environmental issues through providing storage to allow people to live safely and securely.

› Creating Social Value

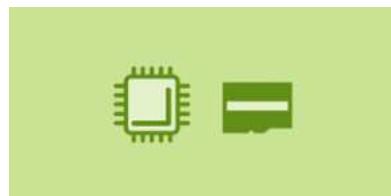
## Foundation for Value Creation

This comprises the following three elements:



### ► (4) Human resources

We will recruit and train highly specialized human resources to develop advanced technologies, and diverse human resources to meet expanding and diversifying market requirements.



### ► (5) Technology

We will promote continuous technological investment and initiatives for future-oriented advanced development.



### ► (6) Partnerships

We will build partnerships with customers, suppliers and research institutions to create products and services that anticipate the needs of society.

► Foundation of Value Creation

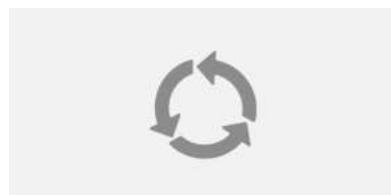
## Requirements from Stakeholders

This comprises the following five elements:



### ► (7) Respect for human rights

We will comply with international human rights principles and promote fair and sound business activities.



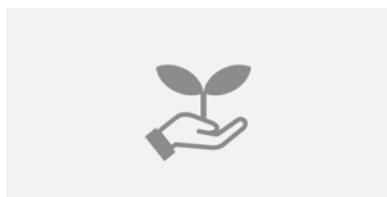
### ► (8) Sustainable supply chains

We will promote sustainable business activities by addressing human rights, labor, safety, environmental and other business risks, including those of our suppliers.



### ► (9) Climate change

We will contribute to a decarbonized society by reducing greenhouse gas emissions and promoting the use of renewable energy in our business activities.



### ► (10) Environmental consideration

We will promote business activities in consideration of their environmental impact, focusing on areas such as waste reduction, chemical substance management and wastewater quality management, with the aim of enriching human life in harmony with the Earth.



### ► (11) Health and safety

We will strive to create safe and healthy workplaces, taking into account changes in society and behavioral patterns, with the aim of preventing occupational accidents, improving employees' health and increasing productivity through enhanced vitality.

## Sustainability Materiality Identification Process

In the first half of 2021 we reviewed the CSR Materiality we set out in 2017 (respect for human rights, promotion of diversity, promotion of supply chain CSR, environmental management) from the perspective of trends in global society and requirements from stakeholders. Furthermore, we identified non-financial capital as a strength for the Kioxia Group over the medium- to long-term and extracted elements of Sustainability Materiality, taking into account the society we want to realize together with our partners and the societal impact of our products, services and technological developments. To do this we listened to the opinions of outside experts at meetings of the Sustainability Committee that became the focus of lively discussions at Sustainability Strategy Meetings.

Looking ahead, we will set targets and build a framework around which we will further evolve our activities.

### ► Sustainability Management

## Creating Social Value

Under its mission of "uplifting the world with 'memory,'" Kioxia Group has created a number of world-firsts as a leader in the areas of flash memory and SSDs, and with its partners has supported the advance of the digital society.

By increasing the capacity, performance and efficiency of our flash memory and SSD products, we will help make people's lives convenient and comfortable. We will also cooperate with our partners in finding solutions to increasingly diverse social and economic issues and contributing to the development of a sustainable society.

Through memory technology, we will help realize a world in which uplifting and diverse experiences, more forms of expression and easier communication are possible, and we will continue striving to build a more creative world.

### Building a Creative World through Memory Technology

Using memory technology to contribute to the realization of a world in which people can lead fulfilling lives with uplifting experiences



Note: Image of the data-driven, digitalized society of the future

Through the provision of memory technology, we help create value by working with partners to provide people with various experiences and creative means of expression and communication.

In addition, KIOXIA's products, services and technologies help support the information society of the future.

In this feature, we introduce some of our innovations aimed at shaping the future.

### Contributing to Convenient and Comfortable Lifestyles

Making data more widely available will help achieve improved lifestyles for even more people



By enhancing high-capacity, high-speed, low-power-consumption and high-reliability technologies, and making people's lifestyles smarter, we will help create a society in which more people can lead convenient and comfortable lives.

In this feature, we show how over the years we have grown together with the digital society.

### Creating Safe and Secure Societies and Environments

Evolving New Memory Technology Solutions for Social Issues



We deliver memory and SSD products that contribute to resolving social and environmental issues and help people live safely and securely.

In this feature, we introduce examples of ways in which we are contributing to society and creating a safe and secure society and environment through our products and technology.

# Building a Creative World through Memory Technology

Using memory technology to contribute to the realization of a world in which people can lead fulfilling lives with uplifting experiences



Note: Image of the data-driven, digitalized society of the future

Utilizing our memory technology,  
we help create value by working with partners to provide people with diverse experiences  
and creative means of expression and communication.

▼ Memory Technology That Will Support the Information Society of the Future ▼ KIOXIA's Innovative and Cutting-Edge Technologies

## Memory Technology That Will Support the Information Society of the Future

The volume of information generated and accumulated by society is increasing steadily, driven mainly by the spread of cloud computing, the advent of the IoT era, and the widespread use of AI technology.

Kioxia Group is engaged in various innovative activities aimed at creating a new future, guided by its vision: "With progressive memory technology at the core, we offer products, services, and systems that create choice and define the future."

**Future Memories**  
Uplifting the world  
with "memory"

### Brand Website

► [Future Memories](#) □

Our brand website introducing people and activities that open up possibilities of "memory" for the future.

## KIOXIA's Innovative and Cutting-Edge Technologies

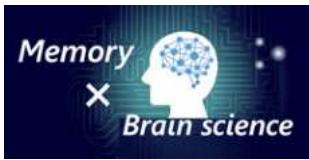
Kioxia Group and its partners utilize memory technology for a variety of research and development in cutting-edge fields, with the aim of creating innovative products that will open up new possibilities for people and society.



### KIOXIA's Cutting-Edge Technology

Introducing latest technologies being researched and developed at KIOXIA and various use cases of flash memories.

► [Technology Topics \(Kioxia Corporation\)](#) □



## Kioxia Corporation has been building signal processing systems for neuroscience in collaboration with Massachusetts Institute of Technology (MIT).

Neuroscience research calls for faster analysis of large quantities of data. Kioxia Corporation is contributing to advances in neuroscience by accelerating data analysis in the research cycle by using high-speed, high-capacity SSDs.

- Challenging to the Brain with Data Storage (Kioxia Corporation) [□](#)



## Automatic Quiz-Generating AI

Kioxia Corporation has developed automatic quiz-generating AI in cooperation with QuizKnock (baton Co., Ltd.) by applying AI and machine learning technology cultivated through the analysis of over 2 billion data lines generated each day at Kioxia Corporation's semiconductor plants.

- Development of AI That Automatically Generates Quizzes (Kioxia Corporation) (Japanese only) [□](#)
- Quiz-Generating AI Development Project - "In the Pipeline" Combining Memory and Technology in Pursuit of Future Horizons - (Brand website) [□](#)

## Contributing to Convenient and Comfortable Lifestyles

Making data more widely available will help achieve improved lifestyles for even more people.



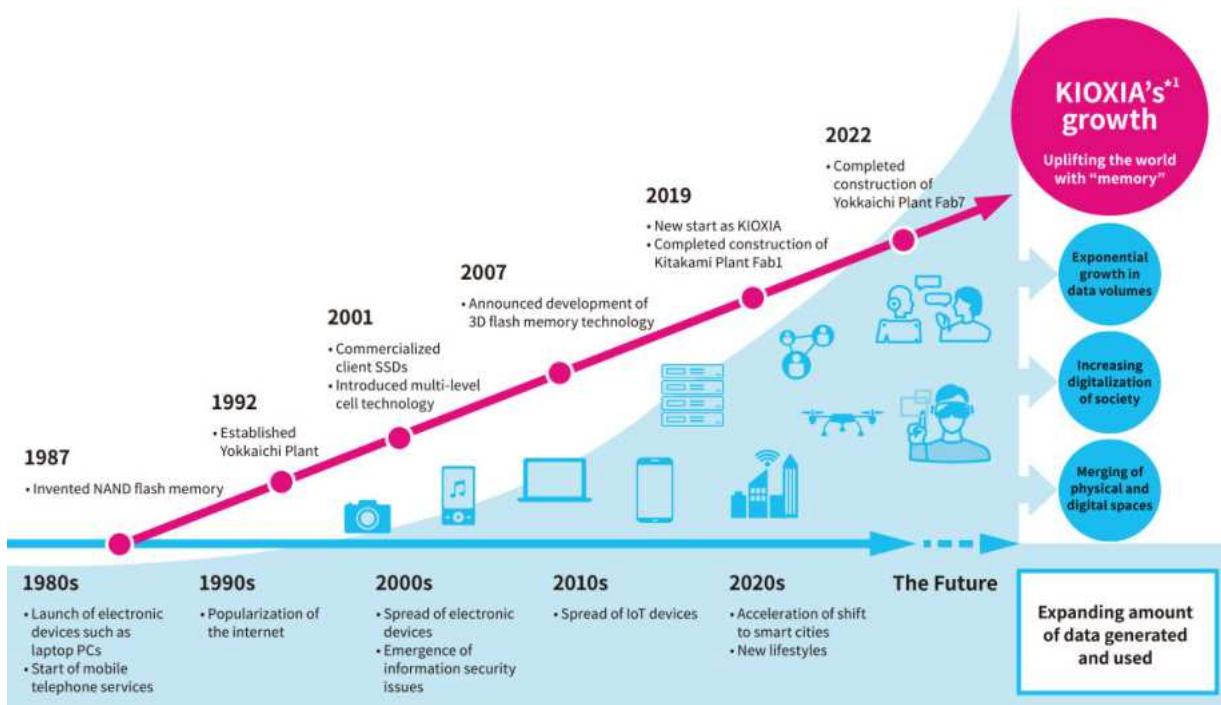
By enhancing high-capacity, high-speed, low-power-consumption,  
and high-reliability technologies, and making people's lifestyles smarter,  
we will help create a society  
in which more people can lead convenient and comfortable lives.

\* The information on this page is current as of the date of the announcement.

Kioxia Group is responding in a sustainable manner to the evolution of a digital society and the increasing demand for data

KIOXIA's semiconductor memory technologies, typified by the NAND flash memory we invented in 1987, have supported the emergence of digital devices and the evolution of a digital society. As the amount of data generated increases exponentially with the use of AI, IoT and big data, new needs and issues are expected to arise. Always in touch with the times, we will continue to innovate and provide society with new products and services.

Kioxia Group will continue to evolve with society, based on our mission of "uplifting the world with 'memory.'"



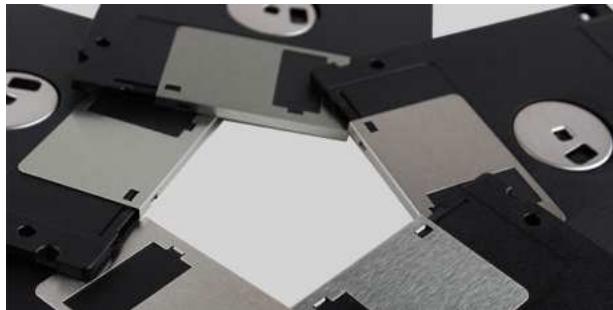
\*1 In 2017, the memory business of Toshiba Corporation was incorporated into a separate company, which commenced operations as Toshiba Memory Corporation. The company changed its name to Kioxia Corporation in 2019.

## 1980s

### Social Trends

From the 1970s, semiconductor manufacturing boomed in Japan, and it became an essential element of the country's industrial sector.

In the 1980s came the first steps in the evolution of a digital society with the launch of new electronic devices such as laptop PCs and video game consoles, and the start of mobile telephone services in Japan.



### KIOXIA

#### 1987: Invented NAND Flash Memory

KIOXIA invented NAND flash memory in 1987. Flash memory is an extremely small semiconductor storage device. Prior to the launch of NAND flash memory, magnetic tape and disks that required no power source were the mainstream storage devices. NAND flash memory offered the distinct advantages of short read/write speed and the potential for miniaturization.



## 1990s

### Social Trends

In the early 1990s, personal computers had become ubiquitous and the internet started to become popular with the advent of the World Wide Web. The dial-up connections used to connect to the internet at the time were a far cry from the high-speed connections commonly used today.

Digital cameras then appeared. Playing a part in this technological innovation were memory cards that store image data.



### KIOXIA

**1991: Commercialized the world's first 4Mbit NAND flash memory (the world's first NAND flash memory commercialization)\***

**1992: Established Yokkaichi Plant**

Yokkaichi Plant was established for the mass production of memory products that were state of the art at the time. Production of NAND flash memory started at Yokkaichi Plant in 1999.



Yokkaichi Plant at the time of its establishment (1992)

## 2000s

### Social Trends

Digital devices such as mobile phones, portable music players and digital cameras became prevalent in the early 2000's, and advances were made in compression technology for audio and video data. Against this backdrop, there was growth in the demand for flash memory as a high-capacity, high-performance recording medium.

Mobile phones with integrated digital cameras emerged, and the start of third-generation (3G) telecommunication services enabled high-speed, high-capacity data transmission, paving the way for the use of email and internet access on mobile phones.



### KIOXIA

**2001: Commercialized 1Gbit MLC (160nm generation) NAND flash memory which was the first application in the world of multi-level cell technology to a NAND flash memory product\***

**2007: Announced Development of 3D Flash Memory Technology**

At the time, the miniaturization technology used to increase flash memory capacity (the number of memory cells per plane) was reaching its physical limits.

In response, in 2007 KIOXIA announced the development of the world's first 3D flash memory technology in which multiple memory cells were stacked. To reduce manufacturing costs, an innovative technology known as BiCS FLASH™ was used whereby plate-shaped electrodes were stacked and through which vertical holes were punched for electrodes, thereby creating memory cells in all the layers at once.



**BiCS FLASH™**

**2007: Announced industry's largest level of capacity 128GB SATA SSD\***

Solid state drives (SSDs) began to replace hard disk drives (HDDs) in laptop PCs, leading to significantly higher performance, reduced weight and lower prices of these devices.

## 2010s

### Social Trends

The use of flash memory in smartphones enabling portable devices to store large images and music became commonplace.

A range of electronic devices appeared, including wearable devices, smart speakers and VR headsets, and the volume of data traffic increased exponentially with the increasing popularity of the internet and cloud computing. Digital technology had become an essential part of daily life.



### KIOXIA

**2016: Started mass production of 3D flash memory BiCS FLASH™**

**2017: Established Toshiba Memory Corporation (currently Kioxia Corporation)**

**2019: Established Toshiba Memory Holdings Corporation (subsequently Kioxia Holdings Corporation) on March 1**

**2019: Made a Fresh Start as KIOXIA**

On October 1, 2019, Toshiba Memory changed its company name to KIOXIA in order to mark a new start.

# KIOXIA

## 2020 Onward

### Social Trends

The development of digital technology has changed people's lifestyles in a number of ways. These include more efficient economic activity through the use of data, and the enabling of communication via the Internet that transcends national and regional boundaries.

A growing array of new needs and issues is expected, ranging from ongoing growth in the amount of data people generate through the use of AI, IoT and big data in the fields of autonomous driving and telemedicine.



### KIOXIA

**July 2020: Completed Acquisition of Solid State Storage Technology Corporation, a Subsidiary of Taiwan-based LITE-ON Technology Corporation**

**October 2022: Completed Fab7 at Yokkaichi Plant**

Fab7 has the capability to produce sixth-generation, 162-layer flash memory and future advanced 3D flash memory.

**June 2023: Commenced Operation of Two New R&D Facilities**

The operation of new R&D facilities in Yokohama is strengthening our research and development capabilities and promoting further advancement in technological innovation.

Kioxia Group will continue using its memory technologies to provide new value, allowing people to lead more convenient and comfortable lives in our digital society.

### Related Links

- [Technology Development History \(Kioxia Corporation\)](#)
- [History of Yokkaichi Plant \(Kioxia Corporation\)](#)

# Creating Safe and Secure Societies and Environments

Evolving new memory technology solutions for social issues



We deliver memory and SSD products  
that contribute to resolving social and environmental issues  
and help people live safely and securely.

- ▼ Our Contribution to Climate Change Countermeasures
- ▼ Contributing to a Bright Future for a Motorized Society
- ▼ Contributing to Information Security

## Our Contribution to Climate Change Countermeasures

### Social Issues: The Digital Society and the Global Environment

With the evolution of a digital society, flash memory and SSDs are now being used in every aspect of life, and demand for higher capacities and higher speeds continues to increase. As digital products and services become more widespread, it has become necessary to reduce electricity consumption and CO<sub>2</sub> emissions. Addressing this need has become a matter of urgency.

### Contributing to the Environment through our Business Activities

At our Yokkaichi and Kitakami Plants, we are reducing our consumption of electricity and working to reduce the amount of chemicals and gas used during manufacturing by increasing productivity. We are also helping to reduce electricity consumption during the use of our products and services by making these more energy efficient.

#### KPIs: Improving the Energy Efficiency of our Products

Kioxia Group is striving to improve the energy efficiency of our products. Specifically, we have set the ambitious target of reducing the energy consumption per 1GB of memory processing in our memory and SSD products to 50% of FY2017 levels by FY2025.\*

\* In 2017, the memory business of Toshiba Corporation was incorporated into a separate company, which commenced operations as Toshiba Memory Corporation. The company changed its name to Kioxia Corporation in 2019.



Energy consumption per 1GB of memory processing

› How We Reduce the Impact of Our Products on the Environment

› Environment

## Contributing to a Bright Future for a Motorized Society

### Social Issue: The Convenience and Safety of a Motorized Society

With the advances in 5G, IoT and AI technologies, connectivity has extended to automobiles, which now make use of a wide range of data. Demand for data storage in vehicles continues to expand with the increase in complexity and sophistication of automotive equipment. In-Vehicle Infotainment (IVI) systems that provide traffic information and entertainment while driving and Advanced Driver-Assistance Systems (ADAS) are just two examples.

#### Helping Ensure Improved Automobile Safety and Convenience through Automotive Memory Solutions

Kioxia Group will help improve automobile safety and convenience levels with high-performance, high-capacity automotive UFS and e-MMC memory products that meet the sophisticated demands of in-vehicle use, such as reliability under a wide range of environmental conditions.

› Automotive Applications (Kioxia Corporation) [□](#)

› UFS & e-MMC for Automotive (Kioxia Corporation) [□](#)



#### A microSD Memory Card with the Durability Required for Use in Dashboard Cameras

Kioxia Group is helping to improve drivers' convenience by providing products with sufficient durability for dashboard camera video recording.

As an example, EXCERIA HIGH ENDURANCE microSD memory cards featuring BiCS FLASH™ 3D flash memory technology have been specially designed for use in surveillance cameras and dashboard cameras.



## Contributing to Information Security

### Social Issue: Security in an Increasingly Sophisticated Information Society

While the advance of digital technology and popularization of the internet have made daily life and the conducting of business more convenient, they have also increased the prevalence of information security issues.

#### SSD Security and Encryption Options for Diverse Needs

Kioxia Group is addressing the need for the protection of personal and business data in our enterprise-, data center- and client SSDs. As an example, in the event of laptop theft, an encrypted SSD can prevent important data such as customer information from being compromised.

Note: Optional security feature compliant drives are not available in all countries due to export and local regulations.

› KIOXIA SSD Security and Encryption (Kioxia Corporation) [□](#)



#### KIOXIA SSD × Sustainability - For a Sustainable and Green Future -

Introducing the collaboration between KIOXIA and NTT Communications on KIOXIA's SSD (Solid State Drive) products for a sustainable and green future.

KIOXIA is dedicated to handle ever-increasing data volumes by its data centers and the latest SSD / flash memory technologies and solutions for enterprise systems, while NTT Communications is committed to meet the demand for high-speed processing of complex workloads with its cutting-edge data center technologies and solutions.

In this video, you will learn about the initiatives by both companies to engage the "sustainability".



› Movie: KIOXIA SSD × Sustainability - For a Sustainable and Green Future - (4:22) [□](#)

› KIOXIA SSD × Sustainability (Kioxia Corporation) [□](#)

## **The Kioxia Group's contribution to the Solving of social issues through its business**

Kioxia Group provides value of "memory" to society through products such as flash memory and solid state drives (SSDs). We will continue to contribute to the achievement of the SDGs through our business activities, with the aim of helping to create a more sustainable society.

➤ [Kioxia Group Initiatives in Support of the Achievement of the SDGs](#)



# Foundation for Value Creation

Our foundation of value creation is an important driving force behind the Group's ability to continually provide value to society. This domain is made up of three elements: Human resources, Technology, and Partnerships.

▼ Human Resources ▼ Technology ▼ Partnerships

## Human Resources



Our human resources represent important capital that helps us meet the expanding and increasingly sophisticated and wide-ranging needs of the market in a timely way. We recruit and train high-caliber graduates and experienced people to work with advanced technologies, and are implementing processes that will enable diverse employees to make full use of their capabilities.

### Recruitment Initiatives

We focus on recruiting diverse human resources capable of working on an expanding range of memory and SSD product applications and other increasingly sophisticated technologies, to help us meet the growing demand for these.

#### Number<sup>\*1</sup> of New Graduate Recruits<sup>\*2</sup> in Administrative and Technical Positions (Kioxia Corporation)

FY2019	FY2020	FY2021	FY2022	FY2023
280	207	298	303	379

\*1 Undergraduate and postgraduate degrees

\*2 As of April 1 each fiscal year

#### ► Talent Development

Kioxia Group has established fair personnel systems to enable our diverse employees to fully display their individual abilities, and we focus on talent development and utilization.

### Recruiting Talent with Diverse Expertise

Kioxia Group recruits talented individuals with high levels of expertise and helps people make full use of their capabilities through measures such as increased mid-career recruitment and deploying human resource processes and systems that develop talent.

#### Number of Mid-Career Recruits (Kioxia Corporation)

FY2019	FY2020	FY2021	FY2022
113	275	280	282

#### ► Diversity Promotion

Kioxia Group promotes diversity to enable our employees with a diverse range of personalities to each fully display their individual abilities.

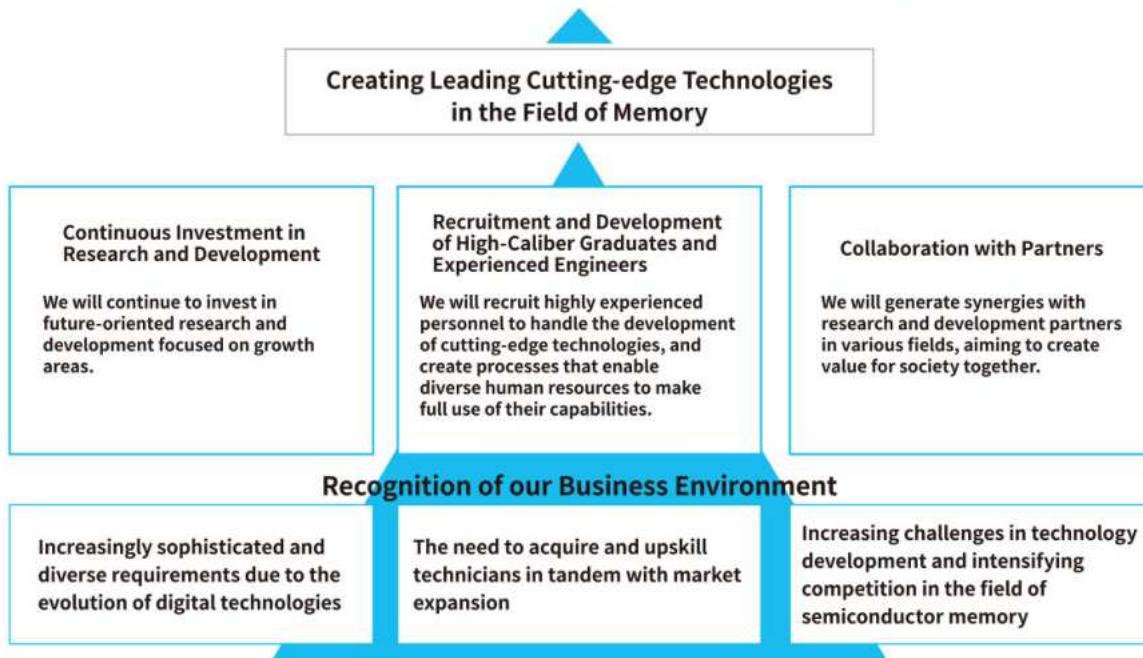


We will steadfastly maintain our leadership position in the field of semiconductor memory technology, undertaking research and technology development.

### Basic Approach to Research and Technology Development

As a technology leader in the field of memory, Kioxia Group is engaged in cutting-edge research and development, aiming to continuously expand its business portfolio.

**We will address market requirements in both new and existing domains and create new business opportunities to steadfastly maintain our position as a technology leader.**



➤ [Research and Technology Development Policy \(Kioxia Corporation\)](#) □

## Strengthening Research and Technology Development

Kioxia Group has been strengthening its research and development capabilities with the aim of creating memory technology that provides new value to society. In June 2023, Kioxia Corporation commenced the operation of two new R&D facilities — the Flagship Building at the Yokohama Technology Campus and the Shin-Koyasu Technology Front. Other Kioxia R&D functions in Kanagawa prefecture have been relocated to these new R&D hubs to improve the efficiency of our research and development, as well as to promote further advancement in technological innovation by stimulating collaboration across our various departments.

The addition of the new Flagship Building has allowed Kioxia to expand its capabilities in evaluating products, thereby enhancing overall product development and product quality.

The Shin-Koyasu Technology Front features a state-of-the-art clean room and cutting-edge research in a wide range of semiconductor areas, including new materials, processes and devices, is conducted there.

Kioxia Group will continue to strengthen its research and development capabilities in flash memory and SSDs. We are also committed to creating innovative technologies and products that go beyond existing memory functionality.

### ➤ Kioxia Commences Operation of Two New R&D Facilities (Kioxia Corporation) □



**Yokohama Technology Campus Flagship Building**

Total floor area: Approx. 40,000 m<sup>2</sup>

Height: 6 stories

Start of operation: June 2023



**Shin-Koyasu Technology Front**

Total floor area: Approx. 13,000 m<sup>2</sup>

Height: 4 stories

Start of operation: June 2023

## Collaboration with R&D Partners

To conduct timely, cutting-edge research and development in diverse fields in a rapidly changing and competitive environment, it is necessary to have access to the latest know-how in a number of fields at all times. Through relationships with R&D partners in Japan and overseas (technology organizations, universities and research institutes), Kioxia Group is able to leverage a wide range of knowledge and ideas and use these to further evolve its products and technologies.

Moreover, in addition to collaborating with partners in research and development, Kioxia Group actively engages in personnel exchange through open innovation.

In Japan, our operations are structured around the following three frameworks:

- Research grants: these support research at academic institutions in a wide range of fields, including semiconductors
- Joint research: addressing business issues through a deep understanding of technology
- Comprehensive collaboration: in addition to conducting research, the objective is to develop the next generation of researchers

Overseas, the Group is also forging links with a number of universities and research institutes.

### Main Achievements in FY2022

In Japan, in the area of research grants we solicited proposals for research projects in fields such as information processing; AI-related technologies; big data; applications; security; semiconductor circuit design; devices; manufacturing and process simulation technologies; and carbon-neutral environmental technologies, for use in semiconductor manufacturing. We selected 21 projects and implemented these.

In the category of joint research, we continue to conduct this in conjunction with academic institutions in Japan. We are also continuing to undertake a number of collaborative activities involving research and personnel exchange with the University of Electro-Communications and Waseda Research Institute for Science & Engineering. In addition, we have signed a new joint research agreement with Nagoya University to strengthen collaboration in the field of mobility and smart factories and to activate the exchange of human resources.

Overseas, we continue to conduct joint research with Massachusetts Institute of Technology Media Lab in the United States, among other institutions.

### ➤ Academic Collaboration (Kioxia Corporation) □

## Research and Technology Development Achievements

While constantly working to develop cutting-edge technologies, Kioxia Group has also been highly commended for presenting its R&D findings through a variety of channels, including major academic societies and research papers.

### Main Achievements in FY2022

#### ➤ Kioxia Awarded 2022 Invention Prize by the National Commendation for Invention ☐

Kioxia Corporation was awarded the 2022 Invention Prize by the National Commendation for its invention of an optimized readout method for multi-level flash memory.

#### ➤ Kioxia received three awards in the Server & Storage Division in the Best of Show Award category, Interop Tokyo 2022 (Japanese only) ☐

Kioxia Corporation was awarded the Runner-up prize for its removable storage device "XFEXPRESS XT2" and "KIOXIA EM6 Ethernet SSD + Foxconn ES2000 EBOF", plus a special prize for its Enterprise SSD "KIOXIA XL-FLASH FL6 Series NVMe SSD".

#### ➤ Kioxia Presented a false-lock-aware Locking Technique for 56-Gbps PAM4 Transceivers at ESSCIRC 2022 ☐

At the European Conference on Solid-State Circuits 2022, Kioxia Corporation announced the development of a false-lock-aware locking technique to avoid misidentification of the lock position of the clock signal, which is used as a reference for the timing of circuit operations. The technology was developed to meet the rising demand for PAM4 high-speed communications used in data centers and similar applications. It was based on the outcome of a research project commissioned by the New Energy and Industrial Technology Development Organization (NEDO).

