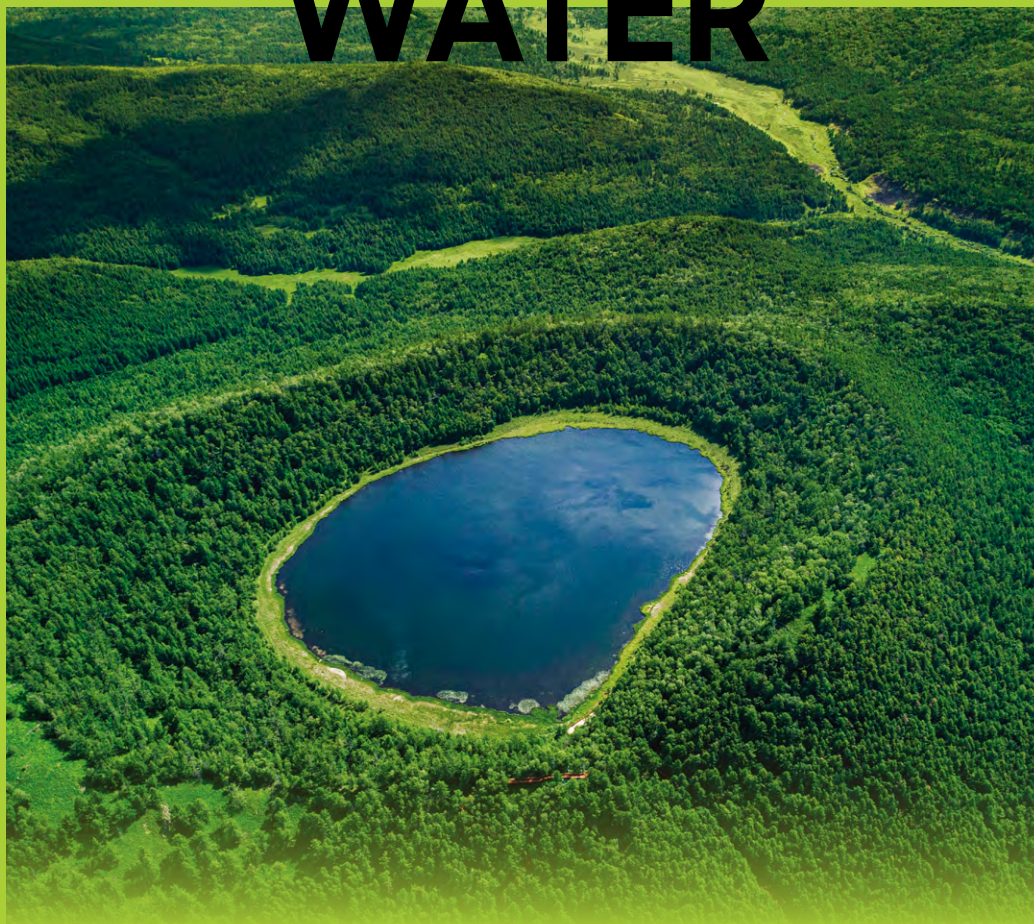



WATER



STEWARDSHIP



Since water is an essential resource to the semiconductor industry, we shape the future of the semiconductor industry with responsible and accountable water resource management 



As the worldwide demand for water continues to grow, we realize Korea is no exception; in fact, it has been classified as a water-stressed nation since 1995. Experts agree that by 2025, there will be even fewer usable resources for semiconductor manufacturing use. Mid-to-long-term measures are critical for the sustainable future of the semiconductor industry as water is one of its core resources. To this end, we are improving the efficiency of water resource utilization, preventing water discharge from polluting water, and advancing our wastewater treatment systems across our entire sites. By leveraging innovative technologies and fostering close cooperation with local and international communities, we aim to enhance water protection with strict management of water as a shared resource.

Our Management Approach

Responsible water resource management contributing ultimate value to the international community



Our water reduction initiatives aim to keep our water withdrawal level in 2030 from growing accordingly with our business, which is to maintain that of 2021, an average of 0.3 million tonnes per day. We also aim to reduce the burden on the ecosystem by cooperating with local communities that share the water sources near our business sites.



Target 6.4: Increase water use efficiency and ensure freshwater supplies



Target 6.6: Protect and restore water-related ecosystems

+ Risk & Opportunity

+ The Impact of Water Management on Samsung Semiconductor

Financial Materiality ●●●○○○

Environmental & Social Materiality ●●●○○○

Risks

- Increased water stress index due to natural disasters such as drought and water outages
- Aggravation of water scarcity due to the expansion of semiconductor manufacturing facilities in regions under water stress such as Texas in the United States
- Increase in industrial water usage due to the advancement of the semiconductor manufacturing process and treatment of chemicals
- Negative impact on the company's reputation from the legal responsibility and penalty due to the violation of laws such as water pollution

