



Samsung Electronics Sustainability Report 2022

A JOURNEY TOWARDS A SUSTAINABLE FUTURE



A JOURNEY TOWARDS A SUSTAINABLE FUTURE

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Interactive User Guide

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Message from Our CEO



CEO and Vice Chairman
Samsung Electronics

Han Jong-hee

Dear shareholders, customers, partners and employees,

I would like to express my deepest gratitude for your unsparing support for Samsung Electronics in overcoming many unexpected obstacles over the past year.

In 2021, we came face-to-face with several challenges, from the prolonged COVID-19 pandemic to the accelerating climate crisis, which threatens the sustainable future of humanity, and from the economic impact of global supply chain disruptions to the intensifying conflicts among nations and communities. These challenges serve as a stark reminder of our call to action for securing a 'sustainable future.'

In this context, we drastically strengthened our sustainability governance to highlight that 'sustainability' remains our top priority in our business operations and to embed this priority in every aspect of the organization.

In addition to establishing the Sustainability Management Office within each business unit and elevating the existing company-wide function as the Corporate Sustainability Center, we expanded the Governance Committee under the Board of Directors as the Sustainability Committee in 2021 to reinforce the Board's oversight of sustainability activities. We also placed the Sustainability Council, an executive-level consultative body, under the direct leadership of the CEO in 2022.

These changes have perfected a virtuous cycle where the pursuit of sustainability leads to advanced products and enhanced business competitiveness.

Our sustainability governance serves as a momentum in identifying new drivers for sustainable growth, strengthening our future competitiveness, and fulfilling our corporate responsibility.

Our ultimate goal is to help consumers join us in our journey to build a better tomorrow through our innovations. We focus on stepping up our efforts to create technologies that further widen the gap with our competitors while linking consumer's decision to choose our products to reflect their sustainable lifestyles.

Our eco-conscious advances, including low-power semiconductors, the SmartThings Energy service designed to reduce energy consumption using AI-based energy-saving features on smart appliances, the SolarCell Remote Control charged by sunlight or indoor lighting, and smartphone models made with materials recycled from discarded fishing nets, are the proud results of our continued pursuit of sustainability.

The COVID-19 pandemic and intensifying international conflicts once again remind us that cooperation with diverse stakeholders is imperative in ensuring success as a global company. We will continue to mutually grow and advance with communities we serve by capitalizing on our rich legacy, expertise, and wealth of resources.

We will expand our corporate citizenship activities centered on nurturing the technological prowess of the younger generations, while reinforcing and launching forward-looking initiatives to narrow the technological gap amid the transition to a digital society, including support for SMEs through the smart factory system. We will provide tailored training and consulting for our partner companies and related smart factory support to assist them with the green transition.

To achieve meaningful progress and have material impact, we believe it is critical to communicate and work together with all stakeholders. In this context, we joined the [United Nations Global Compact](#), an initiative to encourage businesses to adopt sustainable policies, earlier this year. We will continue to seek opportunities to reach out to and cooperate with our diverse stakeholders to catalyze more meaningful changes to the environment and communities by engaging in partnerships with other industrial sectors, civil society groups, and international organizations.

The world is currently facing many tough challenges – political, economic and social. There are even skepticisms about whether a sustainable future for our planet is possible. However, we firmly believe that our competitiveness and sustainable growth goes hand in hand with harnessing our technological solutions to preserve the environment and contribute to building a better world.

We look forward to your continued interest and support in our journey to achieving a sustainable future.

Thank you.

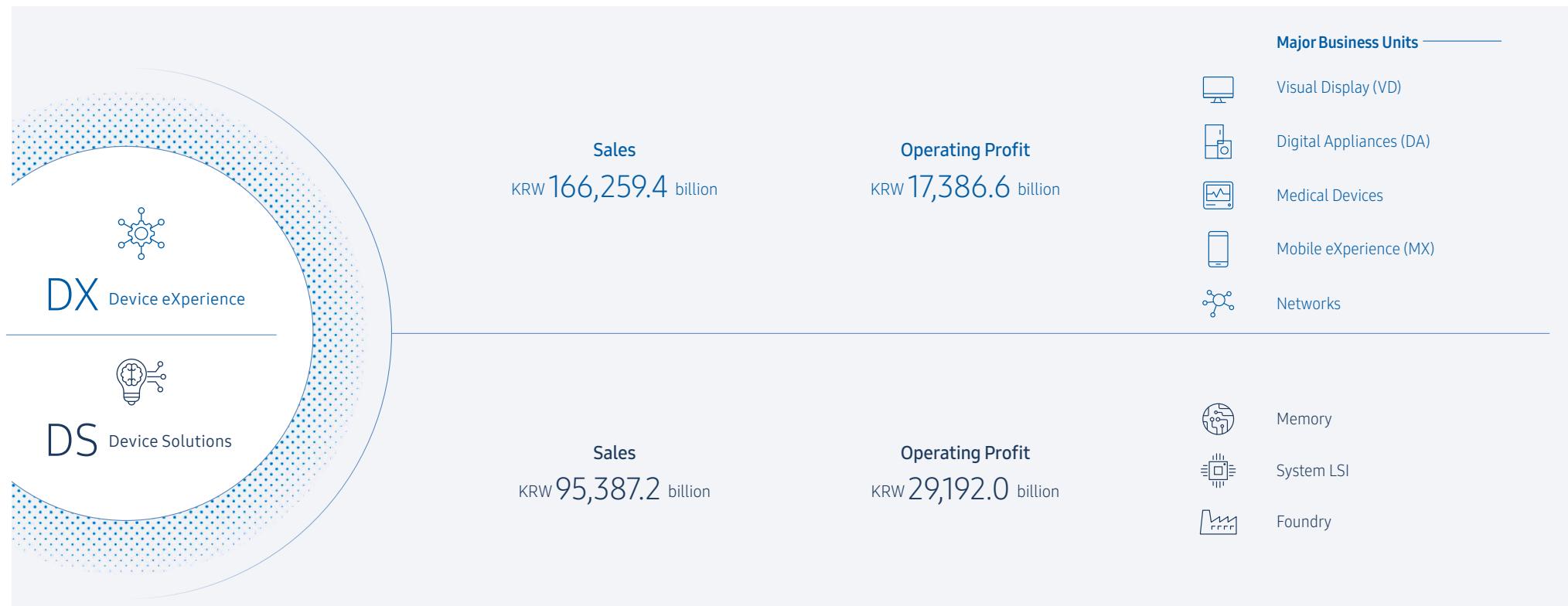
Company Overview

We aim to make a positive contribution to people's everyday lives by offering products and services of great quality built with our innovative technology by our talented workforce.

The [Global Code of Conduct](#) articulates our commitment to helping the world move forward based on our five Key Values. We will uphold the Key Values and achieve the goals of the [Global Code of Conduct](#) by challenging the status quo.

About Our Organization

Samsung Electronics is divided into two main divisions—DX (Device eXperience) and DS (Device Solutions)—and we ensure that each division is operated independently. DX took a new leap forward with the integration of the CE Division (responsible for TVs, monitors, air conditioners, refrigerators, etc) and the IM Division (responsible for mobile devices, network systems, computers, etc) in 2021. This integration is aimed at reflecting more differentiated products and services to optimize consumer experiences. The DS division consists of Memory, System LSI, Foundry businesses, etc.



* Sales and Operating Profit above are based on 2021 figures, excluding SDC and Harman.

Global Network

As of the end of 2021, our global business network consists of more than 230 production sites, sales offices, R&D centers, and design centers. We have 15 regional offices around the world, including our global headquarters in Korea, as well as in North America, Southeast Asia, Europe, Africa, and other regions.

Regions ¹⁾	Regional Offices	Sales Offices	Production Sites	R&D Centers	Design Centers	Others ²⁾
Total	15	54	32	39	7	83

1) Regional classification is based on Samsung Electronics' internal management criteria

2) Sales Branches, Service Centers, Distribution Bases, etc.



Corporate Governance

Our Board of Directors welcomed new members appointed at the general shareholders meeting in March 2022. The heads of all major business divisions, including DX and DS, are now executive directors on the Board, with the goal of achieving responsible management. Additionally, outside experts in a range of fields are serving as independent directors to help maintain accountability. A former global investment expert was appointed as an independent director to help us better identify the needs and views of global investors, and to enhance diversity and inclusion, we appointed additional non-Korean director. In July 2021, the Governance Committee was replaced by the Sustainability Committee to better promote sustainability management while enhancing shareholder value.

Board Composition

The Board consists of no less than three and no more than 14 members pursuant to Article 24 of the Articles of Incorporation. Although Article 383 of the Commercial Act simply mandates that a board of directors shall have no less than three members, we internally set the maximum number at 14 considering our corporate scale and the operational and decision-making efficiency of the Board. At the general

shareholders meeting held in March 2022, three independent directors and four executive directors were newly appointed, thus bringing the total number of directors to 11 (six independent directors and five executive directors). With Independent Directors Han Wha-jin and Park Byung-gook resigning from the Board on April 20, 2022 and May 17, 2022, respectively, the two posts will be filled at the next general shareholders meeting pursuant to Article 542-8 (3) of the Commercial Act. As of the end of May 2022, the Board consists of nine members, including four independent directors.

Independence and Transparency of the Board

To ensure independence and transparency in the operation of the Board, we prohibited holding the concurrent positions of the Chairman of the Board and the CEO in 2018. We also appointed one of the independent directors as the Chairman, a first in the Company's history, and we did so again in March 2020. The Chairman remains open to the opinions and suggestions of the executive and independent directors and serves as a mediator to ensure that the Board oversees our corporate management in a more objective manner. The independent directors hold separate meetings to seek ways to deliver leadership results across all aspects of our business operations, including the creation of shareholder value.

Board Composition

Position	Name	Area of Specialty	Career Highlights
Chairman and Independent director	Kim Han-jo*	Finance and CSR	Chairman, Hana Nanum Foundation/ Former Vice Chairman, Hana Financial Group
Executive directors	Han Jong-hee	DX	CEO and Vice Chairman, Samsung Electronics/ Head, DX Division and Visual Display Business, Samsung Electronics
	Kyung Kye-hyun*	DS	CEO and President, Samsung Electronics/ Head, DS Division, Samsung Electronics
	Roh Tae-moon*	MX	President and Head, MX Business, Samsung Electronics/ Former Head, Development Office, Mobile Division, Samsung Electronics
	Park Hark-kyu*	Corporate Management	President and Head, Corporate Management Office, DX Division, Samsung Electronics/ Former Head, Corporate Management Office, DS Division, Samsung Electronics
	Lee Jung-bae*	Memory Business	President and Head, Memory Business, Samsung Electronics/ Former Head, DRAM Development Office, Memory Business, Samsung Electronics
Independent directors	Kim Sun-uk	Law and Human Rights	Professor Emeritus, School of Law, Ewha Womens University/ Former Minister, Ministry of Government Legislation/ Former member, Policy Advisory Committee, National Human Rights Commission of Korea
	Kim Jeong-hun	IT and Business Operation	Executive Chairman, Kiswe Mobile/ Former President, Alcatel-Lucent Bell Labs
	Kim Jun-sung*	Finance and Investment	CIO, Endowment Fund, National University of Singapore/ Former Managing Director, Government of Singapore Investment Corporation (GIC)

* Directors newly appointed or reappointed at the general shareholders meeting in March 2022

** Independent Directors Han Wha-jin and Park Byung-gook resigned from the Board on April 20, 2022 and May 17, 2022, respectively. Their posts will be filled by the resolution of the next general shareholders meeting.

Director Appointment and Term of Office

Directors are appointed by the resolution of shareholders at the general shareholders meeting in accordance with Article 382 of the Commercial Act. Executive directors are selected among the candidates recommended by the Board, while independent directors are selected among the candidates recommended by the Independent Director Recommendation Committee pursuant to Article 542-8 of the Commercial Act. The same Article stipulates that the majority of an independent director recommendation committee must be composed of independent directors. Our Independent Director Recommendation Committee consists only of independent directors and strictly abides by the preset candidate recommendation procedures. Each director's term of office is three years. A director may be reappointed through the general shareholders meeting after the end of his/her term. However, an independent director's total term is restricted to six years pursuant to the Commercial Act.

Expertise and Diversity of the Board

The fast-changing business environment requires that the Board be equipped with expertise and diversity to help our company take forward-looking, strategic steps. We take extra care to ensure diversity on the Board in terms of nationality, gender, religion etc. Independent directors, in particular, are selected among experts in finance, law, IT, public sector, ESC, and other fields. They bring diverse perspectives to find optimal solutions and offer objective and professional oversight and advice to the executive management.

Board Values

-  Independence Those responsible for our everyday business affairs, our largest shareholders and other important stakeholders, and those who have experience working for our company within the last two years are not eligible to be appointed as an independent director.
-  Transparency Executive directors shall be appointed from among the candidates recommended by the Board, and candidates for independent directors shall be recommended by the Independent Director Candidate Recommendation Committee composed of all independent directors.
-  Expertise Independent directors are selected among those equipped with rich knowledge and experience in business management, economy, accounting, law, technology, and sustainability management.
-  Diversity To ensure diversity in the Board, we do not limit independent director candidates by nationality, gender, place of birth, religion, area of expertise, etc.

Operation

We hold seven ordinary Board of Directors meetings each year for the quarterly approval of financial statements and the regular convocation of the general shareholders meeting. Beyond regular meetings, the Board of Directors hold special meetings whenever the need arises.

Board Convocation

To convene a Board meeting, the Chairman notifies each director of the date, time, venue, and agenda at least 24 hours prior to the meeting, pursuant to **Article 30 of the Articles of Incorporation and Article 8 of the Board of Directors Regulations**. Individual directors are entitled to request the Chairman to convene a Board meeting, with the agenda and reasons clearly defined, if deemed necessary. If the Chairman fails to uphold this responsibility without justifiable reason, the respective director may convene a Board meeting.

Board Resolution

Pursuant to **Article 31 of the Articles of Incorporation and Article 9 of the Board of Directors Regulations**, an agenda item is deemed to have been resolved with the attendance of a majority of the directors and a majority vote of the attendees unless otherwise prescribed in relevant laws. As specified in **Article 391 of the Commercial Act**, all directors may participate in a Board meeting digitally using remote telecommunications devices capable of simultaneous voice transmission and reception. We systematically avoid potential conflicts of interest by restricting the voting rights of those directors with special interests in certain agenda items pursuant to **Article 9 of the Board of Directors Regulations**.

Committees under the Board

The Board delegates its authorities to six affiliated committees pursuant to **Article 28-2 of the Articles of Incorporation and Article 11-2 of the Board of Directors Regulations** to ensure greater efficiency. The Management Committee comprises five executive directors entrusted with relevant authorities to resolve general management matters in a timely manner. The other five committees consist of only independent directors to reinforce independence. The composition, operation, and authorities of each committee are specified in the individual committee regulations enacted by the resolution of the Board. Matters resolved by the committees are notified to all directors within two days. Directors may request the Chairman of the Board to convene a

Board meeting if deemed necessary, and the Board may reconsider and revote on the decisions made by each committee. However, the Audit Committee's decisions are not subject to revote to ensure its independence.

Committees under the Board

	Management Committee	<ul style="list-style-type: none"> • Responsible for deliberating and making decisions on general management matters, finance-related issues, and matters delegated by the Board • All five members are executive directors.
	Audit Committee	<ul style="list-style-type: none"> • Responsible for auditing all business affairs including the financial status • All three members are independent directors.
	Compensation Committee	<ul style="list-style-type: none"> • Aimed at ensuring objectivity and transparency in the decision-making process for compensation for directors. • Both members are independent directors.
	Sustainability Committee	<ul style="list-style-type: none"> • Responsible for taking action to promote sustainability management and enhance shareholder value • All four members are independent directors.
	Independent Director Recommendation Committee	<ul style="list-style-type: none"> • Screening and recommending candidates based on the requirements of their independence, diversity and individual competence • One member (Independent Director)
	Related Party Transactions Committee	<ul style="list-style-type: none"> • Aimed at enhancing business transparency by promoting voluntary adherence to fair transaction regulations • All three members are independent directors.

* The Sustainability Committee was established in July 2021 by reorganizing the Governance Committee under the aim of promoting sustainability management and enhancing shareholder value in **ESG-related matters**.

** Director Han Wha-jin was a member of the Independent Director Recommendation Committee and The Sustainability Committee, but resigned from the BoD on April 20, 2022.

*** Independent director Park Byung-gook was a member of the Compensation Committee, the Sustainability Committee, and the Independent Director Recommendation Committee, but resigned from the Board on May 17, 2022.

Evaluation of Independent Directors

Independent directors are evaluated on all of their Board activities based on our internal criteria. Qualitative and quantitative evaluations are conducted by considering their meeting attendance rates, performance as individual committee members, level of expertise, understanding of material issues, and endeavors to ensure independence. Evaluation results are used as reference to innovate Board operations and enhance the efficiency and composition of the Board and its affiliated committees.

"With sustainability continually growing in importance as a key driver of corporate growth, the roles and responsibilities of the Board of Directors continue to expand in both breadth and depth. As an extension of our efforts to effectively address ESG issues and improve our ESG performance, we reconfigured the Governance Committee into the Sustainability Committee in July 2021. The Board will strive to ensure the integrity and transparency of the Board and help our company march forward as a responsible corporate citizen."

- Kim Han-jo, Chairman of the Board of Directors -



Compliance and Ethics

Principles of Compliance and Ethics

At Samsung Electronics, compliance with laws and ethical standards is the top priority among our **Business Principles**. We disclose our Business Principles to external stakeholders, including partners, customers, and investors, via our website.

[Samsung.com](#) > Business Principles

To achieve sustainable growth as a leading global company, we continually work to ensure compliance and ethics across all aspects of business. Through our commitment to compliance and ethics, we strive to conduct our business in compliance with laws and ethical standards, and build a **sound corporate culture that is free from illegal and unfair practices**.

Management of Compliance and Ethics

We operate the Compliance Team, which directly reports to the CEO, and the Chief Compliance Officer attends all Board meetings and the Management Committee's meetings to ensure lawful decision-making. The Compliance Team implemented the Compliance Program Management System(CPMS), an IT system that enables efficient management of Compliance and Ethics, while also managing potential risks in the focused areas of management (anti-corruption, fair trade, intellectual property rights, privacy protection, labor and human rights, environment and safety, etc.)

Focused Areas of Management

Anti-corruption
Intellectual Property Rights
Privacy Protection
Labor and Human Rights
Subcontracting

Fair Trade
Consumer Protection
Trade
Environment and Safety

In order to uphold a fair corporate culture, we post 'Employees Business Conduct Guidelines' on our intranet system to encourage our employees to practice ethical management in their daily activities. For our partner companies, we post Samsung Electronics Business Guidelines, which detail prohibited business practices, on the websites they use.

Compliance and Ethics Program

We are operating an effective Compliance and Ethics Program aimed at promoting compliance and ethical management through the three stages of prevention, monitoring, and response.

Prevention

We provide employees with detailed compliance policies and guidelines via CPMS for reference when performing their tasks. To minimize legal risks, we also identify the latest regulatory trends and provide training programs for employees. If employees have questions or require assistance determining the legality of specific matters based on the guidelines, they can seek one-on-one consultation with experts at the help desk on CPMS.

Monitoring

Compliance and ethics audits are conducted annually by the organizational units and staff members in charge. The results are reported to the Board of Directors at least once a year. Whistleblowing channels have been established to facilitate the reporting of legal violations committed by our company or individual employees. We ensure whistleblower confidentiality and protect whistleblowers from discriminatory and retaliatory actions.

Response

We devise ways to prevent recurrences of compliance violations by improving the process based on audit results as well as responses to submitted reports. If any violations are detected, disciplinary and remedial actions are taken pursuant to our internal standards based on the gravity of the specific incident. We also operate compliance and ethics programs along with annual legal risk assessment. We evaluate the effectiveness of our compliance control system, including compliance and ethics programs, and report the results to the Board of Directors once a year.

Compliance and Ethics Program



Compliance and Ethics Training

We operate a wide range of compliance and ethics training programs to minimize risk and prevent any illegalities that may occur during everyday business activities.

Training for Top Management

Based on our strong belief that the leadership of top management plays an instrumental role in reinforcing compliance and ethical management, we provide compliance training targeted to our executive management. In June 2021, the Chief Compliance Officer conducted training for the CEOs and top executives on precautions to take while performing their duties.

Employee Training on Ethical Standards and Compliance¹⁾

We conduct training on ethical standards in various formats for all of our employees at least once a year. Additionally, we conduct annual mandatory compliance training (including anti-corruption training) to highlight our focus on compliance and ethical management. In 2021, we offered job-specific training courses to allow employees to receive training aligned with their specific jobs and tasks.

1) Refer to the Ethics training and Compliance training in Facts and Figures section.

Audits and Whistleblowing

We are equipped with organizational units and members dedicated to performing compliance and ethics audits, operating whistleblowing channels, and handling whistleblowing investigations.

Compliance and Ethics Audits

We perform both regular and special audits of ethical standards and compliance on our business sites in Korea and abroad and report the results to the Board of Directors at least once a year. We identify points of improvement based on the results and reflect them in our business activities to ensure company-wide compliance with all relevant laws and regulations.

In 2021, we monitored our domestic business sites for compliance with the mandates in the Occupational Safety and Health Act and conducted online checks of the operation status of the compliance program at our overseas business sites. We also investigated whether our business sites were in compliance with our external sponsorship and internal transactions review processes built to ensure the prevention of risks in relation to corruption and unfair internal transaction. The results showed that our performance was satisfactory overall, and we implemented remedies in areas deemed capable of further improvement pursuant to our internal standards.

Compliance and Ethics Whistleblowing

In addition to the existing in-house whistleblowing channel targeting our employees, we opened a new whistleblowing channel for exter-

Major Audit Activities in 2021

Quarter	Activity	Area
Q1	Compliance with the Occupational Safety and Health Act	Environment and Safety
	Prevention of Competitors' Trade Secret Piracy Risk	Intellectual Property Rights
Q2	Online Compliance Check of Overseas Subsidiaries	Compliance Programs
Q3	External Sponsorship Review process	Anti-corruption
	Internal Transaction Review process	Fair Trade
Q4	Misuse of Technologies for Patent Application	Intellectual Property Rights

nal stakeholders on our website (Samsung.com > Ethics&Compliance Management https://sec-compliance.net) in 2020. Contact information including the email address, telephone number, and fax number is posted online to help whistleblowers submit reports easily.

We protect the confidentiality of whistleblowers' identities and reports based on our internal regulations, and all of our whistleblowing channels guarantee anonymity. All reports submitted are handled in accordance with our internal standards for the entire whistleblowing process, from reporting to investigation and remedial action. The opening of new whistleblowing channels has led to a steady increase in the number of reports from 2020 onwards.¹⁾ We conduct investigations on reports to verify their facts and take corrective measures. In 2021, we took disciplinary action against those who violated our internal processes and also against their managers. In accordance with internal guidelines, we discipline those verified to have committed infractions based on the severity of each incident and report the results to the Audit Committee twice a year.

1) Refer to the status of Compliance whistleblowing and Ethics whistleblowing in facts and figures section.

Major Improvements for Compliance and Ethical Management

Anti-Corruption Policy and Guidelines

We provide employees with our revised Global Anti-Corruption and Bribery Policy in 2020 to highlight our unwavering commitment to compli-

ance with domestic and international anti-corruption laws and ethical business practices. The Policy and detailed guidelines are posted on CPMS.

Details of the **Global Anti-Corruption and Bribery Policy**

I Preface

- The purpose of this Policy is to offer our employees a clearly defined set of criteria for discerning and preventing corrupt practices.

II Basic Principles

- We abide by all anti-corruption laws and policies including the Foreign Corrupt Practices Act of the US, the Improper Solicitation and Graft Act of Korea.
- Engagement in providing money and valuables in exchange for unfair gains and soliciting public officials for illegal acts or abuse of power is prohibited.

III Gifts, Hospitality, and Other Benefits

- Gifts and hospitality provided must conform to all applicable laws and the policies of a recipient's organization, serve a legitimate business purpose, and be deemed reasonable in terms of price and frequency.
- The provision of benefits with any intent for unfair gains or the exercise of leverage is prohibited.
- Receiving gifts and hospitality, provided by partner companies with the expectation of reciprocity is prohibited.

IV Donations, Contributions, and Sponsorships

- Illegal political donations from our assets are prohibited.
- Charity donations, contributions, and sponsorships must be made in compliance with our internal process without any intent for unfair gains and/or the exercise of leverage.

V Third-Party Agents

- The use of a third-party agent to evade anti-corruption laws is prohibited. Proper measures shall be taken when a third-party agent violates this Policy and/or relevant laws.

VI Books and Records

- All expenses must be recorded in accounting books and related documents and be preserved. Disclosing false information is strictly prohibited.

VII Policy Implementation

- Anti-corruption compliance programs must be operated and continually improved to ensure effective implementation of this Policy.
- The head of the Corporate Compliance Team is vested with independent authority and responsibility for prevention of corruption and bribery.

Process for Anti-Corruption

We have strengthened the review process for external sponsorship expenditures in order to prevent potential corruption. The External Sponsorship Council, formed in 2017, conducts prior review of external sponsorships of KRW 10 million or above, and review results is reported to the Audit Committee. Approval of the Board of Directors is required for external sponsorship of KRW 1 billion or above.

In 2020, the Council's operations were strengthened by appointing the Chief Compliance Officer as its chairperson and expanding the review targets to encompass overseas subsidiaries. The anti-corruption review process was also established to conduct a necessary review and attain the Compliance Team's approval prior to vendor registration and contract conclusion.



Improvements for Compliance-Oriented Culture

To foster a culture of compliance, we increased the weight of compliance-related factors in the executive evaluation in 2020 and added compliance-related factors to the organizational performance evaluation in 2021 as well. In 2020, we also implemented the SEC Annual Awards, presented by the CEO, which acknowledge the achievements of employee or organization in compliance management.



Samsung Compliance Committee

Purpose and Composition

The Samsung Compliance Committee (the Committee) was launched on February 5, 2020 under the aim of practicing integrity-based management, which is one of our key values, by reinforcing compliance monitoring and control over the seven major member companies¹⁾ of Samsung Group.

The Committee is an external organization with its independence and autonomy guaranteed. It comprises six external members, including the chairperson and one internal member. Lee Chan-hee, a former president of the Korean Bar Association, is currently serving as the second chairperson following the first chairperson, Kim Ji-hyung, a former justice of the Supreme Court of Korea. The Committee's external members are selected from experts equipped with knowledge and experience in diverse fields related to compliance monitoring (law, accounting, economy, public administration, etc.).

1) Samsung Electronics, Samsung C&T, Samsung SDI, Samsung Electro-Mechanics, Samsung SDS, Samsung Life Insurance, and Samsung Fire & Marine Insurance

Key Activities of the Committee

The Committee communicates with the Chief Compliance Officers of member companies through monthly meetings as well as special meetings. The Committee reviews reports from member companies regarding their external sponsorship and internal transactions, and it issues recommendations as an independent body. It also operates separate whistleblowing channels of its own to collect reports about compliance violations of the member companies via post, email, and external organizations. The details of its meetings with the member companies and the statements it releases are disclosed on its website.

The Committee held a conference with executive management, including the CEOs of the member companies, in January 2021 and met with the labor-management relations advisory group in April and November 2021. The Committee members actively promoted compliance by providing training for the member companies' exec-

utives in July and August 2021. It also held a seminar with outside experts in January 2022 to discuss the current status and points of improvement of compliance issues.

Implementation of the Committee's Recommendations

The Committee delivers recommendations for a range of issues to improve the compliance management practices of member companies. We have faithfully crafted and implemented measures to ensure such recommendations are followed.

For the recommendation to establish measures to prevent recurring labor compliance risks, we formed a labor-management relations advisory group of outside experts under the Board of Directors and realigned all of our labor-related regulations to ensure the protection of the three primary labor rights. Regarding suggestion to enhance communication with civil society organizations, we have engaged in a range of activities to earn greater trust, such as staging a conference between senior members of civil society organizations and our executive management.

For the recommendations to include and expand compliance-related items in the evaluations of executives, we updated our internal regulations and increased the weight of compliance-related factors. We also established a quarterly council of the Chief Compliance Officers to enable them to discuss ways to reinforce the compliance monitoring activities of relevant organizational units at the member companies.

We will work in collaboration with the committee to establish an advanced monitoring program and compliance system and carefully manage the legal risks of the company and the management, implementing Integrity Management and building trust and respect from the public.

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Business Sustainability

DX | Device eXperience Division

Sustainability is a core value and key driver of our operations, and we strive to embed it in every product and service that we offer. We will remain committed to activities that minimize our environmental impact, including the use of recycled materials in all stages of mobile device and home appliance manufacturing processes by 2025.

Use of Recycled Materials

- Galaxy S22 and Tab S8, as well as high-resolution monitors released in 2022, are equipped with parts made with recycled ocean-bound plastic¹⁾
- 1) PET bottles and discarded fishing nets, etc
- All the Visual Display models²⁾ will use recycled plastic materials in 2022
- 2) TVs, monitors, and remote controls. (including outsourced products)



Eco-Packaging

- EPS cushions inserted in the box for Visual Display products and plastic used for sub packaging¹⁾ are made with recycled materials
- 1) Sub packaging: Accessory bag, PP band, box holder, and stand bag
- Eco-Packaging, designed to be upcycled as small and versatile household items, has been implemented in all TV products and is scheduled to be expanded to the vacuum cleaners, air purifiers, Bespoke Qooker and more

Lifetime Warranty for Key Parts

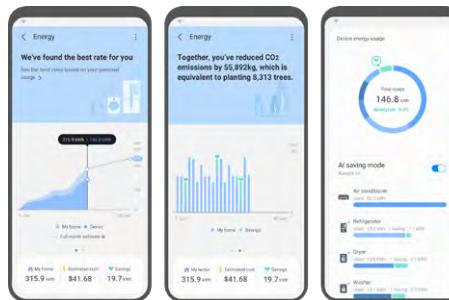
- To reduce home appliance waste, we began to provide lifetime warranties for the key parts (digital inverter motor/compressor) of new products released in Korea from 2021
- Plan to provide 20-year warranty of digital inverter motor and digital inverter compressor for washers sold in the US (for washers made in the US) and refrigerators and washers sold in Europe (From the 2nd Half of 2022)



Image of Lifetime Warranty for Key Parts

SmartThings Energy

- SmartThings Energy enables users to monitor total power consumption of their household as well as the power consumption for connected smart home appliances¹⁾. It also offers the SmartThings Energy Service²⁾ designed to help reduce energy consumption by using an AI-based smart power saving mode
- 1) Service available in Korea, the US, the UK, India, and Brazil
- 2) Service available in Korea only
- * Total power consumption monitoring service is available only for those households connected to a smart meter.



Reducing the Release of Microplastics

- Through a collaboration with renowned active wear brand Patagonia, Samsung is developing a specialized washer that reduces the release of microplastics, particles that are highly damaging to the world's oceans and our health

SolarCell Remote Control

- We developed SolarCell Remote Control that can be charged via sunlight or illumination without the need for disposable batteries. Recycled materials are used in the exterior of the remote control (for QLED TV from 2021, expanded to air conditioners in 2022)
- We plan to replace the lithium-ion battery with a supercapacitor, which emits less GHGs, and use this remote control for all smart TV products in 2022



Samsung Global Goals

- The Samsung Global Goals app introduces our global efforts to meet the 17 Sustainable Development Goals of the United Nations and allows users to donate directly to the goals of their choice
- Donations raised in 2021¹⁾ amount to USD 2.69 million
- 1) November 2020 ~ October 2021

Galaxy Upcycling

- Galaxy Upcycling at home program: A recycled smartphone can be repurposed into a sound sensor, illumination sensor, and notification sender for your current smartphone via the SmartThings app
- Digital vision tester (EYELIKE™): This device is designed to diagnose various eye disorders that may lead to loss of vision using a used Galaxy smartphone. Devices are provided to developing countries such as Vietnam, India, Morocco, and Papua New Guinea



Business Sustainability

DS | Device Solutions Division

We strive to enhance the energy efficiency of major semiconductor products, including memory devices, image sensors, and driver ICs, to reduce the power consumption of data centers and IT devices such as smartphones and laptops.