#### ➤ Kioxia Presented Image Classification System Deploying Memory-Centric AI with High-capacity Storage at ECCV 2022 ☐

This new technology avoids "catastrophic forgetting" or loss of acquired knowledge and abilities, which is one of the major challenges of neural networks. This allows knowledge to be added or updated without the loss of current knowledge in image classification.

#### ➤ Kioxia and EAGLYS signed a Joint Development Agreement aimed at speeding up secure computing (Japanese only) ☐

Combining the technologies of the two companies, Kioxia and EAGLYS are targeting the year 2024 for the conducting of tests of secure computation using fully homomorphic encryption (FHE), which realizes the high-speed linking of the hardware and software layers.

#### ➤ Kioxia and HPE Team Up to Send SSDs into Space, Bound for the International Space Station ☐

Kioxia Corporation announced that the company will provide its SSDs for Hewlett Packard Enterprise (HPE). Kioxia's SSDs will provide robust flash storage in a test environment allowing HPE to conduct scientific experiments aboard the International Space Station.

### Initiatives for Creating Intellectual Property

#### ➤ Kioxia Selected in 2023 Edition of Clarivate Top 100 Global Innovators ☐

Kioxia Corporation has been named as one of the Clarivate Top 100 Global Innovators 2023, a recognition given to the most innovative global companies by Clarivate Plc. This is the second time Kioxia has received this prestigious award in recognition of its accomplishments in the field of intellectual property.

As a global leader in flash memory and SSD technologies, Kioxia Group is committed to cutting-edge research and development. As of December 2022, we held over 12,000 registered patents worldwide. Kioxia Group protects and utilizes its own intellectual property rights, while respecting the legitimate intellectual property rights of third parties.

The Group will continue to protect and utilize its own intellectual property rights and proactively implement initiatives to strengthen the competitiveness of its business.



## Partnerships

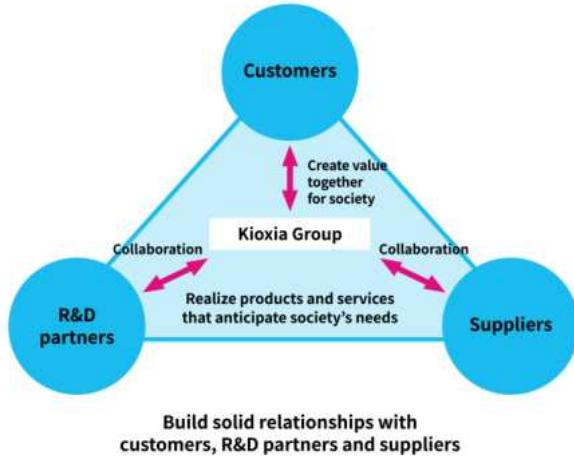


We will build strong relationships with our customers and other partners, with the aim of growing together sustainably.

### Co-Creation with Partners

Kioxia Group builds partnerships with customers, research institutes and suppliers to create products and services that anticipate the needs of society. We collaborate and generate synergy with these partners, aiming to create value for society.

#### Generating synergy through collaboration with partners to create value together for society



#### Customers

Kioxia Group has built global sales capabilities, technical support networks, and supply chain processes to anticipate the needs of our customers, who are providing new value to society around the world, and to respond to any of their issues swiftly.

#### R&D partners

Kioxia Group leverages a wide range of cutting-edge knowledge and ideas and collaborates with R&D partners in Japan and overseas with the aim of further evolving our products and services; the partners include technology organizations, universities and research institutes.

#### Suppliers

Kioxia Group will provide a steady supply of high-quality products through co-creation with suppliers and extend its competitive advantages by generating new manufacturing technologies and other innovations.

### Main Achievements in FY2022

#### Customers

In FY2022, we continued to engage on a regular basis with our customers via quarterly business reviews and other means. Listening to customers' views and understanding their requirements helps us to establish how we can partner with them more effectively to support their business expansion. It also highlights for us how we can improve our products and services and enhance the sustainability of customers' own supply chains.

#### R&D Partners

◀ Collaboration with R&D Partners

#### Suppliers

##### Energy-Saving Processing Technology for Advanced Semiconductor Manufacturing by Nano-Imprint Technology (NIL)

Kioxia Group is collaborating with partners to develop new technology that will achieve energy savings and increase productivity in the semiconductor manufacturing sector.

In May 2022, the energy-saving processing technology for advanced semiconductor manufacturing using nano-imprint lithography (NIL), which was jointly developed by Canon Inc., Dai Nippon Printing Co., Ltd. and Kioxia Corporation, was awarded the Prize for Excellence at the 49th Environmental Awards sponsored by the National Institute for Environmental Studies and the Nikkan Kogyo Shimbun and supported by the Ministry of the Environment.

▶ About the 49th Environmental Awards Prize for Excellence (Kioxia Corporation) (Japanese only) □

#### Mutual Understanding with Suppliers

Kioxia Group provides its suppliers with opportunities to understand the Group's business strategies and to foster mutual understanding with the aim of growing together. For example, we regularly exchange opinions with equipment manufacturers on achieving energy savings and increasing productivity.

# **Environment**

**Environmental Management**

**Environmental Protection System**

**Climate Change**

**How We Reduce the Impact of Our Products on the Environment**

**Current Status of Environmental Impact and Environmental Targets and Outcomes**

**Effective Use of Water Resources**

**Management of Chemical Substances in Our Products**

**Biodiversity Preservation**

**Environmental Evaluation by External Parties**

**Environmental Communication**

**Acquisition of Environmental Certification**

# Environmental Management

Kioxia Group has incorporated concern for environmental issues into our Standards of Conduct; we treat climate change and consideration for the environment as priority areas of focus in terms of ensuring the Group's medium- to long-term growth, and we refer to these priority areas as "Sustainability Materiality." We strive to enhance our corporate value and contribute to the realization of a sustainable society by ensuring that the environmental impact of our business activities are taken into consideration. We have set the goal of achieving by FY2050 net-zero Scope1 greenhouse gas emissions (direct emissions from our business sites), and Scope2 emissions (indirect emissions resulting from our use of purchased energy) across our global operations.

In addition to complying with relevant laws and regulations, we also strive to develop products and services that consider environmental impacts. We take systematic and globally accredited steps to reduce greenhouse gas emissions and mitigate other environmental impact throughout our entire value chain.

## Environmental Management Policy

Kioxia Group has formulated the Kioxia Group's Environmental Policy, which is our basic philosophy concerning the environment, and we have communicated this across the entire Group.

- **Kioxia Group's Environmental Policy**
- **Kioxia Group Standards of Conduct 5. The Environment**

## Kioxia Group's Environmental Management Structure

Kioxia Group manages its business while considering the environment and striving to protect it across all of our sites.

Kioxia Corporation has set up an Environmental Planning and Promotion Group within the Production Technology Promotion Division; this is responsible for planning and proposing strategies that help the company address social issues and protect the environment. The Group also compiles environment-related data from workplaces and manufacturing sites within Kioxia Group. Once every half year, at the Environmental Management Reviews (chaired by the officer responsible for the environment with attendees including Executive Officers), the level of achievement of our overall environmental initiatives is reviewed and confirmed. The Board of Directors discusses key issues flagged in reports from the Sustainability Committee or arising in Sustainability Strategy Meetings.



## Environmental Management System

Kioxia Group has established a global environmental management system to promote environment-related activities. Kioxia Corporation, which includes the company's Head Office and Yokkaichi Plant, Kioxia Iwate Corporation, and Solid State Storage Technology Corporation have obtained ISO 14001:2015 certification.

For more information on our ISO 14001 certification and other environmental certifications, please click the below link.

- **Acquisition of Environmental Certification**

## Environmental Education and Awareness-Raising

In addition to training covering environmental legislation and regulations, Kioxia Group also provides all executives and employees, including temporary workers, with annual training on environmental issues. The training covers the latest environmental issues, including climate change.

Each site raises awareness of the environment among its employees in all aspects of their professional and daily lives through internal publications such as the "Energy-Saving Wall Newsletter" and the "ESG Sustainability Classroom." They also seek suggestions from employees for ways of reducing plastic waste, and encourage them to participate in environmental activities aimed at achieving SDGs, to raise their environmental awareness.



Energy-Saving Wall Newsletter (published six times a year by Kioxia Corporation's Yokkaichi Plant)

# Environmental Protection System

## Environmental Protection Structure

To ensure efficient and ongoing environmental preservation activities, each manufacturing site of Kioxia Group in Japan has established environmental preservation procedures overseen by a General Manager with clearly defined responsibilities and authority. An Environment Management Committee deliberates environmental preservation issues across the entire spectrum of environmental activities, including environmental management systems, policies and objectives. We have further established a Compliance Committee to supervise and ensure full compliance with all relevant environmental laws and ordinances.

Environmental Protection Structure (Case of Kioxia Corporation's Yokkaichi Plant)



\* EMS: Environmental Management System.

## Prevent pollution measures at environmental facilities

Kioxia Group has established "Environmental Structural Guidelines" covering wastewater treatment and related facilities, aimed at preventing and reducing the risk of contamination by chemical leaks.

### Examples



Waste gas scrubber

Structures and specifications aimed at ensuring stable processing



Overhead piping (No buried piping)

Reduces the risk of soil contamination



Drainage dike

Prevents wastewater from leaking underground or into public water areas.



Wastewater treatment

Stable processing system that prevents discharge of wastewater



Double joints in piping

Monitoring and prevention of liquid leakages



Six-sided inspections

Six-sided inspections quickly uncover abnormalities at an early stage

## Status of water and air quality management

In each of our domestic manufacturing operations, we monitor water and air quality on a daily basis using voluntary standards that are more stringent than the prevailing legal requirements, in order to minimize the environmental impact of our business operations.

Around-the-clock, automated monitoring is conducted in respect of legally regulated items such as NOx (nitrogen oxide), SOx (sulfur oxide), T-N (total nitrogen), T-P (total phosphorus), COD (chemical oxygen demand), SS (suspended solids), F (fluorine), and pH (power of hydrogen) levels.

To further strengthen our monitoring of water and air quality, we also voluntarily control items not subject to legal restrictions through sampling conducted at Analysis Centers located within our manufacturing plants. Kioxia Corporation's Yokkaichi Plant tests around 47,000 samples per year, with Kioxia Iwate Corporation testing around 16,000. In FY2022, Kioxia Group was not subject to any government fines or penalties related to conservation of the environment in respect of issues such as water or air quality. Please refer to the environmental reports from each manufacturing site for more detailed results.

▶ [Environmental Initiatives at Kioxia Corporation's Yokkaichi Plant](#)

▶ [Environmental Initiatives at Kioxia Iwate Corporation](#)

### Environmental considerations in the construction of new buildings

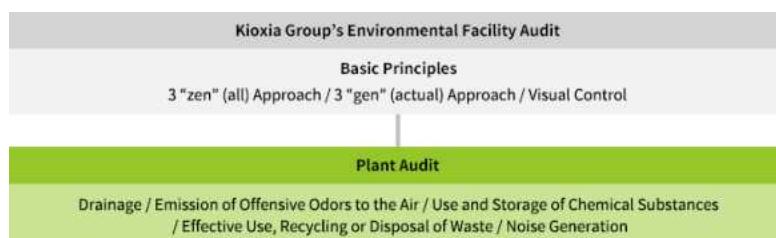
Prior to constructing manufacturing facilities, Kioxia Group considers the impact of the construction on the surrounding environment, conducts an environmental assessment, and takes all necessary precautions. Additionally, after construction is completed, we monitor various parameters in the surrounding environment such as noise and wastewater levels, and conduct surveys of the ecosystem to ensure that the surrounding environment has not been adversely affected by the construction.

## Environmental Facility Audit

Kioxia Group's audit teams conduct annual environmental audits of its sites based on the following principles: the three "Zen (all)" approach (all aspects, all facilities, all staff), the three "Gen (actual)" approach (actual place, actual product, actual reality), and visual control approach (look, visualize, show).

We use these audits to ensure our compliance with laws and regulations; we also use them to measure and manage controlled substances and follow the "4S" approach (sorting, straightening up, sanitation, sweeping). These audits cover eight facilities, including the legally mandated wastewater treatment facilities.

Kioxia Group's Environmental Facility Audit System Diagram



### Cooperation with external contractors

The Kioxia Group has established management and supervisory processes to ensure the appropriate treatment of waste, the recycling and other processing of which is outsourced to external parties. Kioxia Corporation regularly monitors relevant sites, checking the operation of treatment facilities, the storage of goods, and business documentation. During monitoring in FY2022, we did not uncover any issues at these sites.

# Climate Change

Toward a decarbonized society, Kioxia Group treats initiatives addressing climate change as a management priority and we refer to these priority areas as “sustainability materiality”. We aim to reduce greenhouse gas emissions and energy consumption across our operations—both in terms of our business activities and product lifecycles—throughout our value chain.

## Aiming to Achieve Net-zero Greenhouse Gas Emissions by 2050

In April 2023, Kioxia Group announced that by FY2050, the company aims to achieve net-zero Scope1 greenhouse gas emissions (direct emissions from our business sites) and Scope2 emissions (indirect emissions resulting from our use of purchased energy) across our global operations.

We have additionally set a target of procuring 100% of our energy from renewable sources by FY2040. During 2023, we have installed solar power generation systems at our Kitakami and Yokkaichi plants – the largest of their kind at any semiconductor plant in Japan.<sup>1</sup> At the same time we are moving forward with the procurement of non-fossil certificates<sup>2</sup> to boost our use of renewable energy.

Regarding direct emissions from our manufacturing sites, we have installed abatement equipment in 100% of our targeted facilities since 2011, aiming to eliminate during manufacturing the emission of PFCs<sup>3</sup> with high global warming potential.

In addition to these energy conservation initiatives, we will continue implementing measures to combat climate change in the course of our business activities.

<sup>1</sup> Based on our own research (as of November 2023)

<sup>2</sup> Certificates that allow the trading of the environmental value of renewable non-fossil power sources that do not emit CO<sub>2</sub> during generation.

<sup>3</sup> CFC alternatives with high global warming potential used in semiconductor manufacturing. Those used by the Kioxia Group include CF<sub>4</sub>, C<sub>4</sub>F<sub>8</sub>, CHF<sub>3</sub>, SF<sub>6</sub>, NF<sub>3</sub>, CH<sub>2</sub>F<sub>2</sub>, CH<sub>3</sub>F, CH<sub>4</sub>, and N<sub>2</sub>O.



Solar power generation system at Kioxia Iwate Corporation's Plant (Fab 1)



Solar power generation system at Kioxia Corporation's Yokkaichi Plant (Fab 6)

## Disclosures Aligned to the TCFD Recommendations

In June 2021, Kioxia Group announced our endorsement of the recommendations published by the Task Force on Climate-Related Financial Disclosures (TCFD).<sup>4</sup> We believe that accurately ascertaining the climate-related impact of our business, disclosing such information to stakeholders and deepening mutual understanding are indispensable for sustainable corporate growth, and we proactively disclose that information in accordance with the TCFD recommendations.

<sup>4</sup> A task force established by the Financial Stability Board which devises methods of disclosing climate-related financial information; an initiative to promote the disclosure of information related to climate-related risks and opportunities.

## Governance and Risk Management

Kioxia Group is undertaking various activities aimed at mitigating climate change under its sustainability management structure.

At Sustainability Strategy Meetings chaired by the President and CEO, executive officers discuss our strategies and policies and check the level of achievement, while consulting with the Board of Directors on key issues. The Sustainability Committee, chaired by the Executive Officer in Charge of Sustainability, discusses and formulates key themes and sets key performance indicators (KPIs) based on the strategies and policies formulated at the Sustainability Strategy Meetings.

We have also set up Environmental Taskforce under this conference body to tackle important sustainability issues across the organization; the task force reports their areas of focus and progress to the Sustainability Committee.

In FY2022, we discussed the policy of net-zero greenhouse gas emissions and the following items based on the recommendations of the TCFD: scenario analysis, analysis of climate-related risks and opportunities, and strategies, metrics and targets.

For more information on our sustainability promotion structure, please refer to the below website.

### ► Sustainability Management

## Strategy

### Scenario Analysis

Kioxia Group carried out an impact analysis of the effects of climate change on our operations by stakeholder and by business using two scenarios stipulated by the International Energy Agency (IEA) and other organizations: the 2°C Scenario and 4°C Scenario.<sup>5</sup> Under the 2°C Scenario, we believe government action, regulatory strengthening and the preferences of customers and other stakeholders will have a significant impact. For example, we assume that there will be an increase in the costs associated with the implementation of measures to reduce greenhouse gas emissions at manufacturing sites, and higher research and development costs arising from the need to develop more energy-efficient products with increased capacity. Under the 4°C Scenario, we project rising material costs and the emergence of physical risks to our company bases.

<sup>5</sup> The 2°C Scenario and 4°C Scenario are common terms applied to climate-related scenarios depicted by the IEA and other organizations. Each scenario includes specifications of the economic measures needed to suppress rising temperatures and the envisaged environmental damage in the event such increases in temperature occur.

### Risks and Opportunities

Kioxia Group assesses the risks and opportunities outlined in the table below arising from the external environment in 2030, based on an analysis of potential scenarios.

We recognize the transition risks, posed by the migration to low-carbon economies, such as increased power supply costs resulting from the introduction of a carbon tax, and the cost of installing additional equipment to remove PFCs in line with increases in our manufacturing output. In addition, we recognize the potential for physical risks such as an increase in clean room air-conditioning costs resulting from a rise in outdoor temperatures.

In terms of potential opportunities arising from the transition to low-carbon economies, we envisage expanding business opportunities through the manufacture of more efficient products that use less electricity, and by reducing our own power consumption during manufacturing through the implementation of energy conservation measures.

To clarify the potential effects of climate-related risks and opportunities on our business activities, our task force conducts detailed calculations of their financial impact. Given the expansion of our business and the demand from our stakeholders for us to respond to climate change, we believe that the financial impact of both risks and opportunities in our research and development, our transactions with customers, and our electricity costs will be significant, regardless of the scenario. However, we believe that the costs of PFCs abatement equipment and of the associated renewable energy installations will have a relatively small financial impact.

We will continue to address any risks related to climate change, seeing these more as opportunities.

External events	Risks		Opportunities	
	Attributes	Potential Financial Impact	Attributes	Potential Financial Impact
Introduction of carbon pricing	(Transition Risks) Policy and Legal	<ul style="list-style-type: none"><li>Increased cost of power.</li><li>Soaring costs of installing manufacturing equipment.</li><li>Soaring construction costs.</li></ul>	—	—
Conversion to renewable energy	(Transition Risks) Technology	<ul style="list-style-type: none"><li>Increased cost of deploying renewable energy supplies.</li></ul>	(Transition Opportunities) Energy Sources	<ul style="list-style-type: none"><li>Enhanced reputation resulting from conversion to renewable energy.</li></ul>
Stricter promotion of energy saving measures during manufacturing	(Transition Risks) Technology	<ul style="list-style-type: none"><li>Increased cost of installing energy-efficient equipment.</li></ul>	(Transition Opportunities) Resource Efficiency	<ul style="list-style-type: none"><li>Decreased electricity cost due to deployment of energy-efficient manufacturing equipment.</li><li>Improved productivity due to enhanced processes.</li></ul>
Improving environmental awareness of stakeholders	(Transition Risks) Markets	<ul style="list-style-type: none"><li>Increased R&amp;D costs of high energy-consumption efficiency products.</li></ul>	(Transition Opportunities) Products	<ul style="list-style-type: none"><li>Expanded business opportunities as a result of highly energy-consumption efficiency products.</li></ul>
	(Transition Risks) Reputation	<ul style="list-style-type: none"><li>Reputation decline and impact on fundraising abilities if response to our stakeholders is insufficient.</li></ul>	(Transition Opportunities) Markets	<ul style="list-style-type: none"><li>Increased customer trust levels due to strengthened BCM<sup>6</sup> leading to stronger branding power and higher corporate value.</li></ul>
Transition to low carbon products	(Transition Risks) Reputation	<ul style="list-style-type: none"><li>Impact on our business due to demands from customers to reduce GHG emissions and make greater use of renewable energy sources.</li></ul>	(Transition Opportunities) Markets	<ul style="list-style-type: none"><li>Positive impact on our business by responding to demands to reduce GHG emissions and make greater use of renewable energy sources.</li><li>Increased corporate value and fundraising capabilities resulting from strengthened ESG activities.</li></ul>
	(Transition Risks) Technology	<ul style="list-style-type: none"><li>Increased cost of introducing PFCs abatement equipment to the new building.</li></ul>		

External events	Risks		Opportunities	
	Attributes	Potential Financial Impact	Attributes	Potential Financial Impact
Upgrading electricity infrastructure	(Transition Risks) Technology	<ul style="list-style-type: none"> <li>Unstable power supply due to expansion of renewable energy usage.</li> </ul>	(Transition Opportunities) Energy sources	<ul style="list-style-type: none"> <li>Stabilization of power supplies and reduced electricity costs through early securing of renewable energy sources.</li> </ul>
Extreme weather conditions	(Physical Risks) Acute	<ul style="list-style-type: none"> <li>Extreme weather conditions, resulting in suspension of operations, etc.</li> <li>Supply chain disruption, resulting in suspension of operations, etc.</li> </ul>	—	—
Water shortages	(Physical Risks) Chronic	<ul style="list-style-type: none"> <li>Operations halted due to inability to secure sufficient water supplies.</li> </ul>	—	—
Rising temperatures	(Physical Risks) Chronic	<ul style="list-style-type: none"> <li>Increased air-conditioning costs.</li> </ul>	—	—

### Toward Minimizing Risks and Maximizing Opportunities

- Introduction of renewable energy
- Promotion of energy-saving activities
- Efficient use of water resources
- Development of high-capacity, high energy-consumption efficiency products
- Reinforce BCM/SCM

<sup>6</sup>Business Continuity Management

## Metrics and Targets

To help achieve net-zero greenhouse gas emissions by FY2050, Kioxia Group has established KPIs related to energy consumption, environmental impact, and the use of our products. We review the degree of achievement of these at Environmental Management Review meetings held every six months.

For example, with regard to Scope2-related energy consumption, we are promoting energy-saving activities with the stated goal of reducing the volume of emissions by 1% each year compared to the previous fiscal year. For details, please refer to "Greenhouse Gas Emissions Across our Entire Value Chain" and "Our Efforts to Adapt to Climate Change" below.

Moreover, we have set the long-term goal of using 100% renewable energy by FY2040. Through creation of an energy portfolio that incorporates energy conservation activities and the use of non-fossil certificates, we will work to secure the optimal and stable procurement of renewable energy in line with the expansion of our business. We will also work to install renewable power generation system and carbon-neutral city gas in our factories.

## Greenhouse Gas Emissions Across Our Entire Value Chain

Scope1, 2 and 3 CO<sub>2</sub>-equivalent greenhouse gas emissions from Kioxia Group's business operations in FY2022 are shown in the chart below. The figures in the table below cover emissions from Kioxia Corporation, including the company's Head Office, Yokohama Technology Campus and Yokkaichi Plant, Kioxia Iwate Corporation, and the Solid State Storage Technology Corporation (SSSTC).

(Hyphenated cells in the below list indicate "not applicable")

### Scope1 (Direct emissions)

CO <sub>2</sub> Emissions in FY2022 (t-CO <sub>2</sub> )	Category Outlines
680,600	Direct emissions from in-house fuel use and our business processes

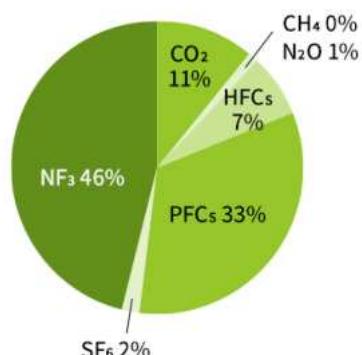
### Scope2 (Indirect emissions)

CO <sub>2</sub> Emissions in FY2022 (t-CO <sub>2</sub> )	Category Outlines
1,899,400	Indirect emissions from production of electricity, heat, and steam purchased by the company

### Scope3 (Other indirect emissions not covered by Scope1 and 2)

Category	CO <sub>2</sub> Emissions in FY2022 (t-CO <sub>2</sub> )	Category Outlines
1. Purchased goods and services	3,043,200	Emissions from activities up to the processing of raw materials and the manufacture of parts, packaging, etc.
2. Capital goods	1,450,366	Emissions resulting from the construction and manufacture of our own capital goods
3. Fuel- and energy-related activities not included in Scope1or 2	348,378	Upstream emissions of purchased fuels/electricity, etc.
4. Upstream transport and delivery	179	Emissions arising from the transportation of products and waste in Japan (excluding overseas transportation and suppliers' transportation)
5. Waste generated in operations	33,863	Emissions from the treatment of waste
6. Business travel	1,421	Emissions arising from employees' business travel
7. Employee commuting	11,983	Emissions arising from employees' commuting
8. Leased assets (upstream)	—	—
9. Downstream transportation and delivery	—	—
10. Processing of sold products	—	—
11. Use of sold products	521,167	Emissions arising from use of sold products
12. End-of-life treatment of sold products	—	—
13. Downstream leased assets	—	—
14. Franchises	—	—
15. Investments	—	—
Scope3 (Total)	5,410,557	

Breakdown of Scope1 direct emissions (FY2022)



## Achievements in the areas of energy consumption and greenhouse gas emissions

We plan and implement capital expenditure to secure the production capacity that will allow us to respond to the dramatic increase in the volumes of data now circulating every day. As a result, our energy consumption is on the rise.

The graph below shows Kioxia Group's energy consumption and Scope1 and 2 greenhouse gas emissions. In order to achieve our goal of 100% renewable energy usage by FY2040 and net zero greenhouse gas emissions by FY2050, we are introducing solar power generation systems and progressing with the purchase of non-fossil fuel certificates in respect of some of the electricity we use, among other initiatives.



Notes:

(1) The percentage of our total energy consumption accounted for by renewable energy in FY2022 was 0.1%.

(2) Subjects are Kioxia Corporation, Kioxia Iwate Corporation and SSSTC (SSSTC results are in respect of the period from FY2021 onward).

Note: Subjects are Kioxia Corporation, Kioxia Iwate Corporation and SSSTC (SSSTC results are in respect of the period from FY2021 onward).

## Our Efforts to Adapt to Climate Change

Kioxia Group is progressing efforts to adapt to climate change throughout our value chain, taking into account the identified risks, opportunities and their impact.

### Product Development

In the data storage market, the need for low-power consumption-type products is growing extremely rapidly, and we expect to expand sales opportunities by further developing these products. We are working on the research and development of more energy-efficient processes and increased capacity through the development of advanced integrating technology. We have set the challenging target of reducing the energy consumption of our products by 50% per 1GB from 2017 levels by FY2025.

Please see below for details.

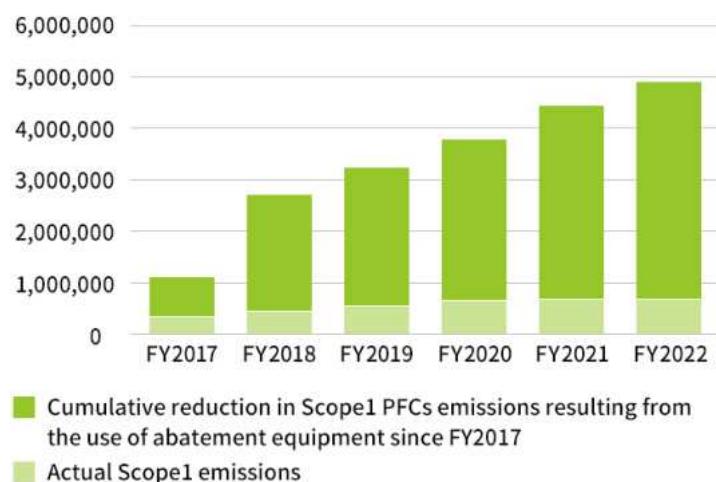
#### ➤ How We Reduce the Impact of Our Products on the Environment

## Operation of Manufacturing Sites and Research Development Facilities

Kioxia Group has set the goal of achieving net-zero Scope1, direct emissions, and Scope2, indirect emissions resulting from its use of purchased energy.

To help achieve the reduction of Scope1 emissions, we have been proactive in the installation of abatement equipment to deal with PFCs – greenhouse gases with high global warming potential. Since FY2011, we have installed PFCs abatement equipment in 100% of the target facilities. The number of PFCs abatement equipment installed between FY2020 and FY2022 averaged more than 170 per year. Since FY2017, the total amount of CO<sub>2</sub> reduced with PFCs abatement equipment has reached 4.24 million t-CO<sub>2</sub>.

The contribution of PFCs abatement equipment to Scope1 direct emissions reductions since FY2017 (t-CO<sub>2</sub>)



Note: Subjects are Kioxia Corporation, Kioxia Iwate Corporation and SSSTC (SSSTC results are in respect of the period from FY2021 onward).

We also conduct research and development in environmentally conscious facilities. The Flagship Building, a new research development building at the Yokohama Technology Campus that was completed in 2023, is the first building in the Group that has acquired ZEB-Ready certification.<sup>7</sup> The other newly constructed building, the Shin-Koyasu Technology Front, features a clean room with an environmentally conscious design.

<sup>7</sup> ZEB stands for net-Zero Energy Building. "ZEB-Ready" is one of the grades assigned by Japan's Building Energy-efficiency Labeling System, certifying buildings that provide a comfortable indoor environment while reducing their primary energy consumption by 50% or more, excluding renewable energy.