Opportunities

- Diversification of the source of industrial water by cooperating with government agencies and local communities such as Yongin, Hwaseong and Pyeongtaek
- Creation of a win-win relationship with partners and securing a competitive advantage through water footprint management and support in the supply chain
- Taking the lead in the circulation of water by recycling and reducing wastewater in wastewater treatment facilities such as having Green Center by sites
- Enhancement of international status by advancing the water resource management system that is responsible and accountable by improving the water quality of water discharge and conserving the ecosystem

⊕ ESG Oversight

⊕ A Governance System that Drives Responsible Water Usage

Based on our water resource management system, we recognize the risks and opportunities that water resources pose at both corporate and national levels. We actively engage with local communities to address water-related issues. Through regular meetings of the Environmental Conservation Committee and the Reuse Expansion Committee, we have discussed detailed implementation projects concerning sufficient supply of water used in semiconductor processes, wastewater management, and impact analysis on watershed ecosystems. We are also operating stakeholder communication channels to implement initiatives to identify and prevent risks related to water resources. The sum of such efforts fulfills our responsibility to manage water resources effectively.

Communication Channel



Local communities

- Public-private, industry-academic consultative body that helps clear streams
- Samsung Electronics Community Engagement Council for Yongin, Hwaseong and Pyeongtaek



Government/Association

- Samsung Electronics-K-water Corporation consultative body for water-related major issues
- Municipal wastewater reclamation consultative body

⊕ Strategy & Action Plan

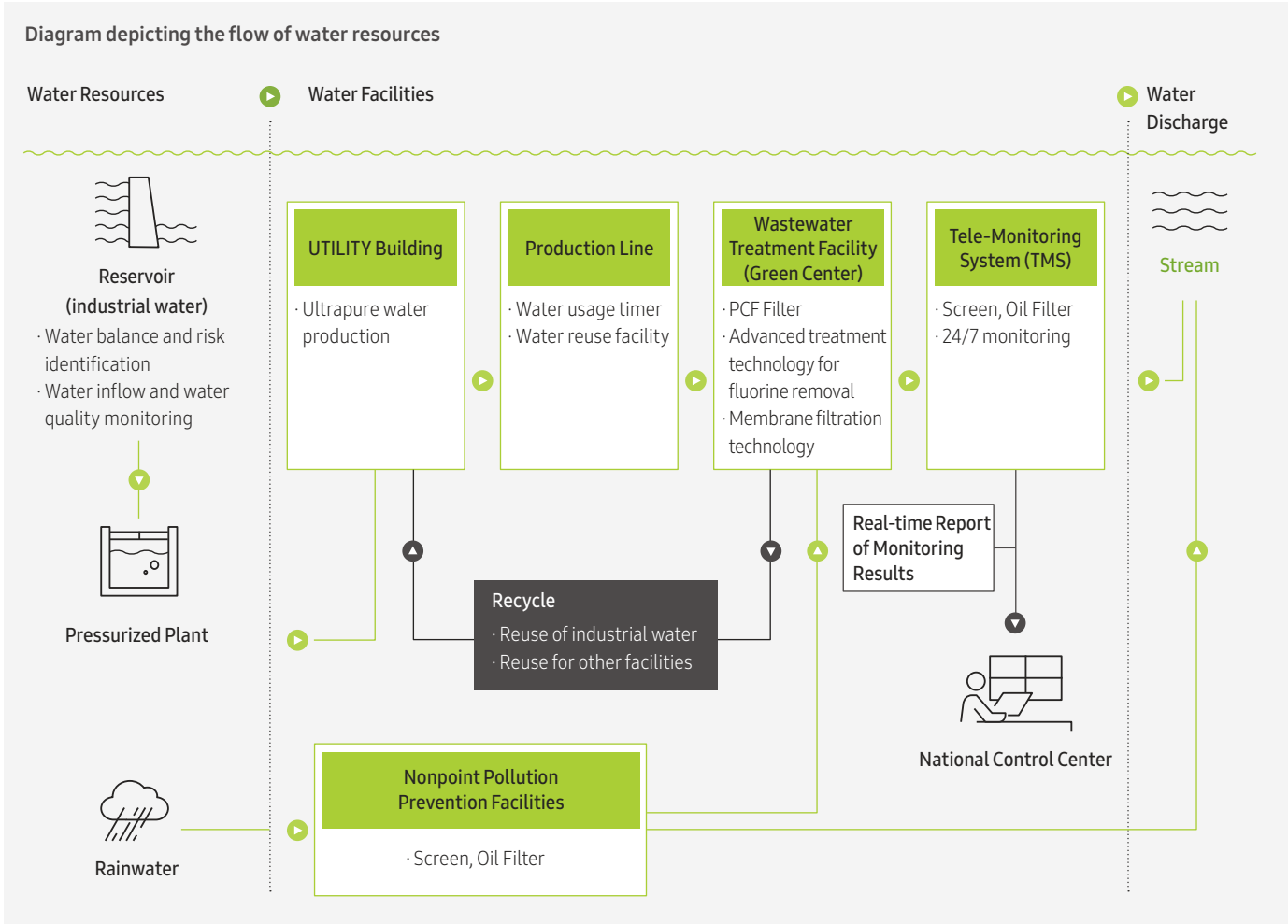
⊕ Our Strategies and Efforts for Sustainable Water Resource Management

