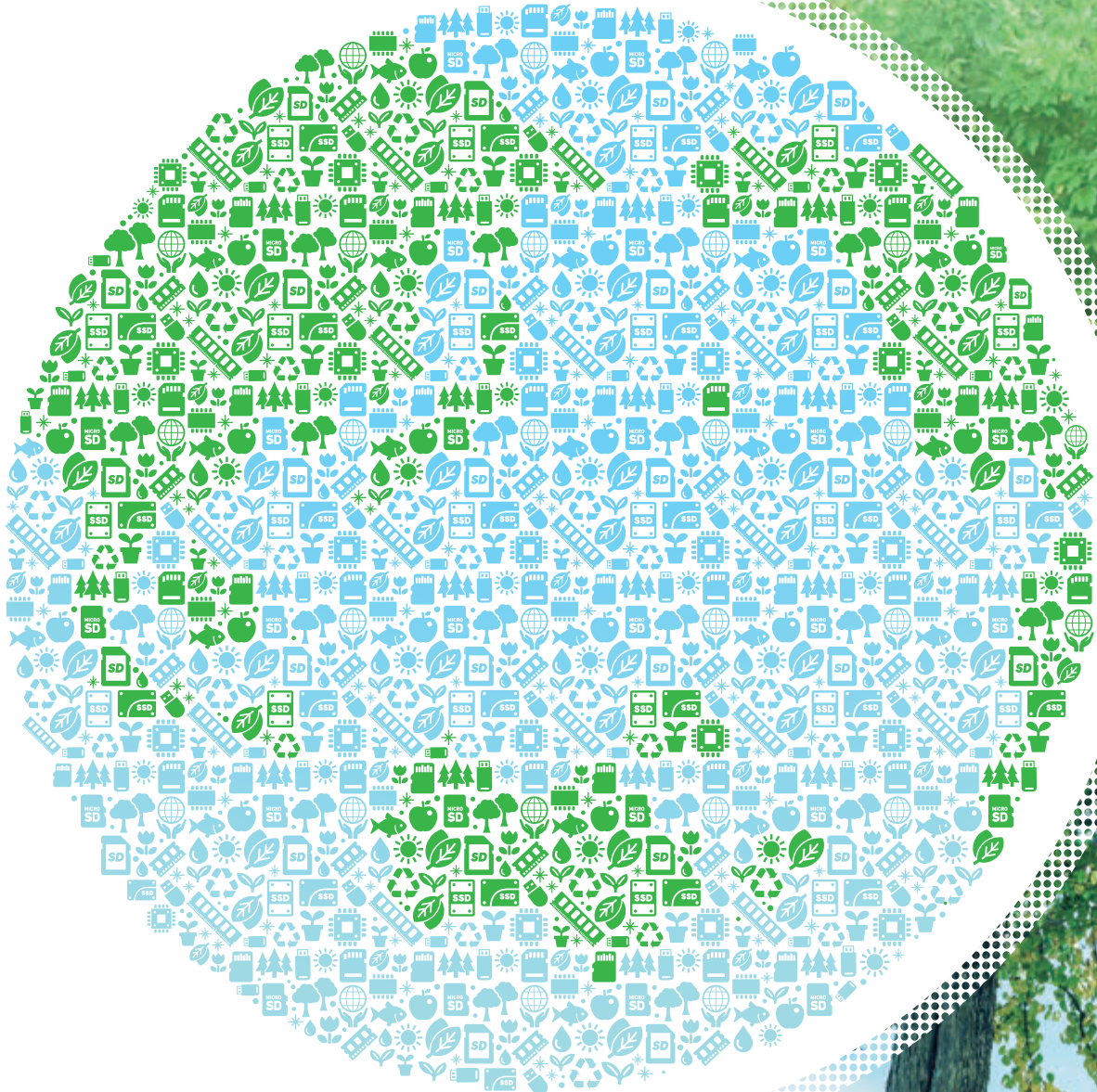


KIOXIA



2023 Environmental Report

KIOXIA Corporation
Yokkaichi Plant



Yokkaichi Plant Overview


Address	Yokkaichi Plant: 800 Yamanoisshiki-cho, Yokkaichi-shi, Mie Prefecture, Japan Asahi Test Center: 2000 Nao, Asahi-cho, Mie-gun, Mie Prefecture, Japan
Site area	Yokkaichi Plant: 694,000 m ² Asahi Test Center: 47,862 m ²
Foundation	January 1992
General manager	Tomoharu Matsushita
Number of employees	7,200 (as of March 31, 2023)
Main products	Semiconductor memory devices*1 (BiCS FLASH™、 NAND flash memory, etc.) *1 In 1987, KIOXIA invented the world's first NAND flash memory not to require a power source (non-volatile memory). This technology is now being used in various fields ranging from digital devices such as smartphones to data centers and has become an indispensable core component of the information society.

Products

- 3D NAND Flash memory: BiCS FLASH™
- NAND Flash Memory with an Integrated Controller (e-MMC*2, UFS*3)
- SLC NAND Flash Memory (SLC NAND, BENAND™)
- Solid State Drives (Enterprise SSD, Data Center SSD, Client SSD)
- Personal Products (microSD Memory Cards, SD Memory Cards, USB Flash Drives, Consumer SSD)

Key Features of KIOXIA BiCS FLASH™ 3D Flash Memory Technology

- Higher monolithic NAND flash memory die density
- Higher Read/Write speed performance
- High reliability by reducing interference effects between adjacent memory cells
- High Energy Consumption Efficiency





Enterprise SSD



Data Center SSD



Client SSD



microSD Memory Card



SD Memory Card



USB Flash Drive



Consumer SSD

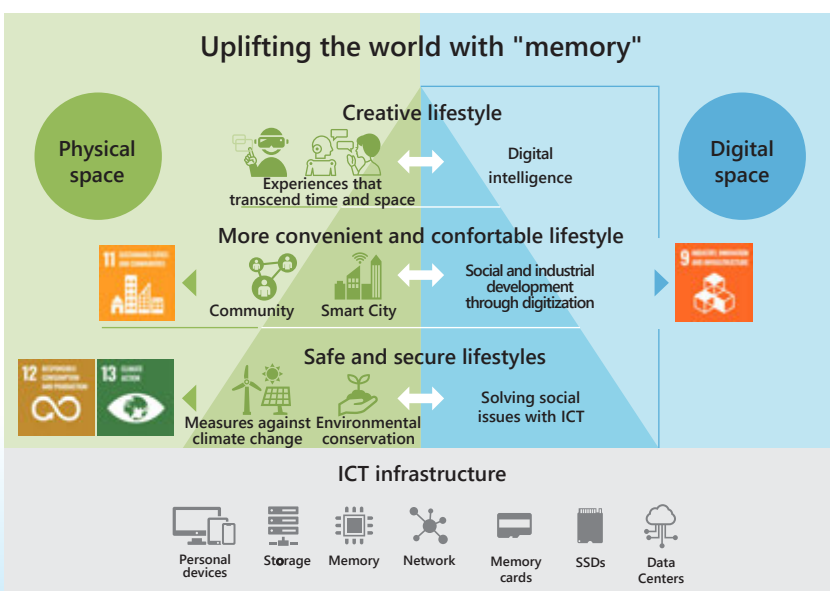


Contribution to the Solving of Social Issues through our Business

The 17 Sustainable Development Goals (SDGs) set out in the 2030 Agenda for Sustainable Development, adopted at the UN Summit in September 2015, officially came into force on 1 January 2016. Based on the SDGs, which are universally applicable to all people until 2030, countries are joining their forces to end poverty in all its forms, fight inequality and address climate change while leaving no one behind.

The SDGs aim to end poverty in all its forms and call on all countries - poor, rich and middle-income - to protect the planet while pursuing prosperity. 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. Relevant SDG icons are shown for each environmental activity.



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Message from the General Manager

Yokkaichi plant was established in 1992 as semiconductor memory manufacturing facilities. The plant initially manufactured DRAMs, then in 2002 it commenced the production of NAND flash memory. It currently manufactures mainly 3D flash memory. The site continues to expand as the market grows, and is now one of the largest flash memory plants in the world, with seven manufacturing facilities.

We have also strengthened the research and development of next-generation semiconductor devices, with the Memory R&D Center commencing operations in 2018. We continue to evolve with the aim of becoming the world's most advanced semiconductor memory plant, where research, development and production work together. In October 2019, we changed our company name to "KIOXIA", and restated our mission as "Uplifting the World with 'Memory.'" We hope that our flash memory will play an important role in storing ever-increasing amounts of information and that this information will thereby be passed on to future generations.

NAND flash memories are used for data storage in various products, including USB sticks and other portable storage media, smartphones, tablets, PCs, digital cameras, games, smart watches, and data centers. NAND flash memory is also being increasingly used in fields that handle big data, such as cloud computing.

At the same time, the expectations and demands of society

Tomoharu Matsushita

Managing Executive Officer
of KIOXIA Corporation and
General Manager of
Yokkaichi Plant



for our plant are steadily increasing, as we contribute to the reduction of greenhouse gas emissions as agreed in the Paris Agreement and participate in the Sustainable Development Goals (SDGs) adopted by the United Nations. In order to meet these expectations, we will not only comply with laws and regulations and social norms, but also strive to contribute to solving social issues through our business.

We will continue to prioritize environmental protection and social initiatives, thus fulfilling expectations regarding our corporate responsibility. We will endeavor to help realize a better global environment and contribute to the development of sustainable society. Our aim is to make Yokkaichi Plant a facility that is admired and trusted by everyone. We look forward to your continued understanding and support.



KIOXIA Group's Environmental Policy

- Mission -

KIOXIA Group's Environmental Policy ensures we conduct business in a way that enhances and preserves the environment. Through purposeful, sustainable actions, we're prioritizing being responsible stewards of the environment to do our part in maintaining our planet's health for years to come.

- Policy -

In addition to complying with environmental laws and regulations in the regions in which it operates, KIOXIA Group considers environmental stewardship to be one of our primary responsibilities. We take actions to limit our environmental impact throughout our supply chain of memory, applied and related software products that support information infrastructure. From taking systematic and globally accredited steps to reduce our pollution and greenhouse gas emissions from our manufacturing processes, to regularly auditing and reviewing our activities to constantly improve our environmental management system, KIOXIA Group takes deliberate action to ensure efficient and effective operations.