Eco-Conscious Manufacturing Process

- Reducing GHG emissions by 6.03 million tonnes in the manufacturing process
- Reducing GHG emissions by 3.03 million tonnes through improving flue gas treatment, change to alternative gases and reducing fuel consumption
- Reducing GHG emissions by 480,000 tonnes by using high-efficiency equipment and parts, and by managing equipment power systems
- Reducing GHG emissions by 2.52 million tonnes by using renewable energy
- Eco-conscious performance in the semiconductor manufacturing process
- Managing water resources to save 6,857 tonnes of water per day and reducing sulfate ion concentration
- Reducing and recycling waste



Energy Consumption Reduction

- Reduce the power consumption of LED products
- Improve luminance efficiency of the lighting LED package (LM301B) device by 2% each year
- Improve luminance efficiency of the vehicle head lamp LED solution (C-series) device by 3% each year

- Implementing semiconductor products with lower energy consumption through the commercialization of an ultra-fine foundry process
 - Reduce power consumption by nearly 50% compared to the 5nm process by applying gate-all-around technology¹⁾ to the 3nm process
 - Enhance the System on Chip (SoC) design and applying fan-out wafer-level packaging²⁾
 - Reduce Large-scale Integration (LSI) power consumption by securing IPs that reinforce its power competitiveness
- 1) Gate-all-around refers to a modified transistor structure where the gate contacts the channel from all sides and enables continued scaling.
- 2) Fan-out wafer-level packaging is an integrated circuit packaging technology that carries out redistribution first and then dices the wafer. In this process, the surface area of redistribution is larger than the chip.

Certification and Award

- 24 products of strategic importance have attained the Carbon Trust's product carbon footprint in 2021



Product carbon footprint labeling	
2019	1 UFS
2020	8 DRAM/SSD/memory cards
2021	4 system semiconductors and 20 DRAM/SSD/memory cards

We have attained low-carbon product certification from the Korea Environmental Industry and Technology Institute (KEIT) and the 'Reducing CO₂ Label by the Carbon Trust.'

- 'Low-carbon product certification by KEIT': Portable SSD T7 (1TB)
- 'Reducing CO₂ Label by the Carbon Trust': HBM2E (8GB), GDDR6 (8Gb), UFS 3.1 (512GB), Portable SSD T7 (1TB), and Micro-SD EVO Select (128GB)

*Lower Carbon Label: Certification for a product that has already attained the Carbon Footprint Label or for its follow-up product found to have reduced GHG emissions across all life cycle stages

- Attained global certifications for the information security management of our foundry business
- Security certification ISO 27001 (Information security management)
- Common Criteria of the German Federal Office for Information Security (Bundesamt für Sicherheit in der Informationstechnik)

- 3 memory products won the CES 2022 Innovation Awards
- PCIe 5.0 SSD PM1743, 512GB DDR5 RDIMM, and ZNS NVMe SSD



- Gained global recognition for LED products
- User-centric lighting³⁾: Winner at the CES 2021 Innovation Awards in the Health and Wellness category

- Plant cultivator lighting⁴⁾: Included in the 2021 IES⁵⁾ Progress Report

1) Lighting technology that positively impacts biological rhythms by influencing melatonin levels

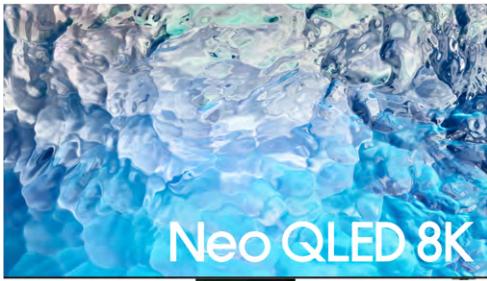
2) Technology emitting light in wavelengths that promote plant growth

3) Illuminating Engineering Society, a not-for-profit organization that develops standards related to lighting

Sustainability Highlights of Major Products

TV (Neo QLED 8K TV / QN900B)

- Intelligent energy-saving function (automatic screen-off and power-off using the light sensor and motion sensor)
 - SolarCell Remote made with recycled plastics
 - Applied Eco-Packaging and recycled EPS¹⁾
 - Carbon Trust's Reducing CO₂ certification
- 1) Expandable polystyrene (Styrofoam)



Second Generation Massive MIMO Radio

- 2.7 times higher output and 55% less energy consumption for maximum output compared to the first generation
- Product size reduced by 14% and product weight by 24% compared to the first generation, thereby saving more resources



Smartphone (Galaxy S22 Series)

- Recycled fishing nets used for the key brackets and interior of S22 Ultra S Pen
 - PCM¹⁾ plastic applied to the speaker modules and interior of the volume key
 - Eco-Packaging (made 100% with recycled paper and minimize the use of plastic)
 - Carbon Trust's product carbon footprint label
- 1) Post-consumer materials created from recycled plastics



Mobile DRAM Solution (LPDDR5X)

- Fastest speed (8.5Gbps) among all our existing mobile DRAM solutions (1.3 times faster than LPDDR5 running at 6.4Gbps)
- Energy efficiency improved by 20% compared to the previous generation

Monitor (ViewFinity S8 / S80PB)

- Energy-saving function applied (Eco-saving plus)
- Grade-A energy efficiency rating (ErP²⁾)
- Recycled ocean-bound plastics used in the back cover of the product
- ENERGY STAR, EPEA²⁾ (bronze), and TCO Certified³⁾ certification
- Applied Eco-Packaging

Carbon Trust's Reducing CO₂ certification

- 1) Energy-Related Products Directive of the EU
 2) Electronic Product Environmental Assessment Tool of the US
 3) Sustainability certification created by Swedish Confederation of Professional Employees

Sustainability Highlights of Major Products



BESPOKE Grande AI Dryer (DV20B9760NE)

- First-grade energy efficiency rating¹⁾
- High-efficiency heat pump
- Energy consumption monitoring and AI-based energy-saving mode (SmartThings Energy)
- AI-based tailored drying function applied to enable the optimization of the temperature and cycle time using 11 sensors
- 1) A classification of the energy use or energy consumption efficiency of home appliances in Korea



BESPOKE Refrigerator Infinite Line (RR40B9981APG)

- First-grade energy efficiency rating
- Water filtration system certified by National Sanitation Foundation (NSF)¹⁾ for its microparticles removal capacity
- Energy consumption monitoring and AI-based energy-saving mode (SmartThings Energy)
- 1) Certification obtained pursuant to NSF/ANSI 42, 53, and 401 Filtration Systems Standards and NSF/ANSI/CAN 372 Technical Requirements



LED Signage (The Wall / LH012IWA)

- Dynamic Peaking technology applied to realize the highest display brightness with lower energy consumption (maximum brightness: 1,600nit)
- Applied Eco-Packaging
- Carbon Trust's Reducing CO₂ certification



Light Solution for the Smart Plant Grower (LM301H EVO)

- World's first solution with a plant-exclusive spectrum (437nm), boasting 6% higher PPFD¹⁾
- 50% more nutrients and 20% less microorganisms in plants compared to the previous generation
- Showcased in the 2021 IES Progress Report
- 1) Photosynthetic photon flux density



DRAM (14nm EUV DDR5)

- Productivity improved by 20% compared to the previous generation based on its best-in-industry wafer level integration
- Power consumption reduced by nearly 20% and speed increased two-fold (7.2Gbps) compared to the previous generation



Note PC (Galaxy Book 2 Pro)

- Recycled fishing nets used in the interior of the brackets and touchpad holder of Galaxy Book2 Pro 360
- New algorithm applied to extend the life cycle of the battery, reduce standby power, thereby decreasing the need for battery replacement
- Eco-conscious AMOLED display (UL's GREENGUARD Gold Certification)

Sustainability Highlights of Major Products

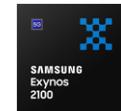
Signage (Crystal UHD Signage / QH55B)

- Recycled materials used in the back cover of the product
- ENERGY STAR and EPEAT (bronze) certification
- Applied Eco-Packaging
- Carbon Trust's Reducing CO₂ certification



Wind-Free Air Conditioner (AF20BX934WAN)

- First-grade energy efficiency rating
- Eco-conscious refrigerant (R32)
- Energy consumption monitoring and AI-based energy-saving mode (SmartThings Energy)
- SolarCell Remote



BESPOKE Grande AI Washer (WF24B9600NE)

- First-grade energy efficiency rating
- Eco Bubble™ Technology (high energy efficiency, reduced cycle times, and minimized damage to cloth)
- AI-based tailored wash technology that automatically dispenses detergent in preset amounts in accordance with cloth type, weight, and soil and stain level
- Energy consumption monitoring and AI-based energy-saving mode (SmartThings Energy)
- "No-detergent wash drum cleaning+" cycle added to enable the cleaning of the wash drum and door frame without detergent



8K DTV¹⁾ SoC

- Lower energy consumption realized through the integration of the DTV SoC and image processor
- Carbon Trust's product carbon footprint label

1) Digital TV

Sustainability Achievements

Environment

Use of Renewable Energy

5,278 GWh

* 31% increase compared to the previous year



EHS management system at our production sites

100 % certified



Recycling

96 % of manufacturing waste



Collection

5.07 million tonnes of discarded electronic goods



* Cumulative sum, 2009-2021

Digital Responsibility

Cases of internal consulting on privacy protection

9.7 % increase compared to the previous year



2021 Digital Inclusion Benchmark

4 th (ICT sector)

* Digital Inclusion Benchmark conducted by the World Benchmarking Alliance.



Empowering Communities

Hours of employees' volunteer work

9,903,186 hours

* Cumulative sum, 2012-2021



Number of beneficiaries of our CSR activities

22,150,865 people

* Cumulative sum, 2012-2021



Number of companies adopting Smart Factories

2,812 companies

* Cumulative sum, 2015-2021



Our Employees

Recognition of Our Efforts to Respect Human Rights

Ranked **1** st among companies benchmarked by Global Child Forum (electronics sector)



Safety and Health Certification at our production sites

100 % ISO 45001¹⁾ certified

1) International standard for occupational health and safety management systems



Sustainable Supply Chain

Suppliers rated outstanding in the comprehensive supplier evaluation

68 %

* The comprehensive competitiveness of our suppliers is evaluated each year.



All smelters and refiners in our supply chain

100 % RMAP¹⁾ certified

1) Responsible Minerals Assurance Process



Recognition and Awards

Rankings

5 th in Best Global Brands 2021 (USD 74.6 billion, 20% increase from previous year)



1 st in World's Best Employers for two consecutive years in 2020 and 2021



Awards

CES 2022 Innovation Awards

- Selected as the highest rated winner (4 products)
- Selected as the winner (39 products)

2021 Sustainable Materials Management Electronics Challenge by the United States Environmental Protection Agency

- Sustained Excellence for SolarCell Remote
- Gold Tier for excellence in the responsible collection and recycling of electronic waste

Certifications

Product Carbon Footprint Label by the Carbon Trust

- 11 TV models, 3 monitor, and 2 signage
- 10 smartphone models including Galaxy S22 Ultra and 4 tablet models
- 4 system semiconductors
- 20 memory semiconductors

Lower Carbon Label by the Carbon Trust

- Galaxy S21, S21+, and S21 Ultra
- 13 TV models, 3 monitor, and 2 signage
- 5 memory semiconductors

4 LED Package Products, Underwriters Laboratories (UL) Certification

Carbon Trust Triple Standard

All semiconductor business sites certified for reduced impacts related to carbon, water, and waste—a first for any manufacturer in the industry.



Common Criteria Certification¹⁾ for 5G Solutions

- Global security certification

UL Gold Certification

- Galaxy S22, S22+, S22 Ultra and 16 other models

Electronic Product Environmental Assessment Tool Certification (US)

- 6 TV models including BE75T-H, 14 Signage models including LH43QMBEBGCXZA, 90 Monitor models including S27A400UJN, Note PC NP930QDBA, etc.

Win-Win Index by Korea Commission for Corporate Partnership under the Korean Ministry of SMEs and Startups

- Rated outstanding for 10 consecutive years



ENERGY STAR Awards, US EPA

- Partner of the year awards for environmental protection
- Honored with sustained Excellence nine times



IDEA 2021 (48 products)



National Quality Management Awards by the Korean Ministry of Trade, Industry and Energy

- Presidential Citation
- Foundry Business for securing unmatched quality eness

National Technology Awards by the Korean Ministry of Trade, Industry and Energy

- Presidential Prize
- Foundry Business for developing processing technology for 14nm RF and succeeding in the world's first mass-production

Energy Winners of the Year by Consumers Korea

- 8 prizes including Grand Prize and Minister of Trade, Industry and Energy Prize

Health-Friendly Company Certification by the Korean Ministry of Health and Welfare

- Minister of Health and Welfare Prize
- Certified for the operation of tailored healthcare programs, in-house clinics, the Musculoskeletal Disorder Prevention Exercise Center, healthcare-themed concerts, etc.

Sustainability Governance

We strive to achieve sustainability governance through the establishment of company-wide governance system including the Board of Directors and Sustainability Management Office in each business unit.

The Board oversees our sustainability activities as the overarching decision-making body. The Sustainability Committee under the Board was established in July 2021 by expanding the role of the existing Governance Committee to push ahead with various ESG activities and increase shareholder value. The Sustainability Council brings together heads of business units and functional teams responsible for a wide range of sustainability issues. The Council, previously led by the head of the Corporate Management Office, has been placed under the direct supervision of the CEO since 2022.

As the sustainability management control tower, the Corporate Sustainability Center is responsible for establishing overall strategies for sustainability, monitoring relevant outcomes, and facilitating external cooperation and communication through collaboration with related departments and councils. The Sustainability Management Office of each business establishes sustainability strategies tailored to its operations and characteristics, and supports their execution. Sustainability Management Offices outside of headquarters identify regional issues that concern our stakeholders and establish and implement strategies accordingly. Sustainability training is offered to employees and executives to integrate ESG principles into their day-to-day tasks.

Since 2021, we have included sustainability-related items in our performance evaluation system for executives and business units to ensure adherence to sustainable practices. We plan to continually update our evaluation and compensation system.



- Monitoring overall sustainability direction and performance
- Key agenda: Environmental issues such as climate change and circular economy, social contribution, labor and human rights, safety and health, ethics, and compliance
- Held at least every 6 months

- Reviewing sustainability issues with those in charge of sustainability in different business areas
- * Agenda items discussed by the Sustainability Council and the results reported to the Board and Sustainability Committee
- Headed by the CEO
- Held at least every 6 months
- Participants

[Corporate Management] Corporate Sustainability Center, Corporate Human Resource Team, Corporate Management Team, Partner Collaboration Center, Global EHS Center, Global CS Center, Compliance Team, IR Team, Global Marketing Center, Communication Team, Mechatronics and Manufacturing Technology Center, and Corporate Citizenship Office, etc.

[Business Units] Heads of major business units and the Sustainability Management Office

Departments Dedicated to Sustainability

- Corporate Sustainability Center
- Sustainability Management Office of the DS Division
- Sustainability Management Office of major business unit (VD, DA, MX, Memory, Foundry, etc.)
- Sustainability Management Functions at regional offices

Councils by Category

- [Environment] Environment Management Task Force, EHS Council, Eco Council
- [Digital Responsibility] Security and Privacy Protection Council, AI Ethics Council, Accessibility Council
- [Employees] Labor and Human Rights Council

Stakeholder Engagement

Engagement with our stakeholders is essential for us to fulfill our responsibilities as a responsible global company. We strive to build a cooperative relationship and enhance mutual understanding in sustainability topics with our stakeholders through various activities such as multi-stakeholder forums, surveys, and on-site visits.

Stakeholders	Major Concerns	Communication Channels	Major Activities
Customers	<ul style="list-style-type: none"> Product and service quality Product safety 	<ul style="list-style-type: none"> Product information accuracy Communication transparency 	<ul style="list-style-type: none"> Customer satisfaction surveys Contact centers and service centers Samsung Newsroom Samsung Semiconstory Young Samsung Community
Shareholders and Investors	<ul style="list-style-type: none"> Economic outcomes Risk management Information-sharing 	<ul style="list-style-type: none"> Sustainability agenda (Environment, Social, Governance, etc.) 	<ul style="list-style-type: none"> IR meetings and roadshows General shareholders meetings One-on-one meetings Analyst Day Investor ESG roadshows
Employees	<ul style="list-style-type: none"> Working environment safety Diversity and inclusion Training and career development 	<ul style="list-style-type: none"> Employment security and welfare Labor-management relations 	<ul style="list-style-type: none"> Labor unions and labor-management councils Counseling centers Satisfaction surveys Internal communication channels Whistleblowing systems (compliance and ethics) Mentoring by Millennial and Gen Z employees for executive management Management of workplace environments Cultivation of a corporate culture that promotes creativity
Suppliers	<ul style="list-style-type: none"> Fair transactions Shared growth 	<ul style="list-style-type: none"> Labor and human rights of workers 	<ul style="list-style-type: none"> Hotline, online whistleblowing systems, etc. Conferences with partner companies Partner Collaboration Day Shared Growth Academy Supplier Consulting Group Promotion of fair transactions and shared growth Support for partner companies' innovative initiatives
Local Communities	<ul style="list-style-type: none"> Recruitment of local jobseekers, revitalization of the local economy, etc. Indirect economic effects 	<ul style="list-style-type: none"> Environmental conservation for local communities Community outreach through donations, volunteer work, etc. 	<ul style="list-style-type: none"> Local volunteer centers Local community councils Support for SMEs for establishing smart factories, etc. Preservation of river ecosystems near our business sites
NGOs, Organizations, and Expert Institutions	<ul style="list-style-type: none"> Social responsibility for local communities and the environment 	<ul style="list-style-type: none"> Contributions to UN SDGs Joining UN Global Compact Transparent and prompt information disclosure 	<ul style="list-style-type: none"> Corporate conferences Meetings with NGOs Meetings with civil society groups Collection of opinions and suggestions from global NGOs
Government	<ul style="list-style-type: none"> Indirect economic effects Fair transactions 	<ul style="list-style-type: none"> Occupational health and safety Compliance 	<ul style="list-style-type: none"> Policy conferences National Assembly meetings Policy advisory bodies Operation of programs to support SMEs in collaboration with the government
Media	<ul style="list-style-type: none"> Transparent and prompt information disclosure 	<ul style="list-style-type: none"> Press releases 	<ul style="list-style-type: none"> Samsung Newsroom Press Interview Support for news coverage activities PR Planning

INTERVIEW

"Samsung Electronics is a very respected player within the [RBA Community](#), and has grown its visibility within RBA a lot as an active member company. Samsung has improved its commitment regarding key sustainability topics, and the company is committed to supporting suppliers. Next step for Samsung may be to scale its efforts to support suppliers with their due diligence practices and systems."

- Bart Devos,

Senior Director of Public Policy, Responsible Business Alliance -

"Samsung Electronics has a strong involvement in educating the future generation of leaders. Initiatives like Solve for Tomorrow stimulate youth's potential for innovative thinking and responsible attitude and through this, create the foundation for more sustainable communities whose members are able to act for the common good."

- Alice Dutu,

Deputy CEO, Junior Achievement Romania -

"Our work together on the Climate Superstar Challenge demonstrates Samsung's commitment to encouraging sustainability in the next generation. The Challenge presents fun and educational activities that help middle school students understand where their energy comes from and how it can affect the environment. Samsung's support of the Climate Superstars Challenge is a great example of a strong commitment to educating students in meaningful and unique ways."

- Meri-Margaret Deoudes,

President & CEO, National Environmental Education Foundation (NEEF) -

"Samsung Electronics Sustainability Management program has made great strides during the past few years. In the US, the program started with a solid foundation on electronics recycling and has steadily expanded recently into an industry-leading consumer self-repair initiative and groundbreaking partnerships like the one announced with Patagonia at CES 2022. Samsung Electronics also provides industry leadership [at CTA on sustainability initiatives](#), [including chairing CTA's Environmental Policy Committee from 2019-2021](#)."

- Walter Alcorn,

VP, Environmental Affairs and Industry Sustainability/Consumer Technology Association -

Joining UN Global Compact (UNGC)

We joined the [United Nations Global Compact](#), a global initiative to encourage businesses to align their operations and strategies with universal sustainability principles, in March 2022. By joining the UN Global Compact, we expressed our commitment to embedding its principles in all aspects of our management and corporate culture and expanding our cooperation with global stakeholders, including the United Nations.

As a global corporate citizen, we remain committed to sustainability and take shared responsibility to preserve the environment and build an inclusive world in partnership with stakeholders.

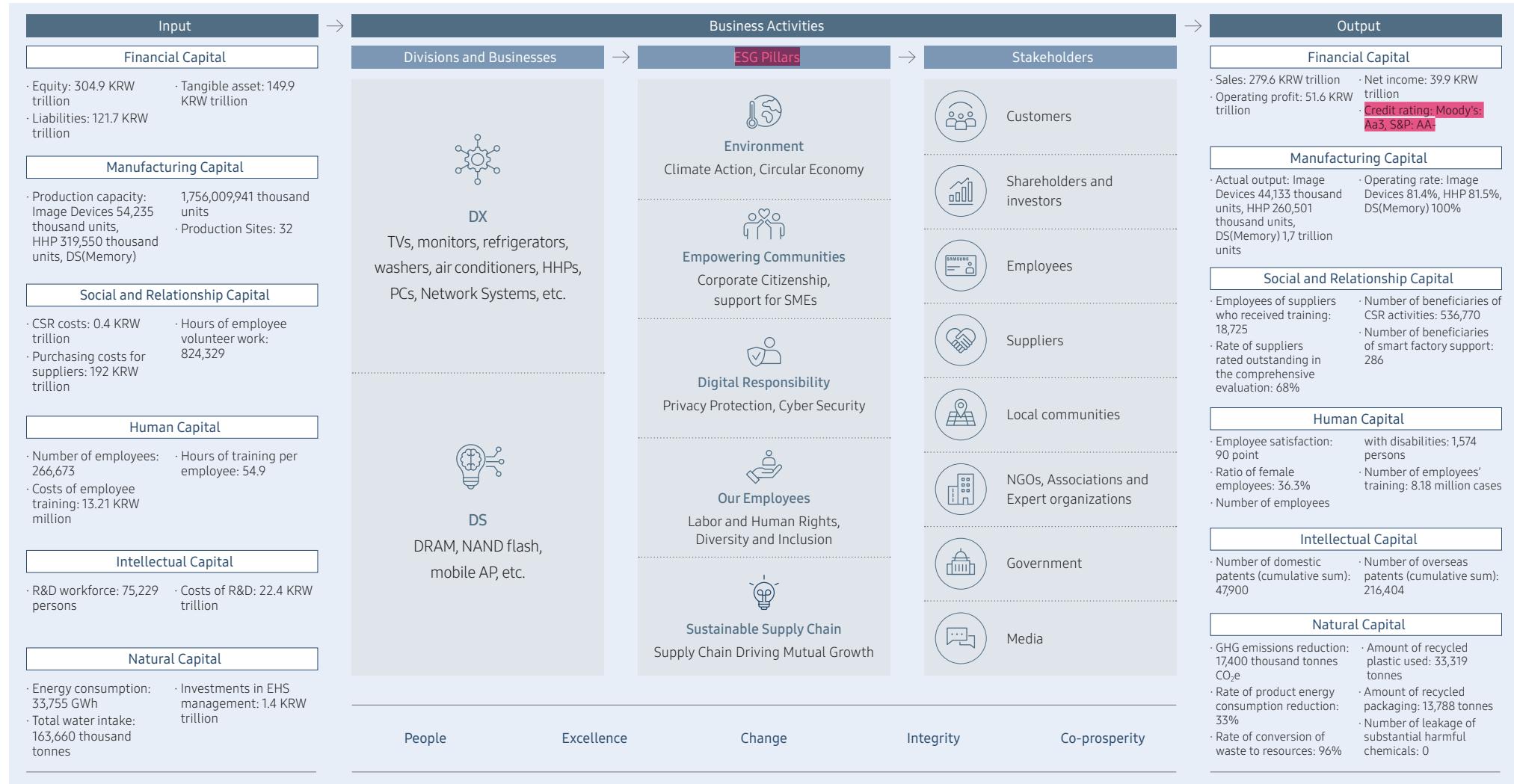
United Nations Global Compact(UNGC)

The [United Nations Global Compact](#) is a [non-binding initiative](#) that encourages its participants to incorporate universal sustainability principles on human rights, labor, environment, and anti-corruption into their business operations and strategies. It is joined by over 19,000 members (including 15,000 corporate members) from 164 countries.

- 01 Businesses should support and respect the protection of internationally proclaimed human rights; and
- 02 Businesses should make sure make sure that they are not complicit in human rights abuses.
- 03 Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- 04 Businesses should seek the elimination of all forms of forced and compulsory labor;
- 05 Businesses should seek the effective abolition of child labor; and
- 06 Businesses should seek the elimination of discrimination in respect of employment and occupation.
- 07 Businesses should support a precautionary approach to environmental challenges;
- 08 Businesses should undertake initiatives to promote greater environmental responsibility; and
- 09 Businesses should encourage the development and diffusion of environmentally friendly technologies.
- 10 Businesses should work against corruption in all its forms, including extortion and bribery.

Business Model of Sustainability Management

We introduced the integrated reporting framework to more effectively communicate the tangible and intangible values created by our business operations to our stakeholders. This framework classifies all injected capital as financial capital, manufacturing capital, social and relationship capital, human capital, intellectual capital, or natural capital and defines how these six forms of capital work to raise stakeholder value through our organization consisting of two divisions and **our five ESG pillars**.



ENVIRONMENT

Based on our strong conviction that the future hinges on the wellbeing of the planet, we take an environmentally conscious approach to business. This approach is reflected in our commitment to advancing the co-prosperity of humanity and nature and building a brighter future for the planet. Our commitment is the driving force behind our continued pursuit of sustainability in everything we do.

Environmental Management	23
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Environmental Management Governance

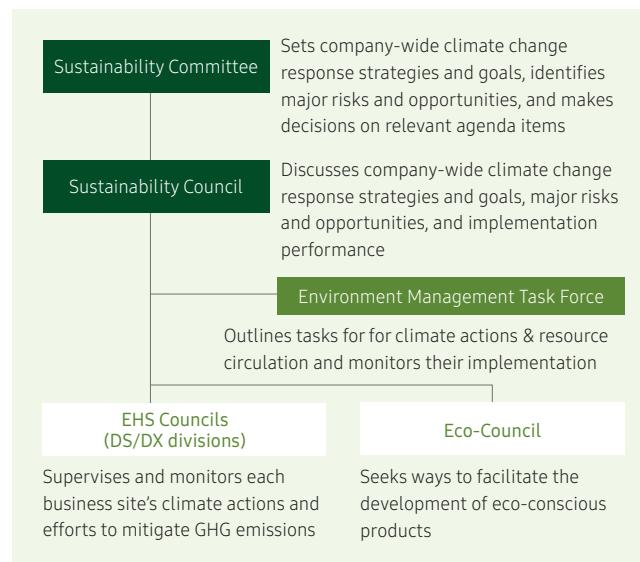
We are in the process of establishing a mid-to-long-term environment strategy to address global challenges on climate and environment that cuts across every aspect of our business. We look forward to sharing this plan as soon as possible.

We strive to address environmental challenges and minimize our impact on the environment from our business.

Climate change, product energy efficiency, water resources, and waste management are the issues that directly affect our operations and financial performance. We report these issues to the Board of Directors, our overarching decision-making body. The Board oversees the implementation of our climate actions and resource circulation measures.

The CEO holds the responsibility and authority to ensure that our environmental strategy and investments are implemented in a manner that achieves our environmental goals. The CEO, together with other chief officers, leads the Sustainability Council. The council, which consists of environment-related executives, works to establish sustainability-related plans and review their outcomes.

Corporate Environment Management Council



The Environment Management Task Force outlines the tasks required to accomplish such plans and monitors their implementation. Each division operates the EHS Council to monitor its business sites and find solutions to their environmental challenges, including issues resulting from climate change. The Eco-Council seeks ways to facilitate the development of eco-conscious products and monitors the results. The Global EHS Center, Global CS Center, and Environment and Safety Center are also in place to help business sites mitigate GHG emissions and reduce the environmental footprint of our products.

Management Systems

Our business sites are required to meet international standards for environmental management and energy management systems. As of 2021, all of our business sites have attained ISO 14001 (environmental management system) and ISO 50001 (energy management system) certifications and implemented strategies and tasks within these frameworks across all stages of operations, from purchasing to development, manufacturing, distribution, and recycling.

We also include GHG mitigation levels and other environmental indicators in the performance assessment of each division and business.

In order to raise our employees' awareness on the importance of eco-conscious management and eliminate environmental risks, we conduct environmental training for all employees at least once a year as well as special job-specific training.

Risk Management

Risks and opportunities related to climate change, waste generation, water resources, and other environmental factors have a serious impact on our products, services, manufacturing processes, supply chains, R&D, and sales. We closely monitor our business sites around the world to identify potential risks pursuant to our risk management processes and manuals for environment and safety, climate change and energy, and compliance.

At the same time, we strive to develop products with high energy efficiency, reduce GHG emissions from our manufacturing sites, minimize landfill waste, and preserve water resources.

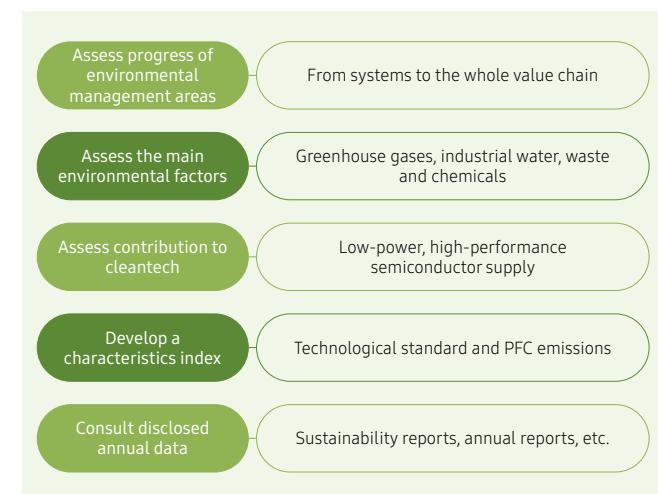
CASE

Semiconductor Environmental Performance Index (SEPI)

As semiconductors are being implemented in a growing number of products, achieving eco-conscious semiconductor manufacturing has become a major issue with far-reaching impacts on many industries around the world. To transparently share our performance and practices, we developed environmental management guidelines tailored to the traits of the semiconductor industry and the **Semiconductor Environmental Performance Index (SEPI)**, our internal semiconductor-related environmental management index disclosed on our website. Consisting of 32 indicators within six themes, **SEPI** is used to evaluate outcomes in four categories: contributions to eco-conscious semiconductor manufacturing, environmental management of partner companies, environmental performance of individual business sites, and environmental benefits for users. We aim to more accurately and efficiently communicate with diverse stakeholders by disclosing our performance systematically assessed through **SEPI**.

1) Semiconductor Environmental Performance Index

The SEPI 5 principles



Eco-Conscious Activities along the Value Chain

We have pushed ahead with diverse environmental initiatives at different stages of the value chain to minimize our environmental footprint across the entire product life cycle, from development to purchasing, manufacturing, distribution, use, and disposal. Improvement plans and tasks for these priorities are established for climate action and resource circularity, the two areas requiring extensive concerted efforts at the global level. Their implementation status is closely monitored on a continuous basis.



Climate Action

Our Response to Climate Change

Climate change is one of the most serious threats facing humanity and a challenge that significantly affects our business. As such we have set up a climate change response strategy centered on the expansion of renewable energy use, reduction of gases used in semiconductor manufacturing, and improvement of energy efficiency across the entire manufacturing process.

We are also moving forward with a wide range of programs to mitigate GHG emissions in all stages of our value chain, from product development to manufacturing and logistics. The GHGs emitted outside our business sites, as well as those emitted directly by our business sites, are subject to such programs.

Our Response to Climate Change by Stage



GHG emissions reduction at business sites

- Operating equipment for the abatement of fluorinated gases in semiconductor manufacturing
- Implementing projects to improve energy efficiency throughout the manufacturing process
- Expanding the use of renewable energy



GHG emissions reduction in the stage of product use

- Mitigating GHG emissions from product use through the development of products with high energy efficiency
- Developing low-energy semiconductors with power efficiency improved by over 10% compared to the previous generation



GHG emissions reduction in other value chain stages

- Controlling GHG emissions from suppliers, logistics companies, business trips of employees, etc.