Flagship Building at Yokohama Technology Campus



Shin-Koyasu Technology Front

We will continue to reduce the amount of Scope2 indirect emissions resulting from our use of purchased energy by making more use of renewable energy sources.

In order to optimize the efficiency of our energy consumption, Kioxia Group's manufacturing sites have the stated goal of reducing Scope2 energy consumption by 1% compared to the previous year's total, in line with the directives contained in the Act on Rationalizing Energy Use and Shifting to Non-fossil Energy (hereinafter, "the Energy-Saving Act") in Japan.

In FY2022 we achieved our goal of reducing energy use through various energy-saving activities, recording an actual reduction of 31,000 t-CO<sub>2</sub> emissions per year against a target reduction of at least 25,000 t-CO<sub>2</sub>. From FY2017 to FY2022, the result of our energy conservation programs was a cumulative reduction of approximately 130,000 t-CO<sub>2</sub> emissions.

To promote energy conservation and efficiency at each facility, we endeavor to improve and incorporate new technologies while periodically addressing priority areas and assessing the progress of improvements at meetings of our Energy Conservation Committee.

Our flash memory products are manufactured in smart factories that incorporate cutting-edge technologies such as AI and IoT. Big data collected by IoT and fully automated control facilities improve the quality and efficiency of our manufacturing processes and also help reduce their environmental impact.

## Activities of Energy Conservation Committee

With the aim of further promoting energy conservation in our business activities, we have established Energy Conservation Committee at Kioxia Corporation's Yokkaichi Plant and at Kioxia Iwate Corporation. We have also set up cross-departmental subcommittees for each target facility and manufacturing process.

At the Yokkaichi Plant, we use air conditioners in the electrical room to prevent electrical equipment there from breaking down due to high temperatures. We have reviewed these operating conditions and successfully reduced the load on the air conditioners by bringing in low-temperature outside air during the non-summer months. This initiative is expected to reduce emissions by 80 t-CO<sub>2</sub> per year.

We also use water to maintain a constant temperature in facilities such as clean rooms and other facilities and in certain equipment. Kioxia Iwate Corporation experimented with lowering the temperature and reducing the flow rate of water used to cool manufacturing equipment. This initiative led to reduction of the load on the cooling water pumps while maintaining their cooling effect, thereby reducing overall electricity consumption and resulting in an annual reduction of 523 t-CO<sub>2</sub> and major water savings.

Furthermore, we have reviewed test equipment and processes, which are essential for ensuring semiconductor quality; this has resulted in a reduction in the amount of test equipment used and reduced power consumption.

## Value Chains

As climate change continues in the form of global warming, damage due to water-related natural disasters including typhoons and heavy rains is becoming more apparent every year. These events impact on the production of component manufacturers and on logistics, increasing the risk of disruption to our manufacturing processes and product supplies.

Kioxia Group has targeted all business units with the drafting of business continuity management (BCM) policies, and has established response protocols that take account of a variety of risks, including natural disasters.

Under our BCM policy, we strive to be fully conscious of the status of our materials and products even at times of no disruption, and ensure we have multiple suppliers. Furthermore, we are making efforts to ensure we are able to swiftly assess the situation in the event of an emergency, and to minimize effects on the business at such times by means of a collaborative process designed to ensure the early recovery of services.

Addressing climate change is also an important issue for our customers, and we closely communicate with them on the related challenges and responses. We will continue to work with our partners across the entire value chain to expand the market share of our products that consider environmental impacts and help realize a decarbonized society.

## Taking Part in External Initiatives Related to Climate Change

The Kioxia Group is helping to address climate change, gathering information and making recommendations to the government through participation in industry associations and other activities.

Following the announcement by Kioxia Holdings Corporation of its endorsement of the TCFD in 2021, we are participating in the activities of the TCFD Consortium with effect from 2022. Moreover, Kioxia Corporation is involved in the addressing of energy and global warming issues as a member of the Environmental Working Group of the Japan Electronics and Information Technology Industries Association (JEITA), a group representing the electronic device industry. As a supporting member of the Japan Climate Leaders' Partnership (JCLP) a corporate group that aims to achieve a decarbonized society, we have collaborated in measures aimed at achieving the targeted 1.5°C reduction stipulated in the Paris Agreement, as well as in discussions about proposals to be made to the government.

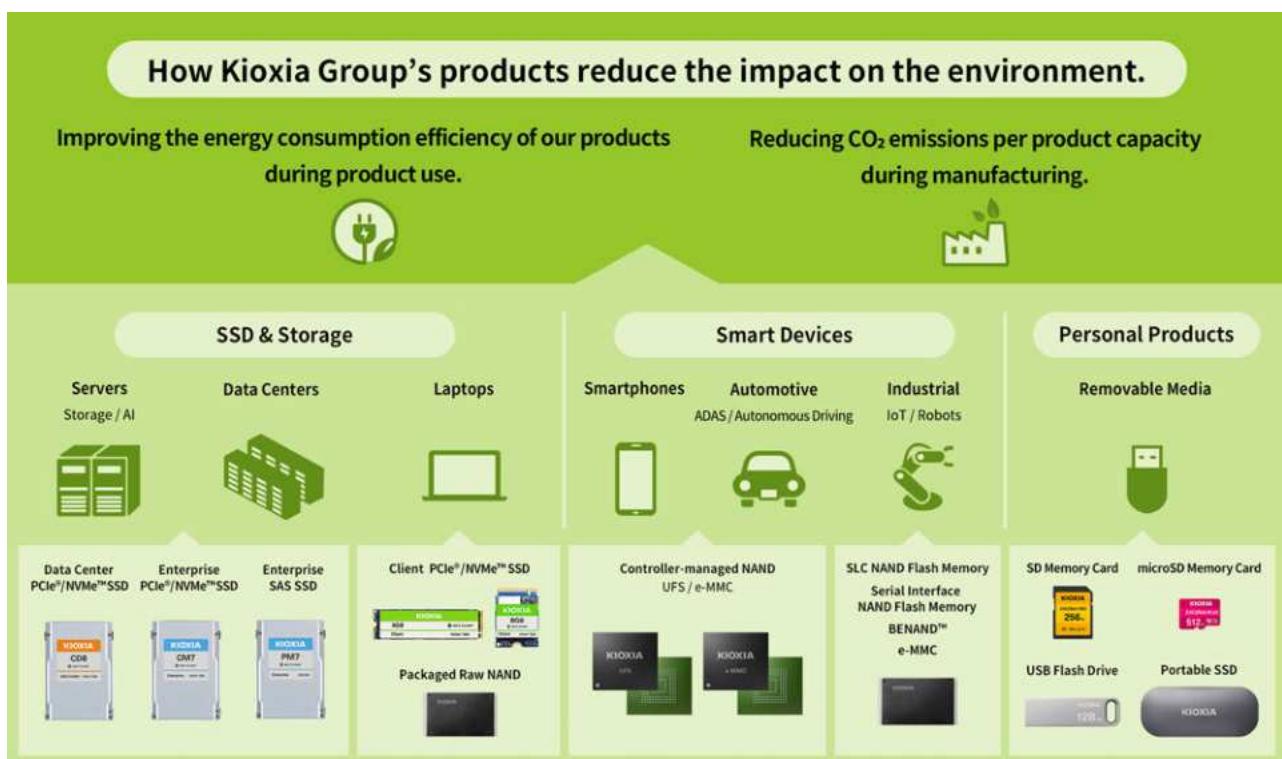
# How We Reduce the Impact of Our Products on the Environment

The NAND flash memory and Solid State Drive (SSD) Products that Kioxia Group supplies are integrated into a wide range of applications and used throughout the world. We are making efforts to reduce the environmental impact of our products on every stage of their lifecycle; this includes reducing CO<sub>2</sub> emissions per product capacity during manufacturing and providing our customers with products that consume efficiently as less energy as possible when in use.

Given recent technological innovation in the fields of AI, IoT and autonomous driving, there is a growing need to increase the capacity and speed of NAND flash memory and SSD products. Kioxia Group's ongoing development of integration technology and the resulting increased capacity are allowing us to reduce the levels of CO<sub>2</sub> emission per product capacity during manufacturing. Specifically, this is being achieved by reducing the amount of electricity and materials per product capacity used during manufacturing, and improving the energy consumption efficiency of our products for processing 1GB data when they are in use.

Furthermore, faster devices with even greater capacities will be required for 5G mobile communication systems, which are becoming more widespread. From an environmental perspective, there is concern that this will result in even more electricity being required to operate such devices. For this reason, we expect the use of highly energy consumption-efficient, large-capacity flash memory and high-throughput SSD products to expand to a number of new fields. As our top priority, we are therefore looking to provide more energy consumption-efficient and higher-capacity products by developing more advanced design and integration technologies, in order to contribute to the realization of a low-carbon society.

## How Kioxia Group's Products Help Protect the Environment



## Targets for Improving the Energy Consumption Efficiency of Our Products

The Kioxia Group will utilize these advanced technologies to further improve the high energy consumption efficiency of its products. Specifically, we have set a high target of improving the energy consumption efficiency for processing 1GB by 50% by FY2025 from the FY2017 level.

In FY2022, we successfully achieved a reduction of around 27% in the energy consumption required to process 1GB data compared to FY2017 level, thereby making considerable progress towards our FY2025 targets. We were able to do this by achieving higher speeds, by integrating advanced technologies in our NAND flash memory, and by designing our own optimal controllers.

### Targets : Improving the Energy Consumption Efficiency of Our Products



### UFS Ver. 3.1 Embedded Flash Memory Devices for Automotive Applications

Kioxia Corporation developed new Automotive Universal Flash Storage (UFS)<sup>1</sup> Ver. 3.1 embedded flash memory devices.

Compared to the previous generation product<sup>2</sup>, the sequential read and write performance of the Automotive UFS Ver. 3.1 256GB device has been improved by approximately 2x and 4x respectively, while energy consumption efficiency for 1GB processing has been improved by approximately 35% and 70% respectively. Compared to the previous generation product, the new product is 0.1mm thinner and approximately 7.7% smaller in overall volume, helping to conserve resources.

The storage capacity of in-vehicle devices continues to increase with the growing sophistication of automotive infotainment systems<sup>3</sup>, advanced driver-assistance systems (ADAS), and the increase in external communication capabilities; to address these developments, this product lineup has a maximum capacity of 512GB.

We will help enable the development of in-vehicle applications that enhance the driver experience, and energy consumption efficiency in product use, by providing the high-performance storage required by increasingly complex in-vehicle devices.

#### ► UFS & e-MMC for Automotive □

<sup>1</sup> Universal Flash Storage (UFS) is a product category of embedded memory products built to JEDEC UFS standard specifications. Its serial interface allows UFS to support full duplexing, which enables both concurrent reading and writing between the host processor and UFS device.

<sup>2</sup> Kioxia Corporation's previous-generation 256GB device part number "THGAFBT1T83BAB5".

<sup>3</sup> A system that integrates driving-related information and support, such as navigation, and entertainment, including movies.

Notes:

(1) The advertised memory on each Kioxia product is based on the on-board memory capacity, not the amount of memory available for data storage by the end user. Since a portion of the memory capacity is used for memory management and other functions, the usable capacity will be less than that advertised; please refer to the product specifications for details.

(2) Read and write speeds represent the fastest times recorded under test conditions at Kioxia Corporation; we are unable to guarantee the read or write speeds of individual devices in actual use; these may vary depending on the device used.

(3) Company names, product names and service names may be trademarks of third-party companies.



UFS Ver. 3.1 Embedded Flash Memory Devices for Automotive Applications

### Enterprise SSD Compatible with Next Generation High-Speed PCIe® 5.0 Interfaces

Kioxia Corporation has begun mass production of the new Kioxia CM7 series of enterprise SSDs; these support the next-generation high-speed PCIe® 5.0 interfaces used in high-performance servers and storage systems.

This product is PCIe® 5.0, NVMe™ 2.0 specification-compliant, and achieves a sequential read performance of up to 14GB/s, the industry's fastest in its class.<sup>4</sup>

This achieves approximately 2x the maximum sequential read speed of our previous-generation Kioxia CM6 Series enterprise SSDs and approximately 1.7x the maximum sequential write performance. The 15.36TB<sup>5</sup> product improves energy consumption efficiency by approximately 30% in sequential reads and 25% in sequential writes respectively.

The product lineup includes capacities of up to 15.36TB in the EDSFF (Enterprise and Datacenter Standard Form Factor) E3.S and Datacenter Standard Form Factor family of specifications, which is expected to become the next-generation form factor, and up to 30.72 TB in the conventional 2.5-inch form factor.<sup>6</sup>

By being the lead in the industry to introduce even faster next-generation SSDs, we will extend our leadership in the sector and significantly support the development of high-performance applications by Original Equipment Manufacturers (OEMs) and improve the energy consumption efficiency of their products.



Enterprise SSD Kioxia CM7 Series

#### ► Enterprise SSD □

<sup>4</sup> As of December 1, 2023 based on Kioxia Corporation survey of publicly available information.

<sup>5</sup> Definition of capacity: Kioxia Corporation defines a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes and a terabyte (TB) as 1,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1 GB = 2^30 = 1,073,741,824 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

<sup>6</sup> For the 2.5-inch form factor and U.3 connections, the transfer speed will be limited to that of PCIe® Gen4.

Notes:

(1) Read and write speeds vary depending on the host system, read/write conditions, file size, etc.

(2) PCIe is a registered trademark of PCI-SIG.

(3) NVMe is a registered trademark or trademark of NVM Express, Inc. in the United States and other countries.

(4) Other company names, product names and service names may be trademarks of third-party companies.

# Current Status of Environmental Impact and Environmental Targets and Outcomes

## Current Status of Our Environmental Impact

The following tables outline the environmental impact of the manufacturing activities of Kioxia Group. Although the figures show an increasing trend as a result of us increasing production capacity in response to the growing demand for communications infrastructure, we continue to work on reducing our environmental impact by means of various initiatives. In order to reduce the environmental impact per product capacity during manufacturing of our product manufacturing, when planning and implementing measures we set specific targets, including percentage changes to base year figures, in order to verify our levels of achievement.

The figures in the table below cover emissions from Kioxia Corporation, including the company's Head Office, Yokohama Technology Campus and Yokkaichi Plant, Kioxia Iwate Corporation, and the Solid State Storage Technology Corporation (SSSTC).

### Input

	FY2020	FY2021	FY2022
Chemicals <sup>1</sup> (t)	56,418	63,539	63,241
- VOC <sup>2</sup> (t)	16,985	18,330	18,318
- PRTR <sup>3</sup> (t)	7,214	7,539	6,669
City water <sup>4</sup> (thousand m <sup>3</sup> )	59	71	122
Industrial water <sup>4</sup> (thousand m <sup>3</sup> )	22,764	24,417	25,153

### Output

	FY2020	FY2021	FY2022
Greenhouse gas (thousand t-CO <sub>2</sub> )	2,365	2,542	2,580
Chemicals <sup>1</sup> (t)	639	625	535
- VOC <sup>2</sup> (t)	599	583	495
- PRTR <sup>3</sup> (t)	3	2	2
Waste (t)	93,914	105,737	101,604
- Recycled volume (t)	67,925	75,025	72,932
Wastewater (thousand m <sup>3</sup> )	17,300	18,445	18,923
NOx (t)	28.7	26.6	32.5
SOx (t)	0	0	0

<sup>1</sup> Chemicals targeted for reduction

<sup>2</sup> Volatile organic compounds: causative agents that generate photochemical smog, such as IPA, butyl acetate and cyclohexanone.

<sup>3</sup> Pollutant release and transfer register: a system to ascertain, compile and disclose data on hazardous chemical substances (such as water-soluble zinc compounds, 2-aminoethanol, silver and its water-soluble compounds, etc.) discharged into the environment from any source or transported from work sites in waste. The result includes only our manufacturing and business sites in Japan.

<sup>4</sup> All fresh water

For details of the environmental impact of each manufacturing site and their efforts to help reduce the environment impact, please refer to each site's environmental reports.

➤ [Kioxia Corporation's Yokkaichi Plant Environmental Initiatives](#) □

➤ [Kioxia Iwate Corporation Environmental Initiatives](#) □

## Targets and Outcomes

Kioxia Group has established its own environmental goals and undertakes business activities that contribute to the realization of a sustainable society. The following table summarizes our environmental targets for FY2022 and their achievement status.

We again achieved all our environmental targets in FY2022 thanks to the energy-saving activities we promoted across the organization and our efforts to reduce the amounts of used and discarded chemical substances at our flash memory manufacturing plants. Our employees also actively participated in a variety of social contribution and biodiversity conservation initiatives, primarily at our manufacturing plants.

We have set numerical targets per product capacity basis for the environmental impact of our product manufacturing activities using FY2017 as a base year; we have also made strenuous efforts to reduce CO<sub>2</sub> and other greenhouse gas emissions. Our business plan included the expansion of our production lines, and the environmental impact of our activities is therefore expected to have increased compared with the previous year; however we will continue to pursue our cross-functional environmental initiatives.

The figures in the table below cover emissions from Kioxia Corporation, including the company's Head Office, Yokohama Technology Campus and Yokkaichi Plant, Kioxia Iwate Corporation, and SSSTC.

Environmental targets and objectives		FY2022 Targets	FY2022 Results	FY2022 Achievement Status
Development of products which has less environmental impact in manufacturing processes	Reducing the environmental impact of production processes through miniaturization of devices	3 or more measures per year	3 measures	✓
Mitigation of global warming	CO <sub>2</sub> emissions from energy sources (Rate of change from FY2017)	≤ 50.0%	44.3%	✓
	PFCs <sup>5</sup> emissions (Rate of change from FY2017)	≤ 65.0%	49.5%	✓
Promoting efficient use of resources	Total amount of waste generated minus amount of valuable waste (Rate of change from FY2017)	≤ 51.6%	40.4%	✓
	Total waste generated (Rate of change from FY2017)	≤ 54.2%	42.8%	✓
	Water intake (Rate of change from FY2017)	≤ 50.9%	42.1%	✓
Reduction of environmental risk	Emissions of chemical substances to air and water (Total amount, rate of change from FY2017)	≤ 26.6%	21.4%	✓
Biodiversity conservation	Biodiversity conservation	Periodic monitoring of indicator species	Periodic monitoring of indicator species	✓
Promotion of environmental communication	Social communication	Charity eco bazaars, collection of recyclable waste, donations, etc.	Held charity eco bazaars, collected recyclable garbage, made donations, etc.	✓
	Community communication	Local communication at manufacturing sites	Communicated with local people (e.g., meetings with local residents' associations)	✓
Raising environmental awareness	Raising environmental awareness	Measures for raising awareness	Held awareness-raising programs (e.g., monthly environmental events)	✓

(✓: Achieved, ✗: Not achieved)

<sup>5</sup> CFC alternatives used in the manufacture of semiconductors. PFCs gases have high global warming potential. The substances used by our group are CF<sub>4</sub>, C<sub>4</sub>F<sub>8</sub>, CHF<sub>3</sub>, SF<sub>6</sub>, NF<sub>3</sub>, CH<sub>2</sub>F<sub>2</sub>, CH<sub>3</sub>F, CH<sub>4</sub>, and N<sub>2</sub>O.

## Removing VOC

Kioxia Group is committed to reducing emissions of chemical substances. In order to control the emission of volatile organic compounds (VOCs), we have installed abatement equipment in 100% of the targeted manufacturing facilities constructed since 2011.

## Effective Use of Resources

We are striving to promote the effective use of resources throughout our entire supply chain with the aim of reducing our environmental footprint. In addition to collecting and recycling waste generated during manufacturing, we are proactively reducing our consumption of chemicals and gas by improving manufacturing processes and using packaging that consider environmental impacts.

Since 2022, we have also launched a cross-organizational project aimed at ensuring the effective use of resources and the reduction of waste.

### Recycling and Reuse of Waste Generated during Manufacturing

When circuits are formed on wafers during semiconductor manufacturing, circuit patterns are transferred by applying the same mechanisms used by cameras when exposing and developing film. All residual cleaning solvents are collected at our manufacturing sites in Japan, distilled and refined by an outside contractor, and then reused.

At Kioxia Corporation's Yokkaichi Plant, hydrofluoric acid used in wafer cleaning and circuit shape processing is also collected and processed at an artificial fluorite production facility. By recovering the calcium fluoride (artificial fluorite), the amount of sludge containing hydrofluoric acid is reduced by approximately 30%. The recovered calcium fluoride is used as a fluorine-based material by fluorine-based product manufacturers as an alternative to fluorite, an imported natural resource, helping to curb imports of this scarce mineral.

In addition, polyimide, used as a film-forming material for wafers, used to be disposed of after use, but as a result of a reevaluation of its potential value following a change in composition, it can now be reused. After recovery, it is distilled and refined and used mainly as a raw material for paints.

### Use of Environmentally Conscious Packaging

Kioxia Group has been expanding its use of environmentally conscious packaging. Memory chips and silicon wafers are transported between us and subcontractors or material suppliers during manufacturing and processing. To maintain the quality of these delicate components, we use durable plastic cases that provide effective protection during transportation and ensure cleanliness. Kioxia Group in Japan inspects and recycles these cases after use, with almost 90% of wafer packaging currently being reused.

When packaging SSD products for delivery to business customers, we use both plastic inner trays that achieve high shape accuracy to firmly anchor the contents and are recyclable,<sup>6</sup> and corrugated cardboard packaging materials (e.g., inner and outer boxes for transportation) that are strong and easy to recycle.

<sup>6</sup> A single material is used for ease of recycling.

For performance data related to our environmental initiatives, please see below.

 [Environmental data \(Performance Data\) \(Excel: 15.0KB\)](#) 

# Effective Use of Water Resources

## Approach to Water Resources

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In line with the Kioxia Group's Environmental Policy, we continually strive to reduce the environmental impact of the wastewater produced during our manufacturing processes. We recycle the water we use in accordance with our own standards, which are stricter than current legal requirements, in order to conserve precious water resources and ensure business continuity.

Amid worldwide concern over water shortages, Kioxia Group has established the conservation of water resources and the ensuring of stable operations as business priorities. The balance between supply and demand, the amount of water that can be withdrawn, and the quality of water vary greatly between regions. Accordingly, Kioxia Group has identified water-related risks for each region, focusing not only on the short term but on the medium- to long-term as well, and conducts environmental impact assessments from all angles to ensure appropriate use of water resources. In doing this, we also consider the impact of external environmental factors, such as drought and flooding, on our business operations, as well as the impact of our operations on local water levels.

## Water Management Structure

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At Kioxia Group, we prioritize all water-related initiatives and indices, seeing these as a key factor in the Group's medium- to long-term growth, and we call these priority areas "sustainability materiality."

Sustainability strategies and policies, including those related to water, are formulated at Sustainability Strategy Meetings, chaired by the President and CEO, with the degree of target achievement confirmed in each case, before a final review by the Board of Directors.

Key performance indicators (KPIs) are discussed and determined by a Sustainability Committee chaired by the executive officer in charge of sustainability, based on sustainability strategies and policies formulated in Sustainability Strategy Meetings, including those related to water.

At Environmental Management Review Meetings, which involve discussions primarily between the officer responsible for environmental protection, the impact on our business, compliance with relevant laws and regulations, and achievement of our KPIs are all reviewed, with reference to social and legislative trends, and our medium-term environmental plan is evaluated in consideration of the risks and opportunities related to our usage of water.

Issues deliberated at these meetings include the installation of equipment to reduce water consumption during the construction of new plants, and the management of risk through business continuity management (BCM) activities. Assessments of water hazards such as overflowing rivers, large-scale typhoons and drought are also conducted as part of our BCM policy to reinforce our overall business risk management and enable swift business continuity in the wake of any disaster. Furthermore, specialists investigate and monitor domestic and international regulations and trends to reduce the risks posed to constantly changing water environments.

## Evaluating Water Risk

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The balance between supply and demand, the amount of water that can be withdrawn, and the quality of water all vary greatly between regions. Kioxia Group has commissioned external experts to evaluate water-related risks from the perspective of current and future water supply and demand risks; these are assessed using tools such as the World Resources Institute's WRI Aqueduct and the Water Risk Filter. We use these assessments to analyze risks such as water stress levels and seasonal variations in water supplies through the year 2040 in order to understand the potential impact on our business activities.

The outcome of the assessment of our Group's manufacturing plants was confirmation that they are not exposed to any water risk likely to have practical financial or strategic impact prior to the year 2040. This assessment was based on investigations into such areas as water supply and demand risks (driven by seasonal changes, the frequency of droughts, water storage capacity and water source protection levels), the risk of water-related disasters such as flooding or landslides, and regional vulnerability to water pollution that might endanger public health or ecosystems.

## Water-related Targets and Results

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Using FY2017 levels as the baseline, Kioxia Group has set targets for the reduction of our water intake per storage capacity output, and we manage these using a PDCA cycle.

For FY2022, we set the target of consuming 50.9% or less of FY2017 levels, and achieved this with an actual result of 42.1%.

Going forward, we will continue to promote activities aimed at achieving water intake reduction targets by both reducing water consumption and by promoting recycling.

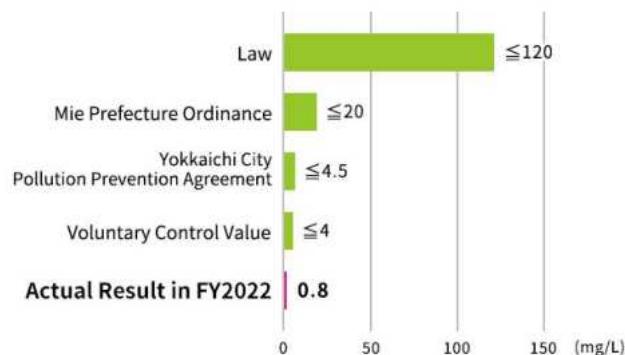
## Enhanced Wastewater Monitoring

Manufacturing sites of Kioxia Group in Japan monitor wastewater using voluntary standards that are more stringent than the prevailing legal requirements, in order to minimize the impact of our business operations on the atmosphere and on rivers.

Around-the-clock, automated monitoring is conducted in respect of legally regulated factors, including chemical oxygen demand (COD), suspended solids (SS), fluorine (F), and hydrogen ion (pH) levels. Kioxia Group in Japan also voluntarily controls items not subject to legal restrictions through sampling conducted at the Analysis Centers located within our manufacturing plants. Kioxia Corporation's Yokkaichi Plant tests around 37,000 samples of wastewater each year, with Kioxia Iwate Corporation testing around 15,000.

As during the previous fiscal year, Kioxia Group was not subject to any government fines or penalties related to wastewater in FY2022.

**BOD (Biochemical Oxygen Demand) concentration control values in drainage to rivers  
(Kioxia Corporation's Yokkaichi Plant)**



## Water Recycling

In order to promote more effective use of resources, Kioxia Group in Japan is devising initiatives aimed at controlling the amount of water we intake and discharge at our manufacturing plants. One example of this is the collection and reuse of water used in manufacturing processes inside plants.

Water recycling at manufacturing sites Kioxia Group in Japan in FY2022 resulted in the collection and reuse of approximately 33 million m<sup>3</sup> of water (equivalent to about 57% of our total intake), which has helped ensure the effective use of water resources and reduced the environmental impact of public water utilities' operations.

### Effective use of rainwater

Solid State Storage Technology Corporation (SSSTC) in Taiwan makes effective use of rainwater. At SSSTC, 160m<sup>3</sup> of rainwater was recovered during the five months from November 2022. This amount is equivalent to about 2% of the water it used during the same period. The collected rainwater is reused as cooling water for air conditioning equipment, etc.

# Management of Chemical Substances in Our Products

## How We Manage Chemical Substances in Our Products

As part of our efforts to help achieve a sustainable society, Kioxia Group endeavors to reduce the risks posed to people's health and to the environment by any chemical substances used in our products, based on the Kioxia Group's Environmental Policy.

Environmental laws and regulations, including the EU RoHS Directive, the EU REACH Regulation, and the TSCA, are being tightened year by year in a number of countries and regions. Kioxia Group believes that in order to prevent the inclusion of these legally regulated chemical substances in our products, it's necessary to exclude them at the design and development stage, and to ensure they do not feature in any of the products, parts and materials we purchase. By complying with these regulations and our customer requests, we are doing our bit to reduce or eliminate the use of substances that may have a significant impact on people's health or the environment.

## How We Manage and Control the Use of Chemical Substances in Our Products

The Kioxia Group is undertaking what we call "green procurement" throughout our entire supply chain; this involves procuring products, parts and materials that have a reduced environmental impact. Kioxia Corporation has established a Green Procurement Working Group comprising members of our Environmental, Quality Control and Procurement Divisions. This group has drawn up "Kioxia Group Procurement Guidelines;" these include specific requirements for suppliers, such as selection criteria for products, parts, and materials with low environmental impact, and standards regarding the use of chemical substances; they also take into account the environmental laws and regulations of each country and region, and address the demands of our customers. They are shared with our suppliers and periodically updated.

Information on any chemical substances contained in our products is properly monitored through our green procurement processes.

## Initiatives to Manage and Control the Use of Chemical Substances in Our Products

At Kioxia Group, environmental impact assessments are conducted from the design and development stage of each product covering the chemical substances used in our product, parts and materials; we make every effort to use chemicals that have minimal impact on the environment within our manufacturing processes as well.

Additionally, we are implementing measures to reduce the risk of environmental pollution caused by the use during manufacturing of chemical substances that are migratory (i.e., those with the ability to be transferred from one product to another if they come into contact).

Furthermore, to ensure appropriate oversight of chemical substances, we utilize monitoring tools and engage external consultants, we participate in industry associations, and we conduct periodic evaluations of the presence of any substances whose use is prohibited or controlled.