- Implementation -

- 1) We strive to make sustainable memory, applied, and related software products by using high-capacity, miniaturized and power-saving technologies. We also perform ongoing environmental assessments of our products and manufacturing processes, as well as a targeted effort to reduce our overall raw material usage.
- 2) We are doing our part to help prevent global warming through initiatives that directly reduce greenhouse gas emissions. This includes the development of energy-saving technologies – especially within power systems and manufacturing machinery – productivity improvements, and introducing clean energies.
- 3) We purposefully take actions aligned with the “three Rs” – reduce, reuse, recycle. Specifically, we focus on developing resource-saving technologies and implementing productivity efficiencies, as well as limiting the use of water resources around our plant sites and returning water used in production to the environment after effective purification treatment.
- 4) We limit environmental risk in our operations by being conscious of the chemicals we use in production and developing technologies that reduce our use of certain chemicals. Through responsible handling and management of production-related chemicals, we also strive to prevent associated pollution.
- 5) We strive to reduce the impact of our business activities on biodiversity, and pursue activities that aim to preserve biodiversity in order to help conserve the environment.
- 6) We regularly disclose information and updates on our sustainability efforts – including new energy-saving technologies – through environmental advertising, exhibitions, media, and collaboration with various stakeholders including the local communities in which we operate.
- 7) We underscore the importance of environmental stewardship with our employees, who promise to keep sustainability top-of-mind in all business activities.

This Environmental Policy is core to KIOXIA Group's operations – it is available internally to global employees of KIOXIA Group and externally to customers, media and the general public. We are committed to pursuing corporate activities that are in line with this policy.



President and Chief Executive Officer
KIOXIA Holdings Corporation

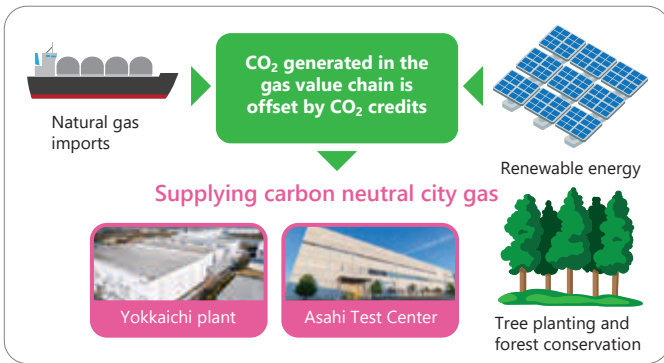
Topics

Introduction of Carbon Neutral City Gas

In February 2023, our plant partially introduced carbon neutral city gas supplied by Toho Gas Co., Ltd. This will contribute to an annual reduction of approximately 10,800 tons of CO₂. This follows the introduction at the Asahi Test Center in November 2021.

The carbon-neutral city gas introduced this time offsets the CO₂ generated in the process from mining to combustion of natural gas, the raw material of city gas, with CO₂ credits*.

*CO₂ credits are certified by a reliable verification organization for CO₂ reductions achieved by environmental conservation projects around the world.



Installation of Solar Power Generation Systems

by FY2050, KIOXIA Group aims to achieve net-zero in terms of the company's Scope 1 greenhouse gas (GHG) emissions, namely direct emissions from its business sites, and in terms of Scope 2 emissions resulting from its use of purchased energy.

To achieve this goal, we will continue with our efforts 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. In terms of energy procurement, we have been installing solar power generation systems at our plants and began purchasing electricity generated from this on-site systems under a Power Purchase Agreement (PPA)* model.

*PPA operators own the solar power generation equipment and are responsible for installation and maintenance of the system; third parties that make the necessary space available (in this case KIOXIA) purchase the electricity generated at the sites from the operators.



Our Plant Fab 6 Rooftop

Power generation capacity	Approx. 3,900 kW
Estimated annual power generation	Approx. 4,100 MWh
Annual CO ₂ reduction	Approx. 1,600 tons
Operation start date	June 2023

Environmental Measures at Fab 7

Fab 7 started operation in October 2022 to increase production capacity of 3D flash memory "BiCS FLASH™". Fab 7 has implemented various environmental measures, including the introduction of latest energy-saving manufacturing equipments.

Main Environmental Measures	
Global Warming	<ul style="list-style-type: none"> Energy conservation measures (e.g., introduction of energy-efficient manufacturing equipments) Reduction of CO₂ emissions by transporting wastewater sludge by large vehicles
Water Resource	<ul style="list-style-type: none"> Effective use of water resources (recovery rate: approx. 90%) Reduction of the total phosphorus concentration agreement value* in wastewater compared to the conventional In case of emergency, such as abnormal wastewater discharge, the wastewater is accepted into an emergency water storage tank, reprocessed, and discharged. <p>*Yokkaichi City Pollution Prevention Agreement</p>
Noise and Odor	<ul style="list-style-type: none"> Install soundproof walls and low-noise silencers Install activated carbon deodorization towers in septic tanks, etc.



Fab 7 (1st period)

Received Letters of Appreciation

We received letters of appreciation from the Yokkaichi City Council of Social Welfare for our food drive activities and for the donation of calendars and notebooks. In addition, we received a letter of appreciation from Japan UNESCO Association for the World Terakoya Movement.



Food Drive (June 2023)



Calendars and Notebooks (January 2023)



The World Terakoya Movement. (March 2023)

Support for Owl Conservation Activities

We are working to conserve biodiversity in order to understand the impact of our business activities on biodiversity, to reduce the impact on biodiversity, and to promote social contribution activities.

In March 2018, our plant signed the "Mie Biodiversity Partnership Agreement" with the Mie Prefectural Yokkaichi West High School Nature Study Group to promote the "Owl Conservation Project". As part of this activity, we support equipments to observe owls from laying eggs to fledging of chicks in order to pass on the rich natural environment of the region to the next generation. As a result, we were able to capture video of the nesting process for five consecutive years starting in 2019. In addition, we are facilitating this activity through four-party consultations*.

* Mie Prefecture, Yokkaichi Nishi High School, Kuwana High School, and our plant



Nesting chicks



Fledging of chicks

Year	Main Activities and Future Plans
2018	<ul style="list-style-type: none"> ● Signed a "Mie Biodiversity Partnership Agreement" ● Determined specifications of the observation devices ● Installed and adjusted the observation devices ● Started to promote the project within and outside the company
2019	<ul style="list-style-type: none"> ● Tripartite discussion on the results of activities in FY2018 and the activity plans for FY2019 ● Improved the observation devices (Solar panels, Batteries, Cameras, and Hard-disk video recorder)
2020	<ul style="list-style-type: none"> ● Tripartite discussion on the results of activities in FY2019 and the activity plans for FY2020 ● Improved the observation devices (Replacement of hard disk, inverter, and router)
2021	<ul style="list-style-type: none"> ● Re-enter into the agreement (automatically renewed annually thereafter) ● Tripartite discussion on the results of activities in FY2020 and the activity plans for FY2021 ● Support for observation equipment ● Review of agreement (Kuwana High School added)
2022	<ul style="list-style-type: none"> ● Four-party discussions on the results of activities in FY2021 and the activity plan for FY2022 ● Support for observation equipment
2023	<ul style="list-style-type: none"> ● Four-party discussions on the results of activities in FY2022 and the activity plan for FY2023 ● Support for observation equipment

Beach Cleanup Activity

In June 2023, about 120 employees and family members participated in a beach cleanup activity. Yoshizaki beach, located in Yokkaichi City, is a beach that sea turtles came to in the past to spawn. This cleanup activity is run by the local community and aims to encourage sea turtles to return there.



Visiting Environmental Education for Children

We have been conducting environmental lectures at elementary schools in the neighborhood since 2009. In addition, we have been conducting children's environmental lectures at the Yokkaichi Pollution and Environmental Miraikan since 2018. Elementary and junior high school students and their parents participated in the lecture, where they learned about global warming through experiments and other activities and considered environmentally friendly ways of living. The event also provided an opportunity to get to know the plant through a virtual reality tour of its clean room.

In 2022, we visited two elementary schools in Yokkaichi city, a total of about 3,200 children have taken the course since 2009. We aim to provide environmental education that children can enjoy while utilizing local mascot characters.



Elementary School in Yokkaichi city



Yokkaichi Pollution and Environmental Miraikan

Major Global Warming Countermeasures Considered by Children

- Don't buy what I don't need
- Use things carefully
- Don't use home appliances too much
- Grow plants
- Take a bath continuously
- Go to bed early and get up early
- Turn off the water when brushing teeth
- Stay in one room as much as possible

Environmental Lecture

In June 2023, 34 students and 4 adults participated in an environmental lecture at Yokkaichi University. The main contents of the lecture were plant overview, compliance, SDGs initiatives, and Reduction activities of environmental impact. The lecture was also a good opportunity for them to understand the Yokkaichi Plant by experiencing the clean room VR and viewing wafers.



CSR and Regional Communication

Social Contribution Activities through Resource Recovery

With the aim of raising environmental awareness of each and every employee, all employees, including those of resident companies on the premises, are involved in a variety of social contribution activities.