GHG emissions reduction based on cooperation with external partners

- Securing emissions permits through carbon reduction projects with external partners, such as the [Clean Development Mechanism \(CDM\)](#)

GHG Management

We closely monitor the GHGs generated at all of our business sites around the world. We require each business site to enter GHG data in relation to electricity use, fossil fuel use, and gas use in semiconductor manufacturing into the EHS System. This allows us to identify and analyze the causes of fluctuations in GHG levels at individual sites on a monthly basis. The organizational unit in charge keeps GHG emissions from domestic and overseas sites under control based on the findings of the analysis. The credibility and alignment of the data are verified through the annual third-party audit.

Climate Change Risks and Opportunities

We identify the substantive financial and strategic impacts of climate change risks, establish response measures in accordance with the magnitude and extent of such impacts, and reflect them in our business. These risks include changes in the global climate system, region-specific regulatory reinforcement, market trends, stakeholder needs, the changing physical environment, and more. In the short term, we view emissions permit price increases, extreme weather events, and the requirement to introduce high-efficiency technologies as potential risks, and emissions permit purchasing and reduced energy costs as opportunities. We project changing consumption patterns and expanded renewable energy use as mid-term opportunities and the physical impacts such as climate change and water stress as long-term risks. We establish response measures for long-term risks based on the country-specific emissions mitigation plans pursuant to the [Paris Agreement](#), [emissions scenarios of the Intergovernmental Panel on Climate Change \(IPCC\)](#), and [Energy Technology Perspectives of the International Energy Agency \(IEA\)](#).

Climate Change Risk Management Process

Identification and Assessment of Risks



- EHS, marketing, sales, and compliance organizational units regularly assess risks in relation to business operations, product planning, and external trends based on [ISO 14001](#), [ISO 50001](#), and other international standards for energy management systems.

Management of Risks and Opportunities



- Energy consumption, GHG emissions, renewable energy use, and impacts of climate change are monitored by organizational units dedicated to EHS.
- Relevant issues affecting global business sites are discussed and managed by regularly convened councils such as the EHS Council.
- The Sustainability Council discusses and makes necessary decisions regarding climate change risks and opportunities.
- The Eco-Council examines business opportunities, shares the results with relevant businesses and organizational units, and implements action plans.

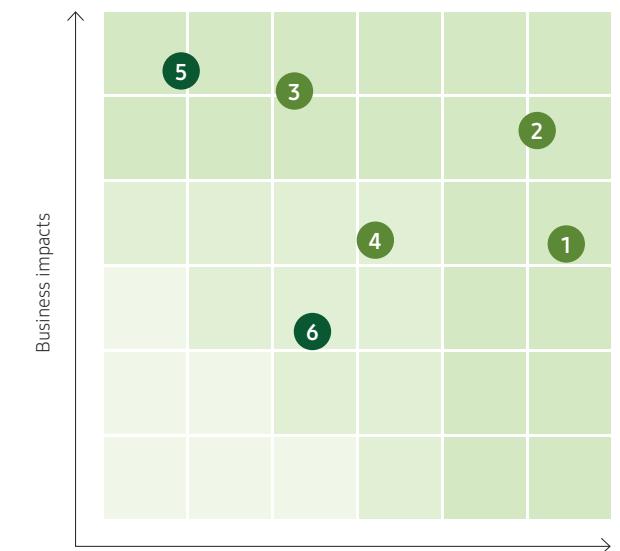
Integration of Climate Risks and Opportunities into the Company-Wide Risk Management Process



- Climate change-related regulatory risks are managed through the company-wide risk management system in an integrated manner.
- Risks include region-specific risks and global regulatory and market changes that may adversely affect our business and reputation.

Risks and Opportunity Analysis

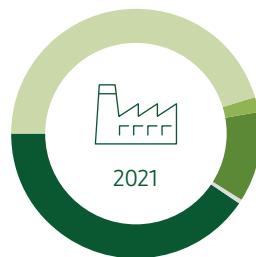
Climate Change Risks and Opportunities		Financial Impacts of Climate Change Risks		Financial Impacts of Climate Change Opportunities	
Transition risks and opportunities	① GHG emissions trading	Short-term →	<ul style="list-style-type: none"> Increased costs due to the rise in GHG emissions permit prices and reinforced pollutant discharge regulations <p>*Refer to the Annual Business Report.</p>	<ul style="list-style-type: none"> Purchase of permits minimized through GHG emissions reduction activities Easing of price sensitivity by attaining permits through projects in cooperation with outside partners 	
	② Adoption of high-efficiency technologies	Short-term →	<ul style="list-style-type: none"> Increased investment in high-efficiency equipment, GHG emissions reduction equipment, and water resource recycling equipment Increased R&D investment to develop advanced emissions reduction technologies 	<ul style="list-style-type: none"> Reduction of GHG emissions and energy costs of business sites Creation of business opportunities such as energy management systems 	
	③ Changes in customer behavior	Mid-term →	<ul style="list-style-type: none"> Increased costs for attaining high-efficiency and eco-conscious product certifications Reduced sales of products with low energy efficiency ratings Increased R&D costs for high-efficiency and eco-conscious products 	<ul style="list-style-type: none"> Release of high-efficiency and eco-conscious products Leading to increased sales and brand awareness 	
	④ Expansion of renewable energy use	Mid-term →	<ul style="list-style-type: none"> Increased production costs due to the rise in short-term energy costs Reduced B2B sales due to customer demand for renewable energy use 	<ul style="list-style-type: none"> Energy cost reduction by sourcing renewable energy and participation in renewable power generation projects 	
	⑤ Natural disasters such as typhoons and floods	Short-term →	<ul style="list-style-type: none"> Increased investment costs for the installation of environmental/safety/emergency facilities for natural disaster prevention Increased costs for business restoration and lost business opportunities in the event of a natural disaster 	<ul style="list-style-type: none"> Decreased insurance costs through investment in natural disaster response facilities New business opportunities such as the launch of the National Disaster and Safety Network 	
	⑥ Global temperature rise and yellow dust	Long-term →	<ul style="list-style-type: none"> Increased business site operating costs due to cooling and heating device installation, etc. Increased investment costs for air pollution prevention equipment installation 	<ul style="list-style-type: none"> Increased sales from the expansion of high-efficiency air conditioner, air purifier, and dryer businesses 	



GHG Reduction Activities

We prioritize finding solutions for the eco-conscious treatment of gases used for semiconductor manufacturing, expansion of renewable energy use, and conservation of energy. With the recent expansion of facilities and increase in production, our business sites are working hard to minimize the increase in GHG emissions by enhancing manufacturing process efficiency and reducing energy consumption. For semiconductor manufacturing sites, we established the Decarbonization Committee to monitor their mitigation of GHG emissions every quarter based on our roadmap for the mitigation of GHG emissions. Each site is required to project its GHG emissions, identify tasks for the mitigation of GHG emissions in manufacturing processes, and implement action plans on a yearly basis. In 2021, we reduced GHG emissions by a total of 6.41 million tonnes through 476 projects including improving gas treatment equipment efficiency, installing high-efficiency equipment, and enhancing manufacturing efficiency.

GHG Emissions Reduction Activities in 2021



Energy Conservation in the Manufacturing Process

IoT-Based Infrastructure We monitor our energy consumption through IoT and AI-based HVAC system for better efficiency and control. Operation data from the central air conditioning system and individual air conditioning units is analyzed every minute to set the optimal control value, which is adjusted based on algorithms. This solution was applied to business sites in Korea, Vietnam, and the US and worked to reduce energy consumption by 11-13% per year. We plan to apply it in Europe, Southwest Asia, and Central and South America as well and are reviewing the possibility of sharing it with our partner companies.

Energy Reduction in Semiconductor Manufacturing To reduce energy consumption across all stages of semiconductor manufacturing, we strive to innovate the process, reduce main equipment testing time through operation optimization, improve auxiliary equipment operation temperature conditions, install high-efficiency equipment, and neutralize the wet scrubber (harmful gas processing device). To reduce LNG use, we introduced the Regenerative Catalytic System (RCS) for heat sources on a pilot basis, while also collecting waste heat through the coolant system and heat exchanger and adjusting the air temperature and air flow of outdoor air control units. We plan to expand the implementation of the RCS depending on the results of on-site testing.

Energy Consumption Monitoring We analyze our energy consumption in real time based on energy data, the operating status of major facilities, and product manufacturing information collected through IoT modules and sensors and display the findings on the monitoring system. We ran a pilot test of this system at our Vietnam business site in 2021 and plan to apply it to more sites, starting with those with greater energy consumption. The energy consumption monitoring system is capable of real-time energy consumption monitoring, target management, consumption management in accordance with production, and energy consumption pattern analysis for different time periods.

Reduction of Semiconductor Process Gases

Improvement of Treatment Efficiency for Semiconductor Process Gases To improve the efficiency and utilization of gas treatment facilities, we are expanding the installation of the Regenerative Catalytic System (RCS). In July 2020, we developed a new catalyst for GHG emissions reduction equipment through three years of joint R&D with our partner companies and raised the gas treatment rate to 95%.

Reduction in the Use of Semiconductor Process Gases We are striving to minimize the use of semiconductor process gases while enhancing efficiency in gas treatment. To this end, we have pushed ahead with a project to optimize the processing time, stages, and recipes for individual processes and continue to monitor our performance on a monthly basis.

Development of Alternative Gases We remain committed to developing and applying alternatives to replace gases with high global warming potential (GWP). Since 2018, we have used G_b in lieu of C_4F_8 for some of the processes. We will continue to actively engage in R&D on alternatives for CF_4 , CHF_3 , C_4F_6 , and SF_6 .

CASE

Decarbonization Committee Operations

The Decarbonization Committee oversees the operation of GHG emissions mitigation activities at our semiconductor manufacturing sites and secures technologies to address different emitters. The committee is chaired by the Head of Global Manufacturing and Infra Technology and comprises relevant organizational units including the EHS Center, Infrastructure Technology Center, and Manufacturing Technology Center. The committee establishes roadmaps for the reduction of emissions for different sources of GHGs, from semiconductor process gases to fossil fuels, electricity, and renewable energy. It also monitors the outcomes of GHG emissions mitigation activities on a quarterly basis.

Expansion of Renewable Energy Use

Mid-to-Long-Term Renewable Energy Plan

We are expanding the use of renewable energy at our business sites around the world. The legal systems and infrastructure conditions, which vary by region, require region-specific transition plans. The business sites¹⁾ in the US, Europe, and China were converted to 100% renewable energy sources in 2020 and are in the process of replacing their REC system with the PPA system.

¹⁾ Includes non-manufacturing operations in buildings/office spaces that are owned by Samsung Electronics and those in rental spaces that consume over 1,000 MWh/year.

The rate of renewable energy in Brazil and Mexico increased to 94% and 71% in 2021, respectively. We expect to be able to attain 100% renewable energy in Latin America and Southwest Asia by 2025. These regions are considered more advantageous as PPA and Green Pricing are common practice.

We will actively expand the use of renewable energy in areas where the use of renewable is relatively low such as Southeast Asia and Africa, considering the legal system and infrastructure of respective countries.

Mid-to-Long-Term Roadmap for Renewable Energy Usage

2018	Declaration to expand the use of renewable energy
2020	Business sites in the US, Europe, and China powered with 100% renewable energy
2025	Business sites in Central and South America and Southwest Asia powered with 100% renewable energy

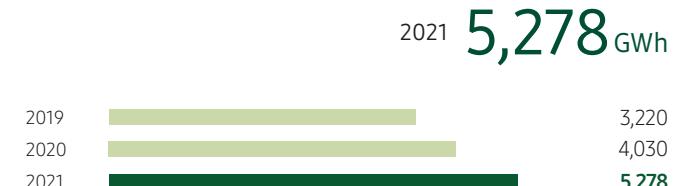
Status of Major Business Sites

Korea The Suwon and Giheung business sites are equipped with 1.9MW and 1.5MW-capacity photovoltaic power generators, respectively. The Pyeongtaek business site is equipped with a 0.4MW-capacity photovoltaic power generator and 200RT-capacity geothermal power generator. We installed a 0.08MW-capacity photovoltaic power generator at the Onyang business site in 2021. We plan to install an additional 0.2MW-capacity photovoltaic power generator at the Onyang business site and a 0.15MW-capacity photovoltaic power generator at the Gumi business site. We also purchased 490GWh of renewable energy using the Green Premium implemented in 2021. We will continually expand the use of photovoltaic and geothermal power generators, and the Green Premium, at our domestic business sites.

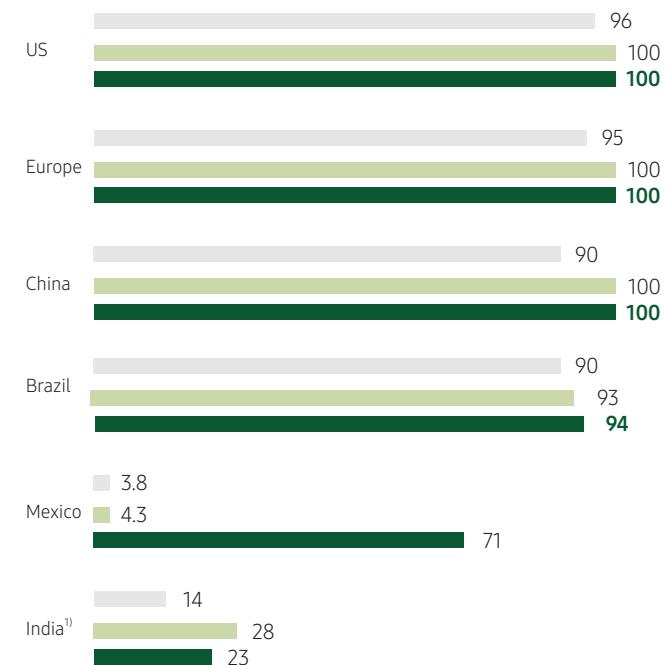
Central and South America The business site in Campinas, Brazil, completed its conversion to 100% renewable energy in 2021 by signing power supply contracts with local wind power, photovoltaic power, and hydropower stations. The business site in Manaus, Brazil, is currently powered by 92% renewable energy sourced from Green Pricing. The site plans to use 100% renewable energy by 2025. The business site in Mexico increased its share of renewable energy to 71% in 2021, up from 4% in 2020, through contracts including REC purchases. This site is seeking to further expand its renewable energy suppliers and achieve conversion to 100% renewable energy by 2025.

Southwest Asia The business site in Chennai, India, achieved 53% conversion to renewable energy by sourcing electricity from local photovoltaic power, wind power, and biomass power stations. The business site in Noida, India, installed photovoltaic power generators with a total capacity of 0.7MW in parking lots and pedestrian passages and is seeking to expand its network of renewable energy suppliers.

Renewable Energy Use (Unit: GWh)



Renewable Energy Use in Major Regions with Operations (Unit: %)



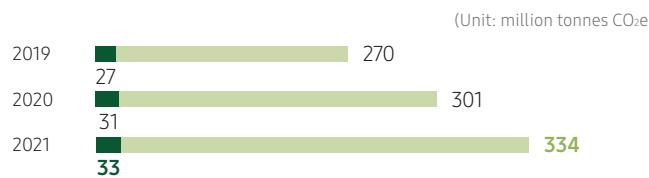
¹⁾ In 2021, the rate of renewable energy use in India decreased, due to the increase in power consumption.

2019 2020 2021

Product Energy Efficiency

We closely monitor the latest developments in environmental regulations and technologies to reduce energy consumption via the company-wide Eco-Council consisting of specialists in the field and each business unit's consultative body of working-level staff members. To mitigate GHG emissions in the product use phase, we continually develop and implement energy efficiency measures for new products. In 2021, the annual energy consumption of our products was reduced by an average of 33% compared to 2009 through the implementation of the high-efficiency heat exchangers for air conditioners, enhanced cleaning power for washers, and high-efficiency driver ICs for TVs.

GHG Emissions Reduced in the Product Use Phase¹⁾



● Amount decreased in the calendar year

● Cumulative decreased amount in previous years

1) Cumulative from 2009

Home Appliances

SmartThings Energy is our AI-based solution that allows more energy-efficient use of connected home appliances. The solution monitors¹⁾ the energy consumption of smart home appliances, including refrigerators, washers, dryers, and air conditioners. It also offers a smart energy-saving mode²⁾.

1) Korea, the US, the UK, India, and Brazil 2) Korea

PCs

We enhanced the energy efficiency of our laptops by adding circuits designed to reduce the electricity loss of the OLED panel and optimized the energy consumption of chargers by eliminating standby power.

Feature Story

Our eco-conscious efforts for the planet, SolarCell Remote

While seeking ways to produce more eco-conscious remote controls, we noted that existing remote controls all use disposable batteries. This means that each household discards 14 batteries throughout the typical life cycle of a TV, which is about seven years, by changing the disposable batteries once a year. To eliminate the use of disposable batteries, we developed the low-power SolarCell Remote that can charge itself with sunlight as well as indoor lighting. We plan to apply SolarCell Remote to all of our TV products released from 2022 onwards. Based on the estimated sales of TVs around the world, we expect to reduce the use of 200 million disposable batteries in 2022 alone.

"As remote controls remain stationary most of the time and lights stay on after dark until bedtime, it is quite easy to charge them with indoor lighting. We can reduce GHG emissions by approximately 12,960 tonnes by replacing the disposable batteries in remote controls with solar cells considering the life cycle of TVs."

- Kim Kwanyoung (Visual Display Engineer) -



Semiconductors

Starting with the Green Memory Campaign launched in 2009, we have showcased low-power memory solutions every year as part of our effort to produce more environmentally responsible products. Low-power semiconductors contribute to the mitigation of GHG emissions from IT devices and data centers handling massive volumes of data. We also aim to achieve more environmentally responsible semiconductor manufacturing by identifying the carbon footprint and emissions factors across all of our product-related processes.

Low-Power Semiconductor Memory We aim to reduce the energy consumption of global data centers by enhancing the energy efficiency of our semiconductor memory solutions. The power consumption of a data center rises in proportion with the amount of data it has accumulated. Increased traffic also leads to heating that requires more power to cool. The heat generated by SSD has been drastically lowered, thereby reducing energy consumption by 50% compared to HDD. The energy efficiency of high-performance SSD memory (PM9A3, E1.S) exclusive for data centers has been enhanced by approximately 50% compared to the previous-generation products and has helped reduce data center operating costs. New products (LPDDR5X DRAM, DDR5 module, etc.) with the latest technologies (Extreme Ultraviolet Radiation, High-K Metal Gate, Through-Silicon Via, etc.) work to ensure better performance with minimized increases in energy consumption, and more energy-efficient data processing.

CASE

Life Cycle Assessment Process for Semiconductors

We went beyond attaining carbon footprint certification for some of our leading products and established the life cycle assessment (LCA) process for all of our products. We plan to develop assessment methods optimized for different product categories and ensure the credibility of the established process through third-party auditing. This is expected to more effectively deliver carbon emissions data to our corporate customers aiming to achieve carbon neutrality. It will also enhance transparency in information disclosure regarding semiconductor manufacturing. We will strive to further reduce our products' environmental impact across their life cycle stages.



Leadership in Process Technology We developed advanced processing and design technologies to deliver high-performance semiconductors that consume less energy. For Exynos, our system-on-chip (SoC) series, we have continually enhanced the energy efficiency of the major cores of CPU, GPU, and NPU. At the same time, we have also installed AMIGO (Advanced Multi-IP Governor), our exclusive solution, to reduce battery consumption when activating high-definition and graphically demanding games and programs. For image sensors, we pioneered ultra-fine pixel technologies to deliver ultra-high resolution and minimize energy consumption during previews. For DTV, the SoC has been integrated with the high-resolution upscaling IC, while the previously separated two TCONs for 8K TVs have been integrated into one to minimize energy consumption. Our efforts to improve energy efficiency in all areas, from design to manufacturing and everyday use, are expected to reduce not only the battery charging time for smart devices, but also the energy consumption of other electronic products, thereby contributing to the mitigation of carbon emissions.

Green Technology Certification

Our technological innovations aimed at achieving greater energy efficiency are certified as **Green Technology** by the Korean government. Since the inception of this system in 2010, we have attained certifications for a range of technologies. As of 2021, we hold ten Green Technologies, and 136 products featuring these technologies are confirmed as Green Technology Products.

Green Technology Certification Status

Product categories	Green Technologies	Cases
Home Appliances	Dryers equipped with a high-efficiency heat pump and heat exchanger, energy efficiency improvement technology, etc.	7
Monitors	Monitors equipped with standby power reduction technology	1
Laptops	Laptops powered by high-efficiency power conversion technology	1

*Sleep-mode energy consumption reduction technology for printers (1 case)

Reducing GHG Emissions in Other Areas

Supplier Management and Support

We joined the Supply Chain Program of the [Carbon Disclosure Project \(CDP\)](#) in 2019 to monitor the GHG emissions of our major suppliers and provide incentives to encourage renewable energy use.

Improving Logistics Efficiency

We are engaging in measures to optimize transport routes, improve loading efficiency, and reinforce transport management to ensure greater logistics efficiency. As a result, we reduced a total of 16.6 million tonnes of GHG emissions in 2021 alone. Emissions from our logistics activities in Korea in 2021 decreased by 5% compared to 2020.

Minimizing Business Trips

In 2021, business trips were restricted due to the COVID-19 pandemic, and GHG emissions from business trips decreased by 38% compared to 2020. We promoted the use of video conferencing, and a total of 220,000 meetings were held online throughout 2021 (616 per day on average). This marks a 10% increase from 2020. We plan to further improve the accessibility and convenience of the video conference system.

Replacing Corporate Vehicles with Zero-Emission Vehicles

We plan to replace all of the corporate vehicles, including passenger cars, shuttle buses, and trucks, used at our domestic business sites with electric vehicles by 2030. We will also install additional electric vehicle charging stations.

Collaboration to Address Climate Actions

Obtaining Emissions Permits

We operate the Clean Development Mechanism projects in Kenya and India. In Kenya, we have provided low-carbon cooking stoves fueled by bioethanol to refugee camps since 2017. In India, we have distributed high-efficiency refrigerators tailored to local lifestyles since 2013. As the operator of these projects, we are entitled to emissions permits in accordance with our yearly GHG emissions reduction performance as approved by the United Nations. In Korea, we purchase emissions permits through landfill gas treatment at large landfills and N₂O reduction activities in nitric acid production processes.

CASE

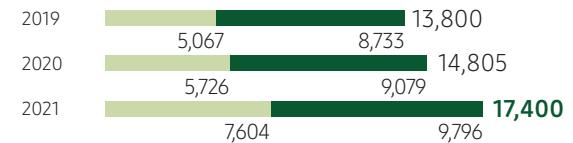
Smartphone Recycling

As an extension of our efforts to combat climate change, we operate a range of programs to recycle used smartphones. For example, we developed and launched the Samsung Knox-based app to enable African Clean Energy, a [B Corp-certified](#) company that distributes solar-biomass hybrid energy systems in developing countries, to connect used Galaxy phones to solar-powered cooking stoves distributed to households in Africa and measure data regarding their use.

GHG Emissions

Our total GHG emissions in 2021 stand at 17.4 million tonnes CO₂e, a 17% increase from the previous year. While we made efforts to decrease the amount of GHGs generated and increase the percentage of renewable energy used at each business site, our total GHG emissions increased due to the installation and activation of the new semiconductor manufacturing lines. We plan to continually make efforts to reduce greenhouse gas emissions by expanding the use of renewable energy, improving process gas treatment efficiency, developing alternative gases, replacing high-efficiency facilities, etc. To this end, we are developing a plan to predict our mid- to long-term greenhouse gas emissions and reduce greenhouse gas emissions continuously.

GHG Emissions (Unit: thousand tonnes CO₂e)



● Direct emissions (Scope 1) ● Indirect emissions (Scope 2)¹⁾

1) Market-based GHG emissions that reflect renewable energy use / Location-based GHG emissions that do not reflect renewable energy use: 16,065 thousand tonnes CO₂e in 2019, 17,571 thousand tonnes CO₂e in 2020, and 20,173 thousand tonnes CO₂e in 2021

Maximizing Resource Circularity

We are striving to shift toward a circular economy where resources are reused and recycled efficiently from the linear economy that follows a “take-make-dispose” paradigm. To this end, we have established our own circular economy principles and have engaged in a range of activities across all product life cycle stages such as development of circular products, improvement of repairability, take-back of e-waste, etc.

Circular Economy Principles

Efficient Use of Resources

Recycled Materials

We are expanding the application of recycled plastic across a range of product categories including refrigerator, washer, air conditioner, vacuum cleaner, TV, monitor, smartphone, and PC. In 2021 alone, we used 33,000 tonnes of recycled plastic from discarded electronic goods, fishing nets, and plastic bottles, reaching a cumulative sum of 310,000 tonnes from 2009.

Amount of Recycled Plastic Used¹⁾ (unit: 10,000 tonnes)



Amount used in the calendar year Cumulative amount used

1) Cumulative from 2009 based on the total weight of plastic containing recycled materials

CASE

Recycled Ocean-Bound Plastic in Our Products

We strive to increase the use of sustainable materials in smartphones and tablets. To that end, we have developed innovative technologies to recycle waste fishing nets to reduce ocean plastic pollution. The Galaxy S22 series smartphones and Galaxy Tab S8 series tablets are built with parts that contain ocean-bound plastic. We plan to apply recycled plastic to the entire Galaxy series.

Mobile Devices The packaging for Galaxy S22, Galaxy Tab S8, and other flagship models are made with 100% recycled paper, while film screen protectors are made with 100% recycled PET bottles. We are replacing the plastic materials used for DLC bands and APS covers with paper to achieve plastic-free packaging by 2025.

Semiconductors All paper packaging for our products is made with 100% sustainably sourced paper, and we are working to apply paper packaging to more products. We first replaced the plastic tray packaging of our portable consumer SSDs with paper packaging in 2020, and now three of our consumer SSDs come with plastic-free paper packaging.

Eco-Package

We are replacing plastic and vinyl materials with paper and recycled materials to reduce the environmental impact of our product packaging. We are also reducing the volume and weight of packaging to mitigate GHG emissions in the transportation and shipping process. We use sustainably sourced paper and recycled paper.

Displays and Home Appliances We use recycled expandable polystyrene (EPS) cushions in the packaging for our major TV models and plan to include them in the packaging for all of our products from 2022 onwards. In 2020, we introduced TV packaging designed to be upcycled into a range of objects for pets or small pieces of furniture based on ideas from consumers around the world. This Eco-Packaging was used for all TV models and some home appliances including air purifiers.

Modular Design

The modular design of our customizable BESPOKE refrigerator line-up enables users to update the design of their product by simply replacing the door panels. The BESPOKE Cube Air Purifier is stackable as a modular unit. If greater capacity is required, additional units can be purchased and stacked on the existing unit, thereby saving resources and space.

Product Life Span Extension

Durability

To ensure the longevity and consistent performance of our products, we conduct various international standards tests, including durability, drop, water-resistance, and life span tests, as well as our own stress tests such as free drop tests for different angles and flooring materials and water-resistance tests under a range of conditions.

Repairability

Repairability is one of our main priorities in product development. We design our products in a manner that allows users to easily disassemble and repair them to prolong their use and make it easy to recycle discarded parts. We continually research ways to develop products with enhanced repairability.

Highest Grade in France's Repairability Assessment

It has become mandatory for electronic goods marketed in France to label their **Indice de Réparabilité**. Our smartphones (including the Galaxy S22), TVs, and frontloading washers have attained the **highest grade [Dark Green]**. We will further reinforce the information provided in product manuals and strive to ensure a stable supply of parts and materials at reasonable prices to enhance repairability.

*Refer to our website for product-specific rating information and other details.

Software Updates

In February 2022, we announced our plan to provide four generations of Android OS upgrades for Galaxy mobile devices. For example, the Galaxy S22 series powered by Android 12 and can receive up to four Android OS upgrades in total, starting with Android 13. Through this new standard, we aim to give users the security to enjoy their Galaxy mobile devices for an extended period of time.

Repair Service

The accurate diagnosis and prompt repair of any defects or malfunctions are essential to prolong a product's life span, maintain its performance, and enhance resource circulation efficiency. We operate a comprehensive global service channel and region-specific service channels optimized for local needs to improve accessibility, while also ensuring consumer convenience by offering services powered by digital technologies.

Global Service Channel – Service Centers As of the end of 2021, we operate 12,807 Service Centers in 214 countries to ensure convenience for our customers around the world. Service Center managers and repair technicians are trained to provide the highest-quality services based on our expertise and service guidelines. We operate training programs for product repair, product use guidelines, and the introduction of new product features.

Environmental Activities for Customer Service As an extension of our efforts to reinforce environmental management practices in customer service, we engage in a range of relevant activities.

Eco Repair The Eco Repair Service is designed to minimize parts replacement and maintain originally installed parts to extend their use as much as possible. For mobile phones, the Eco Repair Service is available in 19 countries including the US and Germany as of 2021.

Eco Paper-free We issue consumer documents such as receipts, submission proof slips, etc. in digital format instead of on paper upon request. This service was first introduced in India in 2021 and will be made available in other regions in the near future.

Eco Packaging We deliver repaired products in sustainably sourced paper box. This service is currently offered in 11 countries including the Netherlands and the UK and will be made available in other regions in the near future.

Eco Box We have installed used mobile phone and accessory collection boxes at repair centers in major cities to take back e-waste.

Eco Delivery We deliver repaired products using eco-conscious means of transportation, such as bicycles and electric vehicles, to those customers who request this service. This service was first introduced in the Netherlands in 2021 and will be made available in other regions.

CASE**Eco Delivery Service in the Netherlands**

Our subsidiary in the Netherlands offers a mobile phone pickup and repair service in collaboration with bicycle couriers. Mobile phones are picked up and delivered after repair by bicycle. We plan to make this eco-conscious service available in more cities in the near future.

**Other Services**

Video Troubleshooting Our Contact Centers have offered video troubleshooting since 2019. This service allows customers to connect with Contact Center experts via video on their smartphones and troubleshoot problems with their product. Customers can access this service by simply pressing an SMS link sent by our staff members without installing an additional app. Once the problem is identified, our staff members provide the solution or proceed with further troubleshooting procedures. This effectively reduces both repair time and costs. As of 2021, this service is available in 72 countries including the US, the UK, Spain, and Brazil.

Visual ARS We offer video ARS that allows customers to visually check and access the services they need on our automatic response system. We plan to continually enhance the user experiences of those with hearing impairment and the elderly. As of 2021, this service is offered in eight countries, including Korea and Australia, and will soon be made available in other regions as well.

CS Chatbot We offer around-the-clock troubleshooting through our AI-based chatbot service developed in 2017 by Samsung Research. As of 2021, this service is available in six countries including Korea, the US, and the UK.

Sign Language Service We provide sign language interpretation for hearing impaired customers. We first introduced this service in Turkey in 2015 and offer it in 55 countries as of 2021.

**Service Quality Control**

Operation of Standardized Services and On-Site Audits We provide standardized services at our Service Centers and Contact Centers based on our work standards and process guidelines. Our global subsidiaries offer training tailored to each region's needs as instructed in the guidelines, while also sharing customer information via the Customer Service Portal. We regularly conduct on-site audits to check if the standard procedures are being followed and make improvements based on the findings.

Service Skills Training We offer training on new products and proper customer response for our Service Center managers and repair technicians. Both video sessions and off-line group sessions are provided depending on individual countries and products. The repair scope allowed for each product is determined based on each technician's capacity. Managers and technicians can access training videos and materials via our website and mobile app anytime, anywhere.



Take-Back and Recycling

We operate a wide range of recycling programs in 56 countries, including in Korea. The Asan Recycling Center, Korea's very first recycling center for electronic goods, has been in operation since 1998 and is connected to our logistics centers in various regions for e-waste collection. Our overseas subsidiaries take back and recycle discarded electronic goods in collaboration with local recycling organizations and service providers. Collected electronic goods are sorted, pre-processed, and pressed to be reused as materials for new product manufacturing. We also operate internal Requirements for Recycling Service Partners that specify EHS-related laws and regulations, supplier management, the prohibition of illegal waste export, etc.