We promote green procurement by classifying and managing chemical substances as follows.

Classification	Definition
Substances whose procurement is prohibited	A group of substances the Kioxia Group prohibits the use of in its products both in Japan and overseas. It includes substances specified as hazardous under the EU RoHS Directive.
Substances whose procurement is controlled	A group of substances whose inclusion in products is monitored by Kioxia Group. As these substances may be subject to legal controls in the future, we carefully monitor their use and concentration levels in our products.

In addition to these efforts, Kioxia Corporation is working to reduce our environmental impact throughout the supply chain by providing training for our distributors covering environmental issues based on the Kioxia Group Green Procurement Guidelines and through collaboration with Kioxia Group suppliers.

Please refer to "Green Procurement" for more information on our green procurement efforts and "Current Status of Environmental Impact and Environmental Targets and Outcomes" for our performance related to the management of chemical substances during manufacturing.

➤ [Green Procurement](#)

➤ [Current Status of Environmental Impact and Environmental Targets and Outcomes](#)

## Training on the Management of Chemical Substances in Our Products

Every year, all Kioxia Group executives and employees are provided with training on environmental laws and regulations and on our Green Procurement Guidelines.

# Biodiversity Preservation

Kioxia Group is engaging in a range of biodiversity conservation activities in order to protect the rich ecosystems in the areas where we operate and to make a contribution to society.

## Our Involvement in the Owl Protection Project

In 2018 Kioxia Corporation's Yokkaichi Plant signed a "Mie Biodiversity Partnership Agreement" with the Yokkaichi-Nishi and Kuwana High Schools, under which we are participating in an owl protection project being undertaken by the schools' Natural Study Groups. We provide equipment enabling owls in the region to be observed and protected in their natural habitat; this supports the project's aim of bequeathing the region's rich natural environment to future generations.

As part of this activity, we have installed solar power generation units and cameras designed by volunteer employees to monitor the bird boxes set up by Yokkaichi-Nishi High School students in Mie prefecture's Forest Park. Since 2019 this has enabled the successful observation over four consecutive years of owls nesting, raising their offspring, and the offspring leaving their nest. Discussions between representatives of Mie prefecture, Yokkaichi-Nishi High School, Kuwana High School and our Yokkaichi Plant were held with the aim of further improving our understanding of biodiversity and enhancing the environmental protection activities we are undertaking.



Solar battery panels powering the on-site equipment



Installing observation equipment inside and outside the bird boxes



Adjusting the observation equipment



Baby owls inside the bird box



A baby owl about to leave the bird box nest

## Planting flowers

Since 2017, Kioxia Corporation's Yokkaichi Plant has been conducting a FloWA<sup>1</sup> project whereby employees plant flowers around the site in order to increase environmental awareness among our workforce, and to create a more attractive and relaxing environment. In FY2022, we replanted flowerbeds around each building and planted trees to commemorate the 30th anniversary of the Yokkaichi Plant.

<sup>1</sup> The 'WA' in FloWA incorporates numerous meanings derived from the Japanese character 'wa,' and can denote a circle of friends, sharing, harmony, or laughter.



Transplanting activities

## Beach cleanup

Kioxia Corporation's Yokkaichi Plant participates in local beach cleanup activities organized by the local community development committee and the NPO Yokkaichi Sea Turtle Preservation Society with the aim of preserving the spawning environment of loggerhead turtles.<sup>2</sup>

In June 2022, a total of about 150 people, including the plant's employees and their family members, participated in cleanup activities to protect the environment where loggerhead turtles lay their eggs, and to deepen their understanding of the ecosystem and the importance of conservation activities.

<sup>2</sup> Loggerhead turtles are classified as endangered species in the Ministry of the Environment's "Red List," indicating they are at high risk of extinction in the wild in the near future.



Employees and their family members participating in the cleanup activities

## Participation in Cherry Blossom Conservation Activities

The city of Kitakami in Iwate prefecture is running a *Sakura-mori* project, to train *Sakura-mori* or cherry blossom guardians to take care of the cherry trees in Tenshochi Park,<sup>3</sup> a famous cherry blossom viewing spot in the city, with the aim of preserving the cherry blossom trees for the next 100 years.

Kioxia Iwate Corporation has been participating in the *Sakura-mori* Workshop, supporting the activities of local junior high school students fertilizing young cherry trees in the park.

<sup>3</sup> Tenshochi Park celebrated its 100th anniversary in 2021 and is famous for its cherry blossoms after being selected as one of the "100 Best Cherry Blossom Spots in Japan."



Kioxia Iwate employees participating in fertilization activities

## Wetlands preservation

Solid State Storage Technology Corporation (SSSTC) in Taiwan, a Kioxia Corporation's subsidiary, is working with the Taiwan Environmental Information Association, a non-profit and non-governmental organization, to promote wetland ecosystem conservation projects. In 2022, 18 employees participated in the extermination of invasive plants in wetlands.



SSSTC employees removing non-native plants

## Coastal afforestation

SSSTC has been engaged in greening efforts along the coast of Linkou in Taiwan to conserve biodiversity and prevent coastal erosion. 56 employees participated in tree planting there in March 2023.



SSSTC employees planting trees

## Supporting coexistence with the Leopard Cat

The population of Leopard cats, the only wildcat in Taiwan, has been declining due to development of roads and farms, an increase in traffic accidents, and other factors. The fact that the wildcats' prey on farmed chickens is also a problem in areas where wildcats and humans co-exist. SSSTC supports the activities of a non-governmental organization called the Leopard Cat Association of Taiwan. Employees at SSSTC are helping to protect the lives of Leopard cats and the livelihoods of poultry farmers by installing wire netting to prevent the wildcats from entering poultry farms, thereby enabling coexistence.



SSSTC employees installing wire netting to prevent Leopard cats from entering poultry farms

# Environmental Evaluation by External Parties

Introducing Kioxia Group's environmental awards and evaluation by external parties.

## Two Employees of Kioxia Corporation's Yokkaichi Plant Awarded for Efforts to Promote Energy Conservation

In February 2022, two Yokkaichi Plant employees of Kioxia Corporation received an award from Japan's Energy Conservation Center in recognition of their contribution to energy conservation. The two recipients played a significant role in the installation and operation of energy-saving equipment at the plant and conducted training sessions for younger employees.

Aiming to contribute to the realization of a sustainable society, we will continue our company-wide efforts to promote energy conservation.



Award recipients

## Disclosure of Environmental Data to CDP

Kioxia Group applies for, and receives, certification from the CDP, the world's largest environmental information evaluation organization, every year.

### CDP Climate Change

This evaluates the risks and opportunities posed to a company by climate change, and the concrete action it has taken. In FY2022, we were rated "B" in the category of "management" of these risks.

### CDP Water Security

This evaluates a company's efforts in the area of water stewardship. In FY2022, we were rated B (management level).



CDP is an international not-for-profit organization established in 2000 to tackle environmental issues, including climate change and water risks. It collects information from major companies around the world using questionnaires on the subject of management risks that climate change and other environmental issues pose to companies, and it rates them on an 8-point scale from A to D- (A is the highest grade) based on the received responses. In 2022, it evaluated over 15,000 companies and provided information to over 680 institutional investors.

# Environmental Communication

Kioxia Group is actively participating in environmental activities that contribute to society. In addition to raising employees' awareness of the environment and their local community, we are also promoting the 3Rs (reduce, reuse, and recycle) and implementing greening initiatives.

Kioxia Group will continue to promote environmental activities that contribute to society, by further improving employees' environmental awareness and encouraging a sense of belonging among them.

## Key Contributions to Society: Collection of Recyclable Materials

The below sections 1 to 9 provide examples of activities at Kioxia Corporation's Yokkaichi Plant; section 10 covers activities at the Solid State Storage Technology Corporation (SSSTC) in Taiwan.



1. Collecting calendars and notebooks (2007-)



2. Collecting plastic bottle caps (2008-)



3. Collecting discarded postcards (2014-)



4. Collecting used postage stamps (2015-)



5. Collecting down products (2015-)



6. Collecting disposable contact lens cases (2016-)



7. Collecting aluminum cans (2016-)



8. Collecting old books (2018-)



9. Food drives (2021-)



10. E-waste Recycling (2021-)

## Environmental Education for Local Communities

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Kioxia Group has been providing environmental education as part of its efforts to realize a sustainable society and contribute to local communities.

Kioxia Corporation's Yokkaichi Plant holds children's environmental study classes under the name of "Operation CO<sub>2</sub> Reduction" at neighboring elementary schools and at "Yokkaichi Pollution and Environmental Museum for Future Awareness." In FY2022, approximately 70 elementary school students participated and learned about the impact of global warming and the importance of energy conservation. They conducted experiments and discussed what they can do in their daily lives to help protect the environment.

We have also given lectures on the environment at Yokkaichi University for students and the general public. In 2022, about 30 people attended these lectures; we deepened their understanding of the local environment by explaining Sustainable Development Goals and introducing our activities to reduce the environmental impact of our operations. We have also participated in local events such as the Yokkaichi City Environmental Fair, which provided an opportunity for people to think more deeply about the environment.



Children's environmental study class



Environmental lecture

## Acquisition of Environmental Certification

Kioxia Group has established an environmental management system and is promoting activities mainly at our manufacturing sites. Please see below for information on acquisition of environmental certification.

Based on our environmental management system, Kioxia Group will continue to actively promote the development of energy consumption-efficient products that address the need for exponentially increasing volumes of data. We will also continue with communication activities at our state-of-the-art factories, as well as with communication about the environment that takes regional characteristics into account, and with our biodiversity conservation activities.

### Acquisition of ISO 14001 Certification

Scope of certification	Certified body	Registration date	Certificate expiry date	Approval certificate No.
Kioxia Corporation's Head Office	Bureau Veritas Japan Co., Ltd.	March 11, 2021	March 27, 2024	4616607
Kioxia Corporation's Yokkaichi Plant				
Kioxia Iwate Corporation				
Solid State Storage Technology Corporation	DNV	June 26, 2022	June 26, 2025	1250-1998-AE-RGC-RvA

### Acquisition of Sony Green Partner

MC Name/FC Name	Expiry Date	Factory Code
Kioxia Corporation's Yokkaichi Plant	December 31, 2024	FC007421
Kioxia Iwate Corporation	December 31, 2024	FC015073

# Social

**Respect for Human Rights**

**Talent Development**

**Diversity Promotion**

**Health and Safety**

**Sustainable Supply Chain**

**Quality Control**

**Supporting Local Community Development**

# Respect for Human Rights

Kioxia Group recognizes that corporate activities based on respect for human rights are a prerequisite for the sustainable development of companies and of society. In order to fulfill our responsibility to respect the human rights of all stakeholders involved in our business activities, including those in our supply chain, we have established respect for human rights as priority areas of focus in terms of ensuring the Group's medium- to long-term growth, and we refer to these priority areas as Sustainability Materiality.

## Policy Governing Respect for Human Rights

In 2021, we formulated the Kioxia Human Rights Policy as a way to clarify our corporate responsibility to respect human rights, and positioned it as one of our key internal regulations. This policy stipulates that we must respect the International Bill of Human Rights to the fullest extent, and that we will make every effort to respect human rights in accordance with international standards such as the United Nation Guiding Principles on Business and Human Rights. Kioxia Group is also committed to conducting business activities that are in line with the Responsible Business Alliance (RBA)<sup>1</sup> Code of Conduct. Examples include progressing our own sustainability initiatives and requesting our suppliers to respect human rights.

The Kioxia Human Rights Policy was established on the basis of advice from outside experts and endorsed by the resolution at a meeting of the Board of Directors of Kioxia Holdings Corporation.

<sup>1</sup> RBA is a corporate alliance that promotes social responsibility within global supply chains.

➤ **Kioxia Human Rights Policy**

➤ **Sustainability Materiality**

## Structure with regard to Respect for Human Rights

The Kioxia Group is implementing procedures whereby we minimize human rights risks in our business activities in order to fulfill our responsibility to respect human rights. We have appointed a staff member within the Human Resources and Administration Division of Kioxia Corporation. The Executive Officer in charge of human resources is designated as the person responsible for promoting human rights awareness. This Executive Officer promotes the company's human rights policies and oversees compliance with these.

In addition, the Diversity and Human Rights Due Diligence Task Force, which comprises staff from a variety of business areas, examines and promotes measures related to human rights due diligence. The Executive Officer manages human rights risks in conjunction with other departments and group companies in line with the Task Force's recommendations.

Furthermore, after thorough discussion at Sustainability Committee and Sustainability Strategy meetings, any important issues are escalated to the Board of Directors.

## Human Rights Due Diligence

In order to respect the human rights of those impacted by our business activities throughout our overall value chain, Kioxia Group conducts human rights due diligence in accordance with the United Nation's Guiding Principles on Business and Human Rights. We are implementing an ongoing cycle of activities aimed at mitigating human rights risks.

These activities include

- identifying and assessment the human rights risks
- constructing a framework for prevention and mitigation of these risks; implementing appropriate measures
- tracking and investigating the situations
- disclosing relevant information.

Due Diligence in Kioxia Group



## Assessment and Monitoring of Human Rights Risks

The Kioxia Group identifies and assesses any potential human rights abuses across its value chain, using the RBA Code of Conduct as our reference point. We conduct surveys aimed at ensuring sustainability and responsible mineral procurement, and encourage our suppliers to strengthen their own measures to protect human rights in line with this Code of Conduct.

With the cooperation of external experts, in FY2021 we conducted human rights risk assessments across Kioxia Group in Japan to evaluate the impact of potential and apparent risks that our business activities might have on human rights. The below risks were identified following interviews with relevant departments, RBA audits at our manufacturing sites, and the completion of RBA self-assessment questionnaires by our suppliers.

In addition, the Kioxia Group conducts various assessments when it builds new facilities to evaluate the environmental impact of these in the surrounding area.

### Potential Human Rights Risks in Kioxia Group

Labor and employment	<ul style="list-style-type: none"><li>Forced labor (including in our supply chains)</li><li>Insufficient employment for persons with disabilities</li><li>Lack of consideration toward sexual minorities</li><li>Long working hours (including in our supply chains)</li><li>Abuse of human rights of foreign workers (including technical interns)</li><li>Harassment to workers</li></ul>
Occupational health and safety	<ul style="list-style-type: none"><li>COVID-19 related risks</li><li>Work related injury or death</li><li>Response to mental health outbreaks</li></ul>
Environment	<ul style="list-style-type: none"><li>Negative impact on the living environment of nearby residents</li></ul>
Ethics	<ul style="list-style-type: none"><li>Procurement of minerals with concerns about human rights abuses</li><li>Transactions with customers in countries where human rights abuses are concerned</li><li>Lack of supplier education</li><li>Inadequate/dysfunctional grievance mechanisms (across our suppliers and for contract workers)</li><li>Impact of product failures on end users</li><li>Leakage of technologies to countries that abuse human rights or misuse for applications that infringe human rights</li><li>Response to product safety and other issues caused by data tampering</li><li>Advertising that raises concerns about human rights abuses</li></ul>

## Prevention and Mitigation of Human Rights Risks

### Prioritizing Initiatives

In FY2022, Kioxia Group in Japan determined the priority of initiatives aimed at addressing the aforementioned potential risks, taking into consideration the severity of their impact on human rights as well as the company's level of involvement and response. In the process, we established criteria based on which we have formulated five levels of response aimed at preventing or mitigating individual risks, ascertained the current level of response, and set targets.

### Implementing Measures

Kioxia Group in Japan has prioritized the following human rights risks, utilizing the results of RBA audits at manufacturing sites.

#### Major Measures at Kioxia Corporation (FY2022)

##### Language support for foreign technical interns

- We now provide options to renew employment contracts in their native language or in a language that they understand
- We now provide pay slips written in their native language or in a language that they understand

##### To help ensure the prevention of child labor, we have:

- implemented an age verification system that requires a government-issued photo ID from candidates during the hiring process
- stipulated actions to be taken in the event that the use of child labor is found at the company

##### To address the risks related to COVID-19, we have:

- encouraged employees to work from home and adopt a flexible working hours system
- restricted business travel
- conducted vaccination programs at our workplaces
- promoted awareness of COVID-19 countermeasures among employees

##### In terms of collaboration with suppliers, temporary staffing agencies, contractors, and on-site service companies,<sup>2</sup> we have:

- raised awareness of the RBA Code of Conduct among the above partner companies
- monitored their compliance with the Code of Conduct

<sup>2</sup> Companies handling cafeteria operation and security-related tasks at Kioxia Group's manufacturing sites in Japan.

## ➤ Major Sustainability Issues and Initiatives in the Value Chain

### ➤ Sustainable Supply Chain

#### Tracking and Investigation

Kioxia Group in Japan checks the status of target achievement for each category of risk every year. We evaluate the effectiveness of our countermeasures and formulate improvement measures based on internal and external trends. While we implemented various countermeasures during FY2022, there were some measures that will be carried over to FY2023 and beyond, such as those requiring the establishment of internal rules. We will follow up on these issues continuously.

#### Education to raise awareness of Respect for Human Rights

Kioxia Group provides training on human rights and harassment issues to all employees once a year. By doing this, we seek to raise awareness of internationally recognized human rights issues, such as those concerning socially marginalized groups that often become the target of human right abuses. In FY 2021, we conducted training to familiarize employees with the challenges faced by people with disabilities, and in FY2022, we conducted similar training covering LGBTQ issues.

At Kioxia Corporation, we provide additional training for our staff on human rights and harassment issues during the employee onboarding process, part of our Basic Training program.

In addition, in FY2021 Kioxia Corporation held a lecture on "Business and Human Rights" by an outside expert for Executive Officers to deepen their understanding of changes in the external environment surrounding business and human rights, efforts required by companies, and advanced examples from other companies.

#### Establishment of Whistleblower System and Consulting Service

Kioxia Group has established contact points where employees and business partners can report and discuss possible violations of the laws and regulations of each country or region, the Kioxia Group Standards of Conduct, and other internal regulations.

#### Harassment Consultation Counter Whistleblower System for Employees

To prevent and remedy harassment, including instances of power harassment and sexual harassment, Kioxia Group in Japan has established a "Harassment Consultation Service" to offer assistance and guidance to employees. At Kioxia Group, it is strictly prohibited to subject anyone who reports harassment to any form of disadvantage or retaliation.

#### Business Partner Hotline

### ➤ Business Partner Hotline

#### Participation in External Initiatives

In order to establish a more effective grievance mechanism on human rights issues, in FY2021, Kioxia Holdings Corporation became a member of the CSR Committee of the Grievance Mechanism Working Group<sup>3</sup> at the Japan Electronics and Information Technology Industries Association (JEITA). We participate in discussions of the issues surrounding the operation of a common industry platform allowing access to remedies, which is one of the pillars of corporate responsibility in terms of respecting human rights.

In November 2022, Kioxia Corporation became a supporting member of the Japan Center for Engagement and Remedy on Business and Human Rights (JaCER), and is gathering useful knowledge and information by participating in its meetings and training sessions.

<sup>3</sup> One of the predecessor organizations of the Japan Center for Engagement and Remedy on Business and Human Rights (JaCER), which was established in June 2022.

### ➤ Japan Center for Engagement and Remedy on Business and Human Rights (JaCER) □

Kioxia Group will establish a cycle of human rights due diligence in its overseas groups in the future, and will strengthen its efforts to respect human rights throughout the Group.

# Talent Development

Kioxia Group encourages all of our employees to make use of their individual capabilities; we have accordingly established fair evaluation processes, seeking to develop and maximize the potential of our diverse human resources.

## Talent Development Policy

People are the source of Kioxia Group's competitiveness. We believe that if each individual employee continuously challenges themselves and creates new value, it will help us realize our mission of "uplifting the world with memory." Accordingly we will continue to strengthen our educational offerings and adopt a systematic approach that allows each and every employee to take on new challenges.

## Talent Development Structure

In FY2022, Kioxia Corporation established a Human Resources Development Group in the Human Resources & General Affairs Department tasked with developing and utilizing human resources more effectively. Kioxia Corporation also has a Training and Development Committee, chaired by the president, which proposes initiatives for the improvement of in-house personnel training and development based on program results. This committee deliberates policies for the following fiscal year on the basis of its business plan. The outcome of discussions by the Training and Development Committee are reflected in new training and development measures.

### Enhancing Our Management of Human Resources

The Kioxia Group is working to create a workplace that enables each and every one of its employees to demonstrate their capabilities.

As part of our human resource strategy, since April 2022 Kioxia Group in Japan has been reforming our personnel policies based on four perspectives: clarifying our definition of "active employees" and what we expect from them, eliminating obstacles that hinder employees from taking on new challenges, installing a transparent salary and reward system, and supporting employees who take on new challenges. The overall aim is to create a workplace where all employees can do this on an ongoing basis. Specifically, we have reviewed our evaluation processes, introduced flexible working practices such as telecommuting, and abolished the system whereby employees were retired from managerial positions after reaching a certain age.

The Kioxia Group will continue to create a workplace environment where each individual can challenge themselves and grow, aiming to achieve innovation, the creation of new value, and sustainable business growth.

## Training for Talent Development

### Training Programs

Kioxia Group runs a variety of training programs aimed at establishing a common learning base for all employees; these include programs based on the requirements of specific career levels. Furthermore, we provide tools to support self-development, encouraging employees to voluntarily acquire fresh knowledge and skills.

## Main Training Programs at Kioxia Group in Japan

Training Category	Outline
<b>Basic Training and Development<sup>1</sup></b>	A program designed to familiarize employees with the Kioxia Group Standards of Conduct and values that form a shared basis for all members of the Kioxia Group, covering such areas as compliance and sustainability. The Kioxia Group Standards of Conduct are available in Japanese, English, traditional Chinese, simplified Chinese, and Korean.
<b>Global Training and Development</b>	A program that seeks to develop globally minded people who can not only perform their jobs within the scope of their own countries or regions, but also at a global level, by accepting cross-cultural differences and communicating with a wide range of stakeholders.
<b>Training and Development Based on Levels of Responsibility</b>	A program that seeks to improve the basic knowledge, skills and management capabilities of employees promoted to new positions (leaders, managers, etc.). This program also includes training aimed at continuously improving the leadership capabilities of managers, as well as education aimed at imparting at an early stage the knowledge and skills required to conduct business on a global basis.
<b>Job-Specific Training and Development</b>	This aims to equip employees with the knowledge and skills they require based on their job function and career status.
<b>Managerial Training</b>	A program for the select group of individuals who are candidates for managerial or leadership positions.
<b>Self-Development Support</b>	We offer about 190 e-learning courses to encourage employees to voluntarily acquire knowledge and skills; these include managerial skills (organization, strategy, marketing, goal management and personnel evaluation, sustainability and compliance, labor affairs, mental health, customer satisfaction, and sales, careers, business skills and cultural skills), computer skills, and languages.

<sup>1</sup> Basic Training and Development: as one aspect of basic training and development at Kioxia Group, various compliance training sessions were conducted to promote understanding of the Kioxia Group Standards of Conduct. There was a 100% attendance rate among employees of Kioxia Group in Japan throughout FY2022.

## Common Training Courses (FY2022, Kioxia Group in Japan)

	Selective / Mandatory	Self-Development
No. of programs	13	187
Total no. of attendees	115,070	1,346
Total attendance time (hours)	137,075	1,422

## Standardized Training at Kioxia Corporation



<sup>2</sup> Includes self-development outside working hours, such as language study

## Technical Training

Kioxia Group proactively fosters and trains its engineers. All new employees of Kioxia Group in Japan are provided with basic training programs covering electrical engineering, electronics, semiconductors, information processing and storage systems fundamentals, as well as manufacturing, statistics, AI, and machine learning; these are seen as essential steps to achieve self-growth and to enhance employees' technical background.

On-the-job training and a variety of education programs within each division are provided under a mentor in each workplace, with detailed instructions provided to each individual in accordance with their career status. Each workplace additionally provides a variety of technical core training for engineers responsible for development, allowing them to acquire knowledge and skills in the field of cutting-edge technologies as they learn about their work. We also provide a work environment that encourages employees to think for themselves about what they need to learn and to then undertake appropriate training, while making the most of interaction with mentors.

## Nurturing Technologies and Expertise

In 2019 Kioxia Corporation newly established the job title of "Fellow" (subsequently amended in 2022 to "Senior Fellow") in order to nurture the company's specialist knowledge and expertise in the field of advanced technologies. Senior Fellows are active in a wide variety of fields: device process basic research, computer systems, simulations, and cutting-edge memory development. They are all committed to the development of semiconductor technologies and nurturing expertise among the next generation through activities at forums such as academic societies and industry groups.

### ➤ Fellow Interviews □

## Career Development Systems

Kioxia Group supports the career development of each employee aiming to develop and utilize their abilities. The Career Design System at Kioxia Corporation, for example, provides each employee with an annual opportunity to discuss and share their views on their own long-term career development as well as on mid-term skill acquisition goals, how their skills can be improved, and how they can showcase them to their superiors. The Performance Management System at Kioxia Corporation gives each employee a semi-annual opportunity to review and discuss with their superiors their job performance over the previous six months as well as their job objectives for the following six months.

## Assignment to Overseas Universities and Research Institutes

Kioxia Corporation has established overseas study programs to encourage employees to take on challenges in a new environment. The company provides them with various opportunities to enhance their knowledge and skills at overseas universities, graduate schools and research institutes. Two examples are Massachusetts Institute of Technology and the University of California San Diego.

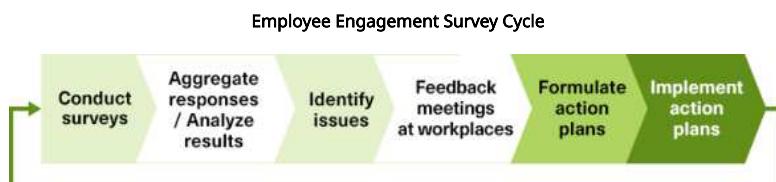
## Employee Engagement Survey

Kioxia Group regularly conducts employee engagement surveys as a starting point from which to enhance employee engagement and revitalize the organization. The surveys are used to determine the level of employee engagement, identify any problem areas, and formulate and implement measures to resolve these.

In FY2022, we conducted an anonymous survey targeting about 14,000 employees worldwide and received responses from 89% of them.

Kioxia Corporation shares the results of these surveys<sup>3</sup> with the President and CEO, Executive Officers, and all department heads, and refers to them when devising employee engagement initiatives. In FY2022, we worked on improving issues that were raised by employees in previous year's survey. Specific measures included sending out easy-to-understand messages from senior management regarding the company's direction, increasing opportunities for the exchange of opinions through dialogue between senior management and employees, sharing survey results, and having discussions at internal meetings to determine appropriate improvement measures. Through these efforts, we are striving to improve the workplace environment and foster a rewarding and open work culture.

<sup>3</sup> Includes employees currently stationed at Kioxia Holdings Corporation



### Related Links

People from various backgrounds fulfill their potential and leverage their strengths at Kioxia Group.

### ➤ Careers

# Diversity Promotion

Kioxia Group firmly believes that the maximization of the capabilities and strengths of individual employees is critical for innovation, corporate growth, and the creation of new value for society. Accordingly, the promotion of diversity is one of the Group's priorities.

## Diversity Promotion Policy and Management Structure

Kioxia Group embeds respect for human rights and diversity in our Standards of Conduct and fosters a culture that enables a diverse range of employees to play active roles irrespective of race, religion, gender, nationality, disability, age, or sexual orientation.

We have designated the Executive Officer in charge of human resources at Kioxia Holdings Corporation as the executive responsible for promoting diversity. We have assigned overall responsibility for the promotion of diversity across the entire Group to Kioxia Corporation's Human Resources & Administration Division. Organization-wide strategies, policies and priority measures are formulated by the Taskforce for Diversity & Human Rights Due Diligence, part of the Sustainability Committee.

### ► Kioxia Group Standards of Conduct 6. Human Rights and Diversity

## Diversity Promotion Initiatives

In FY2022, we focused on measures to promote employee career development and expand the employment of people with disabilities.

## Promoting the Career Development of Female Employees

Kioxia Group seeks ways to enable all employees to fully demonstrate their strengths and play an active role at work, regardless of their gender.

To promote women's participation in management, Kioxia Corporation has set a goal of doubling the number of female managers in FY2025 compared to FY2019. In addition, in the course of our recruitment activities, we aim to ensure that 45% or more of the graduates we recruit for administrative work, and 15% or more of those recruited for technical work, are female. These targets are also stipulated in our Action Plan Based on the Advancement of Measures to Support the Act on Promotion of Women's Participation and Advancement in the Workplace, and we are stepping up our efforts to achieve these.

Specifically, we are distributing a handbook to employees outlining how they can achieve a balance between work and family time; we are also holding seminars and study sessions for managers and executives coaching them on ways to foster a corporate culture in which diverse human resources can play active roles.

### ► Action Plan Based on the Act on the Advancement of Measures to Support Raising Next-Generation Children and the Act on Promotion of Women's Participation and Advancement in the Workplace (PDF: 213KB) [PDF](#)



Covers of the two handbooks, "Balancing Work and Nursing Care" and "Child Care Supporting Programs" Handbooks showing how to achieve a balance between work and nursing care or childcare.

As part of our efforts to promote women's active participation in the workplace, since 2018 Kioxia Corporation has supported an annual summer school program for girls in junior and senior high schools (*natsugaku*),<sup>1</sup> one of Japan's biggest events promoting science and engineering careers. For more information, please see the below link.