1. Calendars and Notebooks Collection (since 2007)

We collect calendars and notebooks that have become surplus in our plant, and donate them to the Yokkaichi City Council of Social Welfare. The calendars and notebooks are reused at nursing homes and facilities for the elderly, and the notebooks are used to communicate with the hearing impaired. (2022 results : 1,306 calendars and 434 notebooks)

2. Bottle Caps Collection (since 2008)

We collect plastic bottle caps and donate vaccines for children in developing countries through the Ecocap Movement, a nonprofit organization. In April 2015, we changed the recipient of the bottle caps to a non-profit organization called "Re=Lifestyle", and are continuing the collection activities. The collected bottle caps are donated to Re=Lifestyle, and the proceeds from the sale of the caps are used to support polio prevention in developing countries through the Japan Committee for Vaccines for the World's Children, an authorized NPO. (2022 result : 445,000 pieces, equivalent to 890 vaccines)

3. Charity Eco-Bazaar (since 2012)

We have been holding an in-house bazaar where employees bring in unwanted items from their homes and sell them to employees. Through the bazaar, we are contributing to the greening of Yokkaichi City by donating the proceeds to the Yokkaichi City Greening Fund, in addition to the effective use (reduce and reuse) of unnecessary items. (2019 results: approximately 38,800 yen donated)

4. Miswritten Postcard Collection (since 2014)

Our plant is cooperating with the World Terakoya Movement* (UNESCO Association of Japan), which supports education in developing countries by collecting miswritten postcards.. (2022result : 440 sheets, equivalent 24,025 Yen)

*As of December 2019, there are approximately 64 million children in the world who are unable to go to school and 750 million adults (15 years of age and older) who cannot read or write. As part of our efforts to achieve the Sustainable Development Goals (SDGs), we will contribute to the creation of self-reliant and sustainable societies by fostering human resources in impoverished areas around the world through "learning spaces (terakoya)"

5. Used Stamp Collection (since 2015)

We collect used stamps, and donates them to a non-profit organization called "Live with Friends on the Earth (LIFE)". The proceeds are used to support agriculture in India and Indonesia. (2021 result : 5,090 sheets)

6. Down Products Collection (since 2016)

Our plant is cooperating with the "Down Project", in which we collect used down products and donate the sale proceeds to the Mie Community Chest of Japan. The proceeds are used to support local contribution activities in Yokkaichi City and Asahi Town. (FY2022 result : 1 down comforter, 2 down jackets)

7. Disposable Contact Lens Case Collection (since 2016)

Our plant is cooperating with the "Eye City eco project," a campaign to recycle the empty cases of disposable contact lenses run by HOYA Corporation, which operates the "Eye City" contact lens specialty store. Collected used contact lens cases are recycled as polypropylene, and part of the proceeds from their sale are donated to the Eye Bank Association. (2022 result : 33,709 pieces)

8. Aluminum Can Collection (since 2016)

In order to support the independence of the disabled, employees of the plant bring aluminum cans from their homes and donate them to the "Asake Works", a facility to support the independence of people with disabilities. At the "Asake Works", the disabled crush the aluminum cans using a machine, which is then sold to a recycling company, and the proceeds are used to supplement their salaries. (2022 result: 2,868 cans, equivalent to 3,728Yen)

9. Used Book Collection (since 2018)

We cooperate with "Charibon (Value Books Co., Ltd.)," which supports NPOs through books that are no longer read. We donate proceed from the sale of used books to the "Kodomo no Mirai Secondhand Book Donation" operated by the Secretariat of the National Campaign for Supporting Children's Future. Donations are used to support NPOs and other organizations that work with children and young people living and working in poverty and conduct grassroots activities such as children's cafeterias and learning support. (2022 result : 33 books, equivalent to 4,914 yen)



10. Mask Collection (2020*)

We collected about 2,600 unneeded masks from the households of our plant employees and donated them to the Yokkaichi City Council of Social Welfare through the Next Step Research Association. These masks are now being used at welfare facilities.

*One on activity

11. Food Drive (since 2021)

A food drive is an activity in which households bring in surplus food and donate it to people in need. We are cooperating with the efforts of the Yokkaichi City Council of Social Welfare to help those who are receiving public assistance to get out of poverty and live on their own income. (2022 result : 602 items)

12. Wheelchair Collection (2021*)

Our plant donated wheelchairs to the Yokkaichi City Council of Social Welfare to replace wheelchairs that had been in use for 10 years. The donated wheelchairs are used for lending to people living in the city.

*One on activity

Environmental Liaison Meeting with the Local Community Association

We hold regular liaison meetings with the local community association to report on the status of environmental conservation efforts that lead to the safety and security of the community, including environmental measurement data on water quality, air quality, etc., and the status of emergency response training.

We will continue to communicate with the local community association so that we can promote corporate activities closely linked to the local community.



Environmental Internship Program

Every year, we accept students from Mie University for an environmental internship program. In September 2019, five Mie University students participated in an environmental internship at our plant. Through the experience of environmental work, including environmental management systems, environmental measurements and waste management, they had the opportunity to think about their future jobs and careers.

Environmental Exhibition

Since 2008, we have participated in annual environmental events organized by Yokkaichi City, Mie Prefecture, and others. In addition to introducing our environmental activities and our memory products, we have set up an area where visitors can take a virtual reality tour of the clean room to communicate with the local community. We also participated for the first time in "MESE NAGOYA 2021," an exhibition for cross-industrial exchange, and introduced our plant's environmental initiatives and other activities.

Student Impressions

- I have learned so many different things, such as the manufacturing process, wastewater treatment after manufacturing, and environmental analysis. I would like to make the most of my experience here and continue to do my best in the future.
- This plant not only treats the various substances discharged, but also spends money to steadily measure the water quality of rivers and oceans. I thought they were recognized by the general public as an environmentally conscious plant.
- This plant has an environment where we can work safely and securely, and trust each other. I also felt that this plant had a good atmosphere.
- I am glad that I was able to experience something that I would never be able to experience in my normal school life.



Environmental Exhibition



Panel Display



Virtual Exhibition



MESE NAGOYA 2021



Sampling



Analysis



Presentation

Environmental Report

In order to have as many people as possible understand our environmental efforts, we have published an environmental report (site report) since fiscal 2003, and this is the 21th edition. We will continue to publish the environmental report in the future with the aim of making it easy to read. We also publish an "Environmental Pamphlet" for children.



Environmental Report



Pamphlet for Children

Education and Training

Environmental Education

Once a year, we provide environmental education to all employees working in the Yokkaichi Plant premises, including those who work on the premises. The educational textbook includes not only global warming prevention and compliance, but also matters of global interest such as the Paris Agreement, SDGs and ESG investment.

Each division also prepares its own educational textbooks on environmental activities that require independent efforts by each department, providing an opportunity for employees to become actively involved in environmental activities.

In addition to specific employee training for those engaged in tasks with the potential to have a large impact on the environment, we also provide environmental education for heads of departments, newly assigned employees, internal environmental auditors, and other employees at different levels.

	Course	Theme
Stratified education	For department managers	Responsibilities and authority
	For all employees	Revisions to EMS, Environmental policy, Objectives and, targets
	For newly assigned employees	Global Environmental issues, EMS, Environmental policy
Functional education	For specific employees	Compliance with environmental laws, environmental impact incurred by non-conformance with operation standards and procedures for specific jobs
	For environmental auditors	Roles and responsibilities, Revisions to environmental laws

Monthly Events

Every year, during Environment Month in June, 3Rs* Promotion Month in October, and Energy Conservation Month in February, we hold employee-participation events to raise employees' environmental awareness. In order to prevent the spread of the new coronavirus, events with risk of infection, such as tours, have been canceled from 2020.

*3Rs: Reduce, Reuse and Recycle

1. Tour of External Environmental Facilities

We visited the Chubu Electric Power Company's West Nagoya Thermal Power Station in February 2019, which was recognized by Guinness World Records for the world's highest power generation efficiency in March 2018, which led to an increased awareness of energy conservation.

Also, we visited the Yokkaichi City Clean Center in October 2019, and were able to deepen our understanding of Yokkaichi City's waste disposal and resource utilization methods. Since 2020, we have remotely hosted tours of the plant's power facilities to deepen employee understanding.

2. 3Rs Master Certification

The plant has conducted its own 3Rs Master certification test every year from 2014 to 2019. 170 employees have been certified as 3Rs Master and are working to promote the 3Rs as key persons in their respective departments.

3. Charity Eco-Bazaar

We held an in-house bazaar in October 2019. Employees brought in unwanted household items and sold them to employees. Through the bazaar, we contribute to the effective use of unwanted items (reduce and reuse) and also contribute to the greening of Yokkaichi City by donating the proceeds to the Yokkaichi City Greening Fund (2019 results: 38,800Yen). We also received an award from the mayor of Yokkaichi City for our contribution to the greening of the city in October, 2020.

4. Road Cleaning around the Plant

Every year during Environment Month and 3Rs Promotion Month, our plant employees, including the general manager, clean up the roads around the plant. In June 2023, approximately 86 employees participated in the cleanup activities and collected approximately 10 kg of trash.

5. Sustainability Quiz

To deepen understanding of our sustainability efforts, we conducted a "Sustainability Quiz" during the 3Rs Promotion Month in October 2022. In

addition, we have set a goal of achieving net-zero greenhouse gas emissions by 2050, and to deepen understanding of these efforts, we held a "Net Zero Carbon Quiz" during the Environment Month in June 2023. Many employees participated in the quiz, raising environmental awareness.



West Nagoya Thermal Power Station



Yokkaichi City Clean Center



3R Master Certification



Road Cleaning around the Plant



Charity Eco-Bazaar

Greening Activities on site

We have been filling the area around each of our buildings with flowers since June 2017 with the aim of raising environmental awareness, improving our image, and creating a healing space for our employees. A replanting event was held in June 2023, with many employees participating.



Publication of Energy-saving Wall Newspapers and Environmental Information "Eco Time"

Since April 2014, we have been publishing the energy-saving wall newspapers, which introduces topics of the plant's energy conservation activities, interviews with energy conservation staff in each division, and energy conservation trends in Japan and abroad.

In May 2017, our plant also began publishing "Eco Time," an environmental newsletter that introduces topics in the plant's environmental activities, environmental activities unique to each division, eco-friendly initiatives that can be carried out at home, and environmental trends in Japan and abroad.

In recent years, we have made an effort to provide information on various initiatives to prevent global warming, trends in renewable energy, environmental laws and regulations in various countries, the SDGs, ESG investment, and other issues that are in the global spotlight.



Energy-saving Wall Newspaper



Environmental Information "Eco Time"

Evaluation from External Parties

Energy Conservation Merit Award (FY2022)

Two employees of our plant received the Energy Conservation Center Tokai Branch Manager's Award for Distinguished Contributions to Energy Conservation, which is given to individuals who have contributed to energy conservation in a variety of fields, including energy management and education on energy conservation.



Recipients of the Energy Conservation Promotion Merit Award

Urban Greening Meritorious Achievement Award (FY2020)

In recognition of our continuous donation of proceeds from the charity ecobazaar to the Yokkaichi City Greening Fund, we received the urban greening meritorious achievement award from Yokkaichi City.