We have implemented a wastewater reuse system to minimize water wastage by optimizing the efficient utilization of water necessary for our manufacturing processes. Furthermore, we established a public-private, industry-academic governance and management system for water resources. Through collaboration with local communities, we aim to diversify the external sources of reclaimed water. In the future, we will increase water circulation and secure water reuse technology to prepare for the major paradigm shift in the semiconductor industry regarding water resource management. Based on the Alliance for Water Stewardship (AWS) guidelines, we will transparently share the process of how we will achieve our water withdrawal reduction goal by 2030.

Integrated Management System for Water Resources

As of 2022, Samsung Semiconductor in Korea uses an average of 344,000 tonnes of water per day to manufacture semiconductors. Water is a critical resource in the semiconductor industry and holds a significant position within our value chain. Therefore, it is imperative for us to adopt a responsible water resource management that minimizes our environmental impact and ensures sustainable water usage. To this end, we established a governance for water resource management and are strengthening a sustainable water resource management system by collecting and analyzing fundamental information on water sources. We ensure that the water used in our manufacturing processes undergoes proper treatment before being discharged, guaranteeing its cleanliness and safety. We also consider well-being of local communities that share same water sources.

We strive to make efficient use of water at our Giheung, Hwaseong, and Pyeongtaek sites according to types and characteristics of wastewater. This includes optimizing the treatment of water, based on its specific use in our semiconductor processes, and applying stringent internal regulations throughout the entire cycle from withdrawal to discharge.



Aligned with AWS Standard:



GOOD WATER
GOVERNANCE

Establishing Water Resource Management System

We have set our water management goals based on global water resource initiatives and public policies including the Ministry of Environment's 1st National Water Management Master Plan (2021-2030), and established a governance system to achieve the goals. In 2022, we introduced a consultative body with K-water to discuss major issues. We also formed a local consultative body with the central government, environmental organizations, and industries to manage water resources for each of our business sites located in various regions. We are continuously expanding the close partnerships with those involved with water resources. Furthermore, we have an internal water management governance system to secure an uninterrupted water resource supply and a compliance system to adhere to the laws and regulations related to water resources.

A dedicated organization that strategically manages water resources

Samsung Semiconductor operates a company-wide water resource management system and a dedicated organization to fulfill our responsibility for water resource management. Our organizational system conforms to AWS standards and guidelines. We identify risks and opportunities on a corporate, national, and local level to establish the strategies necessary to achieve our goals. Moreover, by operating the Environmental Conservation Committee and Reuse Expansion Committee, we are implementing detailed tasks for the mid-to-long-term reduction of pollutants, expansion of treated wastewater reuse, and reduction of water withdrawal.

-
- Environmental Conservation Committee: Committee establishes mid-to-long-term strategies for the reduction of pollutants and non-recyclable waste, and discusses solutions to reduce pollutants in wastewater discharge.
 - Reuse Expansion Committee: Committee establishes strategies to expand water reuse, and discusses how to develop water reuse technologies and implement treated wastewater reuse.
-

Cooperating with local communities to preserve water resources

Joint water resource management: We regularly share monitoring results of neighboring streams and river basins with local communities that could be potentially affected by our business activities. Stakeholders involved in water management, including the Ministry of Environment, affiliated organizations, and local communities, exhibit significant interest in the impact of water discharges on streams. To address this, we actively share information during regular public hearings and briefing sessions. Furthermore, we are carrying out research projects with related institutions in order to tackle the problems of the ecosystem and the effect on related streams and river basins.

Win-win communication for water resources: As a corporate citizen, we aim to foster a win-win growth with local communities. We are committed to ensuring a clean and safe work environment. To this end, we operate 'Samsung Electronics Community Engagement Council for Yongin, Hwaseong, and Pyeongtaek'. We established an organizational structure, along with consultative committees, aimed at actively communicating with local residents. This framework is designed to share information on key concerns and outcomes. In particular, the Pyeongtaek site participates in a public-private, industry-academic consultative body to make clear streams. Organized by Pyeongtaek City, the consultative body was inaugurated in 2022 to conserve the streams near Pyeongtaek City, continue to engage in consultations for projects, including water quality checks and identifying tasks for aquatic ecosystem conservation. We also operate a dedicated ESG division and a communications hotline, media advertising, and information disclosure platform channels to openly communicate with stakeholders.

Risk Management of Water Resources

As water is a core resource in the semiconductor industry, it plays a vital role in determining competitiveness in the industry. Hence, it is crucial for us to respond to risks related to water. We established a process to identify water sources within the regions of our sites and identify risks regarding any relevant water sources. Through this process, we monitor data including annual fluctuation in water withdrawal and specificities of each water source. By doing so, we ensure a constant and reliable supply of water.