Take-Back and Recycling Achievements

We collected a total of 5.07 million tonnes of e-waste from around the world from 2009 to 2021. In Korea, the Asan Recycling Center recovered 32,731 tonnes of valuable resources such as copper, aluminum, iron, and plastic in 2021 alone. We used 5,587 tonnes of plastic materials recycled from discarded products in the manufacturing of new products, thereby minimizing plastic waste generation and the use of petrochemical materials in the production process.

Amount of Collected E-Waste (Unit: 10,000 tonnes)



● Cumulative amount collected in previous years

● Amount collected in the calendar year

* Cumulative from 2009

Global E-Waste Take-Back and Recycling Status



Waste Management

To minimize waste generation, we design our products with a focus on resource efficiency and continually improve our manufacturing processes. All of our global business sites review the amount of waste generated and recycled each month and seek ways to further enhance the recycling rate by examining their waste disposal methods.

Waste Management Activities



Product Development

- Operating the eco-conscious design assessment process
- Assessing eco-friendliness in the development stage (resource efficiency, environmental impact, and energy efficiency)



Waste Disposal

- Setting waste recycling targets
- Developing waste disposal technologies
- Expanding measures to mitigate environmental impact (low-toxic substance and alternative development, neutralization, etc.)



Waste Transportation

- Complying with the **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal**
- Monitoring the travel routes of waste transportation vehicles



Waste Disposal

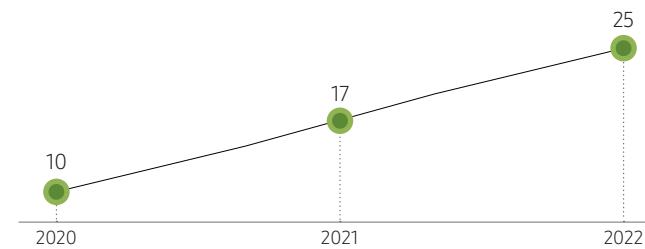
- Ensuring the compliance of waste treatment service provider
- Conducting eco-friendliness assessments of waste disposal companies on a yearly basis (operating capacity, environmental management, etc.)

Waste Recycling Improvement

We achieved a waste recycling rate of 96% in 2021. Our semiconductor business sites established the goal to further improve the recycling rate to reach 99.5% by 2025 and reduce non-recyclable waste to less than 6,000 tonnes. To this end, they continue to advance the circular economy by discovering added value in waste and developing recycling technologies. Our semiconductor business sites succeeded in accomplishing **Zero-Waste to Landfill** for the first time in the industry in 2021. We will strive to have all of our global business sites attain zero waste to landfill certification in the near future.

Zero Waste to Landfill Certification

(Unit: number of business sites, cumulative sum)



Waste Treatment Technology Development and Process Innovation

We are developing waste treatment technologies and reinforcing our system to separate recyclable waste to achieve zero waste to landfill and promote resource circulation.

Reduction of Waste for Landfill, Incineration, and Neutralization

We have recycled approximately 2,000 tonnes of waste generated from our semiconductor business sites. In the past, wooden parts and outdoor air conditioning unit filters consisting of composite materials had to be incinerated. However, we succeeded in developing technologies to separate and recycle these materials. Consumables used to polish wafers were previously incinerated due to harmful substances. They are now cleaned and recycled to reduce incinerated waste.

We also achieved zero waste to landfill by succeeding in recycling epoxy molding compound (EMC¹), which was previously buried, and clean vacuum (CV) dust². We are now able to extract and utilize a new plastic material from EMC waste and valuable metals such as gold and tungsten from CV dust.

1) A material applied in the last stage of packaging in semiconductor manufacturing to protect semiconductor circuits from external shock

2) Dust generated and captured from semiconductor manufacturing equipment

Finding Added Value in Waste The main type of waste generated from semiconductor manufacturing is sewage sludge. In order to raise the added value of waste, we recycle copper extracted from the sludge and have succeeded in producing an alternative substance to fluorspar, which is needed for steelmaking, in cooperation with Hyundai Steel.

Attaining Recycled Resource Quality Marker Certification In 2020, the eight-inch wafer box and IC tray from the Onyang business site attained **Recycled Resource Quality Marker Certification** from the **Korea Environmental Industry & Technology Institute** for the first time in the domestic industry. In 2021, the eight-inch wafer box of the Giheung business site and three nonferrous metals from the Giheung, Hwaseong, and Pyeongtaek business sites were additionally certified. These certified items are no longer categorized as waste and are directly supplied to recycling companies. This contributed to reducing the amount of generated waste by 1,903 tonnes per year.

Waste Reduced through Recycled Resource Quality Marker Certification

(Unit: tonnes)

2020 Approximately

1,213

(eight-inch wafer box and IC tray)

2021 Approximately

1,903

(three nonferrous metals)

CASE**All Semiconductor Business Sites Attaining Zero-Waste to Landfill Certification**

As of 2021, our semiconductor business sites at eight locations¹⁾ have attained **Zero Waste to Landfill certification**²⁾ from **Underwriters Laboratories (UL)**. The Giheung, Hwaseong, and Pyeongtaek sites in Korea and Xian and Suzhou sites in China received the highest rating of Platinum, while the Onyang and Cheonan sites in Korea and Austin site in the US were rated Gold. The Giheung, Hwaseong, Pyeongtaek, and Suzhou sites were upgraded to Platinum in 2021 after having been rated Gold in 2020. In order to exceed the 99% resource recycling rate mark for the Platinum rating, we developed new technology to recycle EMC and CV dust that had previously been buried.

1) Five in Korea (Giheung, Hwaseong, Pyeongtaek, Onyang, and Cheonan), one in the US (Austin), and two in China (Xian and Suzhou)

2) An index designed to assess the resource circulation efforts of corporations and provide four ratings in accordance with the rate of manufacturing waste recycled as resources



- Gold (Resource recycling rate 95~99%)
- Platinum (Resource recycling rate 100%)

Practicing Resource Circularity

Refraining from the Use of Disposable Products To minimize the use of disposable products at all of our semiconductor business sites, we distributed reusable bags to all employees and promote the use of reusable cups and spoon set. This has contributed to reducing the waste of 65,000 disposable plastic bags and 52,000 disposable cups and plates, thereby decreasing the total amount of waste by 230 tonnes.

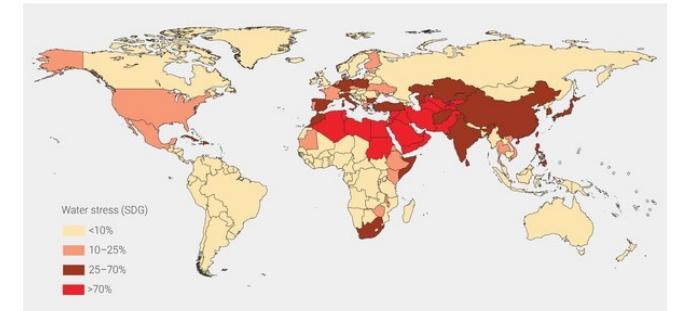
Reinforcing Recyclable Waste Separation We reinforced our recyclable waste separation system to more effectively recycle the waste from daily activities at work and expanded the separation categories from six to ten in 2021. We conducted the Eco-Office Campaign to ensure that our employees remove the labels and lids of all recyclable containers before recycling them. We promoted the campaign through training and an introductory webtoon. We also distributed toilet paper made from milk cartons and blankets made with fabric recycled from plastic bottles to the underprivileged in the local communities we serve. We will continue to focus on practicing resource circulation to preserve the planet.

Water Resource Management

Water resources are indispensable for product manufacturing and business site operations. They are also affected by natural disaster risks such as floods and droughts, and their use and disposal have a critical impact on biodiversity in the communities where we operate. Therefore, it is imperative to closely communicate and work with local communities. We regularly discuss relevant issues through the EHS Council of each business site and submit them to the Sustainability Council and the Board of Directors if deemed necessary.

Water Resource Policy**Water Risk Assessment**

We assess each year whether any business sites are located in regions affected by water stress or water scarcity and develop countermeasures for different risks. We employ the water management tool developed by the Food and Agricultural Organization to identify regions facing water stress or water risks, while also utilizing the tools developed by the World Business Council for Sustainable Development, World Wildlife Fund for Nature, and World Resources Institute to assess the water stress and ten-year water risks of the water basins near our business sites. We also use CDP's water security guidance to establish response measures for water risks.

Strategy to Tackle Water-Risk by Region**CDP Water Report****Water Stress Map****Status of Business Sites with Water Risks (as of the end of 2021)**

Category	Number of business sites	Water intake (1,000 tonnes)	Outflow (1,000 tonnes)
Total	34	163,660	130,955
In regions with water risks	13 ¹⁾	121,807	98,018

1) 10 in Korea, 1 in India, 1 in Poland, and 1 in Egypt

CASE**Response to Water Stress Affecting Our Semiconductor Sites**

For the semiconductor sites that require large amounts of water for manufacturing, we analyze their region-specific water stress and offer optimized management.

The Xi'an site¹⁾, China is located in a region with extremely-high water stress (80% or higher). We classify wastewater into acidic wastewater, alkaline wastewater, and fluoric wastewater and properly treat each for reuse. We also employ a range of treatment technologies including activated carbon filtering, acid-base neutralization, coagulating sedimentation, and reverse osmosis, to purify wastewater and use it for cooling towers, gas treatment facilities, and landscaping. To reduce water consumption, we also use recycled water as a coolant for all devices.

The semiconductor sites in Korea are located in regions with medium-high water stress (20-40%). We classify used water into six types based on our internal standards, and use purification techniques specialized for each type.

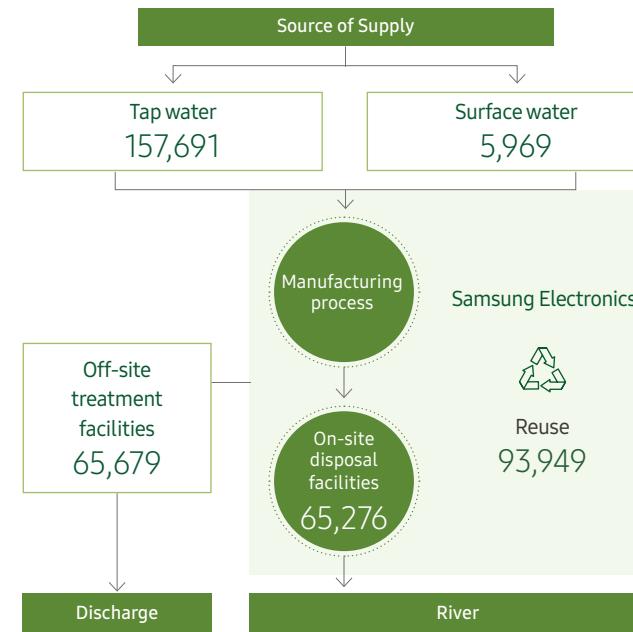
Contaminants are removed through biological treatment, chemical treatment, and filtering step by step, and the purified water is collected in a tank for discharge. The quality of water to be discharged is assessed in real time and reported to the government prior to discharge.

¹⁾China's Xi'an site was classified as low water stress according to our company's management standards, but according to WRI water stress analysis, it was classified as extremely high.

Water Management Process

We minimize water consumption and purify used water for reuse to ensure water use efficiency. To increase water reuse in the manufacturing process, we classify water resources into the four categories of sewage, wastewater, industrial water, and ultra-pure water and ensure that individual sites track the reuse amount for each category on a monthly basis and enter the data into the G-EHS System. We prevent underground water pollution through advanced facilities installed at our business sites and thoroughly process wastewater through off-site and on-site treatment facilities before discharge. We apply our internal regulations that are more stringent than the legal requirements to wastewater directly discharged into rivers through on-site treatment facilities.

Water Resource Flow Chart for 2021 (unit: 1,000 tonnes)



Amount of Water Reused (unit: 1,000 tonnes)

**CASE****World Water Day**

Every year our manufacturing sites around the world carry out river and marine ecosystem conservation campaigns together with local governments, civil organizations, nearby schools, and partner companies in celebration of World Water Day. Our activities in 2021 were focused on environmental cleanup in areas near our business sites and contact-free programs due to the COVID-19 pandemic. Over 20 sites participated in water resource-related exhibitions, idea contests, and environmental protection training.

Preserving the Health of Freshwater Ecosystems

Our domestic business sites periodically measure the water quality of rivers into which used water is discharged based on preset indicators (chemical oxygen demand, biochemical oxygen demand, acidity, etc.) and monitor their impact on the neighboring ecosystems. They also monitor fish diversity and bird diversity in the surrounding areas and make improvements accordingly.

Freshwater Ecosystem Monitoring and Improvement In order to protect the biodiversity of rivers near our business sites, we monitor the latest developments in their ecosystems, toxicity, weather conditions, and precipitation on a regular basis pursuant to the [Guidelines on Freshwater Ecosystem Status Research and Quality Control](#).¹⁾ We also monitor the fish and birds inhabiting nearby areas to make improvements.

1) National Institute of Environmental Research Regulations 775 (enacted on October 24, 2019)

Woncheon-ri Stream in Hwaseong

- Measured and monitored by [Kyung Hee University](#)
- Fish population of 2,390 of 20 species observed (crucian 19%, carp 12%, and false minnow 6%)
- Benthic invertebrates observed
- Effluent water found to have no ecotoxicity on the ecosystem

Osan Stream in Gicheung

- Measured and monitored by [Korea Ecology & Environment Institute](#)
- Fish population of 1,665 of 20 species observed (crucian 27%, carp 22%, and minnow 17%)
- Benthic invertebrates observed (population of 512 of 34 species)
- Effluent water found to have no ecotoxicity on the ecosystem

Seojeong-ri Stream in Pyeongtaek

- Measured and monitored by [Pyeongtaek University](#)
- Fish population of 183 of 13 species (tolerant species of carp and crucian 77% and intermediate species observed of false minnow and dark sleeper 23%)
- Benthic invertebrates observed (population of 728 of 27 species)
- Effluent water found to have no ecotoxicity on the ecosystem

CASE

Osan Stream Biodiversity Conservation Activities

We discharge 45,000 tonnes of purified effluent water per day into Osan Stream, which has contributed to improving the local ecosystem. As evidence of these improvements, wildlife, including otters, now inhabit the area. We conducted campaigns to plant irises known for their water-purifying capacity, supply effective microorganisms to remove pollutants, and release indigenous fish species. We also funded a project to create the [Osan Stream Butterfly Path](#) aimed at protecting the endangered dragon swallowtail.

Wildlife near Osan Stream Wastewater Outlet



Otter



Wildcat



Elk

Water Pollution Control

We ensure that all chemicals and water polluting substances used at our business sites are thoroughly filtered from wastewater before they are discharged into rivers and strive to minimize adverse impacts on freshwater ecosystems. Our internal regulations related to pollutant concentration, water temperatures, toxicity, and other hazards are far more stringent than the legal requirements.

Minimizing Pollutant Discharge In pursuit of minimizing pollutant discharge from all of our semiconductor sites, we have reduced the use of chemicals, developed alternatives for harmful substances, and enhanced wastewater disposal efficiency. In addition, we are effectively reducing the use of sulfuric acid, chlorine, and fluorine through chemical filter development, process innovation, and crystallization technology development.

Multi-Faceted Defense against Water Pollution We are taking active measures to reduce the discharge of pollutants and remain prepared for possible accidents at our wastewater disposal facilities at the same time. We installed triple-tier interlocks across the three stages of infiltration, processing, and discharge at our wastewater disposal facilities. Each interlock measures pollutants in real time, and, if pollutant concentrations surpass the preset level, emergency action is taken to remove the pollutants.

Feature Story

The development of a microplastics-reducing washing machine

Ocean-bound microplastics have emerged as a critical environmental issue. It is estimated that tiny plastic particles shed from clothes and textiles during the washing cycle account for 35% of micropollution in the oceans.

To address this issue, we have launched a project to develop a washer that reduces microplastics in wastewater.

Microplastics reach the oceans.

Plankton eat the plastic particles.

Fish eat the plankton.

People eat the fish.

* Microplastics polluting the oceans ultimately reach people through the food chain.

This project is being developed in collaboration with Patagonia, a global outdoor clothing brand.

"Microplastics generated during laundry are tiny plastic fragments shed by synthetic textiles. These microfibers eventually reach the oceans via wastewater. The key to reducing these microplastics is to prevent microfiber shedding due to agitation in the washer. We are seeking ways to reduce microfiber pollution while also ensuring high-quality cleaning."

—Bang Eun-sook (Researcher for washer development)—

"As a washer developer, I have studied how microplastics enter our oceans through wastewater from washers. We are striving to develop technology to filter microplastics from the wastewater after each wash and enable users to easily remove or discard the microplastics collected in the filter. I believe it is both imperative and worthwhile to design a washer that helps consumers reduce microplastics generated in the laundry cycle."

—Suh Dong-pil (Researcher for washer development)—

Chemical Management

We strive to minimize the negative impacts of hazardous substances that may enter our products, as well as chemicals used in the front-lines of manufacturing on the health of our customers and employees. Our internal regulations are established and stringently managed based on global standards, including the EU's Restriction of Hazardous Substances (RoHS) Directive and the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH).

[Standards for the Control of Substances Used in Products](#)

[REACH Declaration for Substances of Very High Concern \(SVHC\)](#)

Strictly Managing Harmful Substances in our Products

We are equipped with a rigorous pre-inspection and follow-up management system for parts and raw materials to prevent hazardous substances from entering our products. We set the Standards for the Control of Substances Used in Products based on global standards and voluntarily establish reduction plans for the use of potentially hazardous substances, such as polyvinyl chloride (PVC), brominated flame retardants (BFRs), beryllium, and antimony, as well as legally regulated substances.

Managing Hazardous Substances in the Supply Chain Our supply chain review and management systems are designed to help our suppliers actively engage in eco-conscious management practices. All of our product and parts suppliers are subject to Eco-Partner Certification evaluations. Each supplier is required to submit data obtained from its raw material providers and production environment reports that guarantee the credibility of hazardous substance information. We provide certifications to those companies evaluated to have complied with the Standards for the Control of Substances Used in Products. We also provide certifications to companies equipped with an advanced environment and quality management system. Only companies with these certifications are included in our supply chain.

Eco-Life Lab for the Analysis related Health and Hygiene We opened the Environmental Analysis Lab in 2004, which initially monitored the six substances regulated by the EU's RoHS. We have continued to expand potentially hazardous substances subject to monitoring each year to prevent hazardous substances from entering our products. The Environmental Analysis Lab was expanded to the Eco-Life Lab in 2020, and additional test chambers and advanced equipment for microorganisms were introduced. We also expanded the scope of research to identify fundamental causes of odors and appropriate solutions. The Eco-Life Lab's expertise and credibility have been recognized by attaining certifications from Korea Laboratory Accreditation Scheme (KOLAS) and TÜV Rheinland, Germany's renowned testing service provider.

[Samsung Electronics' Chemical Substances Management History](#)

Chemicals Used for Manufacturing

The chemicals used at all of our business sites are stringently controlled pursuant to country-specific laws and our internal List of Regulated Substances for Manufacturing. To ensure that our partner companies use chemicals under the safest possible conditions, we perform regular on-site audits and support work environment improvements. We conduct regular training for staff members handling chemicals and inspections of relevant facilities, while also establishing safety measures for relevant facilities based on the assessments of EHS experts. Additionally, we operate a three-tier chemical reduction program (alternative development, concentration reduction, and prohibition of use).

[List of Regulated Substances for Manufacturing](#)

Chemical Management Process To ensure safety, we systematically monitor and manage the entire chemical-related process, from purchase to disposal. Staff members handling chemicals at business sites request the expert group to perform evaluations of all chemicals prior to purchasing and purchase only those chemicals evaluated to be appropriate for use. In 2021, 7,563 prior evaluations were performed in Korea and abroad. Once the purchased chemicals are delivered to each site, the inventory is thoroughly monitored until they are safely discarded through a separate process.

[Management Process for Chemicals Used in Manufacturing](#)

Reinforcing Chemical Control at Semiconductor Sites To minimize damage from potential accidents, all facilities and buildings on the premises of our semiconductor sites have been reinforced. We implemented physical measures, such as the installation of an automated chemical injection system, disaster prevention and firefighting equipment, and discharge wall, while also upgrading the overall process from facility-specific inspections to the early detection of leakage. In addition, we installed a system to detect and respond to leakage at different points including building interiors and exteriors, rainwater drainage pipes, and outer fences around the business sites. We improved our research on chemical compound risks to prevent related accidents, established a system to prevent chemical mixing, and continue to update relevant construction and job regulations.

Improving Preparedness for Overseas Chemical Regulations As chemical regulations and standards vary by country and continue to be updated, we are required to take a more systematic approach to effectively manage chemicals. We review the relevant laws of the 15 countries in which we have business sites, including China, Vietnam, and India, and reflect the findings in our chemical management standards and database to minimize risks.

EMPOWERING COMMUNITIES

We remain committed to fulfilling our **corporate social responsibility** to create a better world for all. Based on **Samsung's core values of 'People First' and 'Co-prosperity'**, our **CSR activities** aim to help individuals reach their full potential.

Corporate Citizenship	42
SME Startup Support	46
Future Technology Cultivation Initiative	48



Total employee volunteer hours

9,903,186

* Cumulative sum, 2012-2021

Number of beneficiaries of our **CSR activities**

22,150,865

* Cumulative sum, 2012-2021

Number of beneficiaries of the Smart Factory Support Program

2,812

* Cumulative sum, 2015-2021

Corporate Citizenship

Our CSR Activities

We have re-established our CSR vision and theme in line with Samsung's business philosophy and core values. We have focused our capabilities and resources on various CSR activities aimed at tackling societal issues such as youth unemployment and social inequality. A new program focusing on the environment, which allows our employees to lead the entire process from idea generation to development, is also in development.

- **CSR vision:** "Together for Tomorrow! Enabling People!"
- **Theme:** Education for Future Generations

Major programs

- **Global:** Samsung Solve for Tomorrow, Samsung Innovation Campus
 - **Korea:** Samsung Junior SW Academy, Samsung Smart School, Samsung SW Academy for Youth, Samsung Dream Class, Stepping Stone of Hope (support program for self-reliance of youth no longer eligible for facility protection), Blue Elephant (cyber-violence prevention program for youth), and a new environmental program under development
- *Samsung Smart School is operated in Korea and India.

Enhancing Creative Problem-Solving

Samsung Solve for Tomorrow

Samsung Solve for Tomorrow is a contest for youth designed to advance their STEM understanding and creative problem-solving skills required to thrive in the Fourth Industrial Revolution. Teachers and Samsung employee mentors help students identify the root causes of problems in their local communities and work towards optimal solutions. In 2021, despite the prevalence of COVID-19, as many as 160,150 students and 38,615 teachers from over 33 countries participated in the program.



CASE

Addressing anxiety and depression triggered by the pandemic among the elderly (US)

Students at Porter High School in Texas sought ways to help senior citizens stay connected to the outside world and overcome loneliness and depression due to the prolonged pandemic and social distancing. They developed the Gen-Bridge app for tablets and created a companion website. The app offers video call and game services easily accessible by the elderly.

INTERVIEW

Interview with the Program Manager

"We wanted to provide the best education to both students and teachers from the very beginning. We prioritized what they need and want. We aim to help youth proactively pursue intellectual growth and set their own goals, while also focusing on offering unprecedented educational experiences through this program. It is always thrilling and motivating to watch youth transform and take action to bring positive change to both their personal lives and communities. The smallest change in how people think can lead to innovations and the improvement of inconveniences in everyday life."

- Helvio Kanamaru
(CSR Manager, Samsung Electronics Latin America Office) -

Samsung Junior SW Academy

Samsung Junior SW Academy trains teachers who provide software education at elementary and junior high schools. The program was first launched in 2013 by signing an MOU with the Korea's Ministry of Education to expand the horizons of software education. In 2021, the curriculum was redesigned to an AI-focused course. Teachers are trained using AI-related content developed in association with experts in the field, and students are provided with programs and kits for hands-on training.

INTERVIEW

"We must help children prepare themselves for the future amid this whirlwind of changes."

Thanks to the media's continued coverage of AI and related technologies, children today are well aware of the importance of developing their capabilities to solve problems based on data, regardless of their field of interest and expertise. Kim Seong-yeong, who has been engaged in information education over the past 14 years, emphasizes that Samsung Junior SW Academy's systematic curriculum significantly contributes to the growth of children's understanding.

- Kim Seong-yeong, Samsung Junior SW Academy participant -

Since 2015, we have organized the Samsung Junior SW Cup. The goal of the program is to cultivate future software experts and enable them to develop ideas and solutions that benefit society based on their software knowledge. Participation in the 2021 event alone reached 3,490 contestants (1,584 teams). In total, 34,457 contestants (12,938 teams) have participated since the contest was launched.

CASE

Developed by students Lee Ji-hyeon, Yun Ye-yeong, and Jeong Heon-jae, the Da-tective app helps to prevent accidental exposure of personal data online.

This app enables automatic image masking of photos using AI technology before they are uploaded online. This prevents damage from the leakage of personal information included in photos.



Developing Youth Skills for the Future

Samsung Innovation Campus

We began offering technological training programs for adolescents and unemployed youth in 2013. Relaunched as Samsung Innovation Campus in 2019, the program is based on our experience and knowledge accumulated from the previous programs, as well as the latest industry trends.

Samsung Innovation Campus operates a range of curricula, from programming to AI, in different countries. In cooperation with the local ministry of education, schools, and NGOs, we work to adapt the program to the local educational environment and conditions. The program contributes to nurturing workplace capabilities in youth by offering theoretical and hands-on IT training for programming, AI, IoT, and big data. It also offers training for soft skills such as creativity, communication, and empathy to help youth develop well-rounded skills. A total of 39,182 students in 28 countries received technological training in 2021. In Turkey, in particular, 86% of Samsung Innovation Campus graduates succeeded in being recruited, and some started their own businesses.

Technological Capabilities



* We plan to introduce Cloud and mobile platform training courses in the future.

CASE

Program Participant

Batuhan Abay who graduated from Istanbul Technical University in Turkey in 2019, applied to Samsung Innovation Campus under the aim of cultivating his IT competence and working as an IT specialist. Once in the program, he received consulting and training from frontline experts as well as valuable advice on his projects and career path through mentoring. After completing the course at Samsung Innovation Campus in 2020, he was recruited as a software developer by a global IT service operator.



INTERVIEW

Interview with the Program Manager

"Samsung Innovation Campus focuses on not only delivering knowledge but also offering guidance for youth on how to grow and achieve their aspirations and dreams. It is always a great joy to witness youth being inspired by state-of-the-art technologies such as AI and IoT. Their thirst for learning and enthusiasm to contribute to making a better world are always inspiring. I strongly believe that youth education is the best possible investment to realize a sustainable future. Young people have unlimited potential to reinvent the world, and every little step they take has the power to shape our future."

- Anastasia Buda (CSR Manager, Samsung Electronics Italia) -

Samsung SW Academy for Youth

Since 2018, we have operated **Samsung SW Academy for Youth ("SSAFY")** in Korea in association with the Ministry of Employment and Labor. The program offers a year of theoretical and practical training to help youth foster their capabilities and competitiveness as professional software developers. Trainees are exposed to algorithms, coding, web technology, and more, in the introductory course. This is followed by an advanced course focused on cultivating competencies to effectively harness Fourth Industrial Revolution technologies including AI and IoT. A total of 2,785 trainees from the first through fifth entrance classes have graduated from SSAFY. Among them, 2,326 have succeeded in landing jobs in diverse fields including IT and finance, recording an employment rate of 84% as of April 2022. In 2022, about 1,700 trainees of the sixth and seventh entrance classes are being trained at SSAFY.



INTERVIEW

Samsung SW Academy for Youth Graduate, Non-IT major

I majored in business administration at college and am now responsible for software development at Kakao. I applied for SSAFY knowing that I needed to take action to achieve my dream of becoming a software developer before it was too late. SSAFY's unique curriculum, including courses centered on hands-on training, projects simulating real-world tasks, and mentoring from frontline developers, provided a valuable opportunity for growth. Its employment consulting and job fair program also helped me significantly in preparing for interviews and my CV.

INTERVIEW**Personnel Manager at a Software Development Company**

Our new recruits from SSAFY have all shown performance far beyond our expectations and outstanding capabilities in programming language and algorithms, presumably thanks to the superior training offered by SSAFY. Their teamwork skills reinforced through the group studies and team projects required by SSAFY are also an asset to our company. We always welcome applicants from SSAFY, as their completion of its courses proves their excellence.

Lecturer at Samsung SW Academy for Youth

I joined SSAFY with the aim of contributing to fostering youth into developers, as I had also served as a developer for a long time. Companies need talented people who are equipped with expertise and collaboration skills that can be readily deployed to business frontiers. SSAFY provides robust theoretical and hands-on training through projects that simulate real-world tasks to cater to this need.

Samsung SW Academy for Youth Program Manager

"Youth unemployment was a major social issue in 2018. Another challenge was the critical shortage of quality developers needed in the era of the Fourth Industrial Revolution. SSAFY was established to train both IT majors and non-IT majors into convergent talents and provide optimal solutions for the problems facing the industry. It has been five years since SSAFY was launched, and many of the programs developed as graduation projects have been praised by the judges for exceeding expectations and being ready to be deployed to business frontiers immediately. In recognition of our efforts to equip our trainees with the capabilities required on the front lines of the industry, over 100 companies are giving preference to SSAFY's graduates in recruitment, and more and more companies are proposing to hold recruitment presentations. I hope that the SSAFY's graduates will continue to strengthen their presence as competent troubleshooters in different corners of the communities we serve."

- Kang Dae-beom (CSR Manager, Samsung SW Academy for Youth) -

Tailored Education for the Next Generation**Samsung Smart School**

Samsung Smart School was established to help narrow academic achievement gaps and foster essential capabilities for youths by providing our cutting-edge smart devices, training solutions, learning content, and facility remodeling services to schools with inadequate conditions or in underserved areas. We have reached out to 193 classrooms at 98 schools in Korea since 2012. In 2021, we selected ten excellent Smart Schools in Korea and India respectively, and offered remodeling services of two classrooms per school. Each Smart School classroom was given three Samsung Flip products, one tablet for each student, and one Samsung Chromebook for every two students. Additionally, they were provided with online class equipment, printers, and tablet charging stations. We provide regular teacher training and expert consulting to Smart Schools to help improve teachers' capacity to utilize smart devices in the classroom. We also support Smart School operations through free repair services for up to two years and online counseling for smart devices at all times.

**CASE****Korea**

Sangsu Elementary School in Gyeonggi-do has six classes, one for each grade. It was included as a Smart School in 2016 and supported with diverse resources to offer coding and project classes. Students were able to cultivate their coding skills to a middle-school level with training for both text coding and simple block coding. As a result, it was selected as an outstanding Smart School in 2021. The program's excellence led to a continued increase in the total number of students, more than doubling to 95 in 2021 from 45 in 2016.

India

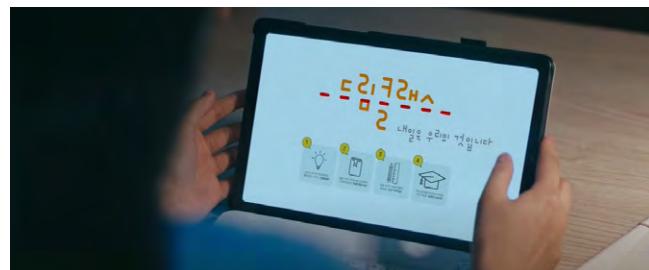
Anita Gupta is a computer science teacher at Jawahar Navodaya Vidyalaya School in Faridabad, India. When she first came to the school, no more than five or six computers were available for students to use. Additionally, teachers were unaware of non-traditional, digital teaching methods. Powered by the Smart School program in 2014, she was able to significantly increase the attendance rate and academic performance of her students. Moreover, thanks to the smart devices provided, in 2021 she was able to successfully make the transition to online classes and still keep students interested during the COVID-19 pandemic. "All the teachers and students have been familiarized with the Smart School program. Without it, we would be forced to return to the past," she said. "I am glad that Samsung Smart School is helping us keep evolving."