*This award is given to individuals and organizations that cooperate with the urban greening of Yokkaichi City.



Commendation Ceremony

Climate Change Action Minister of the Environment Award (FY2020)

KIOXIA's Yokkaichi Plant received "Climate Change Action Minister of the Environment Award (Mitigation field in the Dissemination/Promotion category)" in November 2020. This award constitutes part of the promotion of measures tackling climate change issues, and recognizes individuals or groups who have made remarkable contributions towards the prevention of global warming. The Yokkaichi Plant was recognized for its cross-organizational energy-saving activities and community-based efforts to mitigate climate change.



Reduction of Greenhouse Gases



Efforts to Reduce PFCs Emissions

Large amount and variety of PFCs, types of greenhouse gases, are used in the P-CVD (plasma CVD) process for forming thin films on wafers, the Metal-CVD process, the Hot process, and the DRY (dry etching) process for microfabricating wiring and contact holes. We are focusing on reducing PFCs emissions in the manufacturing process from source to discharge as a pillar of our global warming countermeasures. In 2022, we implemented the following measures to reduce PFCs emissions:

- (1) Installation of abatement equipments that breaks down PFCs into gases with low global warming potential and discharges them,
- (2) Installation of high-efficiency plasma equipments,
- (3) Optimization of reaction chamber cleaning time, and
- (4) Optimization of reaction chamber conditions.

In particular, (1) has always maintained a 100% installation rate, reducing emissions by 92% compared to the case without installation, contributing to the reduction of PFCs emissions. In the Fab 7, which was completed in 2022, we are also working to reduce PFCs emissions by developing measures to reduce the use of PFCs linked to manufacturing.



PFCs Abatement Equipment

No.	Measure	Process	Target Gas	Remark
(1)	100% installation of abatement equipment	P-CVD, DRY, Metal	CF ₄ , C ₄ F ₈ , CHF ₃ , SF ₆ , NF ₃ , CH ₂ F ₂ , CH ₃ F, CH ₄ , N ₂ O	Continued installation in newly installed facilities
(2)	Installation of high-efficiency plasma equipments	CVD	NF ₃	Continued implementation
(3)	Optimization of reaction chamber cleaning time	Metal	NF ₃	Continued implementation
(4)	Optimization of reaction chamber conditions	DRY	NF ₃ , SF ₆ , CF ₄	2022: Finished

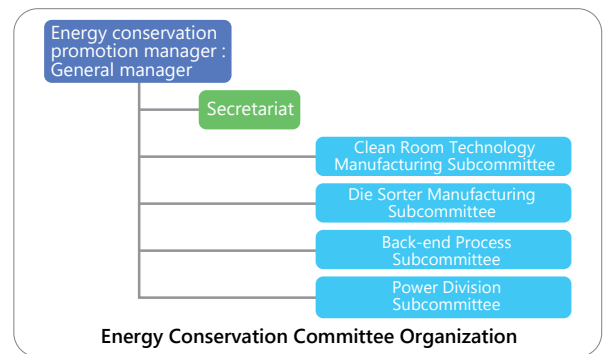
Reduction of Energy-derived CO₂



Efforts to Reduce CO₂ Emissions

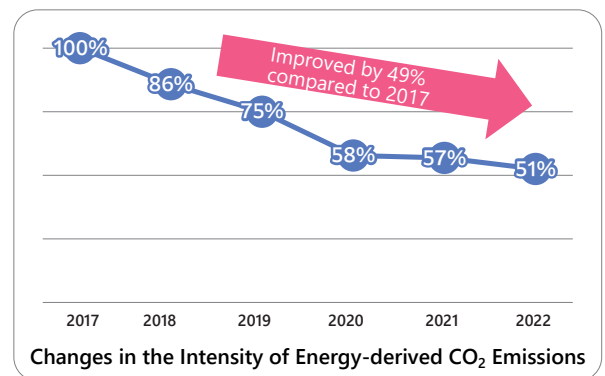
The production technology, manufacturing, and facilities divisions of our plant have organized an Energy Conservation Committee to work across the organization to reduce energy-derived CO₂ emissions, and have formed specialized subcommittees (Clean Room Technology Manufacturing Subcommittee, Die Sorter Manufacturing Subcommittee, Back-end Process Subcommittee, and Power Division Subcommittee) as subordinate organizations.

Every year, each subcommittee sets energy-derived CO₂ reduction targets, and implements energy-saving measures for manufacturing and power equipment. The intensity* of energy-derived CO₂ emissions in 2022 improved by 49% compared to 2017.



* CO₂ emissions per production memory capacity is used as an indicator that can be used to evaluate efforts.

Subcommittee	Measure
Clean Room Technology Manufacturing Subcommittee	158 measures including throughput improvements, heater-less and chiller-less manufacturing equipments
Die Sorter Manufacturing Subcommittee	9 measures including installation of energy saving equipments
Back-end Process Subcommittee	5 measures, including streamlining testing and improving throughput
Power Division Subcommittee	153 measures including optimization of power equipment operation





Reduction of Wastes

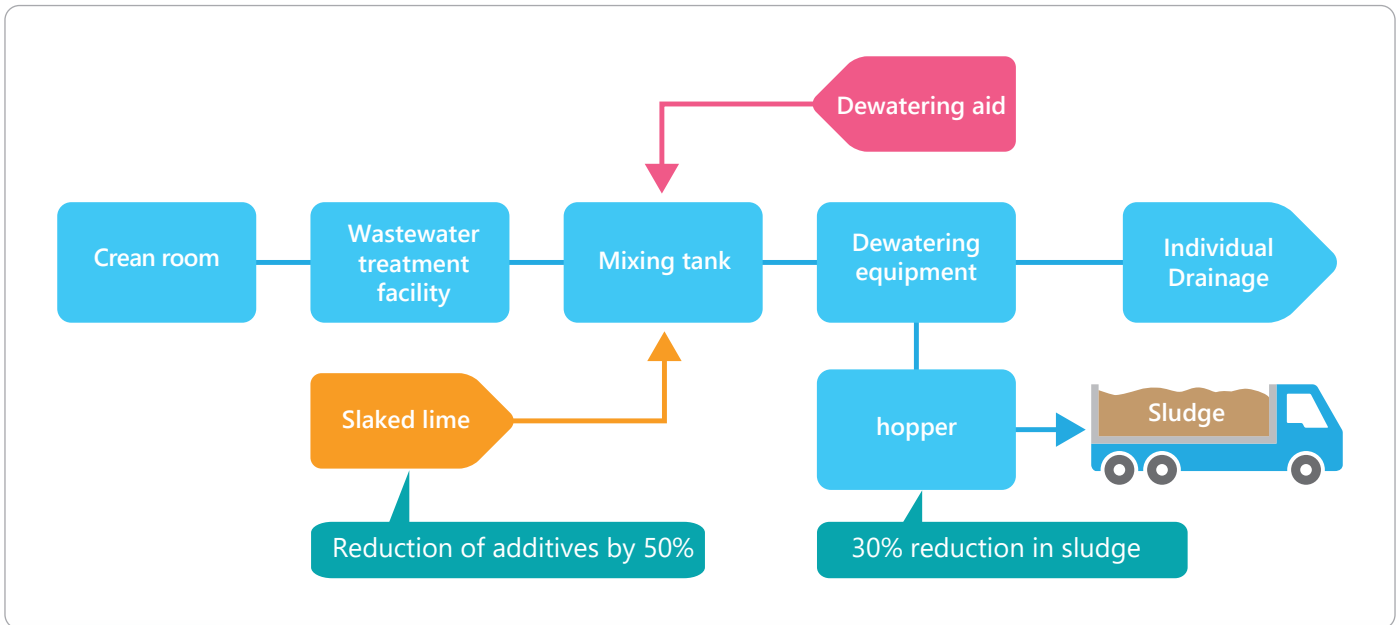


Although the amount of waste generated is on the rise due to the expansion of the scale of this plant, we are promoting the reduction of chemicals and gas usage by improving the manufacturing process, etc., and are actively working to increase the recycling of generated waste and the conversion

of waste into valuable resources. In addition to recovering and recycling waste generated in the manufacturing process, we are actively working to reduce the use of chemicals and gases by improving the manufacturing process.

Reduction of Sludge

By adding a new dewatering aid, the amount of slaked lime added was reduced by 50%, resulting in a 30% reduction in sludge.



Management of Chemical Substances

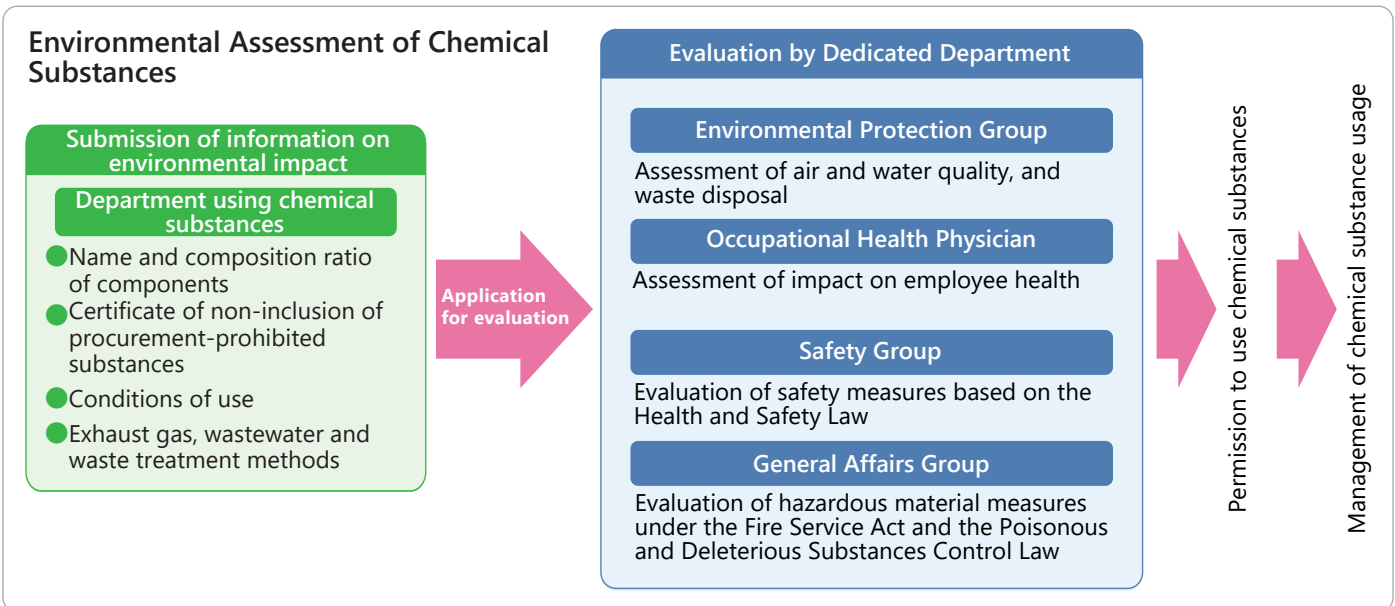


We manage chemical substances based on the principles of "using as few chemical substances as possible," "striving to reduce or substitute chemical substances whenever possible," and "managing chemical substances appropriately when they are used."