Managing all regulatory risks related to water resources

We are proactively responding to regional regulations and tariff changes as we are subject to the *Water Environmental Conservation Act*, the *Promotion of and Support for Water Reuse Act*, the *Water Supply and Waterworks Installation Act*, and the *Sewage Act*.

In accordance with the environmental safety policies, we continuously revise our guidelines for managing environmental safety accidents and apply standards more stringent than the legal regulations for water discharge. When the regulatory authorities establish policies, we share our perspectives with the committees, and therefore play a small but integral part in the improvement of water-related policies and institutions.

The business sites in Giheung, Hwaseong, Pyeongtaek and Onyang are all designated as a 'green company' and operated in accordance with Article 16 (2) of the *Environmental Technology and Environmental Industry Support Act*. A company is designated as a green company if it conforms to the *Enforcement Decree of the Environmental Technology and Environmental Industry Support Act*. It must also take an environmental assessment, provide its current status on pollutant management, have an environmental improvement plan, and provide proof that it has not violated any environment-related laws to be qualified and designated as a green company. Samsung Semiconductor has been implementing green management activities with management standards more stringent than the legal environmental regulations. Thanks to these achievements, we were designated as a green company. In the future, we will continue to play a leading role in water resource management by actively complying with water-related legal regulations.

Aligned with AWS Standard:



SUSTAINABLE WATER BALANCE



GOOD WATER QUALITY STATUS

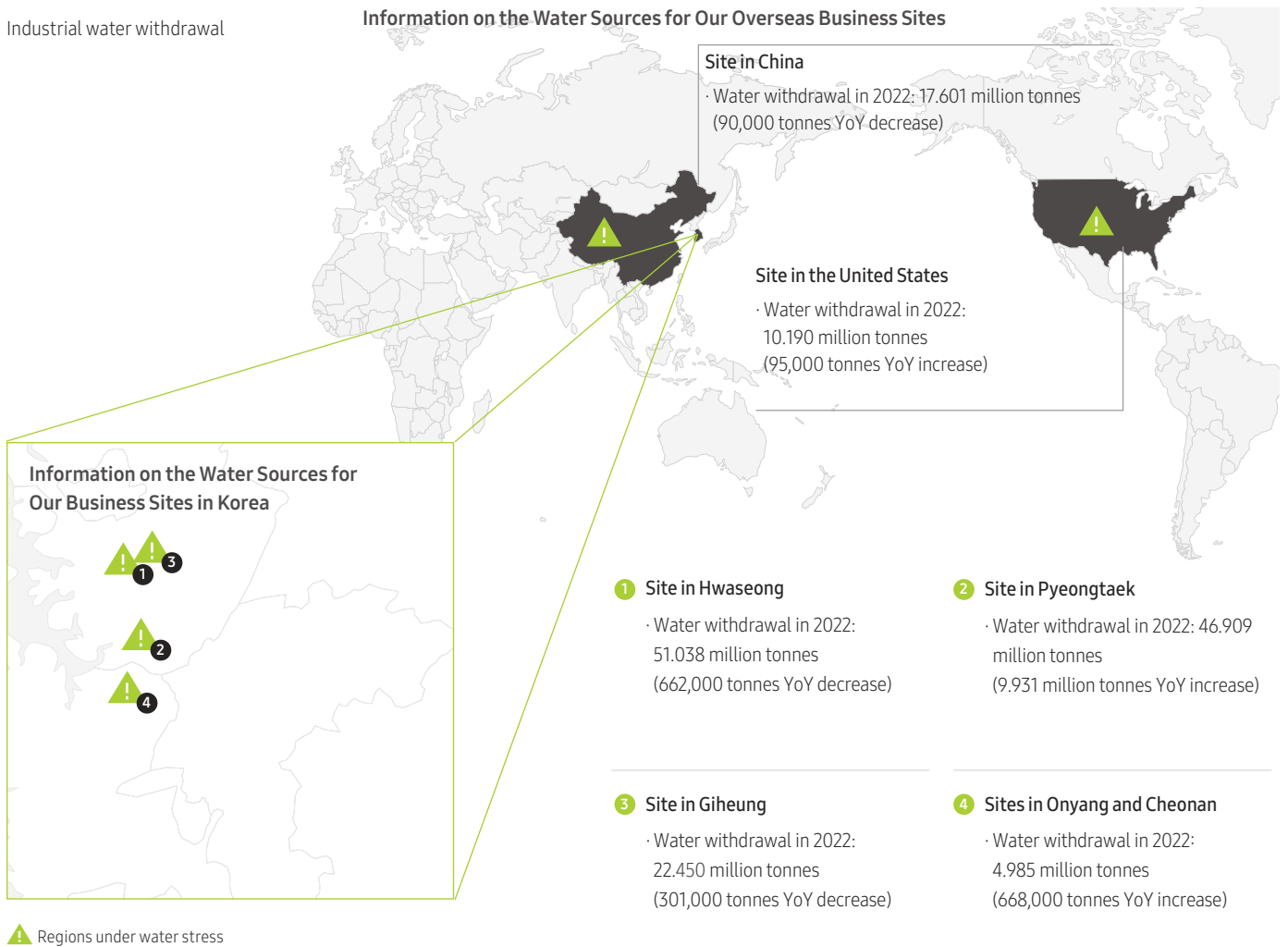
153.99 million tonnes

Industrial water withdrawal

Identifying the basic data regarding water sources

We identify the data related to water resources by business site. The first water source connected to the sites in Giheung, Hwaseong and Pyeongtaek is the Paldang Reservoir. The water from the Paldang Reservoir is designated as a Water Source Protection Area and is managed by K-water. Our sites also have an impact on the river basins of the Han River, Anseong Stream, and the lower Hwangguji Stream. The amount of annual water withdrawal by site is 51.038 million tonnes for Hwaseong, 22.450 million tonnes for Giheung, 46.909 million tonnes for Pyeongtaek, 3.098 million tonnes for Cheonan, and 1.887 million tonnes for Onyang. Effluent from business activities is being discharged directly to Woncheon-ri Stream, Osan Stream, Seojeong-ri Stream, and Gokkyo Stream. Accordingly, we have designated these streams as critical water management areas.

Information on the Water Sources for Our Overseas Business Sites



Analyzing and managing risks related to water resources

In order to identify risks related to water resources, we apply international water resource management standards such as those of the Food and Agriculture Organization of the United Nations' Aquastat¹⁾, the World Business Council for Sustainable Development's Water Stress²⁾, and the WRI Aqueduct Water Risk Atlas³⁾, and establish response strategies by region accordingly.

Response Strategy for Risks Related to Water Resources

Drought, water outages

- Water source diversification: an emergency water supply system available from local water suppliers, mandatory consideration of local water suppliers in water risk assessment, and gradual increase in usage of our industrial water pipeline since the completion in 2001
- Estimation of damages in case of a drought

Increase in Korea's water stress index

- Review of the water stress index of the areas in which our business sites are located, rule out any water-related risks, categorize the risks, and establish response measures every year

Depletion of water resources and water pollution

- Participation in activities celebrating World Water Day: raise awareness on the importance of water
- Communication with local communities: prevent the occurrence of water-related risks in local communities, carry out activities for stream and marine ecosystem preservation with the local government, civic groups, and schools within the vicinities of our global business sites

Water-related regulations

- Constant monitoring and compliance with local environmental policies and laws, manage discharge with standards more stringent than the legal regulations

1) FAO Standards: Analyzes renewable water resources per capita by country using the Aquastat analysis tool, selects countries with less than 1,700 tonnes/year

2) WBCSD's Water Stress Standards: Selected if renewable water resources per capita is less than 1,700 tonnes/year

3) Aqueduct Water Risk Atlas Standards: Countries scoring grades of medium to high (2-3) and up when selected indices - such as quantitative and qualitative data on water resources, institutions and reputation risk are aggregated

Thoroughly trained in emergency response measures

We prepared seven-stage emergency response system for the event of wastewater spills. We assigned a person in charge of each stage to participate in any emergency training being held. Through repeated education and training on water management-related emergencies, we already have possessed the capacity to respond to situations in real time.



Preventing pollutants from contaminating water through our 24/7 monitoring

Samsung Semiconductor's business sites in Korea have not had a case in which we exceeded the standards for wastewater discharge observed by the TMS¹⁾ for a full three years. We have been using TMS to monitor wastewater discharge since 1996, which is long before it was enacted. We installed oil-water separators on all stormwater drains connected to our business sites to prevent particulate discharge. Additionally, we monitor the water quality using a pH meter, Cl meter, and oil detectors. When the water quality exceeds the limit, the drainages close automatically. We also have a 24/7 monitoring system in place to prevent pollutants from contaminating the storm water that is automatically transferred to wastewater treatment facilities.

1) Tele-Monitoring System

Closely managing the water resources of our suppliers

We verify how much water our suppliers use, search through the WRI's Aqueduct Water Risk Atlas and check whether our suppliers are in a water-scarce or water-stressed country. We use such data in our risk analysis. We also encourage our suppliers to set water resource management targets, including water usage reduction, and monitor their progress accordingly.

We shared our performance on water usage reduction and top technologies with our suppliers on the Environmental & Workplace Safety Innovation Day, which was initiated in 2021. The event comprises four subcommittees including the Environment Subcommittee, and had five participant suppliers in 2022. The Environment Subcommittee announced plans to reuse water resources inside and outside the company that includes the recycling of treated water and reuse of water discharge from public wastewater treatment facilities. The Subcommittee also implemented horizontal deployment of the technologies.