Samsung Dream Class

Samsung Dream Class, which originally started as a combination of after-school classes and a vacation camp, was revamped into Samsung Dream Class 2.0 in 2021. Samsung Dream Class 2.0 provides three types of training based on digital technologies: career-path guidance to help youth discover and pursue their aptitudes and dreams; training in communication, coding, mathematical, and reasoning skills required to thrive in the future global arena; and assistance with school curriculum. It also offers practical mentoring by our employees and frontline experts.

* A total of 5,000 middle school students and 500 college students participated in Samsung Dream Class in 2021.



CASE

Jeong Eun-jin (Employee at Samsung Electronics, Modem Solution Team, System LSI) attended Samsung Dream Class and received tutoring from a college student mentor in 2012 when she was in her third year of middle school. After entering college, she participated in the program as a mentor herself and helped middle school students with their studies. She then joined Samsung Electronics in 2019. In 2021, she again participated in Samsung Dream Class, this time as an employee mentor to give back to the program that had helped her. "Back in middle school, through Samsung Dream Class, I met a mentor who had graduated from a science high school. Thanks to her guidance, I was able to enter a science high school as well," she said. "I hope more young students will be able to take bold steps towards their dreams through this program."

Stepping Stone of Hope

Stepping Stone of Hope is a program that came to life from internal idea contest and donations of our employees celebrating the 20th anniversary of the New Management Declaration of Samsung. Adolescents who were protected by state care have to stand on their own feet when they turn 18. Stepping Stone of Hope provides both shelter and tailored education for these young people as they make transition to self-reliance. In collaboration with local governments and NGOs, Stepping Stone of Hope provides one living space to each beneficiary for up to two years as well as education and career programs for their personal development. A total of eight centers are in operation, including ones in Busan, Daegu, Gangwon, Gwangju, Gyeonggi, Gyeongnam, and Chungbuk. Two more centers are slated to open in Gyeongbuk and Jeonnam by 2022.



INTERVIEW

"I was not afraid of going out into the world as I had the Center as my stepping stone to self-reliance."

Kim So-yeon (pseudonym), who now works as a social worker after leaving Stepping Stone of Hope Center, says the Center is indispensable to those who have to stand alone without any family. Kim gained courage from the fact that she had someone to open her heart to and overcame her fear of going out into the world alone.

- Kim So-yeon (pseudonym),
a social worker who benefited from Stepping Stone of Hope Center -

Blue Elephant

Blue Elephant is a cyberviolence prevention program for youth operated in association with the Blue Tree Foundation to resolve drastically increasing cyberviolence among youth. Counselors visit schools to help students develop prosocial behaviors and skills and offer on-site cyberviolence prevention training.

* A total of 259,339 sessions were held for youth, parents, teachers, and lecturers in 2021.

Beyond mere punishment and preaching, the program takes a more forward-looking approach that includes cyberviolence prevention training to induce fundamental change from within; professional psychological counseling to help victims heal based on the network of individuals, families, schools, and local communities; and idea contests and campaigns targeting youth to build stronger social ties and eradicate cyberviolence. It also strives to lay the systematic and legal foundation for cyberviolence prevention and response through academic research on its root causes and current status.



INTERVIEW

"I'm working to shed light on the diversifying forms of violence continually committed in the increasingly complex cyberworld and encouraging people to find solutions together."

Seo In-yeong, a college student who is operating a student club promoting cyberviolence eradication, experienced cyberbullying when he was in the fifth grade. However, he did not realize it was a form of serious violence until recently. He believes he would have strived to resolve the problem at the time if he was able to recognize that it was violence. This is why he engages in activities to urge people to take interest in the issue and find ways to eradicate cyberviolence.

- Seo In-yeong, college student operating a student club supported by the Blue Elephant -

SMEs·Startups Support

We have shared our innovative manufacturing technologies and expertise with SMEs through Smart Factory Support since 2015. Since 2018, we have supported the technological innovation and productivity enhancement of SMEs in collaboration with the Ministry of SMEs and Startups and the Korea Federation of SMEs.

Smart Factory System Establishment

We have dispatched 200 experts across a variety of fields (quality, logistics, mold, etc.) to SMEs to support the establishment of production system, automation solutions and the innovation of manufacturing sites. We supported a total of 2,812 SMEs and established companies from 2015 to 2021.

Areas of Smart Factory Support



Factory Operation System

MES (factory operation), ERP (enterprise-wide resource planning), SCM (supply chain management), PLM (product lifecycle management)



Manufacturing Automation

Introduction of ICT-connected manufacturing robots, unmanned transport vehicles, etc.



Process Simulation

Factory layout simulation and data analysis



Ultra-precision Processing

Provision of metal material design and processing solutions

Achieving On-site Innovations



Stationed a team of three innovation experts at each SME for 8-10 weeks to transfer knowledge and help streamline and automate the manufacturing process (Low-Cost Intelligent Automation or LCIA).

Support for Competitiveness Reinforcement

We help SMEs reinforce their competitiveness through a variety of methods including achieving on-site innovations, pioneering new marketing channels, developing talent, and transferring technological expertise.

Areas of Competitive Reinforcement Support

Pioneering new marketing channels



Support for discovering new buyers in connection with Smart-Biz Expo and Arirang TV and pioneering new marketing channels through participation in our company's in-house holiday fairs, etc.

Developing talent



Starting in 2016, we have helped develop 19,359 specialists through diverse training programs such as job-specific training and smart factory specialist cultivation. In 2020, we expanded with untact programs due to the pandemic.

Transferring technological expertise



Transfer of expertise (molding, automation, etc.) and support for technology

Offering support for partner companies



Support for both target companies and their parts suppliers.

Operating Smart 365 Center



Assistance for consistent maintenance and smart factory advancement.

CASE

Smart Factory Support

Ace Life, a bidet manufacturer headquartered in Asan, a city in the middle western region of Korea, experienced a dramatic surge in orders due to the pandemic-induced shortage of toilet paper in the US and Europe. Ace Life's monthly production capacity stood at 20,000 units, which fell far short of the 32,000 units being ordered each month. We provided our manufacturing expertise to improve Ace Life's process balance, achieve testing automation, and establish an optimal layout. We also created a pleasant and inspiring work environment for employees by building a new on-site lounge. As a result, production capacity increased by 110% (42,000 units per month), and the company's annual sales recorded growth of KRW 7.5 billion. In addition, as many as 16 jobs were created. These innovative improvements to achieve a smart factory system were introduced to overseas buyers and led to the company's advancement into the Japanese market. Ace Life also received a request to develop a new product from a European partner based on its future growth potential.



Startups Support: C-Lab (Creative Lab)

We operate C-Lab to develop innovative ideas into business opportunities and contribute to vitalizing the Korean startup ecosystem.

C-Lab Spin-off

C-Lab Spin-off is designed to select projects with greater growth potential among those cultivated through C-Lab Inside, our in-house venture program, and support them to be fully-fledged startups.

The spin-off startups are provided with seed funding, foundation aid, company building programs and business strategy mentoring in order to help the project stabilize and take firm root at an early stage. They are also provided opportunities to join the list of vendors featured on our online shopping mall for employees and Samsung.com Korea. We allow employees of these spin-off startups to re-enter our company within a preset period of time to help them take on new challenges without fear of failure.

A total of 59 startups have been founded and about 500 jobs have been created through this program since 2015. These startups have been recognized for their value externally and attracted a total of KRW 120 billion in investments. The entire corporate value came to close KRW 560 billion as of April 2022.

INTERVIEW

"Evar is the product of imagination brought to life through close cooperation with my C-Lab colleagues. Many difficulties await startups in different stages. The label that Evar was spun off from Samsung Electronics helped Evar find great business opportunities in the market."

-Lee Hoon, CEO of Evar (C-Lab Spin-off Startup No. 35) -



* Evar : A start-up delivering the mobile charging solution of electric vehicles

C-Lab Outside

C-Lab Outside is a startup acceleration program launched in 2018 to share our experience and knowhow accumulated through C-Lab Inside and bolster Korean startup ecosystem. C-Lab Outside comprises two programs: one directly operated by our company and the other operated in collaboration with Daegu and Gyeongbuk Center for Creative Economy and Innovation.

We provide business grants of up to KRW 100 million to those startups selected to join the program directly operated by our company without equity acquisition, while also offering office spaces, opportunities to participate in global IT exhibitions, and tailored business and marketing development programs for a year.

The program operated in collaboration with the Daegu and Gyeongbuk Center for Creative Economy and Innovation was first launched in 2015 and incorporated into C-Lab Outside for expanded support. Samsung funds KRW 4 billion won each year and dispatches mentors and support staffs from Samsung Electronics to help foster promising startups in non-metropolitan areas.

Detailed C-Lab Outside Support



Business Grant

Providing financial aid of up to KRW 100million



Infrastructure

Offering office spaces within Samsung's campus, meals, and commuter shuttles



Mentoring and Consulting

Providing tailored program to individual needs (finance, market validation, marketing, publicity, etc.)



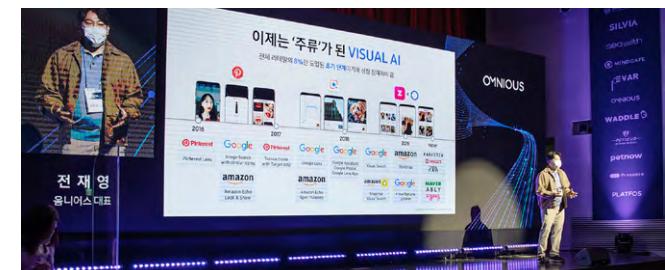
Business Growth

Offering opportunities to join domestic and international IT exhibitions (eg. CES) and Demo Day



Collaboration Opportunities

Arranging business collaboration and co-promotion with Samsung Electronics



C-Lab Startup Demo Day

In 2022, a total of nine C-Lab Outside startups participated in CES, the world's largest tech event. It was a valuable chance for them to network with investors, buyers, and industry specialists from around the globe. They were also recognized for their technological prowess and competitiveness by winning 14 awards at the CES 2022 Innovation Awards.

In November 2021, we staged C-Lab Startup Demo Day both online and offline to allow startups to widely promote their performance over the past year and discuss business and technological cooperation with other companies and investors. We fostered about 400 competitive startups in total since 2015 under C-Lab Outside.

INTERVIEW

"It takes an enormous amount of time and effort for a small startup to develop AR emojis. We were able to drastically reduce the development time and raise the quality of our service using Samsung Electronics' AR emoji technology."

-Cho Hyun-geun, CEO of Smoothy (C-Lab Outside Batch #2) -



* Smoothy : A start-up developed a Video Call Application 'Smoothy'

Future Technology Cultivation Initiative

In 2013, Samsung Electronics launched KRW 1.5 trillion grant program to support creative and innovative R&Ds in areas of basic science, novel materials and information and communication technology (ICT) in Korea.

This initiative aims to contribute to catalyzing creative and challenging R&Ds and building a foundation for technological innovation for the advancement of humanity. To ensure that the program truly cultivates high risk, high impact projects and technologies, we do not hold participants responsible for undesired results.

As of April 2022, our investment stands at KRW 973.8 billion for 735 research projects (251 in basic sciences, 240 in materials, and 244 in ICT). Over 14,600 specialists from 77 universities (Seoul National University, KAIST, POSTECH, etc.) and research institutes (KIST, KIAS, etc.) have participated in the projects, and 1,161 patents have been filed.

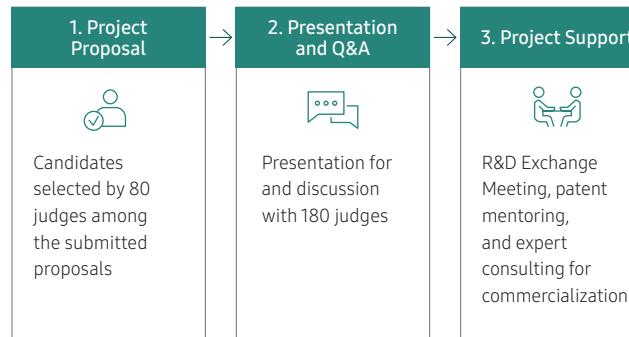
We offer a variety of specialized programs such as the R&D Exchange Meeting for grantees to share information with relevant experts and promote the commercialization of project results, mentoring for patent applications, and expert consulting for business foundation and commercialization.

CASE

Supported by the Future Technology Cultivation Initiative, the team led by professors at POSTECH have succeeded in using light to control and measure the properties of solid materials. The team's achievements were published in *Nature*.

A team led by Professors Lee Gil-ho and Cho Gil-young of the Department of Physics at POSTECH succeeded in developing a platform that uses light to control and measure the properties of solid materials. The findings were published in *Nature*, the world's leading multidisciplinary science journal, on March 16, 2022. The team's research was first selected as a project of our Future Technology Cultivation Initiative in June 2017, and has received support over the past five years.

Project Operating Process



Major Tasks

Basic Sciences	Tracking and restructuring memory, defining mathematical principles of machine learning acceleration techniques, etc.
Materials	Developing treatment options for hereditary brain-nerve system diseases, resolving heat generation in electronic devices, etc.
ICT	Addressing biases in AI, verifying errors in third-generation software, etc.

Operation of the Future Technology Cultivation Initiative

The Future Technology Cultivation Initiative is evaluated to have contributed to expanding the horizons of Korea's R&D and developing future technologies. As many as 2,000 entries are submitted to the biannual free contest and 200 entries to the themed contest on average.

First, we ensure expertise, fairness, and objectivity in the project selection stage.

Each researcher contestant is required to draw up and submit a two-page research proposal without specifying his or her name and position to ensure impartiality, and the judges then select the most innovative and inspiring proposals through collective discussions over the course of two days. The panel of judges, comprising experts in different fields, comprehensively evaluates whether the selected project proposals fulfill our innovation standards and whether the contestants are equipped with the capacity to execute the projects through a one-hour interview.

*Panel of judges consisting of 2,200 from Korea and 1,300 from overseas

Second, we encourage researchers to take on new challenges and pursue innovation by allowing them to take the lead in decision-making and freely make and learn from mistakes.

Researchers are allowed to propose the project theme, objective, budget, and period as they see fit. The objective should not include quantitative targets such as the number of publications and patents. All intellectual property rights resulting from research belong to the respective university or research institute in charge. The employees and researchers involved are not held responsible for undesired results, and cases of failure are collected and treated as our knowledge assets.

Third, we provide multi-faceted support, including funding, to help bring research to fruition.

We help researchers set the overall project direction through the R&D Exchange Meeting and offer high-quality patent application services through intellectual property mentoring. By holding the Annual Forum, we provide a platform for researchers to share their difficulties and guide them to seek solutions through collective intelligence with judges, consultants, and invited experts.

Fourth, we hold the Global Research Symposium to allow contestants to share and review their findings and outcomes with prominent scholars from around the globe.

The Global Research Symposium has been held seven times to date, with leading scholars and researchers in geometry, immunology, meta materials, etc., invited to share their insights.

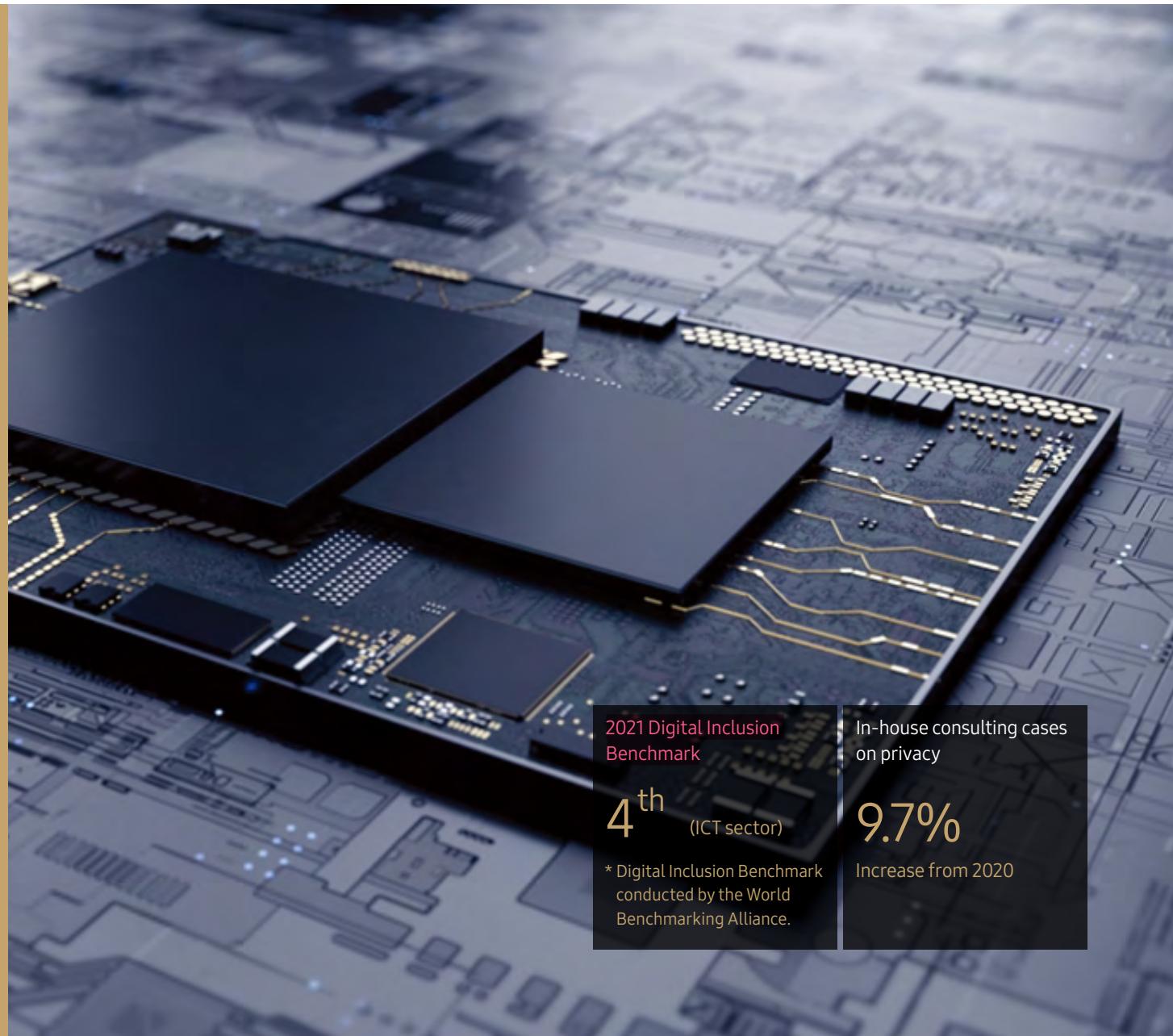
DIGITAL RESPONSIBILITY

The COVID-19 pandemic has accelerated the pursuit of digital transformation. As the impact of digital technology on our lives continues to expand, it is imperative to deliver products and services in a more responsible manner.

Our efforts to protect users' privacy and maintain the highest level of product security are embedded in every aspect of our operations from planning to design, testing, release, and post-release.

We strive to fulfill our corporate, social, and ethical responsibilities in relation to our expansion in the field of AI, while also seeking ways to reinforce the accessibility of our products and services. Additionally, we focus on moving the balanced use of digital devices for consumers.

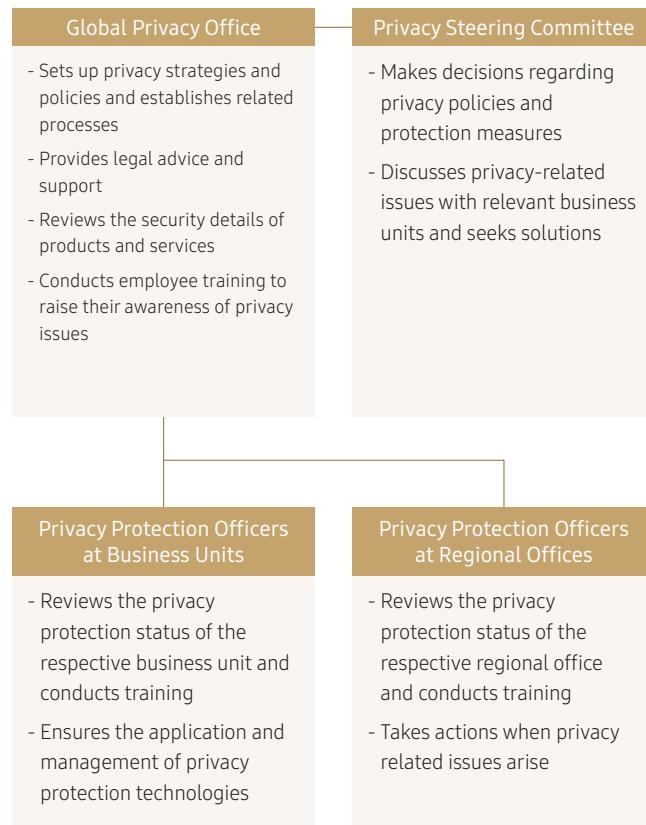
Privacy	50
Cyber Security	52
AI Ethics	55
Accessibility	57
Digital Wellbeing	58



Privacy

We have been consistently seeking ways to provide industry-leading privacy protection solutions and enhance customer convenience based on data. We work hard to act preemptively against risk factors using advanced security technologies that are engineered to provide customers with full control over personal information.

Organizational Units



Privacy Protection Principles

We strive to earn customer trust by ensuring privacy protection and transparently sharing our practices for the collection and use of personal information. To this end, all of our products and services are delivered in compliance with the Privacy Protection Principles.

Principles

Transparency



We transparently share the details on our collection and use of personal information.

Security



All our products are designed to provide optimal services and securely protect users' personal information.

Choice



We enable users to choose the type and extent of personal information to be collected, accessed, and shared.

Privacy Protection Management

We are operating a **country-specific Global Privacy Policy**, which reflects the respective **country's laws and regulations**, to safeguard the privacy of global consumers in an optimal manner.

We take preemptive actions to protect privacy, such as acquiring the industry's first **ISO/IEC 27001 certification (information security management)**, and **ISO/IEC 27701 certification (privacy information management system)** for our digital signage business in 2021.

Privacy Protection Guidelines for Employees and Guidelines on Third-Party Personal Information Processing are provided to our employees. Also, we offer trainings to improve their awareness and understanding of such guidelines.

Management Process



01 Sensing

Monitoring the enactment and amendment status of related laws and joining relevant organizations



02 Establishing Policies and Conducting Trainings

Establishing relevant policies, guidelines, and response measures and conducting employee trainings



03 Operating Privacy Protection Programs

Operating business unit-specific and region-specific privacy protection programs

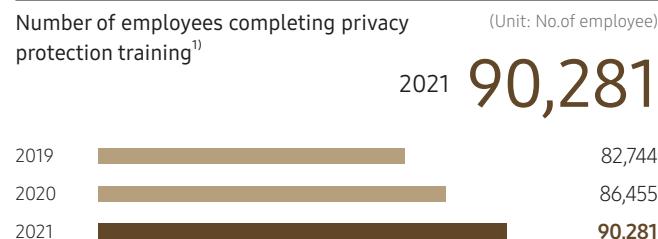


04 Auditing and Making Improvements

Monitoring the implementation of relevant policies and guidelines and taking corrective measures if necessary

Privacy Protection Training

All employees in Korea, including top management, are required to complete privacy protection training every year. Additionally, those whose work involve the handling of personal information receive more specialized, position-specific training on a yearly basis. In 2020, we began using in privacy protection trainings a video guide on precautions for each stage of work (data collection-use-discard) based on the [Global Privacy Policy](#).



1) Employees in Korea

Case Study

Reinforcing privacy protection for mobile devices

One UI 4.0, our mobile user interface upgrade introduced in November 2021, boasts a range of reinforced privacy protection features.

The “Privacy” menu enables users to easily monitor and manage diverse privacy protection settings. The “Permissions usage” menu displays the permission status for device sensors such as (eg., camera sensor, location) and apps permitted to access user information such as (eg., location, contact information, photos) at a glance. From here, users can adjust the status of each permission. These features help ensure the transparency and facilitate the management of personal information use.

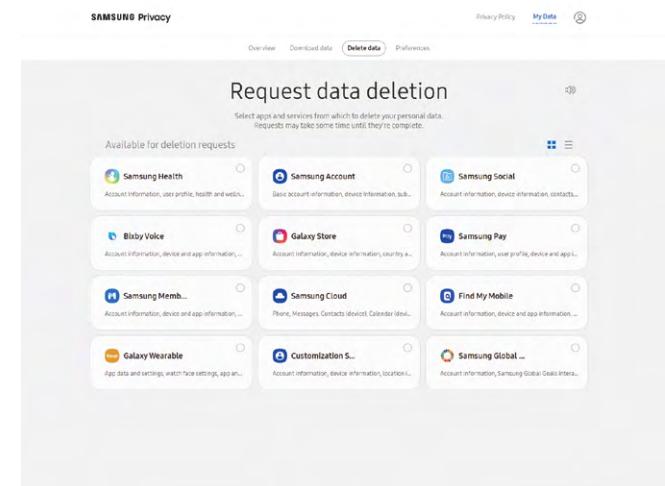
Privacy Legal Management System

Privacy Legal Management System (PLMS) is designed to ensure compliance with privacy-related laws and regulations. This system is connected to product R&D and the Product Life-Cycle Management System to monitor privacy-related matters from product planning, development, operation, and discontinuation, and thereby prevent risks. It also offers news and other materials on privacy protection to keep our employees up to date at all times.

* Name of the system may differ by region

Samsung Privacy Site

The Samsung Privacy Site provides users with comprehensive information on how their personal information is managed. Users can access and delete data being processed in their Samsung products and services connected to their Samsung Account. Through the website, they can also revoke consent to receive marketing news, check the latest Privacy Policy updates, and more.



Samsung Privacy Site

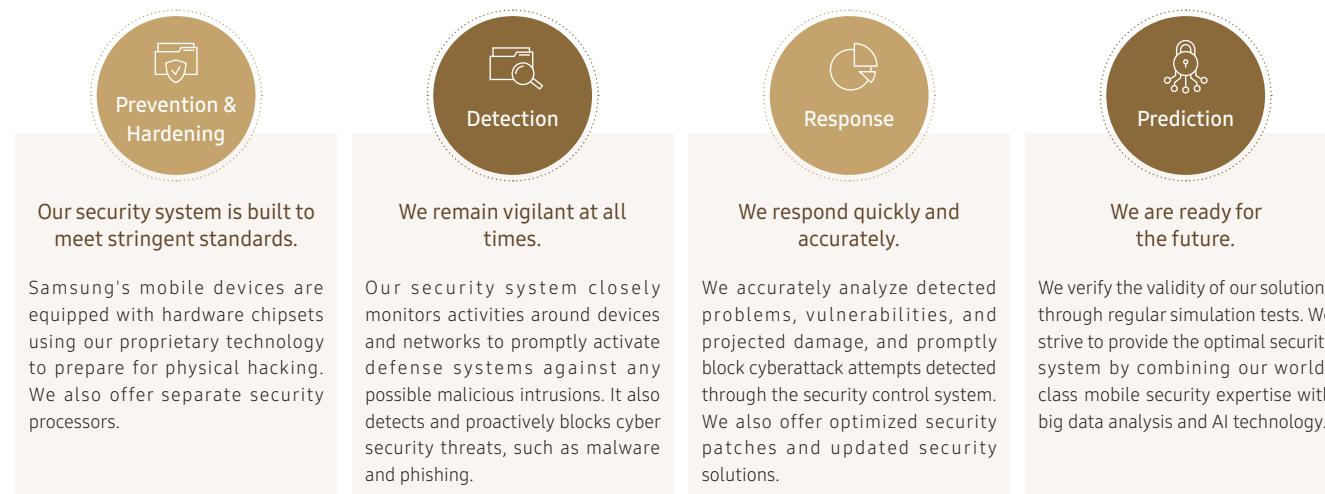


* We are continually updating our UI to provide the most innovative mobile experiences to as many Galaxy series users as possible. The latest UI version as of today may differ from the one described above.

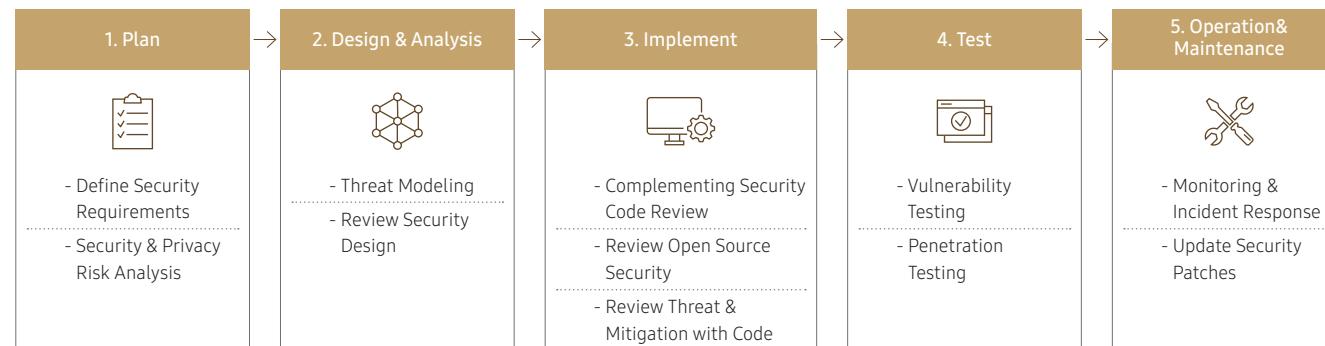
Cyber Security

Recently, there is growing interest and concern in cyber security as cyberattacks of diverse forms and damage from information leakage are increasing. We are doing our best to promptly and flexibly respond to this change and provide advanced security solutions.

Four Pillars of Our Cyber Security Control



Security Building Process



Monitoring Security Vulnerabilities

We actively communicate with external developers to develop an optimal security system. We receive reports about security vulnerabilities through diverse channels, including our security reporting website and email. When vulnerabilities are detected, we promptly verify and correct them. The Mobile eXperience and Visual Display Businesses operate the **Bug Bounty Program**, which offers rewards to those who report security vulnerabilities in our products and softwares.

* Rewards are provided when the reported vulnerability meets the criteria specified in the programs.

[Samsung Security Reporting](#) [Mobile Security Reporting](#)

[TV Security Reporting](#)

Cyber Security and Data Protection Training

We operate a range of programs and provide company-wide online Data Protection Training to raise our employees' awareness of the importance of cyber security and data protection. We also conduct security trainings for engineers and other employees in charge of privacy-related tasks in individual business unit.

Samsung Knox

Samsung Knox is securely built to protect the chipset, OS, and app against hacking attempts and unauthorized access. Saved user data are protected in real time while the devices are booted and used.

In response to the rising demand for reinforced security, we developed and pre-installed Knox Vault in the Galaxy S21 series. It is equipped with the industry's best security chipset (embedded Secure Element or eSE), a Secure Processor that prevents hardware-level attacks, and tamper-resistant security memory, offering airtight protection for passwords and biometric information.

It provides global customers with advanced, targeted security solutions that are accredited by different governments and meet the strict requirements of corporations around the world. Beyond smartphones, tablets, and smart TVs, Samsung Knox continues to expand its integrations with smart home appliances, IoT, and 5G devices.

Continually Updating Mobile Security

We continually update our security systems in a prompt and timely manner. In close cooperation with over 200 telecommunications operators around the world, in addition to our OS and chipset partners, we provide security patch updates for billions of Galaxy devices when any security vulnerabilities are detected. We cooperated with more than 1,000 partners to establish security standards for all Android devices, while also collaborating with diverse security research communities to ensure more secure mobile experience for all users.

In February 2022, We announced to provide up to five years of security updates for Galaxy devices. Models eligible for the updates include our flagship mobile devices and tablets released from 2021 onwards, as well as some models of the Galaxy A-series to be released in the near future. These models will also be able to receive up to four OS updates. The changes are expected to help users more safely experience the world of Galaxy.



* Details about mobile security patch updates are posted on the Mobile Security website.