Before starting the use of new chemical substances, we conduct environmental assessments to confirm whether or not

they contain any of the regulated substances specified by our company and how to properly dispose of them, in order to reduce the environmental impact.

After starting the use of new chemical substances, we use an online totaling system to manage changes in the amount used every month.



Reduction of Chemical Substances

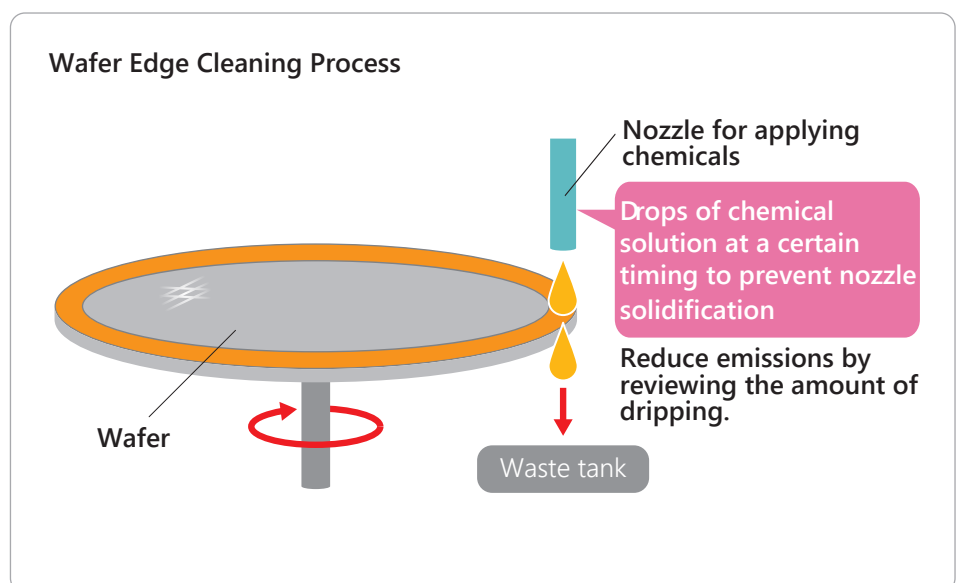


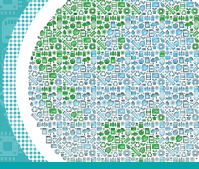
Example of Reduced Chemical Substance Emissions

Through evaluation of the existence of laws and regulations and the risk of leakage, we identify chemical substances we should focus on reducing environmental impact, and strive to reduce the use of chemical substances and their alternatives.

As part of our efforts to reduce emissions of chemical substances, we improved the process of applying chemical solutions containing volatile organic compounds to wafers and reduced emissions of chemical substances by approximately 2%.

We will continue to develop technologies with the 3Rs (Reduce, Reuse and Recycle) in mind to reduce environmental impact.





Management of Chemical Substances in Products

Regulations on chemical substances in products are being tightened every year. In addition to the EU's RoHS Directive, the Packaging Materials Directive and the REACH Regulation have been enforced. Outside the EU, laws and regulations similar to the EU's RoHS Directive are in place in countries around the world. In order to comply with these regulations, "Procurement-prohibited substances" and "Procurement-controlled substances" are selected and substances that must not be included in products or must be controlled are defined.

We conduct product environmental assessments at the product development stage to check information on new raw materials and chemical substances contained in our products. Through these efforts, we are striving to select materials with lower environmental impact to minimize the use of hazardous substances in our products and manufacturing processes to the extent possible.

Category	Definition
Procurement-Prohibited Substances*1	"Procurement-Prohibited Substances" mean group of substances that are prohibited to be included in Deliverables procured by KIOXIA. Except for the exempted applications specified in the guidelines, no intentional addition shall be approved to deliverables of any applications. If there is a restrict value, the impurity concentration must be less than the restrict value. Notwithstanding the above, intentional addition and the impurity concentration must be less than the Restrict Value for the applications where the prohibition of intentional addition is not specified in the regulations.
Procurement-Controlled Substances*2	"Procurement-Controlled Substances" mean group substances that is subject to control for contain/inclusion in deliverables procured by KIOXIA. Unlike procurement-prohibited substances, procurement-controlled substances do not restrict intentional addition in deliverables, and instead refer to substances for which the presence/absence and concentration value should be fully grasped. Suppliers are required to disclose information on the presence/absence and concentration values of substances that correspond to procurement-controlled substances that were intentionally added to deliverables or included as known impurities.

*1 Lead and its compounds, Mercury and its compounds, Cadmium and its compounds, Hexavalent Chromium compounds, Polybrominated Biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs including DecaBDE), Specific Substances of Phthalic acid esters, Asbestos, Certain Azo dyes and Azo pigment that may generate certain Amines, Ozone depleting substances (CFCs, HCFCs, HBFCs, carbon tetrachloride, etc.), Polychlorinated Biphenyls (PCBs), and Polychlorinated Terphenyls (PCTs), Polychlorinated naphthalene (with 1 or more chlorine atoms), Radioactive substances, Short-chained Paraffin Chloride (Carbon chain length 10-13), Tributyltin (TBT), Triphenyltin (TPT), and other substances in the 65 categories specified by KIOXIA.

*2 Antimony and its compounds, Arsenic and its compounds, Beryllium and its compounds, Bismuth and its compounds, Polycyclic Aromatic Hydrocarbons (PAHs), Bromine and its compounds, Nickel and its compounds, Selenium and its compounds, Zinc and its compounds, Chlorinated paraffin, Trivalent Chromium compounds, Cobalt and its compounds, Cyanogen and its compounds, Perfluorocarbons (PFCs), Hydrofluorocarbons (HFC), Chlorine and its compounds, Manganese and its compounds, Organic tin compounds, Sulfur hexafluoride (SF6), PFASs, and other substances in the 28 categories specified by KIOXIA.

Green Procurement



KIOXIA, aligned with our mission to "uplifting the world with Memory", we aim to conduct business in a way that enhances and preserves the environment. Through purposeful, sustainable actions, we're prioritizing being responsible stewards of the environment to do our part in maintaining our planet's health for years to come.

In addition to complying with environmental laws and regulations in the regions in which it operates, KIOXIA considers environmental stewardship to be one of our primary responsibilities. We take actions to limit our environmental impact throughout our supply chain of memory, applied, and related software products that support information infrastructure. From taking systematic and globally accredited steps to reduce our pollution and greenhouse gas emissions from our manufacturing processes, KIOXIA takes deliberate action to ensure efficient and effective operations.

As globalization in business progresses, the social demands of each company, including our own, to realize a sustainable society are steadily increasing. This includes contributing to the reduction of greenhouse gas emissions agreed under the Paris Agreement and the Sustainable Development Goals (SDGs) adopted by the United Nations. To meet these demands, we strive not only to comply with laws and social norms, but also to contribute to solving social issues through our business.

KIOXIA has selected "Respect for human rights", "Sustainable supply chains", "Climate change", "Environmental consideration" and "Health and safety", etc. as Sustainability Materiality (Priority Areas for the Group's Medium- to Long-term Growth) and is working together as a Group to further these actions. KIOXIA will continue to promote Green Procurement activities in the future as one such initiatives. Green Procurement activities ("Green Procurement") are the procurement of products, parts, and materials, etc. that have a reduced negative impact on the environment by encouraging our suppliers to actively promote environmental protections. Coordinating activities across our supply chain are critical in

order to conduct business activities while taking into consideration the reduction of environmental impacts and risks due to hazardous chemical substances, etc., and the cooperation of our suppliers is essential.

We evaluate the environmental impacts of our products as well as the substances used in parts and materials related to our products in advance during the development and design stages. We strive to select products, parts, and materials with lower environmental impacts to minimize the use of hazardous substances in our products and in the manufacturing processes of our products.

Promotion of environmental protections by our suppliers

We request all of our suppliers to establish a management system for environmental conservation, including management of chemical substances contained in their products. We also encourage our suppliers to obtain the latest versions of the international standards ISO 14001 and ISO 9001.