Aligned with AWS Standard:



Reduction of Water Footprint

Following the expansion of semiconductor production lines, we expect that the industrial water needed for our manufacturing sites will double in 2030 against the 2021 figures. Therefore, we set our water usage reduction target to the levels of 2021, and as part of a series of efforts to reduce our water footprint, we introduced an innovative technology to minimize our burden on water resources. The Platinum grade rating in the AWS certification of our Hwaseong site in 2022 has internationally demonstrated the excellence of our water resource management.

Strategies to Achieve the 2030 Water Usage Reduction Target



1) A layer that separates mixtures by selectively allowing only specific components to pass through

Best Practice : Received the Highest Grade of 'Platinum' by AWS for the First Time in Korea

Even a single particle of dust can ruin the quality of a semiconductor, which explains why the process of washing with water to improve the yield is so important. The washing process involves washing off the residual ions after injecting the silicon wafer sludge and semiconductor, which requires a massive amount of water. As of 2022, the average daily water use at our manufacturing site in Korea is about 344,000 tonnes. Accordingly, we are exerting our best efforts for a responsible and accountable water resource management for the entire process, starting from a stable supply of water to safe wastewater treatment.



As the result of such efforts, the Hwaseong site was rated the highest grade of 'Platinum' by the AWS for the first time in Korea, after meeting the highest Carbon Trust standard for reducing water usage. The AWS Certification requires management, monitoring and communication with all stakeholders that are influenced in all areas of water withdrawal. The Certification served as an opportunity to aptly display our excellence in managing water-related risks to major stakeholders such as customers and investors.

In the future, we will not only continue to maintain the certification our Hwaseong site received, but also plan to expand AWS certification across the domestic and international semiconductor manufacturing sites. Within our supply chain, we will encourage our suppliers to establish water usage reduction targets and monitor their performance to ensure that water resources are stably managed. We will also step up our activities for water resource management based on communication and collaboration with various stakeholders.

※ What is Alliance for Water Stewardship (AWS)?

The AWS is an international agency that evaluates whether an entity has and operates a comprehensive water resource management system. It promotes the responsible management of water resources through cooperation with companies, NGOs, government agencies and other stakeholders. It evaluates a company's water resource management levels based on the indices of five criteria: good water governance, sustainable water balance, good water quality status, important water-related areas, and safe water, sanitation and hygiene for all (WASH).

Water efficiency improved through ceaseless trials and efforts

We reduced our water usage by approximately 30,000 tonnes a day and reused 235,000 tonnes of water in 2022, based on the business sites in Korea. We constantly improve water efficiency so that absolutely no water is wasted during the semiconductor manufacturing process. We maximized water recycling with our ongoing water usage reduction projects, both in our daily routines and through structural improvements.

- Reduction of water usage in daily routines: optimization of site operation, replacement of aged facilities, improvement of operational standards, etc.
- Structural improvements: improvement of manufacturing process, establishment of a recycling system, etc.

In addition, our sites in Giheung, Hwaseong and Pyeongtaek were able to reduce the use of 31,585 tonnes of water a day on average for the water usage reduction project, as of 2022. In addition, they collect data on water usage by site each month to meet the water usage target and manage the data in the form of KPI. The sites are raising their rates of water reuse by investing in equipment and water resource reuse technologies. In the future, we will efficiently use water, which is essential in semiconductor production, and continue our activities to reduce our water footprint.



▲ Samsung Electronics Pyeongtaek site

Aligned with AWS Standard:



GOOD WATER
QUALITY
STATUS



IMPORTANT
WATER-RELATED
AREAS



SAFE WATER,
SANITATION AND
HYGIENE FOR ALL
(WASH)

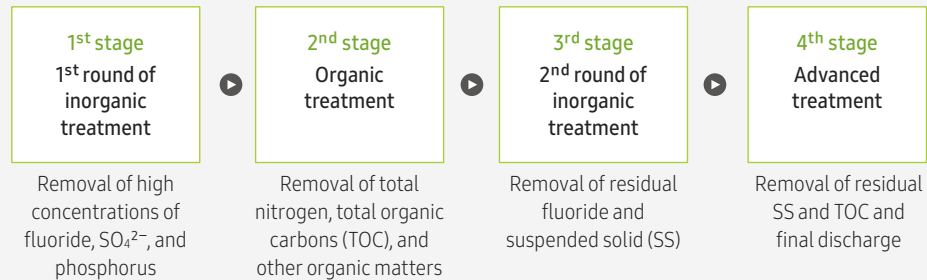
Securing Safe Water Sources

In accordance with strict internal standards, wastewater produced during the semiconductor manufacturing process is divided into six categories. We treat the water in these categories with the optimal methods and technologies fitting to its physicochemical characteristics. To ensure that the water in these categories is discharged safely, we comply with the Ministry of Environment's official test methods and regularly analyze the concentration of pollutants. Furthermore, we carry out monitoring and conservation activities on the streams where wastewater is discharged to ensure the health of the aquatic ecosystem. We also contribute to foster safe water resources by supplying our employees with clean water and implementing water restoration projects to satisfy the demands of local communities.