Basic Principles of Samsung Knox

	Hardware Assisted Security
	Proven Cryptography
	Removal of Test & Debug Hooks
	Fully Isolated Secure Execution Environment
	Strong Authentication
	Secure Communication
	Securely Hardened Storage
	Tamper Resistance
	Most Up-to-Date Security Patches

Certifications Obtained by Samsung Knox

	Common Criteria		DISA		FIPS 140-2		FIPS 140-2
	NCSC		ASD		ANSSI		CCN
	AIVD		Traficom		ISCCC		STRK
	BSI						

Semiconductor Technology Security

Our semiconductors are installed in diverse products and widely used by consumers around the world. Our exclusive semiconductor technologies are acknowledged as Korea's National Key Technologies¹⁾ by the Korean government. We are well aware that it is critical to keep our semiconductor technologies secure for the benefit of various stakeholders and continually reinforce our security measures for such information assets.

1) Technologies acknowledged by Korea's Minister of Trade, Industry and Energy in Korea for their significance in both domestic and global markets from an economic or scientific perspective or for their potential to positively affect relevant industries

Information Security Management System

We conduct a regular annual audit to prevent any incidents in relation to our security systems and products. In 2021, we reinforced our security system for internal document management, network vulnerabilities, and growing cyber security threats detected through the regular audit, while also ensuring the security management of our partner companies. Through our efforts to evolve our information security we have earned third-party certifications including ISO 27001 and Common Criteria.



Common Criteria Certification

ISO 27001 Certification

Semiconductor Security Response System

Our semiconductor technologies acknowledged as Korea's National Key Technologies are protected by the **Act on Prevention of Divulgance and Protection of Industrial Technology**. We have implemented security management guidelines and designated executive-level managers for individual technologies. These managers are responsible for examining technical security procedures and approving measures to protect such technologies.

These measures align with the **Act on Prevention of Divulgance and Protection of Industrial Technology** and are subject to regular audits by the government institution in charge. We also cooperate closely with the government whenever necessary to better respond to security issues.

Our Semiconductor Technologies Acknowledged as National Core Technology

- 01 Technology for the design, processing, devices, and 3D stacking of DRAM of 30nm or a lower class
- 02 Technology for the design, processing, devices, and 3D stacking of NAND flash of 30nm or a lower class
- 03 Technology for the 3D assembly and testing of DRAM
- 04 Technology for the 3D assembly and testing of NAND flash
- 05 Technology for the assembly and testing of advanced system semiconductor package
- 06 Technology for the processing, devices, and 3D stacking of foundries of 30nm or a lower class
- 07 Technology for the design and processing of mobile application processor SoC
- 08 Technology for the design of LTE, LTE advanced, and 5G baseband modems
- 09 Technology for the design, processing, and devices of image sensors or 1μm or less in pixel
- 10 Technology for the design of OLED display driver IC (DDI) for display panel driving

* Above are the translations of the National Key Technologies from Korean; they are not the official terms

Information Security for Our Corporate Customers

We have a robust security system in place for our corporate customers. We conclude a non-disclosure agreement (NDA) with each corporate customer and allow only authorized employees to access relevant information. We also employ Compliance Guide Service, an email filtering service, to filter outbound email messages to keep our confidential information.

Organizational Units Dedicated to Information Security

To safeguard our key technologies against the rapid changes in the IT industry and internal and external security threats, we operate the Integrated Information Security Center dedicated to information protection. We also operate an effective, specialized information security system led by the Executive Vice President-level Chief Information Security Officer.

Information Security Activities Catering to On-Site Needs

Our frontline staff members are designated as Security Agents empowered to protect the key technologies and intellectual assets of their respective organizational units and establish a flexible security system centered on the needs of the business frontier. Our Security Agents are responsible for carrying out security training, inspections, and the identification of vulnerabilities, while raising internal awareness on the importance of information security.

AI Ethics

We seek to contribute to a better global society by designing the superior products and services based on our talent and technologies. The development and implementation of AI technology in our products and services presents our efforts to bring positive change to society. Our vision for AI is based on the themes of "User Centric", "Always There", "Always Safe", "Always Helpful", and "Always Learning". This embodies our determination to create user-centric AI-based products and services that are easily accessible, safe, helpful, and continuously evolving through learning.

Principles of AI Ethics

Fairness

- We will apply the values of equality and diversity in AI throughout its entire life cycle
- We will not encourage or propagate negative or unfair bias
- We will endeavor to provide easy access to all users

Transparency

- Users will be aware that they are interacting with AI
- AI will be explainable for users to understand its decision or recommendation to the extent technologically feasible
- The process of collecting or utilizing personal data will be transparent

Accountability

- We will apply the principles of social and ethical responsibility to AI
- AI will be adequately protected and have security measures to prevent data breach and cyberattacks
- We will work to benefit society and promote corporate citizenship through the AI

Principles of AI Ethics

With AI expected to bring groundbreaking changes to society, we believe it is critical to take an inclusive and ethical approach to AI technology in order to make contributions to humanity. Under the aim of ensuring compliance with related laws, and fulfilling our **corporate, social, and ethical responsibilities**, we have set forth the Principles of AI Ethics (fairness, transparency, and accountability) that are reflected in every aspect of our business activities.

AI Ethics Training for Employees

We distribute our **Guidelines on AI Ethics** and promote compliance with them throughout the entire process of designing, developing, releasing, distributing, and operating AI-based products and services. The guidelines are aimed at helping our employees follow the Principles of AI Ethics in their everyday business activities.

In 2021, we produced new model cards and data cards, which are templates designed for entering information about AI-based models, service development, and evaluation processes as well as related data. These templates help ensure transparency and integrity in all relevant activities.

To encourage our employees' awareness of the importance of AI ethics, we conducted online training in November 2021. The training session dealt with the latest global trends concerning AI ethics, related regulations, and an overview of the Guidelines on AI Ethics for developers.

Partnerships for AI Ethics

We closely cooperate with various stakeholders to enhance the public's understanding of the social impacts of AI and ways to utilize AI technology in a responsible manner.

We joined the **Partnership on AI (PAI)** in 2018, an international non-profit coalition to advance positive outcomes for people and society through AI, and we have actively participated in its discussions and activities. We are sharing in society's efforts to ensure the responsible use of AI and striving to create best practices regarding AI technology. We also take part in the Public-Private Council on the Protection of Users in Intelligent Information Society in Korea and engage in active communication with users, specialists, and related corporations to set the direction for the protection of users of intelligent information service.

AI Ethics for Bixby

AI Ethics for Bixby



Sensitive Language Policy

- Laws/regulations and norms**
- Consumer sentiment and emotions



Sensitive Language Database

- Philosophy, religion, nation, race, gender, crime, issue, emergency situation, etc.



Development and Implementation

- Sensitive Recognition Engine
- Real-time database updates



Verification

- Sensitive language search testing



Operation

- Sensing and response to the issues

Feature Story

AI Ethics Council

The AI Ethics Council is an organization that supports and trains development process/ tools for developers aligned with the Principles of AI Ethics and guidelines for ethical AI development.

Launched in April 2021, it is comprised of experts from Samsung Research and the Compliance Team. The very first project was the creation of the model cards and data cards that contain information about our AI-based models and their data. Transparent recording of AI models is the first step toward AI ethics, and we are also adopting the form in line with global trends. Previously, such records were kept by our developers in non-standardized manner. The new templates have helped our developers archive information more systematically and with a greater focus on ethical matters.

"Our company offers a wide range of products and services. An AI-based feature developed by one team can be incorporated into a product developed by another or one AI-based feature can be applied into multiple products. In order to better realize such AI-based features in accordance with the traits and conditions of individual products and services, it is essential to facilitate the transparent sharing of AI-based model information among planners and developers."

– Lyu Dug-in (Model Card and Data Card Planner) –

The model cards and data cards have been introduced to developers through our AI ethics training program. With the continued expansion of AI-based products and services, the council identified the need for developer training on AI ethics and designed the curriculum. The training program deals with the latest global trends in AI regulation, the Principles of AI Ethics, and the Guidelines on AI Ethics, in addition to the use of the model cards and data cards.



AI Ethics training material

"As AI regulations are being reinforced around the world and issues concerning AI ethics continue to emerge, we thought AI ethics training was necessary. We focused on helping trainees more effectively incorporate AI ethics into their everyday business activities."

– Kim Hyeon-wu (Training Planner) –

"With greater AI technology comes greater responsibility. I hope this online training program will provide momentum for our AI researchers to become more aware of AI ethics issues."

– Kim Su-jin (Training Planner) –

"Although us developers are aware of AI ethics and share the latest changes among ourselves, we need more systematic exposure to such matters. This training program offers us much-anticipated opportunities to prepare ourselves for handling ethical issues."

– Lee Sang-ho (Trainee) –

The council has also worked to collect and share the opinions and ideas of both the government and industry through in-depth discussions with various government agencies and organizations. However, even in the company, AI ethics is still a concern. We face more and more challenges as AI is being implemented to a wider range of products.

"It is never easy to deal with the complexity of AI ethics in product planning and development. For example, it may be considered safer to block the recognition of children's speech for certain products and services. However, it may also be viewed as an act of discrimination. AI ethics is not mathematics, and there is no single correct answer for each issue."

– Kim Tae-hyung (Software Quality Engineering Manager, SE Team) –

Vice President Lee Ju-hyeong, who heads the council, says that we have just begun our journey to understand AI and AI ethics.

"AI is demonstrating rapid growth and increasingly far-reaching impacts, but it also poses many risks. We must remain alert and strive to find ways to prevent technological development from adversely affecting individuals and society using AI ethics as our foundation."

– Lee Ju-hyeong (Vice President and Head of the AI Ethics Council) –

The council plans to step up its efforts to further nurture a corporate culture centered on AI ethics and widely promote best practices.

Accessibility

We strive to design our products and services with a commitment to embracing diversity and respecting differences. We pursue technological innovation as we focus on ensuring equity and convenience for all customers. We strive to ensure compliance with the Accessibility Design Principles and implement guidelines for improving accessibility throughout the entire development and design process of our products.

Accolades



- Selected as a winner in the Accessibility category of the CES Innovation Awards five times (2015-2018, 2021)
- * Won Best of Innovation for TV accessibility features at the CES Innovation Awards (2016, 2021)
- All TV models accredited for accessible technology¹ by Organización Nacional de Ciegos Españoles (ONCE) (May 2021-May 2023)
- Received "Tried and Tested Accreditation"² from the Royal National Institute of Blind People (RNIB) for smart TV (August 2020-August 2022)
- Nominated by the Korea Communications Commission for three consecutive years as the supplier for the TV distribution project for people with visual and hearing impairment (2020-2022)



- Selected as the winner of Best of Best (BESPOKE Jet) and Best Innovation (BESPOKE Jet Bot AI and BESPOKE Qooker) by the Ergonomics Society of Korea in 2021

- 1) First among TV manufacturers
- 2) First among TV products

Major Accessibility Features

TV



Auto Caption Position

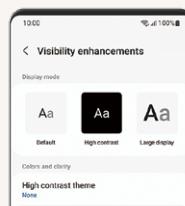
Sign Language Guide: An avatar explains features on the TV menu in sign language.

Auto Caption Position: Through video analysis, the position of subtitles is automatically readjusted to an area on the screen that does not overlap with text embedded in the video.

Voice Guide: Voice Guide is available in 28 languages as of May 2022, and we are working to include more languages.

Graphic Zoom: The screen is enlarged for users with low-vision.

Mobile and Wearable Devices



Display Mode

Flash Notification: The camera light or the screen flashes when notifications are received.

Voice Access: Actions such as app activation, volume adjustment, and tap button control can be executed through voice command.

Display mode: Display mode allows users with low-vision to activate helpful accessibility features.

- Large display mode: Large display mode enlarges the screen and bolds and resizes text.
- High contrast mode: High contrast mode offers a dark theme, a high contrast text, a high contrast keyboard, and a "Remove Animations" setting.

* The accessibility features available may vary depending on the model.

Talkback: Talkback is a screen reading program for users who are unable to visually recognize or understand content on the screen. It combines the strengths of Samsung Electronics' Voice Assistant and Google's Talkback.

Home Appliances



Control Panel with Improved Visibility

Automatic Door Opening: The automatic door opening feature ensures easier access to home appliances for senior users and those with disabilities.

- Refrigerator: Opened when bringing a hand near the door (touch sensor) or when saying "Open the refrigerator door" out loud.
- Washer: Opened when the cycle is complete
- Dryer: Opened when switched on or when the cycle is complete.

Braille and Tactile Points: Braille and tactile points are applied to the major buttons to enable vision-impaired users to locate them with ease. This feature is applied to washers released from 2019 onwards, and to other home appliances from 2021 onwards.

Talkback for Home Appliances and Services: This feature reads home appliance and service content on SmartThings to ensure equally superior services and user experiences for users with visual impairment. It is verified and enhanced by experts with visual impairment.

Control Panel with Improved Visibility: The marks and indicators on the control panels of existing washers and dryers are typically printed and affixed. We adopted an LCD control panel with enlarged text to ensure visibility even in dark environments.

Digital Wellbeing

As an increasing number of people use digital devices to access information, communicate, improve productivity, and enjoy leisure activities, the impact of digital technologies has on our everyday lives continues to grow. While these technologies have improved our lives in many ways, they have also led people to voice concerns about their growing influence. Thus, we are taking action to ensure the digital wellbeing of our users by helping them take a balanced approach to their use of digital devices.

Four Values of Digital Wellbeing



Digital Detox: Helping users focus in the moment

- Focus mode: Blocks notifications and unnecessary apps

"Focus mode" blocks notifications and apps other than ones needed at the moment. Only preset apps can be used to help users focus on the tasks at hand and improve their productivity. This mode is useful for those wishing for uninterrupted work, study, or rest.



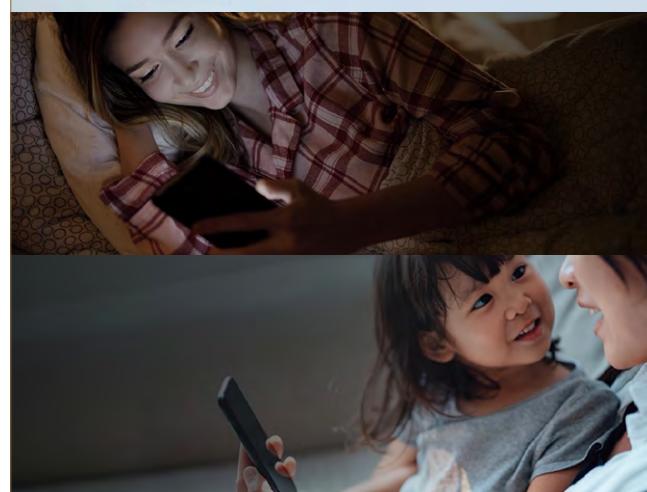
Balance: Fostering balanced digital device habits

- Weekly Report: Checks app use behaviors on a weekly basis

- Bedtime mode: Converts the screen to grayscale and blocks all notifications to ensure uninterrupted sleep

"Weekly Report" proposes desirable digital device use habits based on app usage data accumulated over an extended period of time.

"Bedtime mode" blocks all notifications and converts the screen to grayscale to ensure uninterrupted sleep and to minimize eye strain. It also encourages users to stop viewing their mobile phones when the preset hour to go to bed approaches.



Safety: Promoting the healthy and safe use of digital devices

- Eye Comfort Shield: Volume Monitor: Protects vision and hearing

- Driving Monitor: Monitors the use of digital devices while driving

"Eye Comfort Shield" ensures minimized eye strain by reducing blue light and using warmer colors. The color temperature of the screen is adjusted automatically in optimization mode. "Volume Monitor" protects hearing by sending alerts when the volume of the device in use is raised excessively. "Driving Monitor" sends alerts about dangerous driving behaviors that users themselves may be unaware of, including the use of mobile phones while driving.

Child Protection: Helping children learn to build a healthy digital life

- Samsung Kids: Ensures that children only access pre-approved content for a limited length of time

Users can activate "Samsung Kids" from the quick panel and explore a wide range of programs offered by our partners, including creativity-enhancing games and drawing. They can also limit the length of time digital devices are used and control access to individual apps through the "Child Protection" settings.

OUR EMPLOYEES

We operate under our corporate philosophy “People First” and strive to reflect our respect for human rights, diversity, and inclusion in all of our day-to-day activities.

We take measures to eliminate the risk of potential human rights violations at our business sites and raise our employees’ awareness on the importance of human rights.

We conduct the yearly employee satisfaction survey to build a better corporate culture and help our employees achieve both personal and professional development.

We also strive to create a safety-centric workplace by assessing our safety-first initiatives, improving the working environment, and ensuring strict management of chemical substances.

Labor and Human Rights	60
Diversity and Inclusion	65
Health and Safety	69
Human Resources Development	73
Organizational Culture	74



Recognition of Our Efforts to Respect Human Rights

Ranked 1st

Among companies benchmarked by Global Child Forum¹⁾ (electronics sector)

1) An international non-profit organization established in 2009 by the Swedish royal family to share best practices and evaluation tools and encourage corporations to integrate them into their business operations

Safety and Health Certification at our production sites

100 % ISO 45001¹⁾ certified

1) International standard for occupational health and safety management systems

Labor and Human Rights

We place the highest value on respect for human rights. Based on the [United Nations Guiding Principles on Business and Human Rights \(UNGPs\)](#), we designed the following labor and human rights framework to identify, prevent and mitigate human rights risk factors and violations across all aspects of our business operations. We also require our partner companies to ensure the protection of their employees' labor and human rights as stringently as our own business sites.

Labor and Human Rights Framework



Labor and Human Rights Policies

As a part of our efforts to respect human rights implementation we comply with and advocate for [international human rights standards](#) including the UNGPs, Universal Declaration of Human Rights (UDHR), International Bill of Human Rights^[1], and OECD Guidelines for Multinational Enterprises.^[2]

We are committed to the eight [ILO^{\[3\]} Core Conventions^{\[4\]}](#) outlining the fundamental principles and rights at work and uphold the protection of our employees' labor and human rights as our guiding value.

Our labor and human rights policies and guidelines are [based on international standards](#) and are continually updated in line with [the latest changes](#). We developed an Anti-Discrimination and Anti-Harassment Policy^[5] and published it on our global website in March 2022.

- 1) The International Bill of Human Rights consists of the UDHR; International Covenant on Economic, Social and Cultural Rights; and International Covenant on Civil and Political Rights.
- 2) International Labour Organization
- 3) The eight ILO Core Conventions are the Forced Labor Convention, Abolition of Forced Labor Convention, Freedom of Association and Protection of the Right to Organize Convention, Right to Organize and Collective Bargaining Convention, Equal Remuneration Convention, Discrimination (Employment and Occupation) Convention, Minimum Age Convention, and Worst Forms of Child Labor Convention.

Anti-Discrimination and Anti-Harassment Policy

We respect all individuals' right to work in an environment free of discrimination and harassment. In 2018, we released the [Anti-Harassment Guidelines](#) in association with [Business for Social Responsibility \(BSR\)](#), an organization of sustainable business experts. In 2021, we supplemented the anti-discrimination principles specified in these guidelines and realigned them into the [Anti-Discrimination and Anti-Harassment Policy](#). This policy stipulates relevant conventions adopted by international human rights frameworks (UDHR and UNGPs) and the ILO^[6] and reaffirms our dedication to complying with them. We pledge to remain committed to fostering a workplace where our employees are valued and treated, given equal opportunities, and motivated to demonstrate their competence to the fullest.

Global Code of Conduct

Our [Global Code of Conduct](#), established based on the Samsung Business Principles as the embodiment of our determination to operate within the spirit of laws and ethics as a responsible corporate citizen, serves as a yardstick for judgment in every action and decision. The Global Code of Conduct clearly reflects our focus on protecting the three basic rights of workers by specifying that "we respect our employees' freedom of association and right to collective bargaining and collective action under the aim of nurturing and maintaining cooperative labor-management relations based on mutual trust and understanding." It also clarifies our detailed principles on "work environment," "employment conditions," "grievance handling," "equality and diversity," "child labor and forced labor," and other areas to help our

employees execute their day-to-day tasks in a manner that ensures the protection of human rights. Through the Guidelines on the Global Code of Conduct, we ban any involvement in or imposition of coerced or exploitative labor, such as modern slavery and human trafficking, in support of the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the [United Nations Convention against Transnational Organized Crime](#).

Labor and Human Rights Training

It is imperative for our employees to understand both the importance of human rights and ways to protect them across all aspects of corporate management. In this context, we conduct yearly labor and human rights training tailored to different target groups to ensure compliance with our labor and human rights policies and raise employee awareness.

Human Rights Training Framework

We have conducted labor and human rights training for our employees since 2018, and the curriculum was developed in [collaboration with BSR](#). In 2021, we adopted a system that provides tailored content in accordance with individual employees' training progress to more effectively improve their understanding of relevant issues. The common courses deal with the basic concept of human rights, importance of the protection of labor and human rights, and ways to practice human rights management. To minimize the risk of human rights violations in day-to-day business operations, we operate a specialized course for those responsible for jobs deemed likely to impact the human rights of others.

Human Rights Training Framework

Common courses

1. Level 1: Basic concept of human rights

* Human rights principles, laws and international standards, our human rights policies and framework, access to remedy, and basics of human rights management

2. Level 2: Labor and human rights

* Concept of labor and human rights, human rights due diligence management, case studies, and focus on access to remedy

3. Level 3: Business and human rights

* In-depth review of human rights including frameworks of human rights management, latest legislation developments, and case studies

Specialized courses for different groups



General employees



Those in charge of jobs that may impact the human rights of others



Those responsible for human rights protection at work



Culture centered on mutual respect



Human rights issues related to respective jobs



Cultivation of Human Rights Champions

Operation of Labor and Human Rights Training

We provide labor and human rights training for all employees. In 2020, the training was provided online for all connected business sites in Korea and beyond in response to the spread of the pandemic, thereby reaching 95% of those subject to training. In 2021, a combination of small-scale offline training and online training was offered for overseas subsidiaries that had to postpone their training efforts due to the pandemic, enabling 92% of the target employees to complete the training. To ensure better understanding of the training content, training was conducted with the local language especially in production sites.

Specialized online training was conducted for 91% of staff members engaging in jobs with greater human rights risks around the world, such as those related to personnel, security, general affairs, and purchasing, around the world. All employees at our domestic business

sites completed training on mutual respect at work conducted from July to December 2021.

In order to further highlight the importance of human rights protection and share best practices, we have designated over 50 employees at overseas subsidiaries, mainly personnel, labor-management relations, and training staff members, as Human Rights Champions to further integrate a human rights lens into our business activities and serve as human rights trainers at their respective subsidiaries. In 2021, we helped strengthen their expertise in human rights through regular webinars dealing with a range of themes including forced labor prevention, freedom of association, impacts of the pandemic on human rights grievance resolution, and diversity and inclusion.



In May 2021, Samsung Electronics Poland organized a forced labor awareness raising workshop in collaboration with the International Organization for Migration (IOM) under the theme "modern slavery and ethical recruitment," to which relevant staff members of local partner and suppliers were invited.

INTERVIEW

Human Resources and Purchasing Staff Members on Human Rights Training

Human rights training allows purchasing staff members to keep up with the latest developments in international human rights requirements and our relevant policies and thereby more effectively identify and prevent human rights risks. As the spread of the COVID-19 pandemic and rapid technological progress continuously pose threats to human rights, the international community is increasingly calling for and driving measures to ensure human rights protection in a more binding manner than simply appealing for voluntary engagement. Regular training is required for purchasing staff members to update their human rights knowledge and comply with the preset purchasing procedures to ensure human rights protection in day-to-day business activities.

- Nguyen Thi Binh Minh
(Purchase Team, Samsung Electronics Vietnam)



Through this training, I learned that a bias-free corporate culture is a prerequisite for human rights protection and that inclusion and diversity are the driving forces behind sustainability. It also clearly highlighted the need for the international community to take action to promote human rights. In this context, we will continually strive to practice human rights management within the spirit of laws and ethics through various measures such as training and inspections throughout the future.

- Cecilia Perez
(HR Team, Samsung Electronics Mexico)



Ensuring respect for human rights at work directly and indirectly impacts employees' satisfaction and a company's sustainability, and thus it is essential to conduct human rights training to improve our employees' understanding of human rights protection and prevent human rights violations in daily business activities. In particular, it is imperative to train higher-ranking employees on a continued basis to create and disperse best practices and build a corporate culture centered on respect for human rights.

- Shubheshu Bajpai
(Purchase Team, Samsung Electronics Noida-India)



The importance of human rights protection cannot be stressed enough, and personnel affairs always entail human rights risks. Our company's human rights training reminds us of the need to comply with internal standards and principles and thus is highly effective in preventing potential human rights violations. Our company's human rights training motivates us to remain sensitive to the potential influence of our business operations on the human rights of both the local communities we serve and our employees.

- Laszlo Szollosi
(HR Team, Samsung Electronics Hungary)



Human Rights Due Diligence

We established a **sustainable due diligence system** to accommodate social, geopolitical, and environmental changes, such as the outbreak of the COVID-19 pandemic. We also engage in a range of activities including third-party audits and human rights impact assessments.

Third-Party Assessment by Responsible Business Alliance (RBA)

In 2021, third-party assessments were conducted on nine business sites in Korea, Brazil, India, and China using the **Validated Assessment Program (VAP)¹⁾** of RBA. All nine business sites received the highest rating.

We take remedial action against any gaps detected through **VAP** and implement long-term measures for issues that require an extended period of time for remedies to be implemented.

Our Brazil subsidiary was evaluated by an external auditor as "an exemplary corporation worthy of introduction to other companies for its best practices in complying with all its policies and operating effective employee representative bodies and whistleblowing channels."

¹⁾ An assessment program conducted to verify on-site compliance based on the criteria set by RBA

Compliance rate by area in 2021 ↗

Human Rights Impact Assessment

We perform human rights impact assessments in collaboration with an external expert organization to proactively assess the direct and indirect impacts of our business operations on human rights in alignment with the Corporate Responsibility to respect and proactively identify risks as outlined within the **UNGPs**. We enact and amend human rights policies, improve relevant processes, and provide employee training and take remediation action in order to address identified gaps and risks.

Assessment Procedures

1. Planning: Defining the covered target and scope, defining stakeholders, and conducting basic research
2. Research: Creating checklists for each area subject to assessment and conducting in-depth research on vulnerable areas
3. Communication with stakeholders: Government institutions, press organizations, NGOs, labor organizations, local residents, employees, and partner companies

4. Impact analyses: Identifying risks, establishing improvement plans, and making internal reports
5. Remedial action: Monitoring the implementation and results of tasks and analyzing their effects
6. Information disclosure: Sharing our performance through the Sustainability Report

We conducted our very first **human rights impact assessment** at our Vietnam subsidiary from 2018 to 2019, followed by our newly established Turkey production site in 2021. We established action plans for improvement areas detected during the assessments in order of priority considering the number of affected people, the extent of impacts, severity regarding the possibility of recovery, and risk of occurrence. Also, we closely monitor the implementation status each quarter and carefully carry out the remedial action plans.

Human Rights Saliency Analysis at Our Turkey Production Site in 2021

- Purpose: To identify and address human rights risks prior to the opening of a new business site
- Scope: potentially affected rights of future Samsung employees, supply chain workers, and surrounding communities in the macro-context of Turkey's human rights track record
- Conducted by: Enact and twentyfifty
- Period: April-July, 2021
- Outcomes
 - Salient Risks: Labor and human rights, health and safety rights, stakeholders' rights to know, and workers' rights in supply chain
 - Improvement progress: 12 completed and 10 being carried out among 22 tasks in the following 4 areas
 - 1) Labor and human rights protection: Establishing human rights governance and the process to identify relevant risks, reinforcing grievance resolution and remediation systems, and offering labor and human rights training
 - 2) Occupational health and safety: Establishing relevant policies and conducting training for employees
 - 3) Stakeholder engagement: Ensuring regular communication with external organizations and groups
 - 4) Supply chain management: Helping reinforce the compliance of partner companies in our supply chains and conducting on-site audits

We will strive to proactively identify and assess human rights risks to prevent and minimize any adverse impacts of our business operations.

Living Wage

Although universal consensus on the definition and calculation method of a living wage has yet to be reached, the term is generally understood as the minimum income required to address the basic living needs of a worker and his/her family.

We have been **cooperating with BSR**, an organization of sustainable business experts, to calculate living wage. In 2018, the company for the first time conducted research to estimate the living wage in countries in which we have production sites. We adjusted them in 2022 reflecting economic growth rates and consumer prices so that those don't interfere with the basic living conditions of the employees with economic recession and inflation due to pandemic.

To ensure estimation accuracy, we employed the widely accepted **Anker methodology** and identified diverse items such as household food and non-food expenses and the number of workers and dependent family members within each household by referring to **economic indicators released by credible organizations such as the OECD, UN, and Eurostat and performing on-site surveys**.

We will continually update our internal wage policy to better support the basic living needs of our employees and their families. We also plan to closely cooperate with related expert organizations in the future to take part in the international community's effort to implement living wage.

Respect for and Protection of Migrant Workers' Rights

We closely monitor and manage all of our subsidiaries that employ migrant workers. In 2020, we revised our [Migrant Worker Policy](#) to better protect the rights of migrant workers and distributed internal guidelines that detail principles, case studies, and implementation steps for policy compliance to our HR employees and recruiting agency members in charge of migrant worker management. These guidelines, consisting of 14 steps¹⁾ from recruitment to employment contract termination, were created based on the widely recognized industry guidelines of the [RBA, BSR, and IHRB](#)¹⁾.

We also ensured that COVID-19-related healthcare and financial support equivalent to that of local employees is available for migrant workers. Through this support, migrant workers who tested positive for COVID-19 are given infection control and prevention supplies regularly as well as paid leave for additional testing and quarantine. At some business sites, vaccination services are provided at individual workers' request in collaboration with respective government authorities.

1) Institute for Human Rights and Business : An international think tank on business and human rights

Stakeholder Engagement

We remain committed to ensuring open and active communication with our stakeholders based on mutual trust. To this end, we operate a range of communication channels tailored to our employees, suppliers, customers, and investors, as well as government bodies, international organizations, and NGOs, to share our activities and collect and reflect their voices in our measures. We also actively communicate with employee representative bodies as an extension of our efforts to improve respect for human rights and working conditions.

Stakeholder Forum

Starting from 2018, we have been staging an annual Stakeholder Forum at the Vietnam Complex to better interact with our stakeholders and seek greater synergy through cooperation. The forum has now firmly taken root as a regular event. We held our fourth Stakeholder Forum in 2021 in collaboration with the Vietnam Chamber of Commerce and Industry (VCCI) and Vietnam General Confederation of Labor (VGCL) both online and offline in consideration of the pandemic. The number of attendees increased by more than 50% compared to the previous year, with 414 representatives from government institutions, NGOs, corporations, labor organizations, and media present.

The 2021 forum, held under the theme "Cooperation to Reinforce Workers' Competence in Preparation for the Upcoming Digital Economy in Vietnam," featured research presentations by VCCI and VGCL as well as the introduction of our competence-building programs for both internal and external stakeholders including the Online Learning Platform, In-House College, and Manufacturing Technology Training for Partner Companies.

The attendees gave high evaluations for our endeavors to provide a regular platform that brings multiple NGOs together and build stronger bonds with our stakeholders. The forum also highlighted the wide range of our talent cultivation programs.

The theme for the 2022 forum will be set based on the input of our stakeholders, and the event will be designed to elevate our interaction with them to new heights.

Communication with Global Investors

We have held a regular [ESG](#) Roadshows since 2019 to reach out to global investors and share our relevant major activities including the amendment and implementation of labor and human rights policies and human rights impact assessments.

We had a Roadshow in February 2022, and addressed inquiries about ways to respond to expanding diversity and inclusion requirements and supply chain management needs in accordance with the human-rights due diligence legislation of different countries. We will continually expand communication with our investors through new channels and actively reflect their needs in our human rights management.

Communication with Employee Representative Bodies

Labor Unions We have 32 labor unions representing our business sites around the world. We negotiate employment conditions with them and conclude collective agreements accordingly pursuant to the laws of the respective countries.

Work Councils We operate 40 Work Councils at our business sites around the world in accordance with the respective countries' laws and individual business sites' conditions. Our employees elect their own representatives through direct and secret ballot voting.

Grievance Resolution

A grievance is a perceived injustice evoking an individual's or a group's sense of entitlement as defined by the [UNGPs](#). Grievances also encompass complaints, demands, and suggestions related to work environments submitted by our employees, partner companies, or external stakeholders. An overview of the grievance channels and processes is included in the annual human rights training for employees to help them more effectively and promptly respond to any incidents they may face.