### ► Participation and Career Counseling in the Summer School for Girls in Junior and Senior High Schools

Kioxia America, Inc. has established an internal organization, LeadHERs, to support the career development of its female employees; it provides mentoring programs and networking opportunities to help them achieve both professional and personal goals. LeadHERs also organizes charity events for International Women's Day and other activities to promote the social advancement of women in the technology industry and in the community.

## Initiatives Aimed at Expanding Recruitment of Female New Graduates and Developing Female Managers at Kioxia Corporation

Number of Female Managers<sup>1</sup>



Percentage of New Graduate Recruits<sup>2</sup> Who Are Female<sup>3</sup>

	Administrative	Technical
2019	25.0%	7.2%
2020	25.0%	14.4%
2021	60.0%	11.5%
2022	53.3%	13.2%
2023	37.5%	8.7%

<sup>1</sup> Employees of Kioxia Corporation as of end of March, each year, including those stationed at Kioxia Holdings Corporation comparison with 2019, which was set as the base year for the mid-year target

<sup>2</sup> Undergraduate and postgraduate degrees

<sup>3</sup> Kioxia Corporation's hiring results of regular employees with a college or graduate degree in each year; Kioxia Holdings Corporation does not hire new graduates.

## Recruitment and Career Advancement of Non-Japanese Employees

The Kioxia Group operates globally and employs people of many different nationalities.

With offices in 10 countries and regions, the Kioxia Group has 1,972 employees working at our overseas locations (excluding those temporarily dispatched from Kioxia Group in Japan). Kioxia Group in Japan employs 184 non-Japanese people from 15 countries and regions.<sup>4</sup>

<sup>4</sup> as of March 31, 2023

## Career Advancement for Seniors

In FY2019 Kioxia Corporation raised the retirement age from 60 to 65 with the aim of enabling our employees, regardless of their age, to continue to utilize the knowledge and experience they have spent many years cultivating. In FY2021, we abolished the system of mandatory retirement for managerial positions, whereby those in these positions had previously been relieved of their managerial duties upon reaching a certain age.

## Employment of People with Disabilities

As of March 2023, the percentage of employees with disabilities at Kioxia Group in Japan was 2.37%.

Along with initiatives to achieve the statutory minimum employment rates of those with disabilities, we will endeavor to achieve society's goal of "social inclusion" by encouraging interaction among all employees, creating a comfortable and rewarding workplace and thereby boosting our business value.

### Activity Example: Kioxia Sign-Language Club

Kioxia Corporation provides its employees with monthly sign-language lessons at the Kioxia Sign-Language Club. Employees with impaired hearing serve as instructors during these lessons, teaching sign language in order to facilitate smooth communication and providing information to promote understanding of those with hearing disabilities. The activities were suspended due to COVID-19 countermeasures. With the COVID-19 threat having been downgraded by Japanese government in May 2023, preparations are underway to re-start face-to-face meetings at each business site to complement online meetings.

Members of the Kioxia Sign Language Club took the lead in introducing a tool that displays conversation details in text form in real time on a laptop screen. This is a key measure to counter the difficulties experienced by those with hearing disabilities amid the spread of teleworking, the increased use of teleconferencing, and the widespread use of masks. The tool displays voice recognition results on a laptop screen; these can be projected onto a screen connected to a projector or shared during online meetings, helping to enable information distribution.

## Kioxia Etoile Corporation

At our Kioxia Etoile Corporation, which aims to promote the employment and active participation of people with disabilities, we strive to create a comfortable workplace and encourage individual growth through daily communication and by understanding the characteristics of each employee.

► [Kioxia Etoile Corporation](#) □

## Diversity Education

The Kioxia Group conducted seminars and study sessions for executives and managers in FY2022 aimed at fostering a culture of promoting diversity and promoting understanding of this topic.

### Seminar on Women's Career Advancement

An external executive was invited to deliver a lecture for executive officers and managers from Kioxia Holdings Corporation and Kioxia Corporation on the topic of "Women's Career Advancement and Its Impact on Management and Human Resource Strategies." Approximately 300 participants attended—more than 80% of the target audience—and lively discussions took place.

### Communication Seminar Aimed at Enhancing Psychological Safety

Kioxia Corporation held a seminar for managers on the topic of "Communication Ensuring Psychological Safety," which was attended by approximately 300 persons. An external expert explained what is meant by psychological safety, a necessary element for creating an organization in which people with diverse identities can demonstrate their strengths and help generate innovation.

### Study Session for Executives on "Promoting Women's Career Advancement"

A third party expert was invited to deliver a lecture for Kioxia Group's executives on the topic of "The Importance of Women's Career Advancement as a Management Strategy." After the lecture, a lively discussion took place on how women's career advancement could be further promoted across the Kioxia Group.

## Promoting Work-Life Balance

Kioxia Group constantly strives to enhance the work-life balance of our employees. Each employee is encouraged to undertake different working styles and work in ways that help improve their productivity.

### Consideration and Reduction of Working Hours

We comply with the local laws of the countries and regions in which we operate with regard to working hours, and in Japan we monitor time spent at work and encourage employees to take their annual leave. We also have company doctors who provide advice to those who work long hours.

In Kioxia Corporation in FY2022, the average annual total working hours per employee was 2,070 and the average annual total of non-scheduled working hours was 390.

At Kioxia Corporation, we are taking steps to cut down on the number hours they work. Following a trial and based on the results of surveys, in FY2022 we officially introduced a work from home system. This initiative is creating opportunities for employees to reflect on how they communicate in the workplace and on the time they spend in a variety of working styles; it is also encouraging changes in our workplace culture and work ethics, and aims to improve efficiency and job satisfaction.

### Systems to encourage diverse working styles

#### Key systems and measures regulating working hours<sup>5</sup>

System / measure	Overview
Flexible Work System	Flextime system, Work from home system
Long Leave System	Employees can take a maximum of 25 days of accumulated leave for objectives, such as self-development, community activities, nursing, marriage, bereavement, or spouse childbirth, and also for treatment of non-work-related injuries and illnesses, and other conditions, including infertility.
Annual paid vacation	To promote employee wellness, Kioxia Group encourages all employees to make full use of all their annual paid vacation allowance.
Making working hours more visible	Kioxia Group has systems to increase the transparency of hours worked by each employee.
Addressing long working hours at workplaces	We implement measures in various divisions and business sites to address the problem of long working hours, and publish case studies on our intranet site to spread good practice among departments (e.g., having employees declare their target leaving time, in principle forbidding employees from coming to work on Sundays, banning late-night overtime, setting "focus hours," and banning meetings outside normal working hours).

<sup>5</sup> Available at Kioxia Holdings Corporation and Kioxia Corporation

## Supporting Employees Balancing Work with Childcare and Nursing Care

Kioxia Group helps employees balance their work and personal lives. Kioxia Group in Japan has implemented various measures over and above our legal obligations, and we continue to make these more adaptable and flexible. Under our Hourly-Unit Annual Leave system, when taking leave in excess of one hour, employees can take it on a quarter-hourly basis instead of hourly.

### Key Systems Supporting Employees' Work and Childcare<sup>6</sup>

#### Childbirth and Child-rearing

System	As required by law	Our provisions
Childcare leave	Period: Until the child is one year old, except when certain requirements are met. Number of times: maximum twice per child	Period: Until the end of the month in which the child turns three years old Number of times: maximum three times per child
Short-time shifts	Target: Employees raising children under the age of three	Target: Employees raising children who have not yet completed elementary school 1. No limit on the number of times employees can apply 2. Able to combine with Flexible Work System 3. Can be set in 15-minute units
Hourly leave system	No provision	Leave is available in one-hour units. If more than one hour is taken at any one time, however, employees may take leave in 15-minute units thereafter.

#### Family care

System	As required by law	Our provisions
Family care leave	Up to 93 days in total per person requiring nursing care. The leave can be taken separately up to 3 times.	Up to 365 days in total per person requiring nursing care. The leave can be taken separately up to three times.
Hourly leave system	No provision	Leave is available in one-hour units. If more than one hour is taken at any one time, however, employees may take leave in 15-minute units thereafter.

#### Returning to work

System	Our system
Allowance for raising the next generation	Is provided in respect of each eligible child (the parent of a child being taken care of by a spouse is also eligible for the allowance).
Babysitting voucher	When employees use a babysitter, a subsidy is available covering part or all of the fee (utilizing the government's company-led babysitter user support program)
Mutual understanding program	Offers the opportunity for employees to discuss future career plans and any necessary arrangements with their manager and HR personnel before taking leave of absence or after resuming work, thus helping to reduce any concerns employees who take such leave might have.
Re-employment (return to work) system	We have established scenarios under which those who had to resign for any of the following reasons can be re-employed:  1. In order to accompany a spouse who was transferred by his/her company to a different location (within 5 years) 2. In order to provide nursing care for those requiring it (within 3 years) 3. Childbirth, childcare, or raising children (within 3 years)

<sup>6</sup> System of Kioxia Holdings Corporation and Kioxia Corporation

## **Benefits**

### **Cafeteria Plan**

Cafeteria points provided through the Kioxia Health Insurance Association can be used to offset the cost of recreation facilities, fitness clubs, childcare and nursing care services, etc.

### **Corporate Pension Plan**

To help support employees after their retirement, we offer a defined-benefit Corporate Pension Plan. This complements the state pension provided under Japan's welfare pension insurance scheme. We have also introduced a defined contribution pension scheme aimed at broadening employees' post-retirement options.

For performance data related to our diversity and human resource initiatives, please see below.

➤ **Social data (Performance Data) (Excel: 19.3KB)** 

### **Related Links**

People from various backgrounds fulfill their potential and leverage their strengths at Kioxia Group.

➤ Careers

# Health and Safety

For the Kioxia Group to achieve sustainable development in harmony with society, it is important for every employee to strengthen their physical and mental health in order to be able to flourish and shine professionally.

Kioxia Group has established health and safety as priority areas of focus in terms of ensuring the Group's medium- to long-term growth (what we call Sustainability Materiality), and we strive to create a safe and comfortable working environment for all employees and others involved in our business.

## Health and Safety Policy

Kioxia Group's senior managers in Japan all pledge to ensure health and safety across our operations, a pledge that is shared with all employees. Kioxia Corporation established its Basic Policy for Safety and Health at the time of the company's foundation in 2017, and it reviews the policy annually to ensure it continues to meet the needs of the times. Kioxia Group in Japan has subsequently formulated its own policy and is accordingly implementing a range of health and safety initiatives.

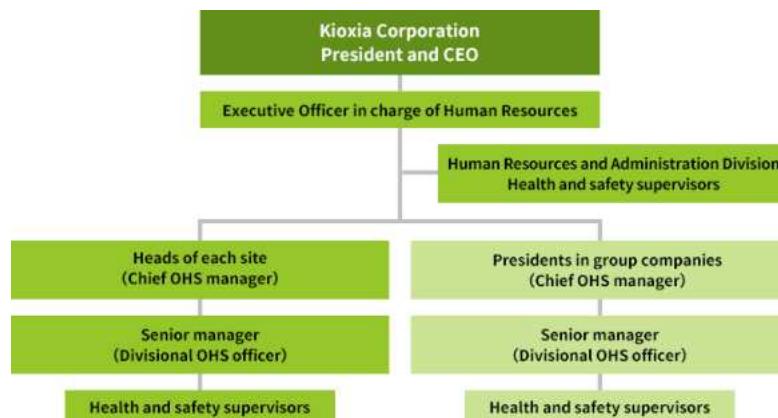
Each overseas group company implements employee health and safety initiatives in accordance with the laws and regulations of their respective countries and regions.

### Basic Policy for Safety and Health

## Promotion of Occupational Health and Safety (OHS)

Kioxia Group in Japan deploys health and safety supervisors within the Administration Division of each group company to promote health and safety activities among employees. They report periodically on health and safety matters to the President of each group company. The Health and Safety Officer of the Human Resources and Administration Division of Kioxia Corporation summarizes these reports and shares the summaries with the President and CEO, and the Executive Officer in charge of Human Resources.

Organization Structure for Health and Safety Management at Kioxia Group in Japan



## OHS Management System

Since January 2021, Kioxia Group has been pursuing the acquisition of occupational health and safety management systems certification (ISO 45001:2018) for its manufacturing and R&D sites. As it moves to comply with the requirements for this certification, Kioxia Group is making efforts to continuously reduce health and safety risks through risk assessment and compliance with relevant laws and regulations, and is making its health and safety management measures more visible.

Kioxia Group is also committed to ensuring health and safety are maintained throughout the day-to-day activities of our organization and our employees. Our efforts include the creation of small workplace groups which undertake a variety of activities on an ongoing basis; these encompass workplace improvement programs, education and training to increase risk awareness among employees, and monitoring to ensure that appropriate practices are being followed. We integrate these activities into our implementation of health and safety management based on ISO 45001 standards.

## Acquisition of ISO 45001:2018 certification

Name of company	Certified body	Certificate expiry date	Approval certificate No.
Kioxia Corporation Kioxia Systems Corporation Kioxia Iwate Corporation	JACO: Japan Audit and Certification Organization for Environment and Quality	March 28, 2025	WC18J0004
Solid State Storage Technology Corporation	DNV	November 23, 2024	183447-2015-ASA-RGC-RvA

## Key Health and Safety Initiatives at Kioxia Group in Japan (FY2022)

Category	Details
<b>Health and Safety</b>	<ul style="list-style-type: none"> <li>Planning and implementation of execution plan based on our Health and Safety Policy</li> <li>Health and safety awards</li> <li>Business site health and safety committees, workplace health and safety meetings</li> <li>Internal audits and external certifications</li> <li>Periodical reports to the president of each group company</li> <li>Implementation of Safety and Health Management Review<sup>1</sup></li> </ul>
<b>Safety only</b>	<ul style="list-style-type: none"> <li>Compliance with relevant laws and regulations</li> <li>Risk assessment to identify sources of danger and steps that can be taken to mitigate those risks</li> <li>Safety reviews when installing or modifying equipment</li> <li>Operation of specialist internal safety committees</li> <li>Sharing of information and holding discussions with labor unions and on-site subcontractors</li> </ul>
<b>Health only</b>	<ul style="list-style-type: none"> <li>Thorough implementation of health measures in full compliance with relevant legislation</li> <li>Promotion of measures to prevent health problems caused by passive smoking</li> <li>Measures to combat brain, heart and lifestyle-related diseases</li> <li>Measures to improve mental health</li> <li>Health management for those posted overseas or on business trips</li> <li>Promotion of activities to support workplace engagement<sup>2</sup> and workplace energization</li> <li>Measures to prevent the spread of diseases</li> </ul>

<sup>1</sup> Periodical reports to the President and CEO of Kioxia Corporation about the activities at Kioxia Group in Japan

<sup>2</sup> Workplace engagement: encouraging a positive and fulfilling attitude toward work among employees.

## Health and Safety Awareness Raising and Education

Kioxia Group in Japan endeavors to enhance our employees' understanding of the need for health and safety and for supportive behavior. On top of the training specified by the Industrial Safety and Health Act, we implement education programs for employees who are newly appointed to health and safety-related posts, as well as for mid-career employees in health and safety-related positions. We also run practical training programs devised by individual operational sites.

## Key Health and Safety Training Results at Kioxia Group in Japan (FY2022)

Type of Training	Ratio of participation : No. of Participants/ No. of Eligible Employees
Training related to job promotion (health and safety)	100% (347/347)
Mental health training	100% (16,760/16,760)
Post-recruitment training (health and safety, road safety, etc.)	100% (2,761/2,761)
Various types of training based on the Industrial Health and Safety Act (for workplace managers and health supervisors, covering the use of industrial robots and safety equipment, etc.)	100% (1,262/1,262)
Competence training (for health and safety promotion committee members, risk assessors, internal auditors, etc.)	100% (822/822)

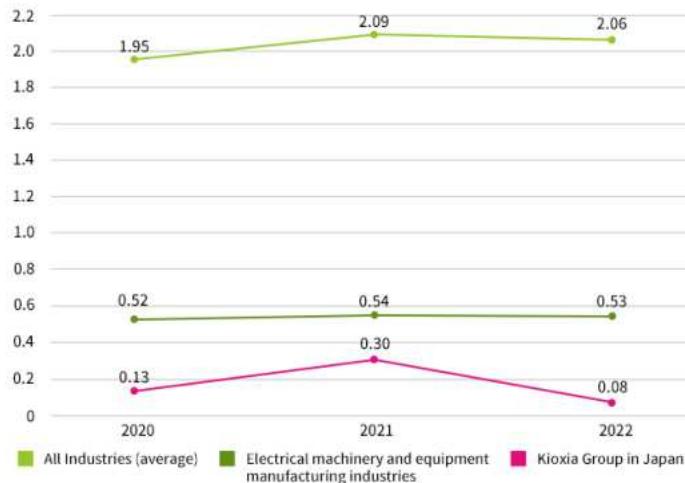
Each work site also conducts its own training in addition to the activities listed here.

## Workplace Accidents

Kioxia Group in Japan strives to minimize the number of workplace accidents and monitor any occurrences. We use the "frequency of injuries resulting in lost working days" as an indicator for these efforts. In 2022, the frequency rate was 0.08, which was below the average rate of 0.53 in the electrical machinery and equipment manufacturing industries.

Kioxia Group in Japan will continue to implement further measures to prevent workplace accidents. In particular, we will prioritize the reduction of hazardous risks that could lead to illness or serious injury and conduct risk assessments of all workplaces and tasks. In addition, we systematically manage and reduce risks by reviewing work methods from risk identification to elimination, renovating facilities, and providing education and training to employees.

### Frequency of Injuries Resulting in Lost Working Time at Kioxia Group in Japan<sup>3</sup>



<sup>3</sup> Frequency = number of casualties due to work-related accidents / total actual working hours x 1 million. Figures for all industries and the electrical machinery and equipment manufacturing industries are collated from the respective "Survey of Industrial Accidents" conducted each year by the Ministry of Health, Labor and Welfare.

## Health Management

As the environment in which the Kioxia Group conducts business continues to change dramatically, we have been working on the implementation of health and safety measures for our employees, an investment which we see as essential for the future of our company and the development of society (health investment).

Kioxia Holdings Corporation issued the Kioxia Group Health Management Declaration in April 2023.

### Kioxia Group Health Management Declaration

Based on our mission of "uplifting the world with 'memory,'" we continue to create value for society through our memory technology. We firmly believe the health of our employees is essential in order to achieve this mission, and consider this to be one of our most important areas of focus. We will continue to promote health management aiming to improve the health of every employee in order to continue to create value for society through "memory" technology.

April 1, 2023

Nobuo Hayasaka, President and Chief Executive Officer,  
Kioxia Holdings Corporation

## Structure for Health Management

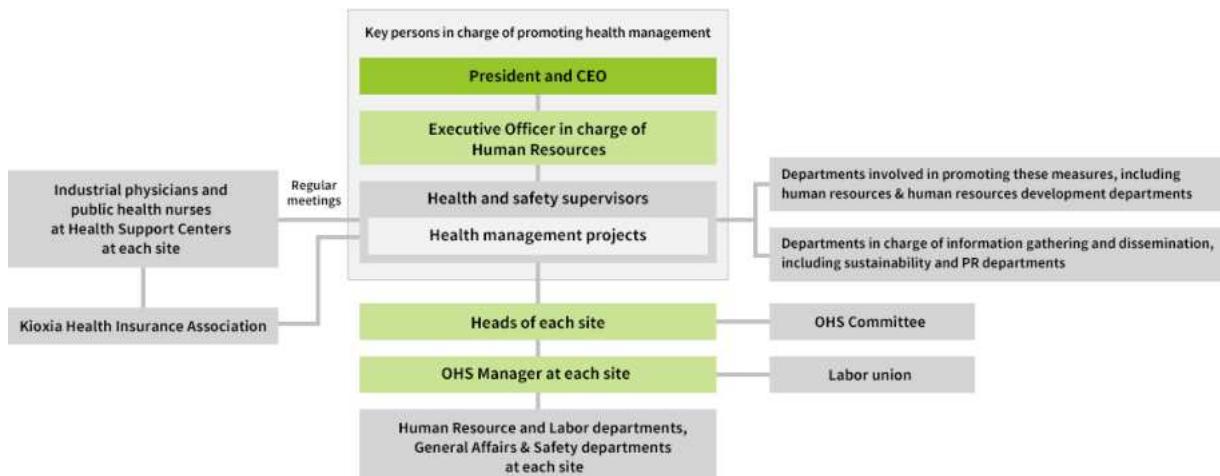
The President and CEO of Kioxia Holdings Corporation and Kioxia Corporation has ultimate responsibility for the promotion of health and safety management. In 2023, Kioxia Corporation reorganized its approach in this area, allowing each level of the company to have a role promoting employee health, as shown in the diagram below.<sup>4</sup>

With the Health and Safety Section of the company's Human Resources and Administrative Division as the secretariat, activities, measures and policies are discussed at regular meetings with the Health Support Center, which deploys industrial physicians and public health nurses at each of our sites. In addition, our management is committed to focusing on health-related issues, with the company, labor union, and health insurance union working together to promote healthy activities and lifestyles.

In the future, we will expand our health management initiatives to other group companies.

<sup>4</sup>Currently at Kioxia Corporation, the President and CEO also promotes health management at Kioxia Holdings Corporation.

Organization Structure for Health Management at Kioxia Holdings Corporation and Kioxia Corporation



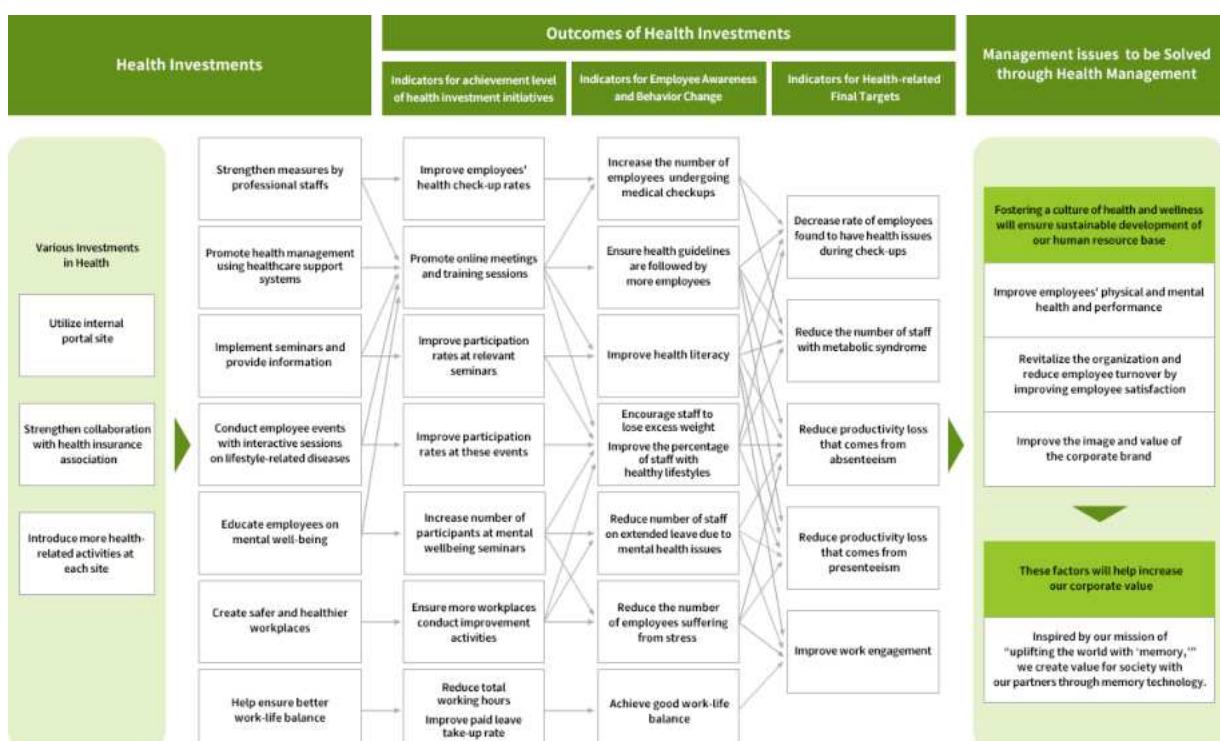
## Health Management Strategy and Processes

The Kioxia Group has formulated its health management strategy and processes in order to clarify issues and areas related to health management, implement measures to address these issues, and continuously implement the PDCA cycle while verifying the effectiveness of each measure.

Recognizing the importance of workplace engagement in terms of promoting our employees' physical and mental health and improving their performance, we will continue to promote health-related measures for them.

To ensure that employees can work for many years in good health and spirits, we will strategically promote employee health and foster a culture of health that makes it easier and more rewarding to work. By doing so, we aim to enhance our corporate value in a sustainable manner.

Health Management Strategy Map<sup>5</sup>



<sup>5</sup> This covers Kioxia Holdings Corporation and Kioxia Corporation.

## Targets

To promote health management, we have set goals in three areas: (1) prevention of the onset and spread of lifestyle-related and other diseases, (2) prevention of stress-related diseases, and (3) creation of more lively workplaces.

- (1) Improve lifestyles by enhancing health literacy.<sup>6</sup> Prevent the onset and spread of lifestyle-related diseases.
- (2) Prevent stress-related conditions such as declines in mental well-being
- (3) Achieve a good work-life balance. Create more lively workplaces through improved employee engagement

<sup>6</sup>The knowledge, willingness, and ability to obtain, understand, evaluate, and use health-related information.

## Initiatives

We pursue the following initiatives to create an environment where employees can work in good mental and physical health. Each business site also proactively implements its own measures.

- We have established processes whereby physicians are deployed to comment on the results of medical checkups covering lifestyle-related diseases such as high blood pressure and high blood sugar levels, allowing for intervention by the physicians and consultation with public health nurses. In this way we aim to reduce the number of employees who leave the company due to absenteeism, leave or illness.
- We have set up a mental health consultation service and make its existence known to all employees. We also provide various training programs aimed at preventing stress-related illnesses.
- We are promoting collaborative health programs<sup>7</sup> with health insurance societies to improve employees' health literacy and to prevent and alleviate metabolic syndrome.

<sup>7</sup>To implement disease prevention and promote good health for employees and their families in conjunction with companies and insurers.

## Changes in individual indicators<sup>8</sup>

Indicator	FY2021	FY2022	FY2023 Target
Employees who attended annual health check-ups	100%	100%	100%
Percentage of employees where abnormal findings were uncovered during health check-ups	33.2%	31.1%	30% or less
Percentage of employees who received thorough examinations after annual health check-ups	—	39.4%	60% or more
Percentage of employees receiving health guidance	—	68.4%	100%
Employees with metabolic syndrome (aged 40 and over)	20.6%	19.0%	Less than 20%
Smokers	23.2%	20.8%	20% or less
Employees undergoing stress check examinations	96.8%	95.7%	97% or more
Employees suffering from stress (based on company standards)	4.8%	5.0%	Less than 5%
Absenteeism <sup>9</sup>	—	—	Still at initial investigation stage
Presenteeism <sup>10</sup>	—	—	Still at initial investigation stage
Work Engagement	—	—	Still at initial investigation stage

<sup>8</sup>This covers Kioxia Holdings Corporation and Kioxia Corporation.

<sup>9</sup>Situation in which an employee is on sick leave, calculated as the percentage of employees who took 8 or more days of leave due to illness or health reasons (from April 2022 to March 2023).

<sup>10</sup>Situation in which an employee attends work but is unable to perform at full capacity due to health problems. Data is compiled based on self-assessments of work performance over the prior four weeks.

For other health and safety performance statistics, please see below.

☒ Social data (Performance Data) (Excel: 19.3KB) ↴

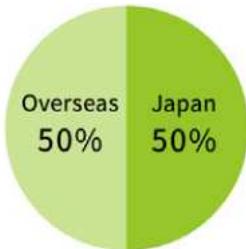
# Sustainable Supply Chain

Stakeholder interest in corporate social responsibility in across supply chains is growing year by year. Kioxia Group is committed to ensuring fair business practices in its Standards of Conduct, and has designated sustainable supply chains as priority areas of focus in terms of ensuring the Group's medium- to long-term growth, and we call these Sustainability Materiality.

By collaborating with suppliers, we conduct business with due consideration of supply chain issues, such as the human rights of workers, occupational health and safety, and the environment, with the aim of reducing business risks and achieving sustainable procurement.

## Kioxia Group's Supply Chain

### Breakdown of Procurement Spend by Region (FY2022)



Kioxia Group procures a variety of raw materials and resources from suppliers in different countries and regions. In FY2022, we had relationships with approximately 700 suppliers, and overseas suppliers accounted for 50% of our total procurement.<sup>1</sup>

<sup>1</sup> The category of "overseas suppliers" includes procurement from the Japanese subsidiaries of foreign-owned companies

## Kioxia Group Procurement Policy

Kioxia Group strives to manage our supply chains and promote sustainable procurement throughout these by complying with the procurement-related laws and regulations of each country or region and with social norms, as well as by building sound relationships with suppliers based on mutual understanding and trust.

We require our suppliers to comply with and implement the Kioxia Group Procurement Policy, and we call for responsible business practices throughout our supply chains.

In addition to the Kioxia Group Supply Chain Code of Conduct governing the promotion of responsible business, we have established Kioxia Group Green Procurement Guidelines covering the use of chemical substances, and the Kioxia Group Responsible Minerals Sourcing Policy which references mineral sourcing. We have informed all relevant suppliers of these policies and instructed them to take appropriate action in order to comply with them.