Management of chemical substances contained in deliverables

For any items delivered to KIOXIA ("Deliverables"), in order to manage contained chemical substances, we ask for the thorough implementation of the following:

1. Establishment of management system for chemical substances contained in deliverables
2. Green procurement of parts and materials with low environmental impacts, such as reducing hazardous chemical substances
3. Measures to prevent the transfer and transition of chemical substances to deliverables through contact and so on
4. Responses to various surveys requested by KIOXIA, including surveys on chemical substances content



Environmental Management System

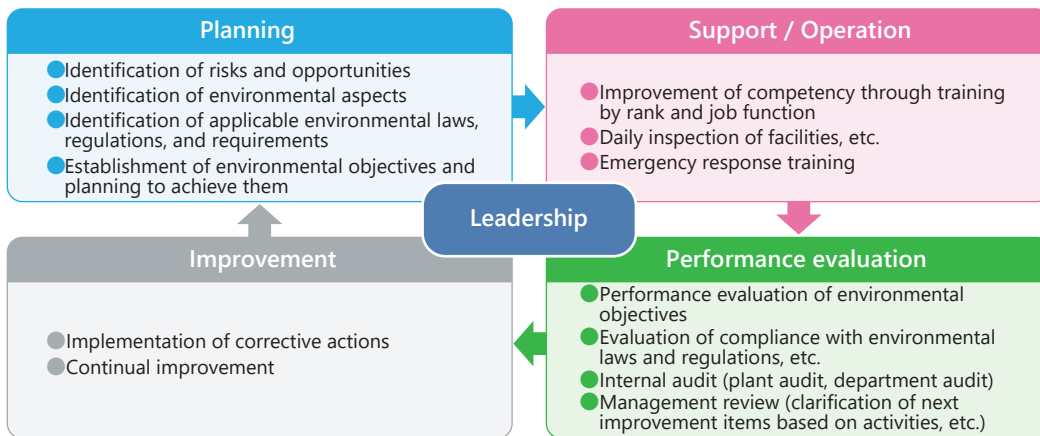
ISO14001



Our plant has established an environmental management system (EMS) in accordance with the international standard ISO 14001 and is committed to continuous improvement and upgrading. We evaluate environmental aspects of our business activities, products and services related to the impact on the environment including biodiversity and develop proactive environmental measures by setting environmental objectives and targets related to reducing the environmental

impact, preventing pollution, and creating products with reduced environmental impact. In 2022, we promoted the reduction of environmental impact in our business activities by taking environmental measures at the fab 7, installing a solar power generation system, and studying measures to achieve net-zero greenhouse gas emissions.

Environmental Management System



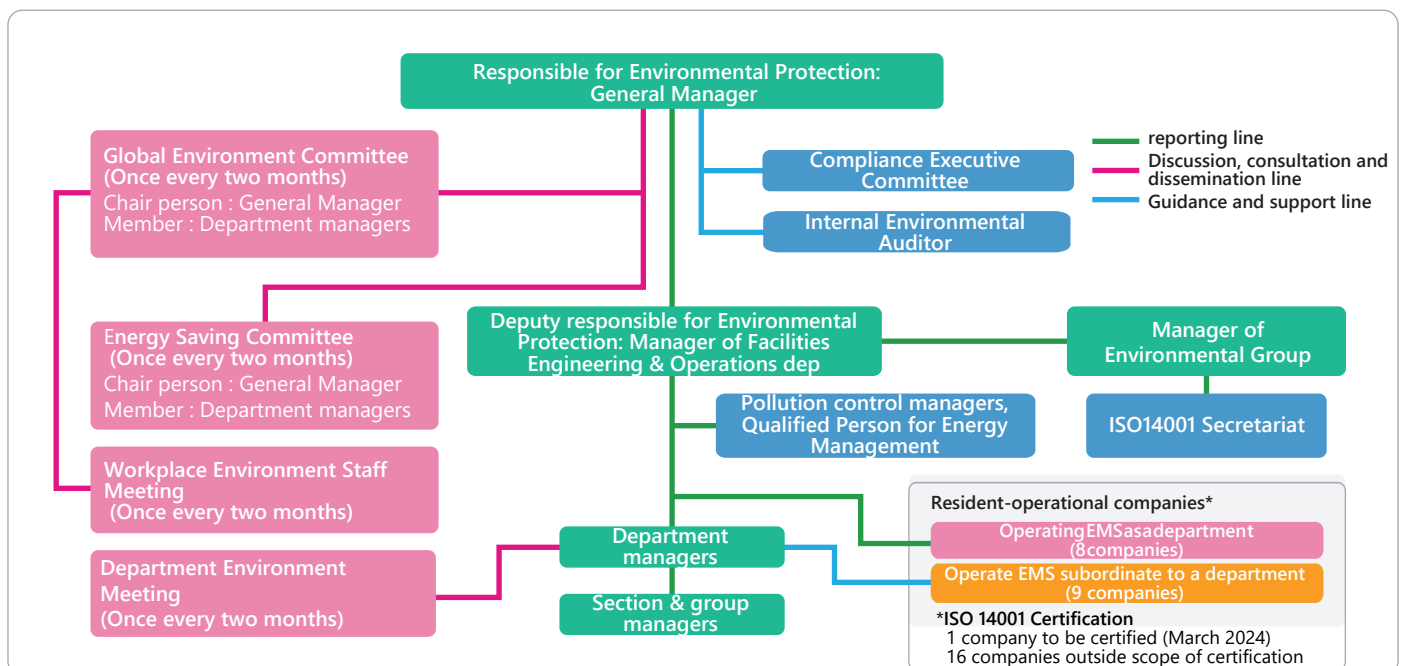
ISO 14001 Certificate of Registration

Environmental Protection Structure

In order to promote environmental protection activities continuously and effectively, we have established an environmental protection system headed by the general manager to clearly define responsibilities and authority, and have established the Global Environment Committee as the highest deliberative body for environmental protection, where EMS, environmental objectives, and implementation plans are

discussed. We have also established a Compliance Executive Committee to oversee compliance with laws and regulations. In addition, all employees, including those who work on site, are actively involved in activities to reduce the environmental impact of our business activities and contribute to society through the environment.

Environmental Protection Structure(As of August 1, 2023)



Environmental Target

Every year, we set environmental targets by reflecting the results of our environmental impact assessment on our progress and performance in achieving the previous year's environmental goals, our performance, our requirements for

our plant, and changes in environmental conditions. In 2022, we refrained from some events to prevent the spread of the new coronavirus. but for other plans, we were able to achieve our goals through various measures.

Environmental Targets and Results in 2022

Environmental objective	Environmental target	Target value	Result	
1	Creating products that consider environmental impact	Reduction of environmental impact through miniaturization and improved manufacturing processes	3 measures	3 measures
2	Preventing global warming	Improving the intensity* of energy-derived CO ₂ emissions (2017 Basis)	57.3% or less	51.4%
3		Improving the intensity* of greenhouse gas emissions (2017 Basis)	62.9% or less	52.3%
4		Introduction of renewable energy	Installation of solar power Generation system at Fab 6	Installation of solar power Generation system at Fab 6 on Dec. 2022 (Power Purchase Agreement)
5	Efficient use of resources	Improving the intensity* of total waste generation (including valuable materials) (2017 Basis)	56.8% or less	45.3%
6		Improving the intensity* of industrial waste (2017 Basis)	63.1% or less	50.1%
7		Improving the intensity* of water received (2017 Basis)	60.1% or less	48.0%
8	Reducing environmental risks	Improving the intensity* of chemical emissions (2017 Basis)	30.4% or less	26.0%
9	On-site greening	Creating a healing space for employees and improving the image of our company to customers and others (Planting of flower beds in each building)	Year-round	- Eucalyptus planting, renewal of flower beds in the administration building (July 2022) - Replanting and maintenance of each building
10	Promoting social contribution activities and environmental communication	Exhibiting at external environmental events	Once	Yokkaichi Environmental Fair (Dec. 2022)
11		Holding environmental liaison meetings with the local community association	Once	Submission of environmental report materials (Dec. 2022)
12		Publication of environmental reports	-Japanese version (Aug. 2022) -English version (Dec. 2022)	-Japanese version (Aug. 2022) -English version (Dec. 2022)
13		Environmental lecture at Yokkaichi University	Once	Environmental lecture (May 2022)
14		Environmental Education for Children	2 places	-Yokkaichi Pollution and Environmental Museum (Aug. 2022) -Neighboring elementary school (Nov. 2022)
15		Food drive (Support for families living in poverty)	Once	602 pcs
16		Collection of disposable contact lens cases (Support for corneal transplant awareness and dissemination)	Year-round	31,838 pcs
17		Collection of down products (Support for Social Contribution Activities in Yokkaichi City and Asahi Town)	Year-round	-Down jackets: 2 pcs -down quilt: 1 pc
18		Collection of used stamps (Agricultural support in India and Indonesia)	Year-round	5,090 pcs
19		Collection of miswritten postcards (Supporting Education in Developing Countries)	Year-round	440 pcs
20		Charity eco bazaar (Support for greening by Yokkaichi City)	Once	Canceled due to corona disaster
21		Collection of plastic bottle caps (Supporting Polio Prevention in Developing Countries)	Year-round	323,000 pcs
22	Collection of surplus calendars and notebooks (For use in nursing homes, kindergartens and nurseries, etc.)	Once	1,306 calendars and 434 notebooks	
23	Increasing environmental awareness	Environmental emphasis month (Environment Month, 3R Promotion Month, Energy Conservation Month)	Three times	Three times
24		Publication of the environmental information magazine "Eco Time" and "Energy-saving Wall Newspaper"	12 times	12 times
25	Biodiversity Conservation	Support for owl conservation activities (Mie Biodiversity Partnership Agreement)	Year-round	Agreement re-signed (May 2022), Tripartite discussions (Aug. 2022), Donation (Dec. 2022), Observation (Jan.2023-)
26		Coastal Cleanup (Support for improvement of sea turtle spawning environment)	Twice	Coastal Cleanup (June and Oct., 2022)

* Volume-based memory capacity is used as an indicator for basic-unit goals that allows appropriate assessment.

Monitoring System



In order to preserve the environment of the atmosphere, rivers, and the sea, we have established voluntary control standards that are stricter than legal requirements. In addition, employees are stationed 24 hours a day to monitor the situation.

Items subject to regulation

Nitrogen Oxides (NOx), Sulfur Oxides (SOx), Total Nitrogen (T-N), Total Phosphorus (T-P), Chemical Oxygen Demand (COD), Suspended Solids (SS), Fluorine (F), and Hydrogen Ion Index (pH) are automatically monitored continuously for 24 hours. Other items are monitored by sampling.

Items not subject to regulation

To strengthen control, items not subject to regulation are also voluntarily monitored by sampling..

Analysis Center

We have set up an analysis center in our plant, which analyzes about 47,000 items per year.