Grievance Channels and Status

We operate various grievance channels, including hotlines, online, offline, and employee representative bodies, tailored to the conditions of individual business sites.

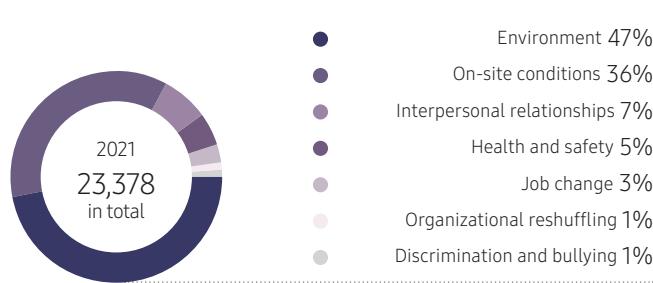
Separate channels are open for our employees with different responsibilities, from HR to labor relations, compliance, and audit, as well as our external stakeholders, including investors, customers, and partner companies, to ensure efficient grievance resolution. All of our grievance channels allow anonymous disclosure, and any retaliation against whistleblowers is explicitly prohibited by the [Guidelines on the Global Code of Conduct aligned with the UNPGs](#). We also offer grievance-related introduction materials in different languages for migrant workers to enhance accessibility.

Filed grievances are handled promptly in accordance with the preset procedures, and follow-up actions, such as training and policy amendments, are carried out to address root causes. Based on interviews with whistleblowers and victims, we investigate if their grievances have been properly resolved in line with the eight [UNGP effectiveness criteria](#) and monitor if remedial actions have been taken. We make sure to prevent recurrence by establishing relevant preventive measures and correct business practices that may trigger potential risks.

Grievance Report Status by Channel (Unit: %)



Grievance Report Status by Type (Unit: %)

**CASE****Grievance Channel Improvement at Samsung Electronics Vietnam**

Samsung Electronics Vietnam joined hands with CSR Europe¹⁾ in 2020 to assess the procedures and operation of its grievance resolution channels and identified improvement areas such as its hotline infrastructure that was lacking efficiency. Based on the findings, a call center was established in 2021 to integrate the existing 34 and 14 hotlines at its two business sites and enhance accessibility for its employees. This instantly led to an increase in the number of filed grievances.

The grievance report center proved effective in helping employees conveniently file their grievances and the company readily handle them, especially in the wake of the outbreak of the pandemic. The majority of the filed grievances concerned on-site conditions (workplace infection control and quarantine requirements pertaining to the pandemic among others) and infrastructure (including dormitories, cafeterias, and commuter shuttles). All grievances were resolved in line with the internal procedures and timeline.

1) Leading European business network for corporate sustainability and responsibility

We invited labor law experts to give special lectures for our company's leadership on topics such as the changing labor-management environment and newly enacted and amended labor laws as an extension of our efforts to ensure compliance management. We also organized special lectures on ways to realize mutually beneficial labor-management relations for staff members responsible for labor-management relations affairs to achieve forward-looking relations between our employees and company.

Communication with Labor Unions

We frequently hold meetings and communicate with employee labor unions to identify their needs, make related improvements, and thereby reinforce sound labor-management relations. We post links to different labor unions on our intranet, provide offline office spaces, and ensure access to our online bulletin and email system to support their activities.

Latest Developments in Collective Bargaining

Through collective bargaining with the joint bargaining group formed by the labor unions, we agreed on 95 items and successfully concluded a collective agreement at our Korean business site in August 2021 without any dispute. At the collective agreement conclusion ceremony, the Joint Statement on Labor-Management Cooperation was announced to highlight our focus on building forward-looking relations.

Protection of the Three Basic Rights of Workers in Korea

We engage in various activities to protect the three basic rights of workers²⁾ guaranteed in the Constitution of the Republic of Korea.

2) Right to organize, right to collective bargaining, and right to collective action

Operation of the Labor-Management Advisory Committee

We established the Labor-Management Advisory Committee under the Board of Directors in August 2020 to ensure sustainability management of the organization and build mutually beneficial labor-management relations. It is composed of four outside experts who identify and examine relevant issues through meetings with the executive management and the Compliance Committee and consult with executives in charge of personnel affairs to make mid-to-long-term recommendations.

Diversity and Inclusion

An unwavering commitment to building a diverse and inclusive workplace is necessary for true innovation and progress. We strive to nurture a corporate culture that brings together talented people from different backgrounds and perspectives and encourages them to engage with each other. We do not discriminate against gender, race, nationality, ethnicity, sexual orientation, religion, or any other group identity, while, at the same time, promoting practices that drive greater diversity and equality.

Our company-wide and country-specific policies and programs are aligned with our pursuit of a more diverse and inclusive corporate culture. We also strive to ensure that diversity and inclusion are represented throughout the entire lifecycle of our products and services. We remain sensitive to the voices of our stakeholders—including our customers, shareholders, and investors—and reflect them in all levels of decision-making.

CASE

Change the Face Alliance

We are a founding member of the [#ChangeTheFace Alliance](#) with the aim of driving diversity and inclusion in the IT industry. We continue to take action to accelerate changes with our stakeholders in collaboration with a collective of like-minded industry leaders such as Vodafone, the company that first launched this initiative.

Certifications and Recognition

In recognition of our continuous pursuit of diversity and inclusion, we have been selected as a [family-friendly company by the Korean Ministry of Gender Equality and Family](#) for nine consecutive years from 2013. Our US subsidiary received a perfect score in the [Corporate Equality Index operated by the Human Rights Campaign Foundation](#) for three consecutive years from 2019 for its inclusive policies for LGBTQ+ employees. It was also included in the [Best Employers for Veterans 2020 and 2021](#) by [Forbes](#). Our scores on the diversity and inclusion items in the [Samsung Culture Index](#) rated by our overseas employees have also continued to rise each year.

My team head respects the diverse values and perspectives of our team members. (Unit: %)



* The year 2020 was omitted due to the inability of some of our production sites to conduct the SCI survey.

Our team members value and treat one another respectfully. (Unit: %)



* The year 2020 was omitted due to the inability of some of our production sites to conduct the SCI survey.

Policies and Programs

We pursue a horizontal organizational culture that respects individual experiences and perspectives and ensures freedom of speech for employees of all ranks. To this end, we eliminated the use of honorific titles in 2017 and introduced the practice of addressing one another by name with "pro" (short for "professional") or by adding the honorific suffix "nim" in Korea.

In 2021, we made it a rule for all employees, regardless of rank, to use the honorific form of language at work and no longer disclosed the job ranks (career levels) of colleagues on our internal system. By closely interacting with regional diversity and inclusion managers, we track and share best practices throughout business sites in Korea and beyond. We also make continuous improvements based on the opinions and suggestions of our stakeholders, including employees, customers, shareholders and investors.

CASE

D&I Council Operation (The US/ India)

In 2020, our US subsidiary established the Executive Inclusion Council consisting of executives across a diverse range of functions. It serves as a valuable communication channel to discuss diversity and inclusion matters that impact the company.

Our India subsidiary's D&I Council was established in 2021 to bring together executives of diverse sectors, ages, and genders, and seeks constructive solutions for relevant issues at work.

Reinforcement of Anti-Discrimination Principles

We strive to go beyond simply adhering to social and legal requirements in a passive manner and uphold the value of diversity to set ourselves apart from our competitors. We regularly review and update our [internal policies to ensure compliance with newly enacted and amended laws and regulations, globally](#). This enables us to prevent discrimination of our partner companies as well as our employees. As an extension of such efforts, we supplemented and updated the anti-discrimination principles specified in the Global Code of Conduct and Guidelines on the Prevention of Harassment to more extensively deal with diversity issues concerning race, gender, religion, language, and other group identities. The new Anti-Discrimination and Harassment Policy was published in March 2022.

[Anti-Discrimination and Harassment Policy](#)

Equal Pay Policy

Pursuant to the [ILO Equal Remuneration Convention \(No. 100\)](#), we are committed to a policy of equal pay for work of equal value for all employees with similar experience and performance, regardless of gender. Driven by this initiative, our gender pay gap in Korea improved by 3.1% in 2021 compared to 2019.

Female employees' compensation rate compared to male employees at different career levels (Korea, 2021)

CL1	CL2	CL3	CL4	Executives
107%) ¹⁾	100%	100%	99%	101%

* Percentage of base pay and incentives paid to female employees compared to male employees (calculated based on new employees who joined or were promoted to each career level(CL))

1) Female employee's compensation seems relatively high because numerous male employees belonged to organizations with lower incentives

Women

Fostering Female Leaders As part of our focus on building a culture centered on diversity and inclusion, we strive to inspire excellence and help our employees reach their full potential through access to equal opportunities. We operate a range of programs and policies to ensure gender equality in recruiting new hires and to help our female employees return to work and successfully build their career after taking leave for pregnancy and childbirth.

In Korea, we were one of the earliest adopters of parental leave, fertility treatment leave, extended childcare leave, and reduced working hours for childcare. The length of each of these programs also extends beyond the **legal requirements**¹⁾. In 2021, the number of our in-house daycare centers reached 15, with a total capacity of over 3,300 children. We maintained a high-quality childcare environment by regulating the ratio of daycare staff to children even more stringently than the legal requirements.

We have also mandated the installation of lounges for pregnant women and new mothers at our overseas production sites to ensure maternal and child health. Our Vietnam subsidiary operates a Mommy Room at 21 locations and has obstetrics and gynecology specialists stationed at their business sites.

We also plan to introduce a Re-boarding program in 2022, which offers training, mentoring, and remote work opportunities for employees returning to work from maternity leave to help them adjust gradually.

The DX Division has been offering leadership training and a networking program for female executives and executive candidates since 2021.

1) Legal Requirements and Our Policy in Korea

CASE

Messages from the CEOs in Commemoration of International Women's Day in 2022

"We will expand mentoring and networking support for our female employees to ensure that they have access to their rightfully deserved opportunities and advance their leadership development."

- Han Jong-hee (Head of DX Division) -

"We will help our employees feel a sense of belonging and reach their full potential based on the inclusion of diversity including gender equality."

- Kyung Kye-hyun (Head of DS Division) -

Employees with Disabilities

Support at Work We strive to create an environment that inspires and encourages our employees with disabilities to reach their full potential. Their preferences and competence are taken into full consideration before deciding on their position and role. Regular meetings are held to identify their challenges and needs.

In order to minimize possible inconveniences in their daily activities, we continue to improve our workplace accessibility. Since 2011, we have regularly conducted inspections on buildings and facilities at our domestic business sites to examine whether they meet the **Samsung Barrier Free (SBF) standards** and have introduced and expanded accessibility elevators, accessibility restrooms, low-floor buses, and other accessibility features, based on our findings.

We also value the voices of our employees with disabilities in the development of accessibility-related features. Based on their opinions and suggestions, we embedded a series of features for enhanced accessibility in our products, including the remote control with Braille buttons, Focused Zoom for enlarging the text of certain menu items (channel, volume, etc.), and Screen reader, in our TVs and other home appliances.

Cross-Generational Communication

We operate various channels that facilitate communication between our Millennial and Gen Z employees and executive management to promote mutual understanding that better reflects the perspectives of younger generations in our business activities.

Global Marketing Center Through the Future Generation Lab, which is comprised of talented and passionate staff members in their 20s from around the world, we plan and launch brands and product marketing strategies that target younger generations.

Visual Display Business The Gen Z and Millennial Board was established to deliver the needs, perspectives, and experiences of those in their 20s and 30s directly to the head of Visual Display. Through this system, they are able to share their thoughts on our products, customer trends, and trending topics on social networking services.

MX Business The head of MX and executive management remain attentive to the voices of Millennial and Gen Z customers and employees, and reflect them in the actions and decisions of MX through the operation of Gen Z Lab. More than 100 Millennial and Gen Z staff members are involved in Gen Z Lab, through which they discuss the latest trends and give their suggestions on our products, services, and issues of major concern to the head of the business and executive management.

Digital Appliances Business Millennial and Gen Z staff members with diverse backgrounds came together and formed MZ Crew. They regularly meet to share their concerns and interests, and propose innovative ideas about our home appliances and services as well as other activities of Digital Appliances Business.

We also ensure interaction between our Millennial and Gen Z employees and executive management through regular events such as Pride in Memory in our **Memory Business** and town hall meetings in our **Foundry Business**.

Feature Story

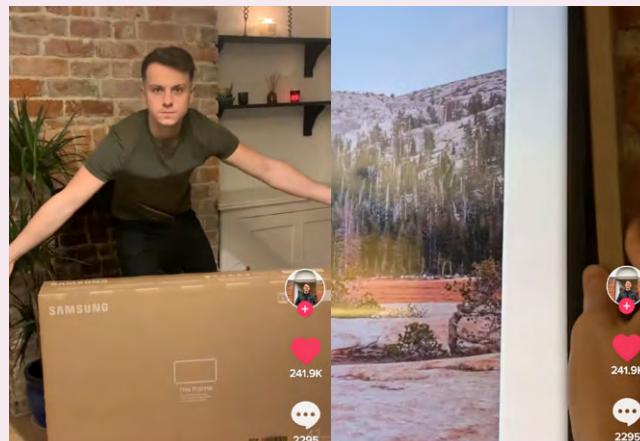
Future Generation Lab

"What is trending amongst the MZ generation?"

Future Generation Lab has the answer to this question. Comprised of those in their 20s working at our global subsidiaries, we set up Future Generation Lab to more effectively reflect the opinions of our Gen Z employees in our business operations and attract more Gen Z customers. Members of the lab help plan brands and products targeted at younger generations based on the opinions and diverse perspectives of Gen Z employees and customers collected from around the world.

The activities of the Future Generation Lab were spotlighted at CES 2022 in January. During the keynote speech by Samsung Electronics, Future Generation Lab members took the mic following Vice Chairman Han Jong-hee to introduce our products and services from a Gen Z viewpoint. They prepared the presentation materials and designed the stage themselves. The presentation became widely discussed as it was rare for young, working-level employees to present on a stage dedicated to keynote speeches by corporations. In February 2022, we launched a social campaign entitled #Frameityourway on TikTok, one of Gen Z's preferred social media platforms, under the leadership of Future Generation Lab. This campaign was designed to challenge

users to replace their old TVs with our new products in partnership with young influencers. The series of 30-second shorts received rave reviews by Gen Z customers around the globe, recording 13 million views in total within a short period of time (January 31–February 19).



"In addition to utilizing content produced by Future Generation Lab members, we also worked with influencers popular among Gen Z fans and that were viewed as a perfect fit with our company. We gave them creative freedom to create content and deliver our overarching message. After all, they are the experts in communication with younger generations."

– Andrew Georgiou (Future Generation Lab) –

"I believe the campaign was able to draw such extensive attention because it was thoroughly planned and prepared to meet the needs of Gen Z."

– Chrissie Moncrieffe (Future Generation Lab) –

Future Generation Lab members continue to actively interact with Gen Z outside of our company through a Gen Z External Advisor program comprising influencers and college students in their 20s. As a result, Future Generation Lab is able to provide our executive management and employees with objective perspectives and balanced insights that have led to tailored marketing for The Freestyle, the release of Cooking Service 2.0, and collaborations for Galaxy accessories.

Future Generation Lab participates in our new product and service reviews, as well as other projects. It is the embodiment of our focus on attracting and retaining Gen Z customers.

We will remain committed to listening to their voices and reflecting their opinions in the development of our products and services, and our marketing strategies, to reach a wider base of Gen Z customers.

Employee Resource Groups

Employee Resource Groups

Our employees are our most valuable sources of innovation. We strive to create a work environment that fosters belonging, ensures equal access to opportunities, and helps our employees achieve both personal and professional growth.

Our Employee Resource Groups (ERGs) are voluntarily organized and operated by employees around themes related to diversity and inclusion such as women, persons with disabilities, generation, race, and veterans. Currently, over 3,700 employees in North America, Central and South America, Europe, and Southwest Asia are participating in about 30 ERGs¹⁾, which offer networking opportunities, mentoring, volunteer services, and employee training.

Logos of ERGs at Samsung Electronics America



¹⁾ 15 ERGs for women, one for LGBTQ+, three for race, two for veterans, four for generation, two for working parents, one for persons with disabilities, and three for culture

Our ERG Activities

Women A total of 15 women-related ERGs are in operation, with multiple ERGs kicking off in North America, Europe, Central and South America, and Southwest Asia in 2021. These ERGs offer various programs that support networking and career development for our female employees. At our UK subsidiary, the Samsung Pioneer initiative was created to promote gender equality and bring positive workplace changes to the IT industry through open forums, surveys, and media promotions.

Race A total of three race-related ERGs are operating in the US and UK. In particular, Galaxy of Black Professionals (GBP) in the US has STEM in a wide range of internal and external CSR activities. They also formed a new partnership with an organization dedicated to fostering technical skills in women and youth.

UNIDOS, established to support Hispanics in the US, held a panel discussion to enable support for the Society of Hispanic Professional Engineers (SHPE) to secure talent in STEM.

BP@S (Black Professionals @ Samsung) of the UK works to reduce racial gaps in recruitment and the workforce pipeline. In 2021, BP@S produced a series of video interviews with black colleagues at Samsung Electronics UK in commemoration of Black History Month as an extension of its efforts to raise awareness on racial discrimination

LGBTQ+ Since its inception in 2017, the Samsung Equality Alliance, an LGBTQ+ ERG at our US subsidiary, has conducted a diverse range of campaigns and programs every year to support LGBTQ+ communities and improve the public's awareness of LGBTQ+ issues. In recognition of its continued commitment, it obtained a perfect score on the [Human Rights Campaign Corporate Equality Index](#) for two consecutive years. Additionally, our US subsidiary was included in the Best Places to Work for LGBTQ+ Equality.

In June 2021, the alliance held a lecture on the history of gender equality, inviting outside experts in celebration of PRIDE Month. It has also formed a partnership with Out in Tech, which is the world's largest community of LGBTQ+ developers.

Veterans Our two subsidiaries in the US have ERGs established to support veterans and their families. The Samsung Veterans Community and the Military Appreciation Group continue to engage in a range of activities in cooperation with relevant national associations and civil society groups.

In 2021, they hosted a walking race to raise funds for veterans and paramedics in celebration of Veterans Day in the US, and raised USD 7,000. They also contribute to the advancement of local communities through volunteer work in collaboration with private organizations that support veterans.

Awareness-Raising Training and Campaigns

To embed diversity and inclusion in our corporate DNA, we ensure that all of our employees, from executive management to new hires, accurately understand and practice these values at all times. To this end, we have included courses to promote an understanding of diversity and inclusion in our programs to train new hires in Korea and abroad since 2018. Over 6,000 employees have completed these courses upon joining our company.

We also added diversity and inclusion content to the training curriculum for global personnel managers and subsidiary heads, as well as for employees scheduled to be dispatched to overseas subsidiaries. Our US subsidiary independently developed 11 programs on topics such as unconscious bias, inclusive leadership, and racial equality, which were completed by over 1,000 employees.

We developed a training program aimed at motivating substantive actions to create an inclusive workplace in collaboration with the non-profit Lean In. We also continue to update our inclusive language guidelines across the four categories of gender, disabilities, culture, and age, to root out the use of discriminatory terms at work.

Health and Safety

Workplace Safety

To achieve world-class safety at all our business sites, we ensure that each site is equipped with tailored health and safety management systems, and we continually identify and analyze potential hazards and risks. The head of the Global EHS Center and head of Global Manufacturing & Infra Technology serve as Chief Safety Officer (CSO) in the DX Division and DS Division, respectively, to supervise the operation of workplace safety management indicators, the implementation of safety standards assessments, the establishment of a safe work environment, and the reinforcement of safety-related practices.

Health and Safety Management System Certification

Our business operations are centered on our stringent health and safety management system. It is mandatory for all our production sites to attain ISO 45001 which is a standard of occupational health and safety management systems. As of 2021, 100% of our production sites around the world have obtained certification.

Creation of a Safe Workplace

Integrated Diagnosis We perform workplace safety reviews each year to identify risk factors for disasters and assess our compliance with relevant laws and facility management practices. In 2022, we established an integrated workplace safety diagnostic system at all of the DS Division's global business sites in partnership with outside experts.

Incident Prevention Process

Identifying Risk Factors	<ul style="list-style-type: none"> Outdated equipment Safety regulation compliance failure Inadequate on-site management
Establishing countermeasures	<ul style="list-style-type: none"> Equipment life span projection Safety regulation compliance measures On-site management system
Taking remedial action	<ul style="list-style-type: none"> Equipment monitoring Safety training On-site investigations
Monitoring	<ul style="list-style-type: none"> Performance management Process improvement

Incident Response Process

Incident Occurrence	<ul style="list-style-type: none"> Disseminating information about occurrence Identifying incident type and crisis stage
Emergency Remedy	<ul style="list-style-type: none"> Forming crisis management committee Implementing emergency evacuation and emergency measures
Investigation	<ul style="list-style-type: none"> Analyzing incident causes Taking action to prevent secondary incidents
Restoration	<ul style="list-style-type: none"> Implementing restoration measures Implementing business continuity plan
Recurrence Prevention	<ul style="list-style-type: none"> Establishing recurrence prevention measures Reviewing incident response system effectiveness

Safety Management System Upgrades To ensure the daily safety management and work efficiency of all employees, we upgraded our safety management system in nine areas including the management of machinery with hazardous risks, lab inspections, and safety monitoring. In particular, we empowered our employees in the field by enabling those in organizational units handling machinery with hazardous risks to independently perform internal verification and user management.

Potential Hazard Identification and Elimination We provide full support for our employees to proactively identify and eliminate potential hazards on business sites. Best practices for the proactive elimination of serious potential hazards are rewarded and widely shared with other business sites. Our semiconductor business sites are subject to advance risk assessments prior to each and every production without exception. Based on the findings from such risk assessments, on-site safety management measures are implemented. Automated and unmanned systems have been introduced for tasks deemed particularly hazardous, such as work dealing with chemical substances or performed at heights, to prevent the risk at its source.

Reinforced Fire and Explosion Precautions We conducted thorough inspections and offered consulting for our business sites with greater fire and explosion risks in collaboration with expert organizations such as the Samsung Global Loss Control Center of Samsung Fire and Marine Insurance. Inspections of local ventilation performance, firefighting equipment, and high-pressure gas use were conducted at domestic business sites.

At overseas business sites, fire risks related to foam processing and high-pressure tanks as well as emergency evacuation preparedness were assessed and remedied. We also established the fire emergency monitoring system to track the firefighting status of overseas business sites in real time and take prompt actions where necessary.

CASE

IECEx CSF Certification

The DS Division established a safety management system to prevent explosions, which may lead to serious disasters.

We formed a dedicated organizational unit to conduct quality control and regular inspections of explosion proof facilities, while also fostering 15 explosion based on our IECEx¹CoPC² certification. In recognition of such efforts, our Giheung and Hwaseong became our first domestic production sites to attain IECEx CSF³ certification in February 2022. This certification ensures the site meets international explosion proof and safety standards. We will continually focus on enhancing the explosion proof capacity of all relevant business sites.

- 1) International Electrotechnical commission Certification System for Explosive Atmospheres
- 2) Certificate of Personal Competency
- 3) Certified Service Facility

Personal Protective Equipment Development and Introduction We convene the Personal Protective Equipment Council every month to discuss protective equipment criteria and enhance the safety and convenience of such equipment. In 2021, we developed a chemical protective clothing with improved wearability, air-permeability, and performance, by upgrading the existing fabric. The flame-resistant helmets and gloves used by electricians were made more lightweight, while hearing protection equipment was improved to more effectively block hazardous noise and facilitate on-site communication.

Workplace Traffic Safety Assessment We conducted a comprehensive workplace traffic safety assessment in cooperation with expert organizations, including the Samsung Traffic Safety Research Institute of Samsung Fire and Marine Insurance, to ensure the safety of both pedestrians and vehicles and prevent accidents on all of our premises. An on-site assessment of major traffic accident risks, pedestrian safety in blind spots, traffic safety measures of new buildings, and more, was performed at business sites with heavier traffic. Based on the findings, we installed facilities to provide guidance on right-of-way at crossroads without traffic lights, set up speed-reduction systems at speed control sections, and reorganized lanes and installed safety facilities at sections where vehicles frequently make illegal U-turns and drive in reverse.

Safety Capacity Reinforcement

Safety Training for Employees We conduct regular firefighting training to prevent accidents. Our employees practice response to fires, earthquakes, chemical leakage, and other emergencies. In 2021, 6,246 emergency training sessions were performed, and each employee underwent an average of 1.6 training sessions and 17 hours of education.

Workplace Safety Training for Employees

Training Target	Details	Achievements in 2021
Employees	Introductory training, legally required basic training, and safety leadership training for executives	· 1,705,901 hours of training completed by 230,386 employees
Staff members in charge of environment and safety (domestic business sites)	Internal inspector course, licensed specialist course (master mechanics, technicians, etc.), legal compensation course, etc.	· 54,555 hours of training completed by 6,815 employees
Staff members in charge of environment and safety (overseas business sites)	Global EHS Conference, Invitational key leader course for overseas staff members, and independent safety and environment training of individual overseas business sites	· 1,547,250 hours of training completed by 277,131 employees

Contact-Free Training and Education Throughout 2021, we conducted contact-free workplace safety education and emergency training due to the pandemic. All training sessions for our employees were held online, with quiz contests and pedestrian and vehicle safety campaigns held to maximize effectiveness. Regular training was replaced with tabletop exercises¹⁾ to verify the effectiveness of incident-specific emergency response scenarios.

1) Training sessions where members discuss their roles and responses to emergency situations.

Risk Assessment Specialist Program We operate a risk assessment specialist program to enhance the risk assessment capabilities of our employees. This program consists of the two courses of Job Safety Analysis and Process Hazards Analysis. In 2021, we developed 1,405 risk assessment specialists in the DS Division (1,118 from our company and 287 from our partner companies). We also offered focused training for the identification of complex hazards for 375 outstanding graduates from the previous year's program.

Safety Supporters Our Safety Supporters work to motivate our employees to build a safety-centered culture with a strong foundation. They identify hazard risk factors and offer advice on how to eliminate them. In 2021, 1,170 employees in the DS Division served as Safety Supporters.

Workplace Safety Innovation Day

Every year we celebrate Workplace Safety Innovation Day, with different events held across each of our business units. Recently, we expanded to celebrate Global Manufacturing and Workplace Safety Innovation Day to share workplace safety risk analysis results and case studies of safety improvements for manufacturing processes and infrastructure. In 2021, the DX Division held an online celebration, bringing together three Korean business sites and 21 overseas business sites. The celebration consisted of presentations and discussions on ways to preemptively address external risks, reinforce operating efficiency, share workplace safety and manufacturing innovation practices, and promote new technologies and smart factory establishment.

The DS Division set up the Parts Suppliers' Workplace Safety Secretariat under the leadership of the five key member companies¹⁾ to more effectively pursue relevant activities. The secretariat comprises three divisions responsible for serious disaster prevention, eco-conscious practices, and competitiveness in future technology. It focuses on defining 35 tasks to be executed at the division level, from water resources management to risk assessment infrastructure establishment. In 2021, 64 new tasks (integrated control system construction for critical incident prevention, resource circulation, etc.) were identified, and the roadmap for their execution was developed. In 2021, the division held a untact Workplace Safety Innovation Day ceremony to join in the efforts to curb the spread of the pandemic. Best innovation practices and knowledge were shared with all of the employees of our parts suppliers through our internal online broadcasting service.

1) Samsung Electronics, Samsung Display, Samsung SDI, Samsung Electro-Mechanics, and Samsung Biologics

Employee Healthcare

We are equipped with a company-wide organizational unit, as well as units at individual business sites, dedicated to promoting our employees' health, improving work environments, and preventing disease. Since 2010, the DS Division has operated the Samsung Health Research Institute (SHRI), Korea's very first corporate research institute specializing in occupational disease prevention and healthcare for frontline workers. The DX Division operates the Health Management Secretariat.

We also provide healthcare support by operating clinics, physical therapy centers, pharmacies, Oriental medicine clinics, the Mental Health Clinic, the Life Coaching Center, musculoskeletal exercise centers, and fitness centers on our premises.

Healthcare System



Health promotion

- Health promotion facilities: Medical facilities (in-house clinics, Mental Health Clinic, etc.), fitness centers, and musculoskeletal exercise centers
- Health promotion programs: Smoking cessation and alcohol abstinence campaigns, stair climbing campaign, healthy meal plans, etc.



Work environment improvement

- Monitoring of potential hazards at work
- Research and elimination of harmful factors for the musculoskeletal system
- Elimination of odor, dust, and noise



Disease prevention

- Medical checkup, infection monitoring, and guidance on requirements for infection prevention
- Vaccination Services on a regular basis: Influenza, typhoid, hepatitis, etc.
- Healthcare for those traveling to other countries for business: Updating of travel-restricted and travel-prohibited countries, provision of essential medications, etc.

CASE

Employee Protection against COVID-19

We strive to protect our employees around the globe against the threat of COVID-19. We mandated mask-wearing both indoors and outdoors at all of our business sites, prohibited symptomatic employees from coming to work, and required on-site social distancing, while also ensuring compliance with country-specific infection control guidelines. We also recommend remote working for all employees and require high-risk groups, such as pregnant employees and those with preexisting medical conditions, to work from home. For those who are unable to work from home and those whose physical presence on site is critical, we perform fever checks prior to their entry with their consent. We also provide free diagnostic testing and respiratory examination services for symptomatic employees via in-house clinics at some large-scale business sites. If cases of positive test results, manufacturing workers are allowed to take paid leave, while office workers are placed under self-isolation.

Smart Diabetes Management Since 2021, we have distributed blood glucose monitors with an attachable sensor to employees with a high risk of diabetes. Based on the monitoring results, physicians and clinical dietitians provide an eight-week personalized healthcare service with guidelines for daily routines, meal plans, and medication.

Effects

Glycated hemoglobin decreased by **37%** on average (11.2% → 7.1%)

Fasting blood sugar decreased by **48%** on average (235 → 123mg/dL)

Obesity Management We offered online personal coaching, at-home training support, healthcare information, and protein powder products for 500 employees with a BMI of 30 or higher and helped them drastically lower their BMI.

Trilateral Care This healthcare system is based on trilateral cooperation among the units to which employees belong, units responsible for workplace safety, and units in charge of personnel affairs. Each employee is allocated a physician to monitor his or her conditions and given opportunities to adjust the workload and work environment through interviews with the heads of the units.

Healthcare Campaigns We continually stage walking campaigns and smoking cessation campaigns using the Samsung Health app. We also invite outside experts to give healthcare lectures and inspire proactive health management.

Work Environment Improvement

Musculoskeletal Disorder Prevention Exercise Center (Korea)

Since 2010, we have operated a Musculoskeletal Disorder Prevention Exercise Center to help our employees maintain their musculoskeletal health. The center offers examinations on basic body composition, sense of balance, and core muscle strength as well as somatotype measurement. Healthcare specialists then recommend exercise programs based on one-on-one counseling. The center specializes in remedial exercise therapy and post-therapy rehabilitation programs for scoliosis, text neck, and other common symptoms found in today's workers.

In 2021, contact-free musculoskeletal health promotion programs were provided due to the pandemic, and were used 20,661 times. Personalized one-on-one exercise plans are also offered annually to those performing jobs that are likely to strain the musculoskeletal system.

To help prevent the onset of musculoskeletal disorders for manufacturing line workers, we analyzed and made improvements to the work environment in 2021. As a result, we developed an ergonomic chair tailored to their needs, with reduced load on the musculoskeletal system and enhanced comfort. This new ergonomic chair is now being distributed to production sites.

Some organizational units also offer a standing desk for those suffering from musculoskeletal disorders.



Ergonomic Line Certification

We make continuous improvements to our work environment for manufacturing processes to optimize ergonomics.

We operate the [ergonomic line certification system](#) based on the [Rapid Entire Body Assessment \(REBA\)^{1\)}](#), which analyzes each manufacturing process from an ergonomics-centric perspective and executes quantitative evaluation. In 2021, we developed the automatic ergonomic analysis tool to automatically analyze the video recorded motions of workers and distributed it to all of our overseas business sites. This significantly reduced ergonomic analysis time and enhanced credibility.