Thoroughly treating and managing wastewater

In order to prevent water resource contamination, we have established and operated a wastewater treatment process comprised of four stages. The Green Center, an advanced wastewater treatment facility, purifies the water into grade 1 quality before discharging it into various regional streams. The Central Control Room (CCR) performs real-time monitoring of all treatment processes starting from wastewater purification to discharge, with 97% of the tasks automated. In addition, a shift patrol is performed every shift to execute rigorous inspections of the wastewater treatment facilities and environment.

Wastewater Treatment Process



In addition, in preparation for possible wastewater facility accidents, we installed triple-tier interlocks between the infiltration, processing and discharge stages. Our defense is multifaceted to ensure that the release of pollutants is reduced as much as possible and so to proactively prepare for any potential environmental accident at our wastewater treatment facilities. Each interlock measures the concentration of water pollutions in real time and if the pollutants exceed the limit, the interlocks are immediately retrieved.

Conservation of biodiversity and ecosystem

We annually monitor the water quality and ecosystem health of streams around our sites following the guidelines of the National Institute of Environmental Research¹⁾. This is to identify the effect of waters discharged from our business sites on streams. With the help of a specialized external institution, we analyze matters including the status of aquatic ecosystems for fishes, benthos, eco-toxicity, etc., and the terrestrial ecosystems for mammals, birds, etc., and habitat condition. The results of our investigations are shared through internal reporting sessions and used to accurately assess the impact of our business sites on the ecosystem. We gradually expanded the scope of our investigations. In 2022, we additionally analyzed the Gokgyo Stream sections in Onyang and Cheonan, the Woncheon-ri Stream, and intensively conducted close examination of the Eurasian Otters (*Lutra lutra*) around the Woncheon-ri Stream and the Osan Stream in Hwaseong and Giheung. We are also continuously carrying out participatory activities to improve biodiversity and ecosystem health, such as the release of endemic fishes, the elimination of ecosystem-disturbing species, and stream purification activities.

1) National Institute of Environmental Research Notification 2019-52 (enacted on December 1, 2019)

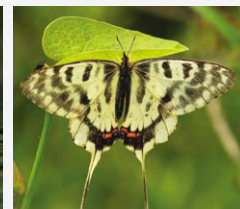
Monitoring Activities of the Aquatic Ecosystem Near Our Business Sites

Woncheon-ri Stream near Hwaseong	14 species of Fishes, 24 species of Freshwater Benthos, 29 species of Birds, and 8 species of Mammals (Eurasian Otter (<i>Lutra lutra</i>) ¹⁾³⁾ and Leopard Cat (<i>Prionailurus bengalensis</i>) ²⁾)
Osan Stream near Giheung	16 species of Fishes, 54 species of Freshwater Benthos, 65 species of Birds (including 8 species of legally protected species such as Long-billed Ringed Plover (<i>Charadrius placidus</i>) ²⁾ , Eurasian Spoonbill (<i>Platalea leucorodia</i>) ²⁾ , and Common Kestrel (<i>Falco tinnunculus</i>) ³⁾), and 5 species of Mammals (Eurasian Otter (<i>L. lutra</i>) ¹⁾³⁾ and Leopard Cat (<i>P. bengalensis</i>) ²⁾ , etc.)
Seojeong-ri Stream near Pyeongtaek	16 species of Fishes and 30 species of Freshwater Benthos
Gokgyo Stream near Onyang and Cheonan	19 species of Fishes, 49 species of Freshwater Benthos, 38 species of Birds (Long-billed Ringed Plover (<i>C. placidus</i>) ²⁾), and 8 species of Mammals (Eurasian Otter (<i>L. lutra</i>) ¹⁾³⁾ and Leopard Cat (<i>P. bengalensis</i>) ²⁾)

1) Class I endangered wildlife 2) Class II endangered wildlife 3) Natural monuments

Best Practice : Activities to Protect the Ecosystem

Samsung Semiconductor made an agreement to discharge an average of 45,000 tonnes of water a day into Osan Stream near the business site. The ecosystem of the Osan Stream Basin has seen significant improvement thanks to the large-scale discharge of cleanly treated water from our Giheung facility, the ecological stream restoration project carried out by Osan City from 2010 to 2017, and the efforts of Osan citizens. Since 2019, we have consistently encountered several Eurasian Otter (*L. lutra*), a keystone species of the stream ecosystem. This is a testament to the fact that Osan Stream's ecosystem has been improved. In addition, we were able to discover an increase in the population of Freshwater Minnow (*Zacco platypus*) and Goby Minnow (*Pseudogobio esocinus*). These species live in streams where the water flows smooth and thick and where there are clean pebbles and sandy plains. We also conducted ecosystem restoration activities such as planting irises to purify water, supplying eco-friendly microorganism fermented liquid, and releasing endemic fishes. Furthermore, we sponsored the creation of the Osan Stream Butterfly Path aimed at protecting the endangered Dragon Swallowtail (*Sericinus montela*).