- [Kioxia Group Procurement Policy](#)
- [Kioxia Group Supply Chain Code of Conduct](#)
- [Kioxia Group Responsible Minerals Sourcing Policy](#)
- [Kioxia Group Standards of Conduct 2. Fair Business Operations](#)

## Structure for Supply Chain Management

Kioxia Group is committed to conducting appropriate transactions with its suppliers and to robust supply chain management. Kioxia Corporation has set up a dedicated planning organization within the procurement department at its Head Office. It coordinates with relevant divisions within Kioxia, such as the Sustainability Division, Environment Divisions, the Human Resources and Administration Division and Group companies in order to address issues regarding human rights, labor, safety, the environment, and other business risks, including those of suppliers. Important issues are submitted to the Sustainability Committee for consideration as needed.

## Participation in Industry Groups and Initiatives

Kioxia Holdings Corporation joined the Responsible Business Alliance (RBA) in 2021 in order to fulfill our social responsibilities across our global supply chains in such areas as labor practices, occupational health and safety, environmental protection, and ethics. As a regular member of the Alliance, we conduct business responsibly in accordance with the RBA Code of Conduct by implementing our own sustainability initiatives and requiring our suppliers to do the same.

- [RBA](#)

In addition, Kioxia Group promotes the responsible procurement of minerals across the Group. Under the umbrella of the RBA, Kioxia Holdings Corporation participates in the Responsible Minerals Initiative (RMI) and Kioxia Corporation has joined the Responsible Mineral Procurement Study Group of the Japan Electronics and Information Technology Industries Association (JEITA).

## Assessment and Monitoring of Suppliers

### New Supplier Assessment

When commencing business with a new supplier, we make them aware of our policies governing sustainable procurement, as well as our Group's overall procurement policies and our Supply Chain Code of Conduct. Before conducting any business with them, we first confirm that the supplier's occupational health and safety measures, environmental and process management structures, legal compliance standards, and management standards, etc., meet the standards of Kioxia Group.

### Supply Chain Monitoring

Prior to continuing business with an existing supplier, we use references such as the current scale of our business with them, and ask them to conduct a self-assessment survey using a format provided by the RBA (RBA-SAQ).<sup>2</sup> This enables us to confirm the status of the supplier's compliance with the RBA Code of Conduct and facilitates rigorous management of our supply chain. Interviews by our procurement managers are conducted with suppliers determined by the RBA-SAQ to be of high risk, and where necessary, suppliers are required to implement corrective measures, such as undergoing an RBA third-party audit. In addition, we check the management status of suppliers' manufacturing sites by means of quality audits, requesting improvements and providing support for the implementation of these where necessary.

<sup>2</sup> Self-Assessment Questionnaire (SAQ) provided by the RBA: This contains questions about labor practices, occupational health and safety measures, the environment, ethics, and management systems. We use two types of SAQ: Corporate, which covers companies in their entirety; and Facility, which focuses on individual factories.

### Supply Chain Monitoring Results (FY2022, Kioxia Group in Japan)

	No. of surveyed companies	No. of responses	Results of risk assessment (No. of cases)			Requests for corrective measures (No. of cases)
			Low risk (No. of responses)	Medium risk (No. of responses)	High risk (No. of responses)	
RBA-SAQ <sup>3</sup> (Corporate)	53	53	48	5	None	None
RBA-SAQ <sup>3</sup> (Facility)	49	117	112	5	None	None

<sup>3</sup> RBA-SAQ responses from RBA Online

### Responsible Minerals Sourcing

Given Kioxia Group's role in the supply chain of its client companies listed on U.S. stock exchanges, following the enactment of Section 1502 of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act) in 2010, we ensured smelters in our own supply chain were investigated by our suppliers to confirm that proceeds from the sales of tin, tantalum, tungsten, and gold (commonly known as 3TG) from the Democratic Republic of the Congo or neighboring countries are not being used as a source of funds for anti-social forces.

Since March 2021 Kioxia Group has been promoting the responsible procurement of minerals from other countries and regions as well; our Kioxia Group Responsible Minerals Sourcing Policy stipulates that Kioxia Group will prohibit use as raw materials 3TG or cobalt obtained from other conflict-afflicted and high-risk areas (commonly known as CAHRAs) where inhumane acts such as human trafficking, slavery, forced labor, child labor, abuse, or war crimes are suspected.

#### ➤ Kioxia Group Responsible Minerals Sourcing Policy

### Structure for Kioxia Group's Minerals Sourcing

Kioxia Corporation has established a Task Force for Procurement of Specific Materials consisting of members from relevant departments such as our Head Office Procurement, Sales, Technology, and IT Departments. The Task Force pursues procurement activities in accordance with the Kioxia Group Responsible Minerals Sourcing Policy, and raises issues to the Sustainability Committee for discussion as necessary.

## Minerals Sourcing Survey

Kioxia Group investigates the use by mineral smelters in our supply chain of minerals they deliver to our company, such as 3TG and cobalt. We require that suppliers procure all materials from Responsible Minerals Assurance Process (RMAP) smelters certified by the RMI, and also request that suppliers identify applicable smelters in the supply chain if 3TG mineral procurement is conducted in the Democratic Republic of Congo, neighboring areas or other conflict or high-risk areas.

In FY2022, Kioxia Group in Japan requested the 69 suppliers that may have used 3TG minerals to conduct a smelter survey using the Conflict Minerals Reporting Template produced by the RMI. However, in FY2022, a large number of RMAP-certified smelters were excluded from RMI accreditation at the end of the annual survey during January 2023. Due to this, the percentage of minerals procured from smelters that were RMAP-certified or currently under audit temporarily fell below 100% (to 71% as of the end of March 2023).<sup>4</sup> While continuing to conduct RMI smelter surveys, Kioxia Group in Japan has engaged in discussions with our suppliers with the goal of achieving conflict-free procurement. Following requests from our stakeholders, we added cobalt to the list of minerals surveyed, and conducted smelter surveys at 30 suppliers using the RMI Extended Minerals Reporting Template in FY2022.

<sup>4</sup> Smelters that are classified as "Conformant" or "Active" in RMAP audit

### Minerals Procurement Monitoring Results (FY2022, Kioxia Group in Japan)

	Survey date	No. of surveyed companies	Survey results (percentage of responses)				Suspension of business, etc.
			No. of responses	Corrective measures completed <sup>5</sup>	Survey continued	Failure of corrective measures	
CMRT surveys (3TG)	End of March 2023	69 (percentage of responding companies: 100)	119	85 (71%)	34 (29%)	0 (0%)	0
EMRT surveys (cobalt)	End of April 2023	30 (percentage of responding companies: 100)	36	34 (94%)	1 (3%)	1 (3%)	0

<sup>5</sup> Request for due diligence by suppliers that procured minerals from smelters that are not RMAP-compliant

## Green Procurement

The Kioxia Group's Environmental Policy outlines our environmental contribution to the realization of a sustainable society.

Kioxia Corporation has established a Green Procurement Working Group under the auspices of our Environment, Quality Control, and Procurement divisions, to work on green procurement, with the aim of contributing to the realization of a sustainable society. The company has also formulated Green Procurement Guidelines, which outline our management standards and contain specific requirements for suppliers regarding the selection of materials with a low environmental impact and the use of chemical substances. We periodically update the guidelines to reflect issues such as changes in the laws and regulations of individual countries or regions, or in response to customer requests.

We also conduct a thorough assessment of the environmental impact of chemical substances from the design and development stage, and use materials with a low environmental impact as part of our efforts to reduce our own environmental footprint.

Through these initiatives, we will continue to collaborate with our suppliers on issues affecting environmental conservation, aiming to contribute to the realization of a better global environment.

### Green Procurement Monitoring Results (FY2022, Kioxia Group in Japan)

	No. of responding companies	Locations of Responding Companies (by region)
RBA Environmental Survey	21	U.S.A. (8 companies) Japan (6 companies) Taiwan (4 companies).

## Sustainable Procurement Training for Employees

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To ensure compliance with our procurement processes, Kioxia Group in Japan provides basic training to all executives and staff on the country's Subcontract Act and related laws. In addition, the Procurement Department provides specialized training on compliance with relevant laws, regulations and rules to employees.

In addition, with the aim of realizing a sustainable supply chain, the Procurement, Sales, and Technology departments regularly conduct training on global social issues in the supply chain such as human rights and labor, the RBA Code of Conduct, and the sustainable procurement activities of the Group.

## How We Address Supply Chain Risk

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Kioxia Group requires suppliers to make improvements and take appropriate measures if

- they are found to have violated our procurement policies or Supply Chain Code of Conduct
- sustainability-related risks are identified in the operations of a supplier or supply chain
- there is a new law or regulation or social requirement necessitating a response
- there is some other reason.

While we will offer corrective guidance and support in such cases, we will suspend business with them in cases where corrective measures are judged to be difficult to implement.

In FY2022, there were no cases where business with a supplier was suspended due to risks related to sustainability.

## Securing Supplies in Accordance with Business Continuity Management Procedures

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Kioxia Group strives to engage multiple suppliers and works closely with them in order to avoid interruptions to business in the event of emergencies such as earthquakes, other natural disasters, accidents, or pandemics. Under our business continuity management (BCM) management regulations,<sup>6</sup> Kioxia Corporation and Kioxia Group's affiliated companies<sup>7</sup> ensure they are fully aware of the status of their supply chains during normal times, allowing them to swiftly grasp the impact in the event of an emergency. We have also established a framework for cooperation aimed at achieving the early recovery of services. Additionally, we will strive to develop our business continuity planning through BCP assessments at major suppliers.

<sup>6</sup>Comprehensive and integrated management of business continuity, including the formulation of countermeasures, their implementation, operation, and review, and continuous improvements aimed at minimizing the impact on the organization, without the need for a suspension of business operations in the event of an emergency, or recovering in a short period of time even if business is suspended.

<sup>7</sup>20 domestic and international affiliates of the Kioxia Group (as of August 2023)

# Quality Control

Kioxia Group considers that one of our most important mission is to provide our customers with safe and reliable products; accordingly we are always striving to manage and improve product quality. In addition, we ensure our products are safe to use and secure, and disclose information regarding product quality to our customers.

## Kioxia Group Comprehensive Quality Assurance

Kioxia Corporation aims to benefit society by providing high-quality, safe, and functionally advanced products and services that meet customer expectations, while complying with all relevant laws and regulations.

### Quality Control Policy

Kioxia Corporation has set out our fundamental approach to quality control within our Quality Control Policy.

► [Quality Control Policy](#)

► [Quality Guidelines \(PDF: 1.4MB\)](#) 

### Standards of Conduct during Quality Assurance

1. We engage in quality assurance from our customers' point of view.
2. We observe relevant laws and contracts and respect the rights of customers and third parties.
3. We deploy quality control systems aimed at achieving 100% quality.
4. We ensure that all of our departments and employees follow our quality control policies.
5. We aim for constant improvement by investigating the root causes of process failures and conduct through risk analysis in order to prevent any re-occurrence.
6. We collect, analyze and appropriately disclose information with the aim of preventing quality issues.

### Standards of Conduct regarding Product Safety and Product Security

1. We observe both Japanese and overseas laws and regulations governing product safety and product security.
2. We collect, and proactively disclose, a wide range of information about any product issues that arise.
3. We immediately report any product issues to the authorities concerned in accordance with relevant laws and regulations.
4. We promptly inform customers when the need to recall and repair products arises.
5. We educate our customers and provide alerts and warnings in order to help them use our products in a safe manner.
6. If an accident should occur, we carry out a thorough analysis of the causes and take necessary measures to prevent it from recurring. We also strive to prevent accidents by predicting risk at the design stage.
7. We strive to eliminate vulnerabilities from products prior to shipment.
8. We collect a wide range of information on product vulnerabilities in order to reduce risk.
9. We implement product security measures on a broad scale in cooperation with the relevant organizations.

## Promoting Quality Control

Kioxia Corporation has established a quality management system throughout its entire product process from planning and development to sales and customer service. Chaired by our President and CEO, who is also the Chief Quality Executive Officer, Quality Assurance Meeting is held twice a year during which the Executive Officer in charge of quality, vice presidents of relevant departments, technology executives, general managers, and senior managers discuss and decide on key quality policy issues. The participants also evaluate the appropriateness and validity of quality management and risk containment measures. We communicate decisions made during these meetings to business divisions and ensure that these are actioned.

Quality Control Processes & Responsibilities at Kioxia Corporation



## Formulating Responses to Product Issues at Kioxia Corporation

Information on issues involving our products in the market is collated by the President and CEO of Kioxia Corporation, who is also the Chief Quality Executive Officer, or the Executive Officer in charge of Quality, through what we call the CPL<sup>1</sup> Incident Response Desk. Any issues are referred to our Quality & Safety Risk Committee who will decide on any action that may be required.

No serious quality incidents occurred in FY2022.

<sup>1</sup> CPL is an abbreviation combining CL (contractual liability) and PL (product liability).

### Product Issue Response Processes & Responsibilities at Kioxia Corporation



## Response to Security Incidents Related to Products

## Quality Management System (QMS)

Kioxia Group manufacturing sites and related facilities have obtained ISO9001 certification, the international standard for quality management systems. We are implementing continuous improvements throughout the Group in accordance with the seven QMS principles on which ISO9001 is based in order to enhance the effectiveness of these systems. Kioxia Corporation has also acquired IATF16949 certification, the international standard for quality management systems specific to the automotive industry.

### ISO/IATF Certification Information (PDF: 16KB) [PDF](#)

## Improving Design Quality

In order to improve product quality at the design stage, Kioxia Corporation conducts product design reviews and quality reliability assessments by means of certification testing. We also conduct what we call Failure Mode and Effects Analysis (FMEA) on our design activities in order to prevent defects from reaching upstream. The aim of this activity is to enhance quality by anticipating the risks and effects of failures or defects, known as failure modes, targeting product design and processes in the early stages of development. We strive to improve the reliability and safety of our products and services by implementing practical training to broaden the base of FMEA activities.

## Improving Manufacturing Quality

Furthermore, at Kioxia Corporation, FMEA is used to identify the risk of quality issues and determine those which need to be managed as a priority; the capacity of each manufacturing process is analyzed and improvements are implemented on areas found to have low process capabilities. A method known as Statistical Process Control is deployed during efforts to stabilize or improve manufacturing quality.

## Disclosure of Information on Quality

Kioxia Corporation discloses information regarding product quality on its website.

### Products: Reliability Information [PDF](#)

- Quality Guidelines
- Reliability Handbook
- Handling Precautions and Requests
- List of Abbreviations

### Personal Products (Japanese) [PDF](#)

- Customer Support

## Quality Education

Kioxia Corporation has created its own in-house curriculum and conducts education and training for engineers in order to improve our design and manufacturing quality. Basic training is conducted throughout the year, including an introduction to quality assurance, contract liability and product liability (including the Product Liability Act), statistical quality control, and quality management systems, along with special training on topics such as QC7 tools,<sup>2</sup> FMEA/DRBFM,<sup>3</sup> failure studies, and why-why analysis.

<sup>2</sup> QC7 tools constitute a method of analysis that combines seven techniques in quality control: Pareto charts, characteristic factor diagrams, histograms, graphs, check sheets, scatter plots, and control charts.

<sup>3</sup> DRBFM (Design Review Based on Failure Mode) is a method of preventing quality defects that prioritizes design changes and modifications when conducting risk analyses.

# Supporting Local Community Development

## Basic Approach

Kioxia Group sees it as our responsibility as a good corporate citizen to not just leverage our business activities to address social issues, but to coexist in harmony with local communities. We aim to help realize a better society by leveraging our technology, products, services and expertise as well as the abilities of our employees; we engage in dialogue with local communities, governments and other public bodies, NPOs/NGOs, and academic organizations, to address community issues. We focus in particular on energizing local communities in the areas where we conduct business, and on fostering human resources in the fields of science and engineering.

## Structure

At Kioxia Group, the Administration Division of each our group company and operational site oversees community engagement activities. We partner with local communities where we operate and engage in activities that are rooted in these area. We also encourage employee participation in social activities.

### Leave System Enabling Volunteer Activities

Kioxia Corporation has introduced a long-term leave system to make it easier for employees take part in community activities. They can use up to 25 days of accumulated leave for such purposes.

## Main Activities (FY2022)

### Fostering Scientists and Engineers of the Future

Kioxia Group sponsors opportunities for young people—the leaders of the future—to develop an interest in science, technology and manufacturing, as we believe it is important to support those aspiring to become outstanding scientists or engineers. In FY2022, our community science lectures and workshops were attended by some 2,200 students of all ages, from elementary school pupils to university undergraduates.

#### Yokkaichi Science Seminar for Children

In August 2022, Kioxia Corporation took part in the Yokkaichi Science Seminar for Children at the Yokkaichi City Cultural Center, which was held with the aim of raising children's interest in science.

In a seminar titled "Science Experience – Yokkaichi, a City of Monozukuri" (the art, science and craft of making things), the company delivered a presentation called "The Secrets of Flash Memory" for roughly 60 visitors. Explaining how semiconductor memories work, we gave a few quizzes about human memory. The excitement mounted as children enthusiastically answered the questions. They particularly enjoyed the virtual reality (VR) simulation of a cleanroom in a manufacturing facility. Many of them seemed genuinely curious, twisting their bodies here and there while wearing VR goggles.



A scene from the Yokkaichi Science Seminar for Children

### Sponsorship of Iwate Programming Education Project for Elementary School Students

Kioxia Iwate Corporation, the second manufacturing hub of the Kioxia Group to commence operations, has been sponsoring the Iwate Programming Education Project for elementary school students since 2020.

This project aims to promote the effectiveness of programming training through hands-on classes and programming contests, with the goal of nurturing and developing children's basic abilities to utilize information and their logical thinking skills.

As a manufacturing company, Kioxia Iwate Corporation hopes to encourage the free ideas and creativity that elementary school students can bring to the table.



A scene from the Iwate Programming Education Project

## Outreach Classes at Yokkaichi Municipal Junior High School

Since FY2008, Kioxia Corporation has been collaborating with Yokkaichi City to provide outreach classes as a part of students' career guidance. In addition to the general issue of children losing interest in science, there is an increasing need for schools to equip students with the necessary foundational skills to prepare them for future social and professional independence. To help address these social issues, Kioxia Corporation's employees provide lectures at junior high schools in the hope of cultivating an interest in science among students.

In FY2022, classes were held at Ooike and Nishi-Sasagawa Junior High Schools under the theme of "Working at companies." Students wore VR goggles and took a virtual tour of a clean room, learning about semiconductor manufacturing processes and the type of work conducted at manufacturing plants. Students also had the opportunity to hold wafers and printed circuit boards<sup>1</sup> in their hands and to try on clean room suits. To encourage students to think about their own future careers, a workshop was held using waste reduction as an example of one of the environmental issues that the company's engineers are tackling in practice.

<sup>1</sup> A wafer is a disk of semiconductor crystals that serves as the base material for semiconductor chips; a printed circuit board is a component that provides an electrical connection between electronic components.



Junior high school students experiencing work in cleanroom suits

## Participation and Career Counseling for Science and Engineering Pathways in Summer School for Girls in Junior and Senior High School

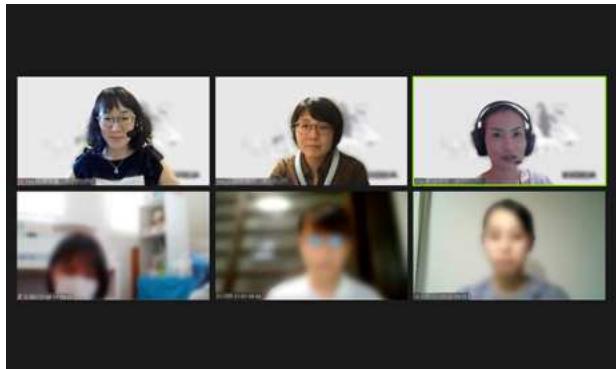
As part of our efforts to promote women's active participation in the workplace, since 2018 Kioxia Corporation has taken part in a Summer School for Girls in Junior and Senior High Schools,<sup>2</sup> one of Japan's largest events promoting science and engineering careers.

In 2022, we participated online in a "Poster and Career Consultation" event. Building on the concept of "The World is Filled with Memory," we gave a presentation explaining how flash memory works and the many ways it is used in our daily lives. Our female engineers also spoke about their own careers.

The students asked questions related to academic and career paths such as, "I'm having trouble choosing an undergraduate school; what was the deciding factor in your choice of school?" and "How did you decide on a college or company?" and other questions related to higher education and careers. The female engineers gave advice regarding the participants' future academic and career paths, including statements such as "Expertise in technology is as valuable as job qualifications," and "If you go to a university's open campus or school festival, you may be able to visualize your student life there. That will motivate you to study harder."

We will continue to give students the chance to experience the joy of science, engineering and manufacturing, supporting the development of future scientists and engineers.

<sup>2</sup> Summer School for Girls in Junior and Senior High Schools is an event that aims to motivate girls to pursue science and engineering careers. It was sponsored by the Natsugaku ("summer school") Executive Committee (in 2018), the National Women's Education Center (in 2018, 2019), and since 2019 has been sponsored by the NPO STEM Career Path Project for Girls.



Engineers providing online career counselling to junior high- and high school girls

## Educational Collaboration of Kioxia Iwate Corporation with Iwate University

Kioxia Iwate Corporation has been pursuing educational collaboration with Iwate University since 2019. In FY2022, the topics covered previously in public lectures were further developed, and lectures on semiconductors were held in multiple engineering departments. These lectures covered the history of the semiconductor industry as well as miniaturization technologies for logic devices and three-dimensional memory technologies, which are drivers of semiconductor technology.<sup>3</sup> The number of students taking these lectures has been increasing year by year, and the sessions feature lively discussions and questions.

The company is planning to expand this initiative to other universities, *kosen* (colleges of technology) and high schools in the Tohoku region, to support the mutual development of industry and academia.

<sup>3</sup> Advanced processes and production technologies that are the driving force of next-generation devices and manufacturing technologies.



Lecture on Semiconductors at Iwate University

## Educational Collaboration with such as Graduate Schools

Kioxia Group hosts classes at graduate schools and other institutions in Japan to foster the development of young scientists and engineers.

Kioxia Corporation has had a Comprehensive Collaboration Agreement with the University of Electro-Communications since FY2019, under which engineers are fostered through personnel exchange, and we collaborate on various research activities. This initiative aims to promote semiconductor memory development and manufacturing technologies. In FY2021, one of our engineers conducted a lecture titled "Information Media System (Data Mining)" for approximately 100 master's and PhD students at the University's Graduate School of Informatics and Engineering. We also held a lecture titled "Semiconductor Memories—Supporting Society (Evolution of Nonvolatile Memories)" at Nagoya University and one titled "Doctorate Career Café: the Power of Doctorate Degrees in Society" at Doshisha University. In FY2022, we held 124 lectures at universities and graduate schools nationwide, which were attended by approximately 1,500 participants.

The Kioxia Group in Japan aims to continuously nurture talented engineers and help deploy them in society by dispatching our employees as lecturers to lectures and seminars hosted by the Semiconductor Division of the Japan Electronics and Information Technology Industries Association (JEITA). In so doing, we aim to develop engineering as an academic discipline, and boost the semiconductor industry.

## Creating Opportunities for Academic Interaction

Since FY2020, Kioxia Corporation has participated in the "AI and the Advanced Programming Consortium (AIC)" series of events at Keio University Global Research Institute.

A workshop using AI technology titled "Addressing Combinatorial Optimization Problems in Semiconductor Manufacturing" was held in FY2022. The participants used familiar problems as themes and tackled these to find the best solution that met various conditions. After the workshop, the students toured the Yokkaichi Plant to see for themselves how AI technology is utilized in companies. A wide range of students participated, from undergraduates to those in doctorate programs; participants commented that the workshop provided them with a better understanding of AI technology and how companies apply it.

We provided a forum where participants could gain new experiences and interact with each other to learn how AI can solve problems and create new value.

Please see below for information regarding other local engagement activities of Kioxia Corporation's Yokkaichi Plant and Kioxia Iwate Corporation

- [Kioxia Corporation Yokkaichi Plant CSR Activities and Cooperation with the Local Community](#) ↗
- [Kioxia Iwate Corporation CSR Activities and Cooperation with the Local Community \(Japanese\)](#) ↗

## Donations via Charity Run: Kioxia Europe GmbH

Kioxia Europe participated in B2Run, a charity running event that aims to support community engagement, employee health promotion, and teambuilding.

The B2Run vision is "A society united through sport and an awareness of health" and their mission is "Supporting long-term health, teambuilding and motivation in society by creating environments where people work together." The B2Run was held as a 6km race in Düsseldorf, Germany, with 514 companies participating and 11,500 people completing the course.

A highly motivated Kioxia Europe team of 14 employees took part. From the B2Run participation fees, the company also made a charitable donation of 5 euros per person to the German Bone Marrow Bank.



Kioxia Europe employees taking part in the B2Run in matching shirts

## Reaching out to Youth in the Community: Kioxia America Inc. LeadHERs

In 2018 Kioxia America established an internal organization called LeadHERs, whose goal is the education, enrichment and empowerment of women. LeadHERs also supports corporate community engagement events in partnership with Kioxia America's Community Relations team.

In October 2022, LeadHERs volunteered to prepare and serve lunch in partnership with the Orangewood Foundation, which supports young adults who have come out of foster care. The Orangewood Foundation helps these young people in Orange County, California, become independent adults in the areas of health and wellness, housing, life skills, employment and education.

The Orangewood Foundation supports almost 2,000 young people every year. They can utilize the Orangewood facilities and programs for college and career counseling services; they also have access to resources that help them lead independent lives, including food and other supplies.

LeadHERs volunteers donated, prepared and served food at Orangewood's kitchen, providing meals and fellowship to the Foundations 18-24-year-olds, who are transitioning to independent living.



Group photo of participants, including Kioxia America employees at Orangewood's kitchen

## Providing local children with food-related support: Solid State Storage Technology Corporation

Solid State Storage Technology Corporation (SSSTC) in Taiwan works with the "Baby Green Box Association" (BGBA), an NPO supporting children, to help ensure that children in foster homes have access to fresh vegetables and fruits. In Taiwan, more than 600 infants and toddlers are placed in foster homes each year after being separated from their birth families. Children in foster homes do not have enough of the fresh vegetables and fruits that are essential for their health and growth. In FY2022, SSSTC purchased and delivered NT\$200,000 of vegetables and fruits to those foster homes across Taiwan. In addition, in the same year, 32 employees volunteered to engage this event for packing vegetables and fruits with the cooperation of BGBA.



Participants at the packing volunteer event, including SSSTC employees

# **Governance**

**Corporate Governance**

**Risk and Compliance**

**Information Security**

# Corporate Governance

Kioxia Group is reinforcing our governance processes in order to increase our corporate value.

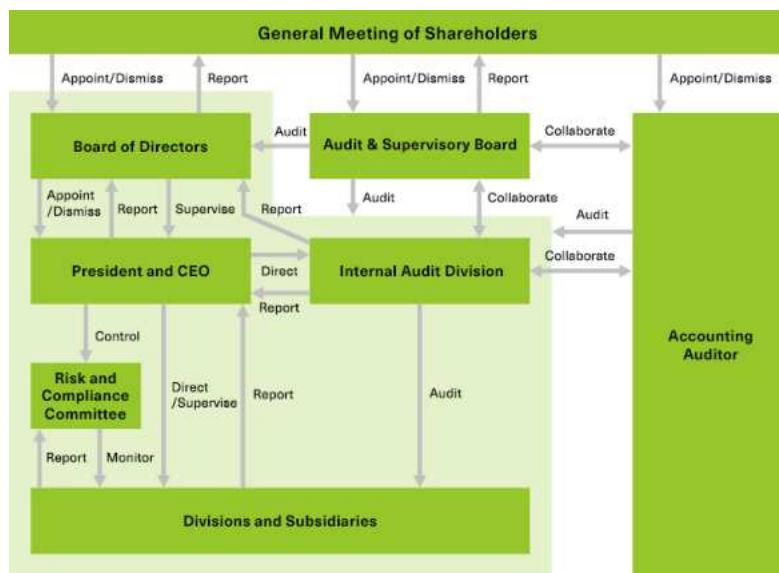
## Corporate Governance Policy and Structure (as of March 2023)

Kioxia Holdings Corporation is a company with Board of Statutory Auditors. We have developed a group governance structure in which the performance by directors of their duties is audited by our statutory auditors. We have appointed three statutory auditors.

The core of the Kioxia Group governance is our Board of Directors, consisting of six persons, including the President and CEO. Furthermore, to clarify the separation of the supervisory functions and executive functions of management, the latter is carried out by executive officers assigned by the Board of Directors and by departments that assist directors.

As Kioxia Holdings Corporation's Chief Executive Officer, the President and CEO is responsible to shareholders when making decisions on important company matters. The President and CEO also steers Kioxia Group's business by broadly and optimally managing the resources of Kioxia Holdings Corporation and its group companies and maximizing their synergies.

Kioxia Group's Corporate Governance Process & Responsibilities (as of March 2023)



# Risk and Compliance

Kioxia Group enforces global compliance with relevant laws and regulations, social and ethical norms, and internal rules, and carries out risk- and compliance-related activities.

## Risk and Compliance Policy and Structure

At Kioxia Group, we strive to ensure thorough compliance with all relevant laws and regulations based on the Kioxia Group Standards of Conduct, in order to ensure fair and open competition.