Automatic Wastewater Analyzer



Water Treatment Facility Monitoring System



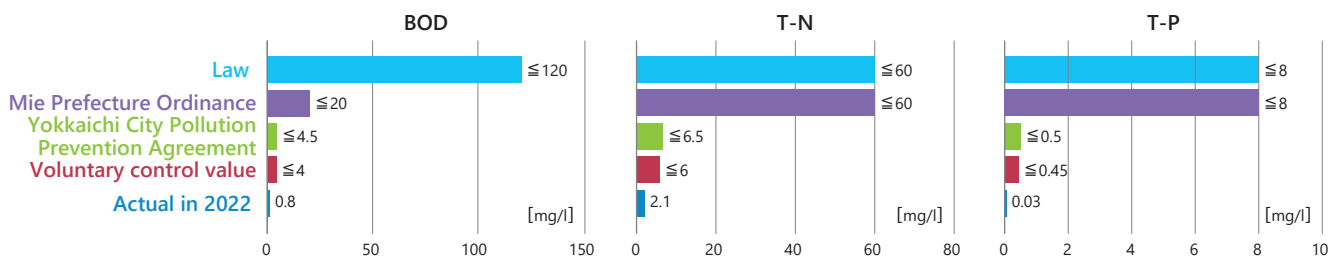
Analysis Center

Air and Water Quality Management

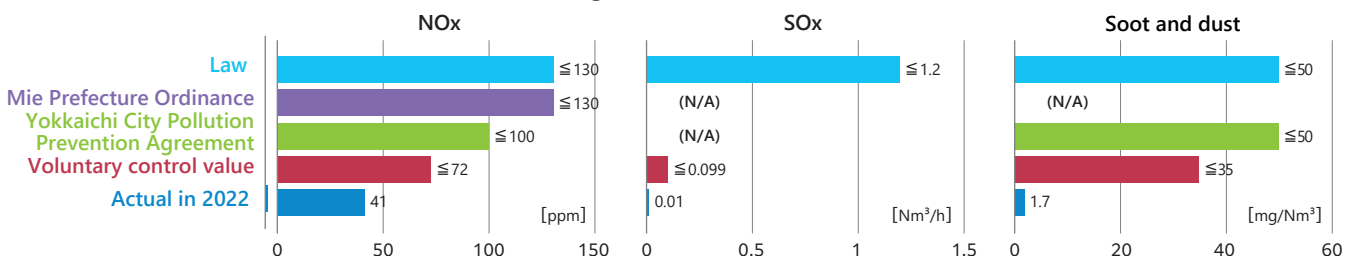


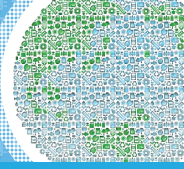
To ensure compliance with laws, ordinances, and agreements, we have established voluntary control standards, and monitor the situation on a daily basis. Below is the status of drainage (BOD, T-N, T-P) and exhaust gas (NOx, SOx, Soot and dust) management.

Drainage into river (actual measured value: 2022 average value)



Exhaust Gas (actual measured value: 2022 average value)





Environment-related Facilities



In order to prevent contamination by chemical substances and reduce contamination risk, KIOXIA has established its Structural Design Guidelines to reduce the risk of a leak of chemicals at environment-related facilities.

Examples

Waste gas scrubber



Structures and specifications for stable processing

Overhead piping



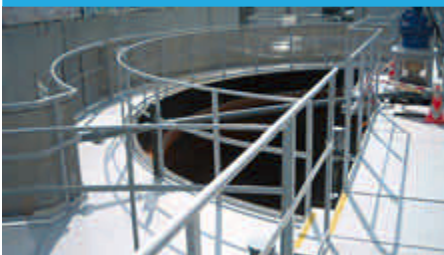
Reducing soil contamination risks

Drainage dike



Preventing wastewater from discharging into under or public water areas

Wastewater treatment



Stable processing system and preventing outflow of wastewater

Double joints in piping



Monitoring and preventing liquid leakages

Six-sided inspection



Early detection of leaks from the bottom by notches in the foundation

Seismic structure to store safely, Drainage dike, Oil level alarm

Emergency Response Training



We use a variety of chemicals in our plant. We have selected equipment and operations with high environmental risks that may be subject to emergencies due to breakdowns of the equipment that handles them or natural disasters, and we have standardized all of our response procedures.

In 2022, a total of 18 training sessions were conducted with a total of 321 employees participating, including those of the company stationed on the premises. After the training sessions, the effectiveness of the response methods was confirmed and response procedures were improved as necessary.



Response training for a chemical leak

Compliance with Laws and Regulations



In addition to clarifying the environmental laws, regulations, and other requirements that apply to our plant, we also check for compliance with applicable laws and regulations in the procurement of manufacturing and power equipment to ensure that we do not fail to comply with the laws and regulations.

Centralized Management of Laws and Regulations

We regularly check the content of legal amendments to ensure that we are up-to-date with constantly changing environmental laws and regulations. The content of the legal amendments applicable to our plant is incorporated into the "Legal Registration List and Compliance Evaluation Table" for centralized management.

Compliance Assessment

Each year we evaluate compliance with the environmental laws and regulations applicable to our plant. In 2022, we had no problems with all legal requirements.

Compliance Checks on Equipment Investment and Procurement

At the time of equipment investment and procurement, all 10 laws and regulations, including the Water Pollution Control Act and county ordinances, are checked for compliance. For facilities that are subject to the laws and regulations, notification is made as necessary.

Visualization of Compliance Management

Stickers indicating the relevant laws and regulations are placed on the subject equipment to ensure the visualization of legal management.



System for conformity

Check for compliance before procuring equipment.



Visualization of Compliance Management with Stickers

FAQ

Q Smoke from the building roof ?

A The air discharged from the cooling tower is cooled by the outside air and turns into water vapor that appears white.



Cooling Tower

Measurement Data on the Environment

Atmospheric Measurement Results

	Regulatory value	Voluntary control value	Measured value	Frequency
NOx (ppm)	130 or less *	72 or less	41	Once per year
SOx (Nm ³ /h)	1.2 or less *	0.099 or less	0.01	Once per year
Soot and dust (mg/m ³)	50 or less *	35 or less	1.7	Twice per year

* Air Pollution Control Act

Measured values are averages for FY2022

Drainage measurement results (No.1 drainage outlet: river)

	Regulatory value	Voluntary control value	Measured value	Frequency
pH	5.8-8.6 * ¹	6.5-8.0	6.7-8.0	Once per month
BOD (mg/l)	20 or less * ¹	4.0 or less	0.8	Once per month
COD (mg/l)	20 or less * ¹	4.0 or less	2.9	Once per week
SS (mg/l)	70 or less * ¹	3 or less	1	Once per month
Nitrogen (mg/l)	60 or less * ²	6.0 or less	2.1	Once per week
Phosphorus (mg/l)	8 or less * ²	0.45 or less	0.03	Once per month
Fluorine (mg/l)	8 or less * ²	4.5 or less	1.7	Once per week

*¹ Mie Prefectural Ordinance for Living Environment Conservation

Measured values are averages for FY2022

*² Water Pollution Prevention Act

Drainage measurement results (No.2 drainage outlet: sea area)

	Regulatory value	Voluntary control value	Measured value (Feb 6)	Measured value (Feb 7)	Frequency
pH	5.0-9.0 *	6.5-8.0	6.5-7.6	6.8-7.5	Once per month
COD (mg/l)	120 or less *	10 or less	4.3	2.2	Once per week
SS (mg/l)	150 or less *	8 or less	1	1	Once per month
Nitrogen (mg/l)	60 or less *	15 or less	3.2	1.4	Once per week
Phosphorus (mg/l)	8 or less *	1 or less	0.1	0.02	Once per month
Fluorine (mg/l)	15 or less *	12 or less	3.7	1.4	Once per week

* Water Pollution Prevention Act

Measured values are averages for FY2022

Sound Noise and Vibration Measurement Results (West Area)

	Measurement location: Time	Regulatory value	Voluntary control value	Measured value	Frequency
Sound noise (dB)	Site boundaries: morning and evening	N/A	55 or less *	53	Four times per year
	Site boundaries: Daytime	N/A	60 or less *	55	Four times per year
	Site boundaries: Night	M/A	55 or less *	52	Four times per year
Vibration (dB)	Site boundaries: Daytime	N/A	50 or less *	<30	Once per year
	Site boundaries: Night	N/A	50 or less *	<30	Once per year

Sound Noise and Vibration Measurement Results (East Area)

	Measurement location: Time	Regulatory value	Voluntary control value	Measured value	Frequency
Sound noise (dB)	Site boundaries: morning and evening	50 or less *	-	50	Four times per year
	Site boundaries: Daytime	55 or less *	-	51	Four times per year
	Site boundaries: Night	45 or less *	-	44	Four times per year
Vibration (dB)	Site boundaries: Daytime	60 or less *	-	<30	Once per year
	Site boundaries: Night	55 or less *	-	<30	Once per year

* Mie Prefectural Ordinance for Living Environment Conservation

Material Balance

Input

		2018	2019	2020	2021	2022
Chemicals *	t	47,661	47,173	53,905	55,262	50,806
City Water	Thousands of m ³	78	30	22	31	49
Water	Thousands of m ³	19,463	19,766	21,076	21,485	21,573

* Substances to be reduced as specified by the KIOXIA Group

Output

		2018	2019	2020	2021	2022
Greenhouse gas	Thousands of t-CO ₂	2,073	2,136	2,205	2,150	1,993
Chemicals *	t	653	518	586	562	478
Waste	t	80,203	81,211	90,161	93,636	85,180
Drainage	Thousands of m ³	14,777	14,733	15,857	16,191	16,196
NOx	t	28	27	25	23	29
SOx	t	0	0	0	0	0

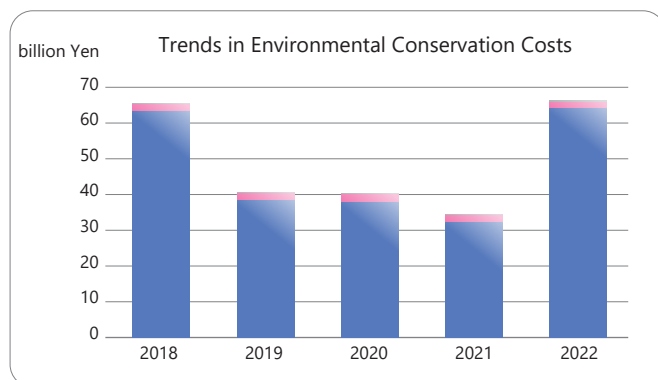
* Substances to be reduced as specified by the KIOXIA Group

Environmental Accounting

Every year we record the cost of measures to reduce the environmental impact in accordance with the "Environmental Accounting Guidelines 2005" set by the Ministry of the Environment.