▲ Eurasian Otter (*L. lutra*), a keystone species of the stream ecosystem

▲ Dragon Swallowtail (*S. montela*), an endangered species

Best Practice :

Activities to Protect Streams Near Our Business Sites in Hwaseong, Onyang and Cheonan

Creation of Donghak Mountain conservation forest

Our business site in Hwaseong created a green space of approximately 290,000m² including the Donghak Mountain conservation forest (natural forest 46,000m²) within the site. In accordance with the Environmental Impact Assessment Act and through an agreement with agencies that approve business projects, we conserved a certain percentage of the green space, and created an ecological pond, a landscape pond and a recreation forest.

Conservation of Sohwang Sand Dune

Since 2006, our sites in Onyang and Cheonan have been engaging in public-private joint activities to conserve the ecosystem and the landscape of the Sohwang Sand Dune¹⁾ in Boryeong, Chungcheongnam-do. They have installed a sand trap, removed plants that disrupted the ecosystem, and collected marine litter every 6 months. The original shape of Sohwang Sand Dune has been restored and was even designated as an ecological and landscape conservation area, as well as marine landscape protected area (Ministry of Environment, Ministry of Maritime Affairs and Fisheries). It is inhabited by the endangered Mongolia Racrunner (*Eremias argus*) and Chinese Egret (*Egretta eulophotes*).

1) Sohwang Sand Dune (sand dune along the Sohwang-ri coast): It is the only coastal sand dune (length of coastline is 2km, size is approximately 120,000m²) in Korea that is not damaged and it is inhabited by 391 flora and fauna, including endangered species.



▲ Sohwang Sand Dune Conservation Activity

Thoroughly managing effluent water quality indices

At our business sites in Korea, we refer to the analysis results of 'Upstream Storage' by WRI's Aqueduct Risk Atlas to calculate the amount of water resources that exist in nearby streams. Additionally, we regularly measure water quality indicators such as Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD), Suspended Solids (SS), Total Nitrogen, and Total Phosphorus in the streams we discharge effluent into. This allows us to effectively manage the ecological impact. We also monitor the watershed management plans of government agencies and actively cooperate with such plans.

Safely managing WASH of our employees, suppliers and local communities

We are safely managing water resources in accordance with the internal guidelines regarding facilities and water supply related to WASH¹⁾. We conduct assessments developed by Responsible Business Alliance (RBA) and WBCSD, and we disclose these results to our employees and government agencies. Our suppliers also apply the same standards and manage their water resources safely through the RBA assessment and WASH service inspections.

Drinking water facilities within the company- such as water purifiers and collectors - are inspected on a quarterly basis (monthly within the summer season between June to September). In 2022, the results of the drinking water quality assessments indicated all to be in safe ranges for the six criteria: general bacteria, total coliforms, fecal coliforms, free residual chlorine, hydrogen ion concentration, and turbidity.

All manufacturing facilities also provide sufficient information on the facilities for the treatment of wastewater, hygiene and education related to water resources. They also installed water-saving facilities in the toilets and taps. Business sites with relatively more risks refer to the results of the 'Access to Water' item of the WRI's Aqueduct Risk Atlas to analyze the cause. In addition, we confirmed that the water vapors generated at the business sites were harmless to the human body and we installed water vapor reduction facilities to remove water vapors, which assuaged the concerns of residents.

1) Water, Sanitation, Hygiene

Best Practice : Participation in the development of WASH Project

Since 2019, Samsung Advanced Institute of Technology (SAIT) has been collaborating with the Bill & Melinda Gates Foundation to develop Reinvent the Toilet (RT). In 2022, we held a completion ceremony for the RT project. The Gates Foundation began the RT Project in 2011 for developing countries, and it supports supplying completed toilets and the development of a new concept of sanitary toilet technology that does not require a separate water or wastewater treatment facility. Due to the lack of sanitary toilet facilities, more than 0.9 billion people are forced to defecate outdoors, which leads to the deaths of over 360,000 children below the age of five from diarrheal diseases caused by contaminated water. The Gates Foundation had made attempts to realize the RT with prestigious research labs and universities around the world, but faced challenges due to technical limitations and difficulty securing the appropriate unit price for mass production. In 2018, they asked us to participate in the RT development.

The SAIT started building infrastructure for domestic RT implementation, developing parts and module technology, improving performance, and creating prototypes for mass production. After three full years of intensive efforts, it finally succeeded in securing operational energy efficiency and the ability to purify wastewater. The SAIT developed core technologies for the reduction of exhaust emissions, improvement of durability, and creation of a smaller RT. It successfully completed user testing and utilized heat treatment technologies and biotechnologies to develop technologies for water discharge deemed unharmed to the environment. It also achieved 100% in treated water recycling.

We will provide the licenses of patents pertaining to the technologies Samsung Electronics developed for the RT Project, to developing countries during the commercialization stage without royalty fees. Even after the termination of the RT Project, we will continue providing the Gates Foundation with consulting support for mass production and take the lead in corporate social responsibility as a global company. We will continue moving forward to create a more ideal world for all.