At Kioxia Holdings Corporation, the President and CEO is assigned lead responsibility for ensuring risk compliance; the Officer in charge of Human Resources & Administration, the Officer in charge of Legal Affairs and the Officers designated by President and CEO (hereinafter referred to as the "Designated Officers") have joint second-level responsibility. Kioxia Holdings Corporation has established a process whereby our Risk and Compliance Committee has complete authority and responsibility with regard to all risk and compliance-related issues across the entire Group. Our statutory auditors attend meetings of this Committee as "observers."

In line with our Risk Compliance Management Regulations, Kioxia Group collects, analyzes and assesses all relevant risk-related information regarding compliance risks, including business risks and risks associated with disasters, accounting fraud, information security, and product quality, prior to formulating priority measures and implementing these. Furthermore, we have constructed a framework that allows swift and organization-wide response to risks across the entire Group when required.

We classify risks into a number of categories, including compliance-related risks, finance/accounting-related risks, and business risks, and have established committees for each category to enable agile management of these. Each committee reports on activities and status to the Risk and Compliance Committee on a timely basis. The Risk and Compliance Committee, which meets every six months, determines risks that may cause a crisis, or "crisis risks,"<sup>1</sup> and reviews all matters related to Group-wide risks and compliance activities. Furthermore, the Committee formulates, implements and supports risk and compliance management measures (priority measures), monitors the activities of each committee, and reports on these to the Board of Directors, which reviews them as appropriate.

When a crisis risk or an event that may develop into one occurs, staff must report the situation to Risk and Compliance Committee at Kioxia Holdings Corporation immediately. The Officer Responsible for Risk Compliance then issues instructions regarding the handling of the risk in consultation with the heads of each organization directly under the President and other appropriate parties, and implements measures to address the situation and prevent recurrences.

<sup>1</sup> Crisis risk is serious and immediate risk that cannot be addressed through usual decision-making channels and is at a level that has the potential to significantly endanger the value of the company.

### Kioxia Group's Risk and Compliance Committee Structure



## ■ Kioxia Group Standards of Conduct

## Whistleblower System

### Whistleblower "Risk Hotline" for Employees

In order to create an open work environment and reduce risk, in addition to encouraging day-to-day communication within each workplace, Kioxia Group operates a whistleblower system. All employees are informed about this system through internal websites, emails and other means. The system is designed to protect the anonymity of whistleblowers and ensure that they are not treated disadvantageously. The number of reports received and consultations undertaken through the whistleblower system in FY2022 was 239.

Of the reports received, those referencing inappropriate situations or concerns about inappropriate situations were reported to the relevant division so that instructions for improvement could be provided or alerts issued. In cases involving consultations and questions about the duties of the informants themselves, we gave advice on how to deal with each situation.

For reports other than those that were anonymously submitted, in principle we explained the status of our responses to the informants. Except in cases where prior consent is obtained from the employees concerned, the names or contact details of informants are never disclosed.

## **Business Partner Hotline**

Kioxia Corporation has established a Business Partner Hotline to enable business partners such as suppliers to report to us any violations or suspected violations of laws and regulations, Kioxia Group Standards of Conduct, the Kioxia Group Procurement Policy, business agreements, corporate ethics, or other applicable rules, standards and norms established by Kioxia Group in connection with procurement and other business transactions, and to help us rectify these.

We investigate and establish the facts and in principle notify the results of our investigation to the whistleblower. The personal details of the person who made the allegation are not disclosed to anyone outside the Business Partner Hotline Secretariat without their consent. Moreover, we ensure there is no unfair treatment of the whistleblower or their company arising from their allegation.

The number of reports received and consultations undertaken through the Business Partner Hotline in FY2022 was zero.

➤ **Business Partner Hotline (PDF: 136KB)** 

## **Risk and Compliance Training**

Kioxia Group provides various compliance training programs and thoroughly disseminates details of the Kioxia Group Standards of Conduct to all directors and employees in order to reinforce risk and compliance awareness.

### **Topics Covered at Kioxia Group's Employee Training in Japan during FY2022**

- Kioxia Group Standards of Conduct
- Accounting compliance, including internal control systems
- Business risks, including bribery and antitrust laws
- Prevention of insider trading
- Export controls
- Spending and procurement management
- Compliance with subcontracting law, appropriate outsourcing contracts
- Electrical Appliance and Material Safety Law
- Technology ethics
- Product security
- Proper handling of information, including information security and personal information protection
- Intellectual property rights
- Sustainability management in general; also covers environmental and human rights

## **Anti-Corruption Efforts**

Kioxia Group defines risks related to compliance as priority risk management issues that have the potential to severely impact our business; we strive to prevent such risks and to respond swiftly in the event of an occurrence. The basic policies governing behavior are defined in the "Kioxia Group Standards of Conduct: 1. Sound Business Management and 2. Fair Business Operations." Initiatives include the establishment of internal rules and operational frameworks aimed at ensuring compliance with anti-trust laws and regulations and with those related to the prevention of bribery or insider trading, or potential third-party risks such as political donations and funding.

## **Compliance with Anti-Trust Laws and Anti-Bribery Measures**

In the light of recent global regulatory trends, Kioxia Group has been making rigorous efforts to prevent cartelization and bribery. In FY2022, we conducted voluntary audits at our major group companies that have adopted a compliance program and two related guidelines regarding compliance with anti-trust laws and anti-bribery with foreign public officials. These audits allowed us to establish the levels of compliance at those companies<sup>2</sup> and provide thorough compliance training.

Kioxia Group promotes rigorous compliance with business-related laws and regulations by providing training, making effective use of relevant databases, and performing periodic self-audits. We implement improvements aimed at mitigating any risks found by internal audit in order to continue to enhance our compliance structure.

As a part of our anti-bribery initiatives, we perform due diligence on our outsourcing partners and other business partners that may have relationships with public officials, in order to identify potential bribery risks and any other risks before commencing business with them. In addition to incorporating provisions that prohibit bribery in our contracts with the aforementioned parties, we also notify them about our anti-bribery policy, among other activities.

Furthermore, Kioxia Group is taking steps to raise compliance awareness among our staff based on our own Standards of Conduct. Kioxia Group in Japan provided their directors and employees with e-learning training on sales-related risks during December 2022 and January 2023, to raise the level of our sales-related legal risk management.

<sup>2</sup> 6 domestic and 14 overseas affiliates of the Kioxia Group (as of August 2023)

## **Prevention of Insider Trading**

To prevent insider trading and ensure proper management of all information, Kioxia Holdings Corporation and Kioxia Corporation have formulated "Insider Trading Prevention Regulations" and developed processes and regulations designed to manage the flow of potentially market-sensitive information. In 2022, e-learning designed to prevent insider trading was conducted for all employees of Kioxia Group in Japan. This initiative aimed to ensure that the contents and objectives of the "Insider Trading Prevention Regulations" were thoroughly understood.

## **Political Contributions**

As part of its contribution to society, and when deemed to be necessary, Kioxia Corporation makes transparent donations to political parties, in order to encourage the adoption of policies that will support our business and aid the healthy development of parliamentary democracy. Where we make donations to political parties, procedures in accordance with internal rules are followed and, in the case of donations made in Japan, we ensure we are compliant with Japan's Political Funds Control Law.

## **Donations and Provision of Funds**

While Kioxia Corporation forbids the incurring of inappropriate expenses, we do stipulate that appropriate donations may be made to relevant organizations. We therefore donate to a number of different organizations, taking into consideration factors such as the contribution made by the organization to society, the causes it supports, and the community aspects of its activities.

## **Continued Severing of Relationships with Antisocial Groups**

Kioxia Group in Japan has taken various measures to ensure that all links with antisocial groups are severed. In particular, we have developed and implemented "Basic Public Relations Management Rules" and appointed public relations management officers in each department. When conducting transactions with a new customer, the public relations management officers of that department confirm that the customer has no relations with any antisocial groups. If during those background checks the need arises for further investigation, our Human Resources and Administration Division will verify whether there is any evidence of a relationship between the customer and any antisocial groups. We also periodically conduct surveys on customers that we already have business relations with. Transaction contracts normally include a clause regarding the exclusion of organized crime syndicates, which enables a contract to be cancelled without notice when a business partner is identified as being part of an antisocial group.

We also continuously ensure that employees understand the importance of excluding antisocial groups from the business activities they conduct.

## **Ensuring Appropriate Tax Reporting**

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The basic policy of the Kioxia Group is to fulfill our obligations to pay all due taxes through business activities conducted based on the principles of fairness, integrity, and transparency. Kioxia Group's tax policy stipulates that the Group must

- (a) comply with the guidelines of the Organization for Economic Cooperation and Development (OECD) and with the applicable laws and regulations of each country and region;
- (b) contribute to the tax administration of local communities through sales, profits, and payment of taxes in accordance with the purpose and reality of our business activities;
- (c) develop our business while ensuring tax transparency; and
- (d) appropriately manage and reduce any tax risks.

These activities are carried out in accordance with the following:

### **1. Tax Governance (Structure)**

The Chief Financial Officer of Kioxia Holdings Corporation has official responsibility for ensuring that our Group complies with all relevant tax regulations and reports to the Board of Directors on its compliance with these, on its implementation of relevant initiatives, and on any key issues. The Kioxia Holdings Group Tax Office periodically arranges internal training on tax policies in order to cultivate human resources who are familiar with the tax system of each country and region; it also identifies any potential tax issues, collects information, and shares knowledge. Group companies are required to report on any potential tax risks or other tax issues to the Chief Financial Officer.

### **2. Compliance**

We comply with the OECD Transfer Pricing Guidelines and with the laws and regulations of each country and region, and undertakes proper tax reporting and payment.

### **3. Tax Risk Management**

We recognize the possibility of tax risks arising in situations where laws and regulations differ or are interpreted differently in different countries and regions. When a potentially significant risk is identified, we strive to minimize it by means of thorough scrutiny and analysis, by obtaining advice from tax specialists, by making prior referral to tax authorities or by means of advance pricing agreements.

### **4. Transfer Pricing**

Transfer prices between Group companies are decided in accordance with the arm's length principle. The functions and risks of all Group companies are analyzed and periodically monitored to ensure profits are allocated on the basis of the contributions of each company.

## 5. Tax Incentives and Tax Havens

Tax deductions and incentives in each country and region are utilized in a manner that accords with our business objectives, and we strive to pay all appropriate levels of tax. Business activities are conducted in accordance with appropriate tax structures in line with our business objectives; we do not deliberately conduct transactions or other activities in low tax countries or tax havens.

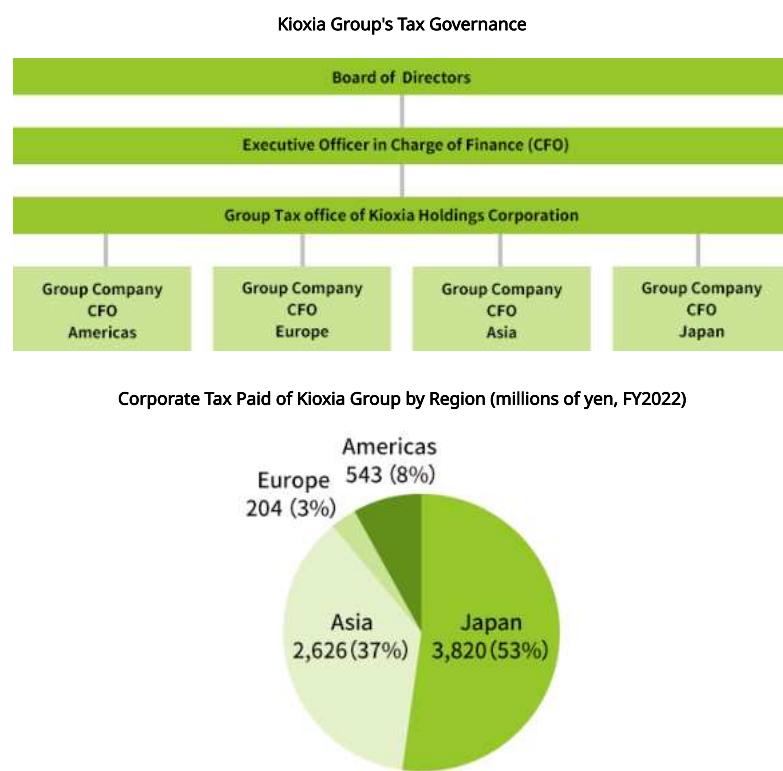
In addition, we strive to eliminate double taxation by utilizing the prevailing relief systems and tax treaties in each country and region. Situations where the tax position is uncertain are documented in accordance with proper accounting standards.

## 6. Ensuring tax transparency

Kioxia Group supports the reform of international taxation proposed by the OECD and the G20. Furthermore, in accordance with the process by which information is exchanged between tax authorities in regions where Group companies are situated, we submit country by country reports and master files according to regulations in each country or region. We strive to ensure tax transparency by providing the information required for tax reporting and payment in a timely and appropriate manner.

## 7. Relationships with Tax Authorities

We seek to maintain good relationships based on mutual trust with the tax authorities overseeing each country and region. We respond to requests from tax authorities with honest and accurate representations of the facts.



## Risk Management through Business Continuity Management (BCM)<sup>3</sup>

Kioxia Group identifies, analyzes and assesses business risks and ensures appropriate levels of risk management across all areas of our business in order to prevent interruptions to our operations in times of emergency, such as earthquakes or other natural disasters, accidents, or pandemics. The Group has devised business continuity management regulations in accordance with our BCM Policy, and implemented measures to ensure the safety of employees and their families and ensure disaster readiness at our business sites and factories. We conduct practical training and prepare for emergencies so that we can continue or quickly resume delivering products and services in the event of damage or loss.

We have initiated business continuity planning at Kioxia Group manufacturing, sales, and technical bases as well as at administrative bases. However, in response to various changes in the social environment, we are further reinforcing our supply chain management and strengthening ties between other committees, including the Information Security Committee and Quality Conference, in order to ensure business continuity planning that spans companies throughout the entire Kioxia Group.

<sup>3</sup>Business Continuity Management refers to the comprehensive and integrated management of business continuity during an emergency, including the formulation of countermeasures to minimize the impact of the emergency on the organization without suspending business (or restoring it in a short period of time even if business is suspended), and continuous improvement through its implementation, operation, and review.

# Information Security

## Information Security Management

### Information Security Management Policy

The utilization of data and cloud services and the use of AI have increased in line with digital transformation, and we are also seeing more diverse working styles, such as a rise in telecommuting. With cyber-attacks becoming increasingly sophisticated and potentially able to cause more serious damage to companies' businesses, cyber security measures have become more important each year.

Information security is a key management issue for the Kioxia Group, and we recognize the sensitivity and value of all information handled during the course of our business activities, including personal information, customer and business partner information, management information, and technical and production information. Our basic policy is to manage such information in a confidential manner in order to protect it and prevent inappropriate disclosures, leaks or improper use.

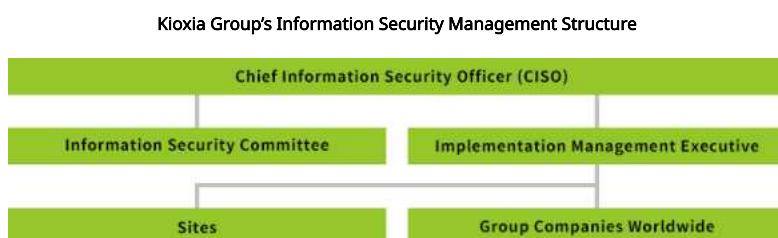
➤ [Kioxia Group Standards of Conduct 2. Fair Business Operations](#)

➤ [Privacy Policy](#)

### Structure of Information Security Management

Kioxia Group has assigned its Executive of Information Security as the Chief Information Security Officer (CISO), and whose responsibility is to oversee and ensure compliance with our Information Security Management Policy across the Group. We have also designated the General Manager of our Cyber Security Center with the responsibility for managing and implementing our information security measures. Information security management processes incorporating the protection of personal information have been implemented at each business site and organization, including all Group companies. The Information Security Committee deliberates matters that are deemed key to ensuring information security throughout the Group.

In addition, implementation status of relevant measures and specific issues arising in any of our Group companies are reported to our executive officers on a regular basis in order to standardize and improve the level of information security throughout the Kioxia Group.



### Information Security Measures

In FY2022, Kioxia Group implemented information security measures that included the reinforcement of networks and internal system monitoring from four perspectives.

### Implementation of Information Security Measures

Category	Description
(1) Organizational measures: establishing organizational structure and rules	<ul style="list-style-type: none"><li>Periodic reviews of information security-related in-house regulations</li><li>Development and maintenance of information security management structure</li><li>Performance of audits</li></ul>
(2) Human resource and legal measures: ensuring adherence to rules	<ul style="list-style-type: none"><li>In-house regulation of information protection duties and disciplinary measures in the case of any breach of rules of employment</li><li>Provision of periodic employee education and training</li><li>Contractor information security evaluation and conclusion of confidentiality agreements</li></ul>
(3) Physical measures: supporting implementation of rules from physical aspects	<ul style="list-style-type: none"><li>Carry-in/carry-out control of devices holding information</li><li>Facility access control, room/building entry control</li><li>Control of access to highly sensitive information</li></ul>
(4) Technical measures: supporting implementation of technology-related rules	<ul style="list-style-type: none"><li>Encryption of hard disks and measures to combat malware</li><li>Assessment of the vulnerability of devices such as servers that are accessible to the public and enhancement of relevant protective measures</li><li>Implementation of a system to detect unauthorized external access or data breaches</li></ul>

## **Education, Inspection and Audit of Information Security Management**

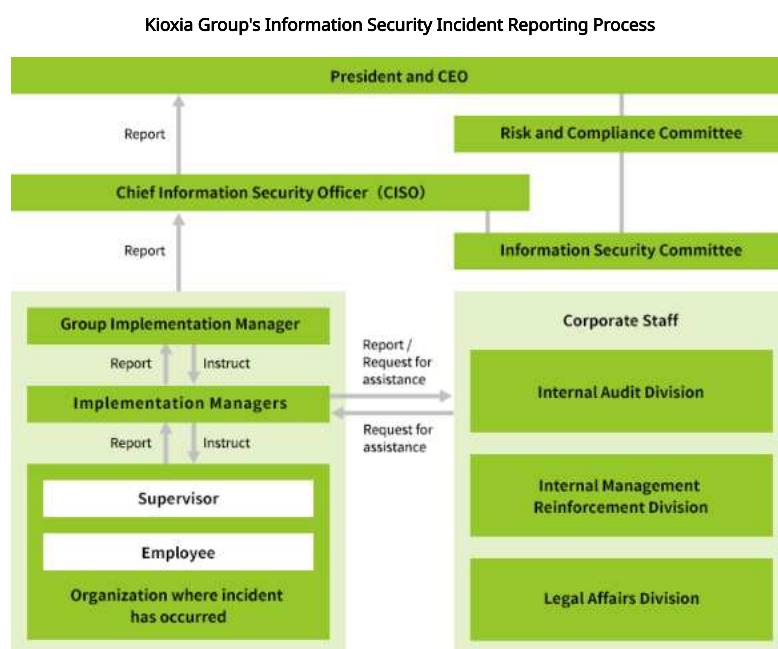
All Kioxia Group's divisions and organizations conduct annual self-inspections and self-audits of their compliance with information security policies and internal rules; they identify any issues and seek to address these in an effort to improve the level of information security within each of them.

Kioxia Group conducts annual training for all officers and employees and communicates relevant messages regarding information security from the management to all employees in order to ensure strict compliance with all in-house regulations. We also ask our business partners and subcontractors to provide a similar level of training for their employees.

## **Responding to Incidents such as Leakage of Confidential Information**

In the event an information security incident such as a leakage of confidential information occurs, Kioxia Group responds promptly in accordance with its information security incident reporting processes.

When we become aware of the occurrence or potential occurrence of an incident involving a serious leakage of confidential information that may entail a violation of any laws or ordinances, we strive to respond promptly based on our risk and compliance management processes.



## **Status of Incidents such as Leakage of Confidential Information**

In FY2022, there were no incidents of sensitive information held by Kioxia Group companies being leaked, nor were there any complaints from relevant external individuals or regulatory bodies concerning personal information. We will continue to work to prevent information security incidents and ensure we are fully prepared for any situation that might arise.

## **Product Security Management**

### **Product Security Management Policy**

Kioxia Group responds promptly to any cyber-security risks emerging in society at large, and to requests from customers and other stakeholders related to product security.

Kioxia Group defines "Product Security" as the prevention of any malicious information leaks, falsification, or unforeseeable faults in the products and services we sell or provide to our customers. Our basic policy is to establish a product security management framework that ensures the provision of safe and secure products and aims to minimize any cyber-security risks associated with them.

We have drawn up this basic product security policy and we ensure all employees and officers of the Group are fully aware of it.

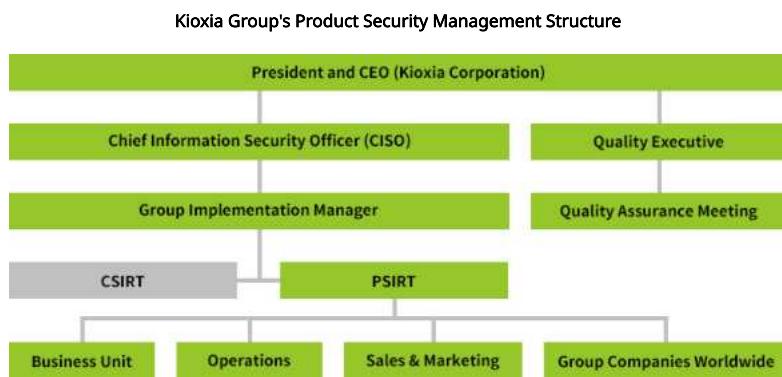
- **Kioxia Group Standards of Conduct 3. Quality and Publications**
- **Kioxia Group Standards of Conduct 7. Risk Management**

## Structure of Product Security Management

The Kioxia Group has appointed the Chief Information Security Officer at Kioxia Corporation whose responsibilities include ensuring compliance with our Product Security Policy across the Group. In each business division we have formulated product security processes that are strongly integrated with our quality management system. We have also established a special support service we call the Product Security Incident Response Team (PSIRT)<sup>1</sup> which enables us to respond promptly to inquiries and to address any security vulnerabilities in our products. In addition, we have established processes governing the operation of the Computer Security Incident Response Team (CSIRT)<sup>2</sup>, which responds to incidents and inquiries about information assets.

<sup>1</sup> A team that responds to product security issues.

<sup>2</sup> A team that addresses information security issues.



## Product Security Measures

In addition to the aforementioned organizational, process and legal measures, the following internal rules and regulations have been established to implement security measures for our products.

Category	Description
(1) Legal and regulatory compliance	<ul style="list-style-type: none"><li>Investigating and addressing security regulations and laws related to our products</li></ul>
(2) Secure development: establishing processes to ensure we provide secure products	<ul style="list-style-type: none"><li>Consistent maintenance and enhancement of security measures throughout product lifecycles</li><li>Maintenance and enhancement of security measures in product supply chains</li></ul>
(3) Incident system development: dealing with product vulnerabilities, inquiries, etc.	<ul style="list-style-type: none"><li>Establishment of PSIRT</li><li>Addressing security requirements and responding to inquiries from stakeholders</li></ul>

## Response to Product-related Security Incidents

In the event of a security incident caused by a cyber-attack, for example one targeting product vulnerabilities, Kioxia Group will strive to respond promptly, with PSIRT and the Group implementation manager assessing the situation based on our product security management processes and on our formulated responses to product incidents.

### Formulating Responses to Product Issues at Kioxia Corporation

## Status of any Product Vulnerabilities and Our Responses

There were no serious incidents associated with vulnerabilities in any of our products in FY2022. We will continue to strive to prevent the risk of product vulnerabilities, and we will ensure swift detection and a prompt response to any that are found.

# Performance Data

**Environmental Data**

**Social Data**

**Governance Data**

## Performance data (Environment)

[Environmental data collection method]

Scope: Kioxia Corporation (Headquarters, Yokohama Technology Campus, Yokkaichi Plant), Kioxia Iwate Corporation and Solid State Storage Technology Corporation

Issues	Index	Unit	FY2021	FY2022	Remarks
Climate Change	Green House Gas Emissions :Direct Emissions (Scope1)	t-CO <sub>2</sub>	694,000	680,600	<p>"Green House Gas Emissions" is the summery of CO<sub>2</sub> equivalent value of SF<sub>6</sub>, NF<sub>3</sub>, PFCs, CO<sub>2</sub>, HFCs, N<sub>2</sub>O, CH<sub>4</sub>.</p> <p>Scope1:Direct emissions from own fuel use and business processes.</p> <p>Scope2:Indirect emissions from the use of electricity, heat, steam,etc. (market basis)</p> <p>Scope3:Other indirect emissions not covered by Scope1 and 2.</p>
	Green House Gas Emissions :Indirect Emissions (Scope2)	t-CO <sub>2</sub>	1,848,000	1,899,400	
	Green House Gas Emissions :Direct and Indirect Emissions (Scope1+2)	t-CO <sub>2</sub>	2,542,000	2,580,000	
	Green House Gas Emissions :Other Indirect Emissions (Scope3)	t-CO <sub>2</sub>	5,038,292	5,410,557	
	1. Purchased goods and services	t-CO <sub>2</sub>	2,823,400	3,043,200	
	2. Capital goods	t-CO <sub>2</sub>	1,259,310	1,450,366	
	3. Fuel- and energy-related activities not included in Scope1 or 2	t-CO <sub>2</sub>	322,621	348,378	
	4. Upstream transport and delivery	t-CO <sub>2</sub>	315	179	
	5. Waste generated in operations	t-CO <sub>2</sub>	20,353	33,863	
	6. Business travel	t-CO <sub>2</sub>	107	1,421	
	7. Employee commuting	t-CO <sub>2</sub>	13,586	11,983	
	8. Leased assets (upstream)	t-CO <sub>2</sub>	-	-	
	9. Downstream transportation and delivery	t-CO <sub>2</sub>	-	-	
	10. Processing of sold products	t-CO <sub>2</sub>	-	-	
	11. Use of sold products	t-CO <sub>2</sub>	598,600	521,167	
	12. End-of-life treatment of sold products	t-CO <sub>2</sub>	-	-	
	13. Downstream leased assets	t-CO <sub>2</sub>	-	-	
	14. Franchises	t-CO <sub>2</sub>	-	-	
	15. Investments	t-CO <sub>2</sub>	-	-	
Environmental Consideration	Energy consumption in operation	MWh	4,600,700	4,971,856	<p>Purchased or obtained electricity, gases, fuels and heat.</p> <p>Renewable energy is the purchased electricity generated by renewable energy power plants or Non-fossil certificates.</p>
	Non-renewable energy	MWh	4,599,700	4,966,300	
	Renewable energy	MWh	1,000	5,556	
	Renewable energy ratio	%	0.02	0.1	<p>CO<sub>2</sub> emissions from energy use in manufacturing process. Ratio per product capacity (annual) versus FY2017.</p> <p>Total weight of industrial and general waste generated.</p> <p>Weight of waste that was collected and reused.</p> <p>"Weight of specially controlled industrial waste" under Japan's "Act on Waste Management and Public Cleansing"(Waste Disposal and Cleaning Act).</p> <p>Weight of hazardous waste that was collected and reused.</p> <p>Ratio per product capacity (annual) during manufacturing versus FY2017.</p> <p>Ratio per product capacity (annual) during manufacturing versus FY2017.</p> <p>Excludes conserved water. Total city water (freshwater) and industrial water.</p> <p>Ratio per product capacity (annual) during manufacturing versus FY2017.</p> <p>Ratio per product capacity (annual) during manufacturing versus FY2017.</p> <p>Amount of hazardous chemical substances (water-soluble compounds of zinc, 2-aminoethanol, silver and its water-soluble compounds, etc.) released and transferred from workplaces (in Japan) under Pollutant Release and Transfer Register.</p> <p>Volatile organic compounds. Causative agents of photochemical oxidants that cause photochemical smog, such as IPA, butyl acetate, and cyclohexanone.</p>
	CO <sub>2</sub> emissions from energy use per gigabyte (vs. FY2017)	%	-	44.3	
	Contribution of PFCs abatement equipment to Scope1 emission levels accumulated figure from FY2017	t-CO <sub>2</sub>	3,768,551	4,237,279	
	Reduction of energy consumption by products per 1GB processing (vs. FY2017)	%	19	27	
	Waste	t	105,737	101,604	
	Recycled waste	t	75,025	72,932	
	Hazardous chemical substances	t	13,375	12,841	
	Recycled hazardous chemical substances	t	12,233	11,194	
	Waste per gigabyte (vs. FY2017)	%	-	40.4	
	Waste per gigabyte including valuables (vs. FY2017)	%	-	42.8	
	Water intake	km <sup>3</sup>	24,488	25,275	
	Wastewater	km <sup>3</sup>	18,445	18,923	
	Water intake per gigabyte (vs. FY2017)	%	-	42.1	
	Release of chemicals	t	625	535	
	Release of chemicals per gigabyte (vs. FY2017)	%	-	21.4	
	Pollutant release (PRTR)	t	2	2	
	Release of volatile organic compounds (VOC)	t	583	495	
	Release of NOx	t	26.6	32.5	
	Release of SOx	t	0	0	
	Environmental incidents (Regulatory violation)	number	0	0	