In 2022, we invested 66.5 billion yen for environmental measures, including the installation of exhaust gas abatement treatment facilities at Fab 7.

Other Costs (green procurement, ISO14001 operations, and environmental education)
Costs of resource utilization and waste reduction
Costs of pollution protection (air and water)



Law concerning Pollutant Release and Transfer Register (PRTR)

The PRTR Law of Japan mandates a system to monitor the amounts of chemical substances released to the environment (air, water area or soil), the amounts transferred, etc., and to aggregate the results and disclose data to the public. This law, the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof, requires reporting of the amounts released and transferred if the amount

handled of a Class I Designated Chemical Substance per year is 1 ton or more (0.5 tons or more for a Specified Class I Designated Chemical Substance).

KIOXIA Group voluntarily discloses the amounts handled, consumed, removed and recycled in addition to the amounts released and transferred for each Class I Designated Chemical Substance.

PRTR Substance Data in 2022

Substance number	Chemical substance name	Amount handled	Amount released					Amount transferred			Amount consumed ¹	Amount removed ²	Amount recycled ³
			Air	Public water	Soil	Landfill	Total amount	Waste	Sewerage	Total amount			
1	Zinc compounds (water-soluble)	2.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.90	0.00
272	Copper salts(water-soluble, except complex salts)	4.35	0.00	0.00	0.00	0.00	0.00	4.35	0.00	4.35	0.00	0.00	0.00
302	Naphthalene	4.10	0.02	0.00	0.00	0.00	0.02	4.08	0.00	4.08	0.00	0.00	0.00
374	Hydrogen fluoride and its water-soluble salts	5550.66	2.00	0.00	0.00	0.00	2.00	160.19	0.00	160.19	0.00	3898.60	1489.86
395	Water-soluble salts of peroxodisulfuric acid	37.06	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.74	0.00	36.32	0.00
405	boron compounds	1.42	0.00	0.94	0.00	0.00	0.94	0.48	0.00	0.48	0.00	0.00	0.00
438	Methylnaphthalene	9.08	0.04	0.00	0.00	0.00	0.04	9.04	0.00	9.04	0.00	0.00	0.00
453	Molybdenum and its compounds	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	0.00

¹ Amount consumed is the amount of a substance used in or associated with a product and shipped out of the Operations.

² Amount removed is the amount of a substance transformed into other substances by neutralization, decomposition or reaction treatment performed at the Operations.

³ Difference between the amount of waste transferred and the amount recycled depends on whether waste is processed with charge or without charge. When waste disposal is outsourced with charge even for recycling purposes, the amount is considered as the amount of waste transferred. d as the amount of waste transferred.

History of Yokkaichi Plant

1992	-Established Yokkaichi Plant	2007	-Started Fab 4 operation
1993	-Started Fab 1 operation -Started production of 16Mbit DRAM	2008	-Opened Advanced Memory Development Center
1996	-Acquired ISO14001 -Started Fab 2 operation -Started production of 64Mbit DRAM -Started support for Dominion Semiconductor, L.L.C., a company established in the United States as an overseas production base of memory front-end process	2011	-Started Fab 5 phase1 operation -Achieved a cumulative production total of 10billion units of NAND flash memory (1GB conversion)
1997	-Achieved a cumulative production total of 100million units of 16Mbit DRAM	2012	-Celebrated 20th anniversary of Yokkaichi Plant
1998	-Established Yokkaichi Toshiba Electronics Corporation	2013	-Awarded "GOOD FACTORY Award for Factory Management (organized by Japan Management Association(JMA))"
1999	-Started production of NAND flash memory	2014	-Started Fab 5 (Phase2) operation
2001	-Announced the withdrawal from manufacturing and sale of commodity DRAM -Dissolved Yokkaichi Toshiba Electronics Corporation	2016	-Started mass production of 3D flash memory BiCS FLASH™ -Started New Fab 2 operation
2002	-Celebrated 10th anniversary of Yokkaichi Plant -Moved FlashVision LLC from Virginia, USA to Yokkaichi Plant -24-hour plant of technology with 24-hour line engineers support	2017	-Commenced operations as Toshiba Memory Corporation Yokkaichi plant as the memory business of Toshiba Corporation was made into a separate company. -Awarded "Gold Prize of Field Innovation Award in 2016 (The Japanese Society for Artificial Intelligence.)"
2003	-Opened Asahi Test Center -Acquired ISO9001:2000	2018	-Started Fab 6 operation -Completed construction of Memory R&D Center
2005	-Started 300mm-wafer Fab 3 operation -Achieved a cumulative production total of 1billion units of NAND flash memory (64MB conversion)	2019	-Commenced operations as KIOXIA Corporation Yokkaichi Plant due to the change in company name
		2021	-Absorbed KIOXIA Advanced Package Corporation through an absorption-type merger and strengthened memory back-end process development
		2022	-Celebrated 30th anniversary of Yokkaichi Plant -Certified as achieving 'Platinum Status' by the Responsible Business Alliance (RBA) -Completed construction of Fab 7

History of Environmental Activities

1990	-Concluded pollution control agreement with Yokkaichi City, Mie Prefecture
1991	-Concluded pollution control agreement with Yamanoisshiki-cho, Yokkaichi -City Started holding Yamanoisshiki-cho local meetings
1996	-Gained BS7750 environmental management system certification -Gained ISO14001:1996 environmental management system certification
1999	-Received the prize of Recycling Promotion Council
2000	-Received the Chubu Ministry of Economy, Trade, and Industry Minister's Award (heat category) -Received the prize of the Chairman of Energy Conservation Center, Japan
2001	-Received the Chubu METI Minister's Award (electricity category, contribution to energy management)
2003	-Concluded pollution control agreement with Asahi-cho, Mie Prefecture -Received the Director-General, Agency for Natural Resources and Energy Award (heat category) -Started publishing Yokkaichi Plant's environmental report
2004	-Received the Director-General, Agency for Natural Resources and Energy Award (electricity category)
2005	-Gained ISO14001:2004 environmental management system certification
2006	-Received Energy Saving Center's Award for outstanding performance at conference of successful cases of energy saving
2007	-Started Kid's ISO14000 program (environmental education for children) -Gained ISO14001:2004 integrated environmental management system certification
2008	-Received the PRTR Outstanding Performance Award (Jury's Special Award)
2009	-Started Kid's Yokkaichi CO ₂ diet program (environmental education for children) -Received the Gold Boiler Management Establishment Award
2010	-Received the Encouraging Prize of Kansai Eco-Office Grand Award -Started the Eco-kid's CO ₂ diet program (environmental education for children)
2011	-Received the Technology Prize in the 49th All Japan Boiler Conference
2012	-Received the Prize of the Chairman of ECCJ of Energy Conservation Group Prize -Received the Prize of the Chairman of the 3R's (Reduce, Reuse, Recycle) promoter Prize -Received the silver prize in an international section of Green Apple Award
2013	-Received the Chubu METI Director's Award (energy management) -Received the Prize of the Manager of Tokai branch office -ECCJ, Received the Prize of the Chairman of the 3R's (Reduce, Reuse, Recycle) promoter Prize -Received 1st place at 2nd Mie Environmental Awards
2014	-Received the Prize of the Chairman of the 3R's (Reduce, Reuse, Recycle) promoter Prize -Received the METI Minister's Awards for Resources Recirculation Technologies and Systems
2015	-Received the Prize of the Manager of Tokai branch office ECCJ (Recognition of distinguished people in promoting energy saving)
2016	-Received the Prize of the Manager of Tokai branch office, ECCJ (Recognition of distinguished people in promoting energy saving), -Received the "Recognition of distinguished people of city greening" award, Received the letter of appreciation at the 65th Mie prefecture social welfare convention
2017	-Gained ISO14001:2015 environmental management system certification -Received the Prize of the Manager of Tokai branch office, ECCJ (Recognition of distinguished people in promoting energy saving)
2018	-Received the "Achievement Award" from NPO "Re lifestyle" (Collecting PET bottle caps), -Starting an environment class at the Yokkaichi Pollution and Environmental Future Museum, -Received the Prize of the Manager of Tokai branch office, ECCJ (Recognition of distinguished people in promoting energy saving)
2019	-Received the Yokkaichi City Environmental Activity Award -Received the Prize of the Manager of Tokai branch office, ECCJ (Recognition of distinguished people in promoting energy saving)
2020	-Received the "Recognition of distinguished people of city greening" award -Received "Climate Change Action Minister of the Environment Award -Received the Prize of the Manager of Tokai branch office, ECCJ (Recognition of distinguished people in promoting energy saving)
2021	-Received a letter of appreciation from the Yokkaichi City Council of Social Welfare (for food drives, etc.) -Received the Prize of the Manager of Tokai branch office, ECCJ (Recognition of distinguished people in promoting energy saving) -Received a letter of appreciation from the Japan Association for UNESCO (UNESCO World Terakoya Movement)
2022	-Received a letter of appreciation from the Yokkaichi City Council of Social Welfare (for food drives, etc.) -Received the Prize of the Manager of Tokai branch office, ECCJ (Recognition of distinguished people in promoting energy saving) -Received a letter of appreciation from the Japan Association for UNESCO (UNESCO World Terakoya Movement)

Editorial Policy

The purpose of this report is to help you further understand the environmental management of KIOXIA Corporation's Yokkaichi Plant (environmental management, reduction of environmental impact in business activities, etc.).

This report has been edited with reference to the Environmental Reporting Guidelines 2018 issued by the Ministry of the Environment.

■ Period covered by the report description

The activity performance data focuses on activities for fiscal year 2022 (April 1, 2022 - March 31, 2023), but includes some earlier or 2023 activities.

■ Target Organizations

Yokkaichi Plant* and Asahi Test Center, KIOXIA Corporation

* Including representative divisions and companies

Environmental information is available on our website.

KIOXIA Group Sustainability

<https://www.kioxia-holdings.com/en-jp/sustainability.html>



Yokkaichi Plant Environmental Initiatives

<https://www.kioxia.com/en-jp/about/yokkaichi/environment.html>



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