**Performance data (Social)**

Issues	Index	Scope	Unit	FY2021	FY2022	Remarks
Diversity	Number of employees	Kioxia Group in Japan	total	person	12,056	13,124
			(temporary employees)	person	762	934
			male	person	10,924	11,813
			female	person	1,132	1,311
		Kioxia Corporation	total	person	10,257	10,703
			(temporary employees)	person	177	288
			male	person	9,306	9,672
			female	person	951	1,031
	Number of employees by region	Japan		person	12,056	13,124
		Asia (except Japan)		person	1,437	1,448
		other		person	698	646
	Number of employees by age groups	Kioxia Group in Japan	ages below 30	person	2,250	2,745
			ages 30-39	person	2,101	2,108
			ages 40-49	person	3,840	3,797
			ages 50-59	person	3,462	3,918
			ages over 60	person	403	556
		Kioxia Corporation	ages below 30	person	1,673	2,000
			ages 30-39	person	1,898	1,799
			ages 40-49	person	3,377	3,220
			ages 50-59	person	2,967	3,243
			ages over 60	person	342	441
	Ratio of female employees	Kioxia Group in Japan	%		9.4	10.0
		Kioxia Corporation	%		9.3	9.6
	Number of Female Managers (from FY2019)	Kioxia Group in Japan	person		-	94
		Kioxia Corporation	person (%)		78(1.59)	89(1.82)
	Female ratio in managers	Kioxia Group in Japan			-	4.3
		Kioxia Corporation	%		-	4.5
	Female ratio in directors	Kioxia Group in Japan	%		0	4.5
		Kioxia Corporation	%		0	0
	Wage gap between male and female	Kioxia Corporation	total employees	%	-	77.8
			regular employees	%	-	77.7
			(temporary employees)	%	-	90.3
	Average Length of service	Kioxia Corporation	total	year	-	17.2
			male	year	-	17.7
			female	year	-	12.2
	Number of new graduates recruits(new graduates)	Kioxia Group in Japan	total	person	372	371
			total	person	298	303
			administrative: male	Person (%)	8(40.0)	7(46.7)
			administrative: female	Person (%)	12(60.0)	8(53.3)
			technical: male	Person (%)	246(88.5)	250(86.8)
			technical: female	Person (%)	32(11.5)	38(13.2)
	Number of mid-career recruits	Kioxia Group in Japan	Person		363	419
		Kioxia Corporation	Person		280	282
	Percentage of recruits (people with disabilities)	Kioxia Group in Japan	%		1.63	2.37
		Kioxia Corporation	total	%	1.80	2.21
			male	%	1.70	2.03
			female	%	2.70	3.95
	Total working hours per employees	Kioxia Corporation	hour		-	2,070
	Total non-scheduled working hours per employees		hour		-	390
	Number of paid leave days take	Kioxia Corporation	day		-	18.4
	Percentage of paid annual leave take		%		-	77.1
	Percentage of childcare leave take	Kioxia Corporation	male	%	-	30.0
Talent Development	Number of persons who takes selective or mandatory training program	Kioxia Group in Japan	person		98,239	115,070
	Total hours of selective or mandatory training program		hour		118,435	137,075
	Number of persons who takes self-development training program		person		1,934	1,346
	Total hours of self-development training program		hour		1,396	1,422
	Labor union membership ratio	Kioxia Corporation	%		81.6	81.3
	Ratio of participants of employee engagement survey	Kioxia Group	%		92	89
Health and Safety	Lost time accident	Kioxia Group in Japan	number		10	3
	Days lost by accident		day		545	12
	Frequency rate:Frequency of injuries per 1,000,000 working hours		point		0.30	0.08
	Severity rate: Number of lost days by accident per 1,000 working hours		point		0.02	0.00
	Number of death by accident		number		0	0
	Percentage of annual health check-ups taken	Kioxia Corporation	%		100	100
	Percentage of employee where abnormal findings were uncovered during health check-ups		%		33.2	31.1
	Percentage of employees who received thorough examinations after annual health check-ups		%		-	39.4
	Percentage of employee receiving health guidance		%		-	68.4
	Percentage of employee with metabolic syndrome (aged 40 and over)		%		20.6	19.0
	Percentage of employee who smokes		%		23.2	20.8
	Percentage of employee undergoing stress check examinations		%		96.8	95.7
	Percentage of employee suffering from stress*based on our standard		%		4.8	5.0
Respect for human right	Percentage of human right training program (basic) taken	Kioxia Group in Japan	%		100	100
Sustainable supply chain	Number of RBA assessment taken in our facilities (coverage ratio)	Kioxia Group	facility (%)		3(100)	3(100)
Quality Control	Number of serious quality incidents	Kioxia Corporation	number		0	0

## Performance data (Governance)

Issues	Index	Scope	Unit	FY2021	FY2022
Risk/ Compliance	Percentage of compliance training program (basic course) taken	Kioxia Group in Japan	%	100	100
	Number of reports received through the "Risk Hotline" for employees	Kioxia Group	Number	158	239
	Number of reports received through the "Business Partner Hotline"	Kioxia Corporation	Number	1	0
Information security	Number of serious leakage incidents of confidential information	Kioxia Group	Number	0	0
	Number of serious incidents associated with product vulnerabilities	Kioxia Group	Number	0	0

# GRI Content Index

This report is prepared in reference to the Global Reporting Initiative (GRI) Sustainability Reporting Standards.

## GRI 2: General Disclosures 2021

### 1. The organization and its reporting practices

Content Index	Disclosure	Location
2-1	Organizational details	> Company Information
2-2	Entities included in the organization's sustainability reporting	> Global Network
2-3	Reporting period, frequency and contact point	> Sustainability Reporting Policy > Contact Us
2-4	Restatements of information	-
2-5	External assurance	> Third-party Verification > Performance Data

### 2. Activities and workers

Content Index	Disclosure	Location
2-6	Activities, value chain, and other business relationships	> Company Information > Major Sustainability Issues and Initiatives in the Value Chain > Stakeholder Engagement > Sustainable Supply Chain
2-7	Employees	> Company Information > Diversity Promotion > Performance Data
2-8	Workers who are not employees	> Performance Data

### 3. Governance

Content Index	Disclosure	Location
2-9	Governance structure and composition	<ul style="list-style-type: none"> <li>➢ Sustainability Management</li> <li>➢ Corporate Governance</li> </ul>
2-10	Nomination and selection of the highest governance body	-
2-11	Chair of the highest governance body	➢ Corporate Governance
2-12	Role of the highest governance body in overseeing the management of impacts	<ul style="list-style-type: none"> <li>➢ Sustainability Management</li> <li>➢ Corporate Governance</li> <li>➢ Risk and Compliance</li> <li>➢ Environmental Management</li> <li>➢ Respect for Human Rights</li> </ul>
2-13	Delegation of responsibility for managing impacts	<ul style="list-style-type: none"> <li>➢ Risk and Compliance</li> <li>➢ Environmental Management</li> <li>➢ Respect for Human Rights</li> <li>➢ Sustainable Supply Chain</li> </ul>
2-14	Role of the highest governance body in sustainability reporting	<ul style="list-style-type: none"> <li>➢ Corporate Governance</li> <li>➢ Sustainability Management</li> <li>➢ Environmental Management</li> </ul>
2-15	Conflicts of interest	➢ Kioxia Group Standards of Conduct
2-16	Communication of critical concerns	<ul style="list-style-type: none"> <li>➢ Risk and Compliance</li> <li>➢ Environmental Management</li> <li>➢ Climate Change</li> <li>➢ Respect for Human Rights</li> <li>➢ Sustainable Supply Chain</li> </ul>
2-17	Collective knowledge of the highest governance body	<ul style="list-style-type: none"> <li>➢ Sustainability Management</li> <li>➢ Corporate Governance</li> </ul>
2-18	Evaluation of the performance of the highest governance body	-
2-19	Remuneration policies	-
2-20	Process to determine remuneration	-
2-21	Annual total compensation ratio	-

#### 4. Strategy, policies and practices

Content Index	Disclosure	Location
2-22	Statement on sustainable development strategy	<ul style="list-style-type: none"> <li>➢ Messages from the Management</li> <li>➢ Messages to Stakeholders</li> </ul>
2-23	Policy commitments	<ul style="list-style-type: none"> <li>➢ Mission &amp; Vision</li> <li>➢ Standards of Conduct / Policies</li> <li>➢ Kioxia Group Initiatives in Support the Achievement of SDGs</li> <li>➢ Environment</li> <li>➢ Social</li> <li>➢ Governance</li> </ul>
2-24	Embedding policy commitments	<ul style="list-style-type: none"> <li>➢ Sustainability Management</li> <li>➢ Environment</li> <li>➢ Respect for Human Rights</li> <li>➢ Health and Safety</li> <li>➢ Sustainable Supply Chain</li> <li>➢ Quality Control</li> <li>➢ Supporting Local Community Development</li> <li>➢ Corporate Governance</li> <li>➢ Risk and Compliance</li> <li>➢ Information Security</li> </ul>
2-25	Processes to remediate negative impacts	<ul style="list-style-type: none"> <li>➢ Major Sustainability Issues and Initiatives in the Value Chain</li> <li>➢ Environment</li> <li>➢ Respect for Human Rights</li> <li>➢ Health and Safety</li> <li>➢ Sustainable Supply Chain</li> <li>➢ Quality Control</li> <li>➢ Risk and Compliance</li> </ul>
2-26	Mechanisms for seeking advice and raising concerns	<ul style="list-style-type: none"> <li>➢ Risk and Compliance</li> <li>➢ Respect for Human Rights</li> </ul>
2-27	Compliance with laws and regulations	<ul style="list-style-type: none"> <li>➢ Risk and Compliance</li> <li>➢ Environment</li> <li>➢ Quality Control</li> <li>➢ Performance Data</li> </ul>
2-28	Membership associations	<ul style="list-style-type: none"> <li>➢ Sustainability Management</li> <li>➢ Climate Change</li> <li>➢ Respect for Human Rights</li> <li>➢ Sustainable Supply Chain</li> </ul>

#### 5. Stakeholder engagement

Content Index	Disclosure	Location
2-29	Approach to stakeholder engagement	<ul style="list-style-type: none"> <li>➢ Stakeholder Engagement</li> </ul>
2-30	Collective bargaining agreements	<ul style="list-style-type: none"> <li>➢ Stakeholder Engagement</li> <li>➢ Performance Data</li> </ul>

### GRI 3: Material Topics 2021

Content Index	Disclosure	Location
3-1	Process to determine material topics	<ul style="list-style-type: none"> <li>➢ Messages to Stakeholders</li> <li>➢ Sustainability Materiality</li> </ul>
3-2	List of material topics	<ul style="list-style-type: none"> <li>➢ Sustainability Materiality</li> </ul>
3-3	Management of material topics	<ul style="list-style-type: none"> <li>➢ Sustainability Management</li> <li>➢ Environmental Management</li> <li>➢ Climate Change</li> <li>➢ Respect for Human Rights</li> <li>➢ Health and Safety</li> <li>➢ Sustainable Supply Chain</li> <li>➢ Risk and Compliance</li> </ul>

### Economic

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#### GRI 201: Economic Performance 2016

Content Index	Disclosure	Location
201-1	Direct economic value generated and distributed	<ul style="list-style-type: none"> <li>➢ Supporting Local Community Development</li> </ul>
201-2	Financial implications and other risks and opportunities due to climate change	<ul style="list-style-type: none"> <li>➢ Climate Change</li> </ul>
201-3	Defined benefit plan obligations and other retirement plans	<ul style="list-style-type: none"> <li>➢ Diversity Promotion</li> </ul>
201-4	Financial assistance received from government	-

#### GRI 202: Market Presence 2016

Content Index	Disclosure	Location
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	-
202-2	Proportion of senior management hired from the local community	-

#### GRI 203: Indirect Economic Impacts 2016

Content Index	Disclosure	Location
203-1	Infrastructure investments and services supported	<ul style="list-style-type: none"> <li>➢ Supporting Local Community Development</li> </ul>
203-2	Significant indirect economic impacts	-

#### GRI 204: Procurement Practices 2016

Content Index	Disclosure	Location
204-1	Proportion of spending on local suppliers	<ul style="list-style-type: none"> <li>➢ Sustainable Supply Chain</li> </ul>

#### GRI 205: Anti-corruption 2016

Content Index	Disclosure	Location
205-1	Operations assessed for risks related to corruption	<ul style="list-style-type: none"> <li>➢ Risk and Compliance</li> </ul>
205-2	Communication and training about anti-corruption policies and procedures	<ul style="list-style-type: none"> <li>➢ Risk and Compliance</li> </ul>
205-3	Confirmed incidents of corruption and actions taken	<ul style="list-style-type: none"> <li>➢ Risk and Compliance</li> </ul>

## GRI 206: Anti-competitive Behavior 2016

Content Index	Disclosure	Location
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	> Risk and Compliance

## GRI 207: Tax 2019

Content Index	Disclosure	Location
207-1	Approach to tax	> Risk and Compliance
207-2	Tax governance, control, and risk management	> Risk and Compliance
207-3	Stakeholder engagement and management of concerns related to tax	> Risk and Compliance
207-4	Country-by-country reporting	> Risk and Compliance

## Environmental

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### GRI 301: Materials 2016

Content Index	Disclosure	Location
301-1	Materials used by weight or volume	-
301-2	Recycled input materials used	> Effective Use of Water Resources > Current Status of Environmental Impact and Environmental Targets and Outcomes
301-3	Reclaimed products and their packaging materials	> Current Status of Environmental Impact and Environmental Targets and Outcomes

### GRI 302: Energy 2016

Content Index	Disclosure	Location
302-1	Energy consumption within the organization	> Climate Change > Performance Data
302-2	Energy consumption outside of the organization	> Climate Change > Performance Data
302-3	Energy intensity	> Climate Change > Performance Data
302-4	Reduction of energy consumption	> Climate Change > Performance Data
302-5	Reductions in energy requirements of products and services	> How We Reduce the Impact of Our Products on the Environment

### GRI 303: Water and Effluents 2018

Content Index	Disclosure	Location
303-1	Interactions with water as a shared resource	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Effective Use of Water Resources</li> </ul>
303-2	Management of water discharge-related impacts	<ul style="list-style-type: none"> <li>➢ Effective Use of Water Resources</li> </ul>
303-3	Water withdrawal	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Effective Use of Water Resources</li> <li>➢ Performance Data</li> </ul>
303-4	Water discharge	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Biodiversity Preservation</li> <li>➢ Performance Data</li> </ul>
303-5	Water consumption	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Effective Use of Water Resources</li> <li>➢ Performance Data</li> </ul>

### GRI 304: Biodiversity 2016

Content Index	Disclosure	Location
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	<ul style="list-style-type: none"> <li>➢ Biodiversity Preservation</li> </ul>
304-2	Significant impacts of activities, products, and services on biodiversity	-
304-3	Habitats protected or restored	<ul style="list-style-type: none"> <li>➢ Biodiversity Preservation</li> </ul>
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	-

### GRI 305: Emissions 2016

Content Index	Disclosure	Location
305-1	Direct (Scope 1) GHG emissions	<ul style="list-style-type: none"> <li>➢ Climate Change</li> <li>➢ Performance Data</li> </ul>
305-2	Energy indirect (Scope 2) GHG emissions	<ul style="list-style-type: none"> <li>➢ Climate Change</li> <li>➢ Performance Data</li> </ul>
305-3	Other indirect (Scope 3) GHG emissions	<ul style="list-style-type: none"> <li>➢ Climate Change</li> <li>➢ Performance Data</li> </ul>
305-4	GHG emissions intensity	<ul style="list-style-type: none"> <li>➢ Climate Change</li> <li>➢ Performance Data</li> </ul>
305-5	Reduction of GHG emissions	<ul style="list-style-type: none"> <li>➢ Climate Change</li> <li>➢ Performance Data</li> </ul>
305-6	Emissions of ozone-depleting substances (ODS)	-
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Performance Data</li> </ul>

## GRI 306: Waste 2020

Content Index	Disclosure	Location
306-1	Waste generation and significant waste-related impacts	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Performance Data</li> </ul>
306-2	Management of significant waste-related impacts	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Performance Data</li> </ul>
306-3	Waste generated	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Performance Data</li> </ul>
306-4	Waste diverted from disposal	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Performance Data</li> </ul>
306-5	Waste directed to disposal	<ul style="list-style-type: none"> <li>➢ Current Status of Environmental Impact and Environmental Targets and Outcomes</li> <li>➢ Performance Data</li> </ul>

## GRI 308: Supplier Environmental Assessment 2016

Content Index	Disclosure	Location
308-1	New suppliers that were screened using environmental criteria	<ul style="list-style-type: none"> <li>➢ Sustainable Supply Chain</li> </ul>
308-2	Negative environmental impacts in the supply chain and actions taken	<ul style="list-style-type: none"> <li>➢ Sustainable Supply Chain</li> </ul>

## Social

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### GRI 401: Employment 2016

Content Index	Disclosure	Location
401-1	New employee hires and employee turnover	<ul style="list-style-type: none"> <li>➢ Diversity Promotion</li> <li>➢ Performance Data</li> </ul>
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	-
401-3	Parental leave	<ul style="list-style-type: none"> <li>➢ Diversity Promotion</li> <li>➢ Performance Data</li> </ul>

### GRI 402: Labor/Management Relations 2016

Content Index	Disclosure	Location
402-1	Minimum notice periods regarding operational changes	-

### GRI 403: Occupational Health and Safety 2016

Content Index	Disclosure	Location
403-1	Occupational health and safety management system	➢ Health and Safety
403-2	Hazard identification, risk assessment, and incident investigation	➢ Health and Safety
403-3	Occupational health services	➢ Health and Safety
403-4	Worker participation, consultation, and communication on occupational health and safety	➢ Health and Safety
403-5	Worker training on occupational health and safety	➢ Health and Safety
403-6	Promotion of worker health	➢ Health and Safety
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	➢ Health and Safety
403-8	Workers covered by an occupational health and safety management system	➢ Health and Safety
403-9	Work-related injuries	➢ Health and Safety ➢ Performance Data
403-10	Work-related ill health	➢ Health and Safety ➢ Performance Data

### GRI 404: Training and Education 2016

Content Index	Disclosure	Location
404-1	Average hours of training per year per employee	➢ Talent Development
404-2	Programs for upgrading employee skills and transition assistance programs	➢ Talent Development
404-3	Percentage of employees receiving regular performance and career development reviews	➢ Talent Development

### GRI 405: Diversity and Equal Opportunity 2016

Content Index	Disclosure	Location
405-1	Diversity of governance bodies and employees	➢ Management ➢ Diversity Promotion ➢ Performance Data
405-2	Ratio of basic salary and remuneration of women to men	➢ Performance Data

### GRI 406: Non-discrimination 2016

Content Index	Disclosure	Location
406-1	Incidents of discrimination and corrective actions taken	➢ Risk and Compliance ➢ Respect for Human Rights

### GRI 407: Freedom of Association and Collective Bargaining 2016

Content Index	Disclosure	Location
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	➢ Stakeholder Engagement ➢ Sustainable Supply Chain

## GRI 408: Child Labor 2016

Content Index	Disclosure	Location
408-1	Operations and suppliers at significant risk for incidents of child labor	> Respect for Human Rights > Sustainable Supply Chain

## GRI 409: Forced or Compulsory Labor 2016

Content Index	Disclosure	Location
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	> Respect for Human Rights > Sustainable Supply Chain

## GRI 410: Security Practices 2016

Content Index	Disclosure	Location
410-1	Security personnel trained in human rights policies or procedures	> Respect for Human Rights

## GRI 411: Rights of Indigenous Peoples 2016

Content Index	Disclosure	Location
411-1	Incidents of violations involving rights of indigenous peoples	N/A

## GRI 413: Local Communities 2016

Content Index	Disclosure	Location
413-1	Operations with local community engagement, impact assessments, and development programs	> Supporting Local Community Development > Biodiversity Preservation
413-2	Operations with significant actual and potential negative impacts on local communities	N/A

## GRI 414: Supplier Social Assessment 2016

Content Index	Disclosure	Location
414-1	New suppliers that were screened using social criteria	> Sustainable Supply Chain
414-2	Negative social impacts in the supply chain and actions taken	> Sustainable Supply Chain

## GRI 415: Public Policy 2016

Content Index	Disclosure	Location
415-1	Political contributions	> Risk and Compliance

## GRI 416: Customer Health and Safety 2016

Content Index	Disclosure	Location
416-1	Assessment of the health and safety impacts of product and service categories	> Quality Control
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	> Quality Control

**GRI 417: Marketing and Labeling 2016**

Content Index	Disclosure	Location
417-1	Requirements for product and service information and labeling	> Quality Control > How We Reduce the Impact of Our Products on the Environment
417-2	Incidents of non-compliance concerning product and service information and labeling	-
417-3	Incidents of non-compliance concerning marketing communications	-

**GRI 418: Customer Privacy 2016**

Content Index	Disclosure	Location
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	> Information Security

# SASB Content Index

## Greenhouse Gas Emissions

<b>Accounting Metric</b>	(1) Gross global Scope1 emissions and (2) amount of total emissions from perfluorinated compounds
<b>Code</b>	TC-SC-110a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	(1) Scope1 (Direct emissions) :680,600tCO <sub>2</sub> (2) 600,100tCO <sub>2</sub>
<b>Location</b>	➤ Greenhouse Gas Emissions Across our Entire Value Chain
<b>Accounting Metric</b>	Discussion of long-term and short-term strategy or plan to manage Scope1 emissions, emissions reduction targets, and an analysis of performance against those targets
<b>Code</b>	TC-SC-110a.2
<b>Kioxia Metric/Qualitative Disclosure</b>	<p>In April 2023, Kioxia Group announced that by FY2050, the Group aims to achieve net-zero Scope1 greenhouse gas emissions (direct emissions from our business sites) and Scope2 emissions (indirect emissions from our use of purchased energy) across our global operations.</p> <p>Regarding direct emissions from our manufacturing sites, we have installed abatement equipment in 100% of our targeted facilities since 2011, aiming to eliminate during manufacturing the emission of PFCs with high global warming potential. The number of PFCs abatement equipment installed between FY2020 and FY2022 averaged more than 170 per year. Since FY2017, the total amount of CO<sub>2</sub> reduced with PFCs abatement equipment has reached 4.24 million t-CO<sub>2</sub>. In addition to these energy conservation initiatives, we will continue implementing measures to combat climate change in the course of our business activities.</p> <p>We have additionally set a target of procuring 100% of our energy from renewable sources by FY2040. During 2023, we have installed solar power generation systems at our Kitakami and Yokkaichi plants – the largest of their kind at any semiconductor plant in Japan. At the same time we are moving forward with the procurement of non-fossil certificates to boost our use of renewable energy. Through creation of an energy portfolio that incorporates energy conservation activities and the use of non-fossil certificates, we will work to secure the optimal and stable procurement of renewable energy in line with the expansion of our business. We will also work to install renewable power generation system and carbon-neutral city gas in our factories.</p>
<b>Location</b>	➤ Climate Change

## Energy Management in Manufacturing

<b>Accounting Metric</b>	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable
<b>Code</b>	TC-SC-130a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	(1) 4,871,856MWh (2) 96.9% (3) 0.1%
<b>Location</b>	➤ Achievements in the areas of energy consumption and greenhouse gas emissions

## Water Management

<b>Accounting Metric</b>	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress
<b>Code</b>	TC-SC-140a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	<p>(1) Total water withdrawn: 25,275 thousand m<sup>3</sup> Total city water (freshwater) and industrial water</p> <p>(2) Total water consumed: 6,352 thousand m<sup>3</sup> Percentage of each in regions with High or Extremely High Baseline Water Stress: 0%</p> <p>Kioxia Group has commissioned external experts to evaluate water-related risks from the perspective of current and future water supply and demand risks; these are assessed using tools such as the World Resources Institute's WRI Aqueduct and the Water Risk Filter. We use these assessments to analyze risks such as water stress levels and seasonal variations in water supplies through the year 2040 in order to understand the potential impact on our business activities.</p> <p>The outcome of the assessment of our Group's manufacturing plants was confirmation that they are not exposed to any water risk likely to have practical financial or strategic impact prior to the year 2040. This assessment was based on investigations into such areas as water supply and demand risks (driven by seasonal changes, the frequency of droughts, water storage capacity and water source protection levels), the risk of water-related disasters such as flooding or landslides, and regional vulnerability to water pollution that might endanger public health or ecosystems.</p>
<b>Location</b>	➤ Current Status of Environmental Impact

## Waste Management

<b>Accounting Metric</b>	Amount of hazardous waste from manufacturing, percentage recycled
<b>Code</b>	TC-SC-150a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	<p>(1) Wastes generated amount: 12,841t (2) Recycled rate: 87%</p> <p>The above hazardous wastes are aggregated as "specially-controlled industrial wastes" under the Waste Management and Public Cleansing Act in Japan.</p>
<b>Location</b>	➤ Current Status of Environmental Impact

## Employee Health & Safety

<b>Accounting Metric</b>	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards
<b>Code</b>	TC-SC-320a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	Since January 2021, Kioxia Group has been pursuing the acquisition of occupational health and safety management systems certification (ISO 45001:2018) for its manufacturing and R&D sites. As it moves to comply with the requirements for this certification, Kioxia Group is making efforts to continuously reduce health and safety risks through risk assessment and compliance with relevant laws and regulations, and is making its health and safety management measures more visible.
<b>Location</b>	➤ OHS Management System
<b>Accounting Metric</b>	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations
<b>Code</b>	TC-SC-320a.2
<b>Kioxia Metric/Qualitative Disclosure</b>	None.
<b>Location</b>	-

## Recruiting & Managing a Global & Skilled Workforce

<b>Accounting Metric</b>	Percentage of employees that are (1) foreign nationals and (2) located offshore
<b>Code</b>	TC-SC-330a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	<p>The Kioxia Group operates globally and employs people of many different nationalities.</p> <p>With offices in 10 countries and regions, the Kioxia Group has 1,972 employees working at our overseas locations (excluding those temporarily dispatched from Kioxia Group in Japan). Kioxia Group in Japan employs 184 non-Japanese people from 15 countries and regions.</p> <p>Kioxia Group embeds respect for human rights and diversity in our Standards of Conduct and fosters a culture that enables a diverse range of employees to play active roles irrespective of race, religion, gender, nationality, disability, age, or sexual orientation. In addition, We have designated the Executive Officer in charge of human resources at Kioxia Holdings Corporation as the executive responsible for promoting diversity. We have assigned overall responsibility for the promotion of diversity across the entire Group to Kioxia Corporation's Human Resources &amp; Administration Division.</p>
<b>Location</b>	➤ Diversity Promotion

<b>Accounting Metric</b>	Percentage of employee engagement
<b>Code</b>	TC-SI-330a.2
<b>Kioxia Metric/Qualitative Disclosure</b>	<p>Kioxia Group regularly conducts employee engagement surveys as a starting point from which to enhance employee engagement and revitalize the organization. The surveys are used to determine the level of employee engagement, identify any problem areas, and formulate and implement measures to resolve these.</p> <p>In FY2022, we conducted an anonymous survey targeting about 14,000 employees, and received responses from 89% of them.</p>
<b>Location</b>	➤ Employee Engagement Survey

## Product Lifecycle Management

<b>Accounting Metric</b>	Percentage of products by revenue that contain IEC 62474 declarable substances
<b>Code</b>	TC-SC-410a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	Kioxia Group does not disclose the percentage defined by this metric.
<b>Location</b>	None.
<b>Accounting Metric</b>	Processor energy efficiency at a system-level for: (1) servers, (2) desktops, and (3) laptops
<b>Code</b>	TC-SC-410a.2
<b>Kioxia Metric/Qualitative Disclosure</b>	Not applicable.
<b>Location</b>	-

## Materials Sourcing

<b>Accounting Metric</b>	Description of the management of risks associated with the use of critical materials
<b>Code</b>	TC-SC-440a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	<p>Kioxia Group has been promoting the responsible minerals sourcing based on the Kioxia Group Responsible Minerals Procurement Policy.</p> <p>Our policy stipulates that Kioxia Group will prohibit use as raw materials 3TG or cobalt obtained from other conflict-afflicted and high-risk areas (commonly known as CAHRAs) where inhumane acts such as human trafficking, slavery, forced labor, child labor, abuse, or war crimes are suspected.</p>
<b>Location</b>	➤ Responsible Minerals Sourcing

## Intellectual Property Protection & Competitive Behavior

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<b>Accounting Metric</b>	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations
<b>Code</b>	TC-SC-520a.1
<b>Kioxia Metric/Qualitative Disclosure</b>	None.
<b>Location</b>	-

## Third-party Verification

In order to improve the reliability of this report, Kioxia Group requested the Japan Audit & Certification Organization for Environment & Quality to provide third-party verification of its performance data. The following are FY2022 results, which were verified in FY2023.

1. Scope of the verification: Greenhouse gas emissions generated in five sites of Kioxia Corporation and its subsidiaries (Scope1, 2 and 3)

2. Period:  
FY2022 (April 1, 2022 to March 31, 2023)

3. Verified greenhouse gas emissions:

Scope1: 680,600t-CO<sub>2</sub>

Scope2: 1,899,400t-CO<sub>2</sub>

Scope3:

Category 1: 3,043,200t-CO<sub>2</sub>

Category 2: 1,450,366t-CO<sub>2</sub>

Category 5: 33,863t-CO<sub>2</sub>

Category 6: 1,421t-CO<sub>2</sub>

Category 7: 11,983t-CO<sub>2</sub>

Category 11: 521,167t-CO<sub>2</sub>



➤ **Independent verification report by Japan Audit Certification Organization for Environment and Quality (PDF : 150KB)**

# **KIOXIA**

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