We identified 220 points of improvement (incorrect posture, repetitive jobs, excessive strain, etc.) through the analysis of 549 manufacturing lines and implemented improvements accordingly.

1) Rapid Entire Body Assessment

Improvement Cases in Overseas Business Sites (Unit: Number of cases)

Improvements by Types					
Total	Incorrect Posture	Repetitive Jobs	Work Environment	Excessive Strain	Contact Stress
220	84	68	37	26	5

Human Resources Development

We provide comprehensive support for our employees to develop their skills and reach their full potential based on our corporate value of "People First."

Competence-Building Programs

We operate programs designed to foster creativity, a healthy dissatisfaction with the status quo, leadership, and expertise in our employees. We perform systematic leadership assessments each year and provide leadership training. We also help our employees plan for the future in preparation of retirement and longer life expectancies.

Career Development Training

All of our employees are given opportunities to design their career development path under the guidance of the heads of their respective organizational units and select corresponding career development programs. For software developers, for example, we provide training on AI/Data, algorithms, software architecture, and code review as well as lectures and training from outside experts and partners.

Sales & marketing employees undergo trainings on developing a customer-centric mindset and business acumen, digital literacy, and collaboration in addition to Samsung sales and marketing fundamentals. Samsung Marketing Academy, our global sales and marketing training channel, also offers curated learning programs encompassing a diverse range of topics (B2C sales, online sales, product marketing, Integrated marketing communication, etc.) for those who wish to develop their sales and marketing career.

External Fostering & In-house School

We provide opportunities for our employees to participate in outside programs—including MBA programs, master's courses in personnel and finance, and academic training programs in Korea and abroad—based on their career level and needs.

The Samsung Institute of Technology (SSIT), originally launched in 1989 as an in-house semiconductor technology college to build the competence of on-site workers, was accredited as a regular university in 2001 and offers four-year bachelor's courses in equipment, infrastructure, and display. We also established the Semiconductor Display Engineering Department and DMC Engineering Department at Sungkyunkwan University as our in-house graduate school courses to nurture next-generation tech leaders. As of February 2022, 1,045 bachelor degree holders, 769 master's degree holders, and 89 doctoral degree holders have graduated from SSIT and our in-house graduate school¹⁾.

1) Some of the figures in the 2021 Sustainability Report require correction.

As of February 2021, the number of those who have attained undergraduate, master's, and doctoral degrees at SSIT and our in-house graduate school stands at 1,020 (not 1,002), 728 (not 1,150), and 84 (not 177).

Talent Cultivation System

	Internal Fostering	External Fostering
Operating Objective	Core Program Instilling Samsung's vision, value, and culture in employees Onboarding education for new hires, and annual presentation of strategic direction to all employees	Leadership Program Foster core global leaders Leadership based on Samsung's leadership model
Curriculum	Expertise Program Develop top experts by job category Job-specific ¹⁾ training provided by specialized organizational units ²⁾	Key Areas Samsung MBA Regional Expert Program Academic training In-house graduate program in Technology

WORKPLACE LEARNING Mentoring, Coaching, and On-the-job training

L&D OPEN INNOVATION

KNOWLEDGE NETWORK (Web 3.0, SNS, and mobile-based) Samsung U Learning Portal, S/W Expert Academy, Knowledge Contents

1) R&D, marketing, sales, service, logistics, procurement, manufacturing, and management administration

2) Samsung Advanced Technology Training Institute (R&D), Samsung Marketing Academy (sales and marketing), Global CS Center (quality and service), Partners Collaboration Center (procurement), Corporate Design Center (design), and Global Technology Research (manufacturing and production engineering)

Organizational Culture

We strive to build a sound and forward-looking organizational culture grounded in the three values of “Work Smart”, “Think Hard”, and “Build Trust”.

Our organizational culture is aimed at encouraging our employees to grow and share innovative ideas, and we reflect them extensively in our products, systems, and processes to generate the desired results.

01. Idea Generation

Brainstorming innovative ideas



02. Communication

Sharing and promoting them through active communication



03. Execution

Reflecting them in our products, systems, and processes



04. Output

Generating the desired results

To this end, we focus on creating a horizontal workplace that facilitates communication. In consideration of the ongoing pandemic, we have implemented a range of programs to ensure greater work efficiency, work-life balance, and employee satisfaction.

Horizontal Structure

In 2017, we streamlined the previous seven career levels into four and replaced honorific titles with the honorific suffixes “nim” and “pro” (short for “professional”) in pursuit of a more flexible and inclusive organizational culture in Korea. In 2022, we made it a rule to use the honorific form of language at work at all times regardless of position, title, length of service, and age and have campaigned extensively to help implement this policy. Beginning in February 2022, we also removed positions and employee identification numbers in our internal system. This is aimed at promoting unrestricted communication among our employees that is free from a seniority-based hierarchy.

Internal Communication

To build mutual trust between our executive management and employees, we seek and maintain diverse communication channels suited to the needs of employees of all ranks. Our town hall meetings, held regularly under the leadership of division and business heads, have received positive responses from employees. The meetings have become an effective channel to share the executive management's goals, principles, and major business issues, as well as provide prompt answers to employees' questions.

The team heads and group heads reinforce their bonds with employees through the monthly meeting and events aimed at energizing the organization. They strive to listen to their staff members' voices through one-on-one interviews and frequent conferences, and provide prompt solutions on site to help build mutual trust.

We have been operating an in-house communication platform since 2009 to create a transparent and active communication culture of our employees. In December 2020, we newly opened our bulletin ‘Samsung Electronics NOW’ with a shake-up. On our bulletin, which guarantees anonymity, an average of 300-400 messages are posted every day, testifying to its significance for internal communication.

Programs to Ensure a Healthier Work-Life Balance

We continually evolve our work system by adopting flexible and efficient programs tailored to individual jobs. We allow our employees to customize their working hours and annual leave and have more control over their schedule to truly achieve a “Work Smart” environment.

Beginning in 2016 in Korea, we designated our monthly payday as Family Day to encourage all employees to leave work by five and spend more time with family. Some organizational units further expanded this program and allow their staff members to leave work early once a week or every other week.

To build a healthier work-life balance, we also offer remote working options. In the wake of the outbreak of the pandemic, the percentage of those working remotely has continued to increase. As of March 2022, 39% of sales and research institute employees overseas are working from home.

We have also operated the family care leave¹⁾ program since 2020 to assist our employees facing the loss of childcare options due to the pandemic. In 2021, a total of 4,322 employees benefited from this program.

¹⁾ Leave allowed for up to ten days a year (Korea) for those who need to care for family members (grandparents, parents, spouses, spouses' parents, children, and grandchildren) related to disease, injury, old age, etc.

CASE

DX Division

The DX Division provides a platform for interaction between the executive management and staff members through the regularly held DX Connect x CEO event. It also holds a smaller scale tea meeting, called CEO One Table, and publishes the DX Connect bulletin.

DS Division

The DS Division organizes WeTalk, a real-time broadcast program led by the division head and executive management, and TeaTalk, a small-scale meeting of the division head and staff members, on a weekly basis. It also shares the latest developments from executive management through the release of the CEO's message.



To revitalize the overall organization during the pandemic, we held online town hall meetings, photo contests, and other contact-free events. We also organized health programs, such as the at-home training challenge and power walking competition, to improve the work-life balance of our employees as well as their workplace satisfaction.

Welfare Benefits

We strive to ensure a better quality of life, enhance employee satisfaction, raise morale, and maximize employee engagement by operating a range of welfare programs. We help our employees remain prepared for their post-retirement life through personal pension support, while also providing educational and healthcare expenses for their family members. We also offer medical checkups and group insurance services to promote employee health and safety, as well as an array of elective welfare benefit programs that can be selected based on individual needs.

Welfare Benefits (Korea)



Healthcare

Medical expenses for employees and their spouses and children / Medical checkups / Medical expenses for disabilities and critical illnesses / Operation of in-house clinics



Support for Congratulations and Condolences

Paid leave and financial support for related events Provision of funeral supplies and support services



Support for Education

Support for preschool expenses / Support for educational expenses for elementary, middle, and high school and college / Leave for training and self-development



Entertainment and Recharging

Company resorts / Waterparks / Fitness centers

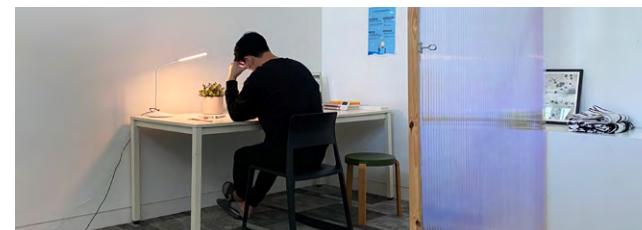


Others

Support for purchasing our company's products / Compensation for damage due to fire and other disasters / Elective welfare benefit programs / Leave for long-serving employees

Work Efficiency Improvement

We strive to create a work environment that ensures greater employee engagement and generates the desired results. We revamped our offices to provide space for cooperation and engagement. We also offer single-person meeting rooms to meet the growing demand for video conferences due to the pandemic.



Immersive Space

Samsung Culture Index Survey

We conduct the global **Samsung Culture Index (SCI)** survey each year to identify our strengths and points of improvement, and gauge employee satisfaction with our work environment. The survey is centered on the three key values of our corporate culture: "Work Smart", "Think Hard", and "Build Trust". In 2021, over 240,000 employees at 126 business sites around the globe participated in the survey. The comprehensive satisfaction level has continued to rise since the introduction of the survey in 2012. The SCI score for overseas employees in 2021 was 90 points, marking a one-point increase from 2019¹⁾.

We offer organizational culture consulting for units with lower SCI scores to help identify points of improvement and discover solutions. We engage professional consultants if deemed necessary and develop and implement improvement plans in cooperation with all members of the respective unit. We also identify additional weak points through post-consulting surveys to continually reinvent the way we work.

¹⁾ The year 2020 was omitted due to the inability of some of our production sites to conduct the SCI survey that year.

Mental Health Promotion Programs for Employees

We operate an in-house Life Coaching Center at 15 locations, and a Mental Health Clinic at 11 locations in Korea. We also promote mental health at 21 overseas subsidiaries with 20 Life Coaching Center locations and 11 overseas research institutes with Mental Health Clinic locations¹⁾.

The Life Coaching Center is equipped with **certified counseling professionals**. It offers programs to reduce and control daily stress, such as tension relief, meditation, color therapy, and pain relief.

Psychiatrists are stationed at the Mental Health Clinic to provide one-on-one counseling, medication, and mental health treatment, for a diverse range of issues including workplace relationships, grievances, stress release, and family affairs. Confidentiality is guaranteed for all information obtained through counseling and physician examinations pursuant to the **code of ethics for counselors and the Medical Service Act**.

After the outbreak of the pandemic, we have ensured unrestricted access to psychological counseling by operating online programs and channels (video, telephone, and messenger counseling) on a permanent basis in Korea. Our production site and research institute in India operates hotlines to effectively resolve any grievances and difficulties of their staff members.

¹⁾ Those subsidiaries and research institutes without an in-house Life Coaching Center utilize an external employee assistance program.



Life Coaching Center (Korea)

SUSTAINABLE SUPPLY CHAIN

We seek to foster a responsible, eco-conscious supply chain to achieve mutual growth with our suppliers and reinforce supply chain sustainability. We offer a range of programs designed to help our suppliers enhance their global competitiveness. We strive to ensure labor and human rights protection, environment preservation, and workers' health and safety throughout our supply chain, while also minimizing the negative impacts that may be incurred by the mineral mining process.

Responsible Supply Chain	77
Mutual Growth Throughout the Supply Chain	81
Sustainable Supply Chain	82
Transparent Management of Responsible Minerals	83



Win-Win Index

Highest Index Rating
for 10 Consecutive Years

*Evaluation of large corporations' efforts to achieve mutual growth by the Korea Commission for Corporate Partnership based on their SME support history and surveys

CDP Supply Chain Program

Operated for 3 years

* Program designed to help suppliers effectively respond to risks and opportunities through GHG management

Management of Responsible Minerals in the Supply Chain

100% of smelters and refiners are validated by the [Responsible Minerals Assurance Process of the Responsible Minerals Initiative](#)

*Using only minerals mined in a socially responsible manner that ensures human rights protection and environmental preservation across the entire supply chain

Responsible Supply Chain

We strive to ensure strict adherence to global laws and proactive fulfillment of social responsibilities across all aspects of our supply chain. We also strive to reinforce the competitiveness of our supply chain with the aim of establishing a sustainable business ecosystem.

Supplier Management System

We are equipped with an organizational unit dedicated to comprehensive supply chain management and operate an integrated purchase system based on the [Global Purchasing Code of Conduct](#). We require our suppliers to follow the [Supplier Code of Conduct](#) and strive to build a robust and sound supply chain through rigorous supplier evaluations.

Operating System

Global Purchasing Code of Conduct All employees responsible for purchasing are required to comply with the [Global Purchasing Code of Conduct](#) encompassing purchasing standards, purchasing ethics criteria, and socially responsible purchasing.

Integrated Purchase System We have established an integrated purchase system (G-SRM) to manage our suppliers and supply chain; share information; conduct evaluations and supplier registration; ensure risk readiness, compliance management, and integrated work environment management; and share the codes of conduct and self-evaluation checklist.

We have automated the submission of requests for the supply of parts to our suppliers. The system automatically sets the delivery date based on the lead time agreed to by the two parties in advance. As such, we cannot reset the deadline unless we consult with the respective supplier and gain its prior approval for readjustment.

Supply Chain Risk Management

In order to minimize the risks related to business continuity, we operate a system which can obtain disaster information in connection with disaster-specialized institutions and automatically analyze and respond to the impact of the supply chain.

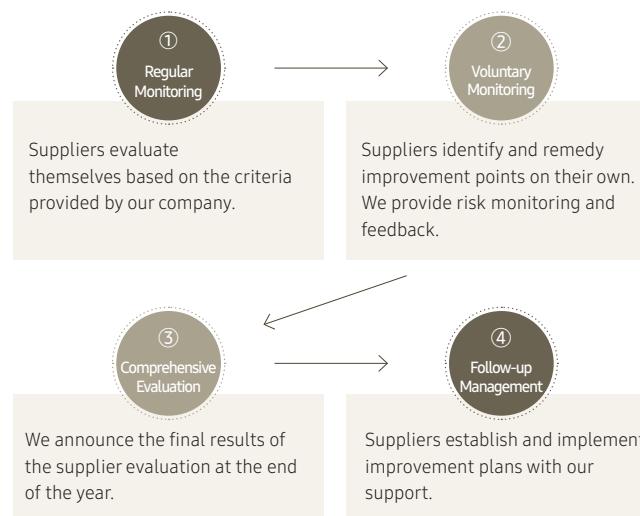
Dedicated Organizational Unit We are equipped with an organizational unit dedicated to managing the work environment and monitoring and supporting our suppliers. We operate various support programs for our suppliers' R&D, employee training, and competitiveness enhancement.

Comprehensive Supplier Evaluations

We perform comprehensive annual evaluations on our suppliers based on transaction data and materials submitted by each supplier to ensure the competitiveness of our supply chain. Major evaluation items include technology, quality, response, delivery, cost, environment and safety, finance, and corporate ethics. The results are reflected in the following year's purchasing policy to encourage our suppliers to improve their capabilities. In 2021, we added ESG risk diagnosis items to the evaluation to more effectively evaluate our suppliers' environment and social responsibility performance.

The 2021 comprehensive evaluations for those companies that have been in our supply chain for more than one year were conducted on 93% of our suppliers. The results showed that 68% were rated outstanding and 2.3% required improvement. For the DX Division, those suppliers rated outstanding are given priority in supply volume allocation for the following year and for the DS Division, those suppliers are given incentives such as extra points for the selection of exemplary innovation cases, the opportunity to tour our semiconductor business sites, and the deferment of the following year's comprehensive evaluation.

Comprehensive Evaluation Process



Selection of New Suppliers

When selecting new suppliers, we prioritize five areas: purchase/quality, environment/safety, labor/human rights, eco-friendliness, and finance. Especially, we thoroughly review each candidate's environment/safety and labor/human rights status using the internal checklist based on the criteria of the [Responsible Business Alliance \(RBA\)](#). In 2021, the prohibitions on forced labor, inhumane treatment, and discrimination were incorporated as essential items to more rigorously verify each candidate's human rights status and protect vulnerable groups. Surveys and interviews to eradicate the forced labor of vulnerable workers were also added to thoroughly investigate how they were recruited, whether recruitment fees were paid, and whether they experienced any discrimination as well as their company dormitory conditions and working hours.

To ensure greater accuracy in new supplier evaluations, our in-house professionals in different areas visit each company to conduct on-site audits, while outside specialists are commissioned to evaluate the company's financial status (credit rating). In 2021, we performed registration evaluations on 82 companies. Among them, 76 were selected as new suppliers, and the other six were eliminated due to failure to meet essential labor and human rights criteria.

Major evaluation items for registration of new suppliers

Open Sourcing

Companies wishing to partner with us are able to submit proposals for parts and materials applicable to the products through our [Open Sourcing program](#). We invite them to join us as partners once their competitiveness and other qualifications are verified to meet our internal standards. A total of 459 proposals were reviewed in 2021, 84 of which were integrated into our products.

Go to Open Sourcing (business cooperation proposal)

Standard Supplier Contract

Our standard supplier contract includes corporate social responsibility requirements, such as compliance with internationally accepted human rights protection standards and labor practices and our company's workplace safety standards and codes of conduct.

Integrated Work Environment Management Process

We require all of our suppliers to comply with the local laws of their respective country as well as the Supplier Code of Conduct created based on the RBA Code of Conduct in relation to human rights, environment, health and safety, and ethics. To ensure compliance, we operate an integrated work environment management process consisting of self-assessments, on-site audits, and third-party audits. The findings from self-assessments, on-site audits, and third-party audits are reflected in the annual comprehensive evaluations, and those suppliers rated outstanding are recognized as exemplary innovation cases.

Our first-tier suppliers are required to manage the work environments of their subcontractors in compliance with our internal work environment policy. For subcontractors with issues deemed to be of serious concern, we monitor whether remedial actions have been successfully implemented and the desired results have been achieved via our first-tier suppliers.

Supplier Code of Conduct

We update our Supplier Code of Conduct to reflect revisions of the RBA Code of Conduct and other global norms, and require our suppliers to comply with it. We ensure that provisions regarding compliance with the Supplier Code of Conduct are incorporated in every contract and require suppliers to sign a separate written agreement committing to compliance of our code. The Supplier Code of Conduct Guide help suppliers more effectively and easily follow the Supplier Code of Conduct and practice compliance management.

[Supplier Code of Conduct](#)

[Supplier Code of Conduct Guide](#)

Self-Assessment

Based on RBA's criteria, we developed a self-assessment tool that consists of 85 items and is used by all of our suppliers to perform annual self-assessments. In 2022, we reflected RBA's updated criteria in this tool to facilitate self-assessment. The updated criteria place greater weight on items of priority, such as forced labor, child labor, and industrial accidents, in order to preemptively identify potential risks of our suppliers. We encourage our suppliers to obtain certification related to international standards in corporate social responsibility (such as SA8000) and have included this as one of the self-assessment items.

Integrated Work Environment Management Process

- 01 Self-Assessment**
 - Annual self-assessment using the checklist created based on RBA's criteria
 - Target all first-tier suppliers

- 02 On-site Audit**
 - Perform on-site audits, identify and improve issues for high-risk suppliers
 - 367 on-site audits performed in 2021

- 03 Third-party Audit**
 - Identify the top 90% of suppliers in terms of transaction amount each year and perform third-party audit every three years
 - Use third-party audit specialists accredited by RBA to randomly select suppliers and conduct initial audits based on RBA's criteria
 - Remedy any issues identified on-site following the initial audit and checking overall results of remedial actions taken through the closure audit

On-Site Audit

Our dedicated organizational unit conducts on-site audits on our suppliers. To more thoroughly and accurately audit their work environments, we first identify their issues and points of improvement based on the opinions and comments of their employees. The points of improvement are registered on the integrated purchase system, and the respective suppliers are required to establish and implement improvement measures accordingly. Some problems are remedied immediately, while the implementation of remedial action for other problems is verified within three months from the registration of the points of improvement. Facility installation, certification, and other matters that require an extended period of time and significant expenses to be resolved are monitored over a longer term based on the respective supplier's improvement plan. In 2021, we performed on-site audits on all 367 high-risk suppliers¹⁾. As a result of implementing remedial action, the average on-site audit compliance rate reached 94%.

We demand prompt remedial action for any violations related to our top priorities, such as the prohibitions of child labor and forced labor, and impose rating penalties on those suppliers found to have committed violations in the comprehensive evaluations.

1) High-risk supplier screening criteria: Companies with geopolitical risks in relation to labor and human rights or with significant impacts on our company (including companies surpassing a certain level in transaction amount and volume, companies recording low scores in the self-assessment, and companies affected by work environment issues raised by NGOs)

CASE

Special Audits to Eradicate Child Labor

We maintain zero tolerance for child labor for our suppliers and perform special audits of their recruitment practices every year to eliminate child labor. Based on our 2021 audits of 141 suppliers, none were found to have recruited child workers. However, some of the audited suppliers failed to implement recruitment practices, such as collecting written identity authentication pledges and including age limit information in their job opening notices. We took immediate action to have the respective suppliers remedy these issues.

CASE

Support through the Child Protection Program

In August 2021, through the third-party audit of one of our first-tier suppliers located in East Asia was found to have partnered with a subcontractor that hired a child worker. Pursuant to our principle of zero tolerance for child labor, we immediately had the supplier sever all business connections with the subcontractor and implemented the child protection program based on Samsung Supplier Code of Conduct. Furthermore, we took action to immediately remove the child from the business site, met with the child's parents to pay all wages, and arranged to support the child to stay in school until reaching legal working age. The respective supplier was given the lowest rating for failure to properly manage its subcontractors and given a strict warning that its partnership with us would be terminated in the case of any recurrence of the use of child labor.

Remedial Action for Overtime Work of Juvenile Workers

We prohibit juvenile workers from engaging in overtime work, night shifts, and hazardous work. Through on-site audits in January 2021, we identified a young worker engaging in overtime work at one of our first-tier suppliers in Central and South America. The findings from follow-up investigations showed that the supplier lacked sufficient understanding of local laws and the Supplier Code of Conduct. As a result, a mandatory pre-recruitment age verification process was adopted, and we performed recruitment-related training for the supplier's staff members in charge of personnel.

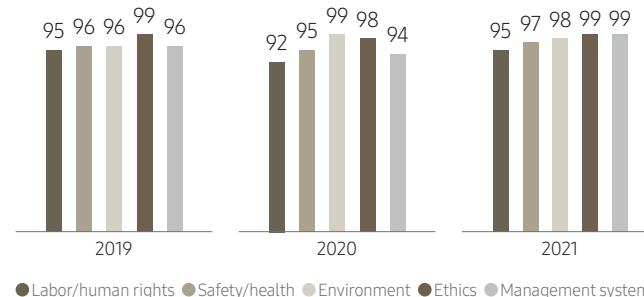
Supplier Support for Local Legal Requirements and Amendments

We require our suppliers to comply with all local laws as well as the Supplier Code of Conduct. To ensure compliance, we closely monitor any changes made to such laws that may impact their operations. In July 2021, Mexico amended its outsourcing laws that companies can't hire outsourcing companies for engaging in tasks that overlap with the core business in terms of the companies' corporate purpose and activity. Mexico also mandated the registration of outsourcing companies with the Mexican Secretariat of Labor and Social Welfare. We held presentations on ways to better respond to Mexico's outsourcing regulations scheduled to be implemented in 2022 and provided guidance on the business categories allowed to register with the Secretariat. From 2022, we will focus on relevant items when we audit our Mexican suppliers, and we will continue to support them to comply with local laws and facilitate their operations.

Third-Party Audit

Physical monitoring of some of our suppliers' business sites was restricted due to the COVID-19 pandemic throughout 2021. However, we conducted video meetings and remote audits to prevent setbacks in our work environment management.

Compliance Rate by Area (Unit: %)



*Post-closure audit compliance rate

Improvement Progress Monitoring

We require improvement measures for violations detected in the initial third-party audit and monitor implementation status in the closure audit. Violations that require an extended period of time for improvement are monitored on a continued basis in collaboration with the respective suppliers.

Improvement Rate by Category

	Improvement Rate	Major Violations
Labor and Human Rights	63%	Working hours, etc.
Health and Safety	87%	Emergency response drill scenarios, etc.
Environment	83%	Establish improvement goals.
Ethics	90%	Monitoring process, etc.
Management System	93%	Internal review execution, etc.
Total	81%	

* Improvement rate: (Violations detected in the initial audit – Violations detected in the closure audit) / Violations detected in the initial audit

Compliance Improvement Activities

We help our suppliers identify their vulnerabilities and implement improvement activities. We provide training for our suppliers' executive management and working-level staff and operate a separate grievance resolution channel for those in our supply chains.

Compliance and Human Rights Training

Since 2015, we have hosted a range of workshops and training programs related to compliance management every year for the heads and working-level staff of our suppliers. We also provide human rights training on mutual respect, humane treatment, and discrimination elimination based on the Supplier Code of Conduct, as well as industrial safety training for the protection of pregnant and nursing employees¹⁾. We also share global and local legal revisions, audit results and best practices of our suppliers, and environment and safety-related trends of different regions. We conduct training on the safe handling of chemicals and award suppliers with outstanding performance in labor/human rights and environment/safety. In 2021, 342 suppliers²⁾ around the world received our training. We encourage participating suppliers to actively share the details of our training and provisions of the Supplier Code of Conduct with their subcontractors.

1) Rate of employees subject to maternity protection at high-risk suppliers: 2.1% (based on G-SRM, 2022)

2) Equivalent to 93.2% of high-risk suppliers

Fair Transaction Training

To eradicate unfair transactions and promote technology protection for subcontractors, we provide training for our suppliers on Korea's Fair Transactions in Subcontracting Act and Act on the Promotion of Mutually Beneficial Cooperation between Large Enterprises and SMEs. In 2021, training was provided for 1,007 employees of 598 first-tier and second-tier suppliers (four courses).

Migrant Worker¹⁾ Recruitment Process Training

We prohibit forced labor and the collection of recruitment fees from our suppliers' migrant workers through the [Supplier Code of Conduct](#). Based on this policy, a total of USD 389,921 was reimbursed to 1,199 migrant workers from nine countries recruited by our suppliers from 2017 to 2021. In 2021, we established the Responsible Recruitment Procedure training course to improve our suppliers' understanding of the procedure, help them eliminate relevant risks, and offer a self-diagnosis tool.

We also performed training on diverse subjects including recruitment criteria, risk recognition and assessment, improvement and risk prevention and mitigation targeting 143 labor and human rights managers at 75 suppliers in local languages such as English, Chinese, Thai, and Malaysian. We plan to expand the training program to improve the labor and human rights of migrant workers in more suppliers and countries that are hiring migrant workers from 2022.

1) Rate of migrant workers at high-risk suppliers: 1.1% (based on G-SRM, 2022)

Training Details



Recruitment Criteria

Correcting and supplementing suppliers' policies based on the provisions related to forced labor prohibition in the [Supplier Code of Conduct](#)



Risk Recognition and Assessment

Identifying the entire recruitment process related to recruiting agencies in departure countries, recruiting agencies in destination countries, and suppliers and assessing risks using the self-diagnosis tool



Improvement

Collecting data through migrant worker interviews and submitted grievances, reaching conclusions in a transparent manner, and establishing improvement plans



Risk Prevention and Mitigation

Analyzing fundamental causes, establishing subsequent corrective measures, and performing training for migrant workers and recruiting agencies

Grievance Handling

We support suppliers in establishing and operating an internal grievance resolution process to facilitate communication between the management and employees. As an extension of this effort, we have been operating a direct hotline for all suppliers since 2013 to receive reports on suppliers' work environment or workers' rights grievances via telephone, email, or mobile phone to complement on-site audits.

We strictly guarantee informants' confidentiality in all processes of grievances so that suppliers' employees can report without any fear for retaliation. Posters offering guidance on how to use the hotline are produced in different local languages and posted in offices, production sites, corridors, dormitories, and cafeterias.

Our organizational unit dedicated to grievance management verifies the factual grounds of all reports within one week, notifies informants of the findings and steps to be taken, and monitors respective suppliers to ensure that they take remedial actions. In 2021, grievances related to the misconduct of superiors and wages accounted for the largest share of cases. We implemented measures to prevent recurrence, provided communication improvement training for the respective suppliers, and confirmed that all grievances were remedied.

In addition, in order to establish a more reliable grievance handling system, we are collecting opinions on the improvement of the hotline system from suppliers through interviews with workers during on-site audits, and compliance management workshops. As a result, we have been conducting a survey on the satisfaction of informants since 2020, and we have confirmed that all measures have been

Hotline Reports Status

(Unit: Number of cases)



satisfactorily handled in an environment where informants' confidentiality is guaranteed. We will strive to ensure the continued improvement of the system in collaboration with our suppliers.

CASE

Grievance Resolution Cases

1. A grievance regarding improper monitoring and disciplinary action committed by a superior was submitted from one of our suppliers in Central and South America. Based on the findings from subsequent investigations and interviews for fact-finding, the victim was relocated to a new position, and the superior was banned from physically approaching or taking retaliatory action against the victim. We conducted monitoring for three months to prevent the occurrence of any similar incidents.

2. An employee at one of our suppliers in Southeast Asia submitted a grievance about the hygiene of bedding and food provided by the company. After investigating the dormitory and restaurant environment in cooperation with the supplier, the supplier immediately remedied the situation and conducts monthly employee surveys to make continued improvements.

3. There was a case that an employee's wage was deducted at one of our suppliers in Europe to repair a cleaning tool kit that he damaged. We explained to the employee first that wage deduction is not a permitted form of disciplinary action based on the [Supplier Code of Conduct](#), and verified it through an interview of the supplier's manager and other evidential documents. The deducted amount was immediately reimbursed to the employee on the date of submitting the grievance. The employee was satisfied with the results, and the case was closed.

Mutual Growth throughout the Supply Chain

We aim to achieve mutual growth and progress with our suppliers across all aspects of our supply chain based on our vision statement "We Buy Value, We Pay Trust."

Partner Collaboration

We operate diverse partner collaboration programs for our suppliers in areas such as production cost, manufacturing and quality, technology innovation support, human resources training, and financial support as an extension of our efforts to reinforce the competitiveness of our supply chain and achieve mutual growth.

In recognition of such efforts, we received the highest index rating for ten consecutive years for the first time in the industry on the **Win-Win Index**, which is a combination of the comprehensive mutual growth assessment and fair-trade agreement implementation assessment.

Innovation Support

Production Cost Innovation To more effectively help our suppliers achieve innovation, we operate the Consulting Center staffed with specialists in manufacturing, quality assurance, development, and purchasing. We select about 20 suppliers each year and support their activities to maximize productivity by sharing our extensive pool of innovation cases and offering cost reduction ideas. In 2021, we supported 26 suppliers.

Manufacturing and Quality Innovation We help our suppliers improve challenging problems and vulnerabilities such as degrading productivity and defects and achieve factory optimization and production stability.

Technology Innovation We stage the 'Advanced Technology Trans Fair' to introduce technologies developed by domestic universities and public institutions and the 'Biz Technology Trans Fair' to promote innovations that can be commercialized. Since 2013, we have funded the 'Technology Development Based on Private-Public Joint Investment' led by the Korean Ministry of SMEs & Startups and provided approximately KRW 20 billion for 32 companies through 2021. In addition, we have shared our patents for use by both our suppliers and non-partner SMEs and ventures since 2015 as an extension of our efforts to reinforce their technological competitiveness and transferred roughly 1,800 patents (cumulative sum of 2021) free of charge through our patent-related consulting program.

Human Resource Recruitment and Training

Recruitment Support We operate the Youth Job Center dedicated to assisting our suppliers in finding the talents they need. This center succeeded in matching our suppliers with 1,033 employees in 2021 through locating jobseekers with profiles that specifically cater to their needs, staging Samsung supplier job fairs, and collaborating with online recruitment sites.

Training Support Our Partner Collaboration Academy offers over 500 free employee training courses for our suppliers lacking training infrastructure. The academy, spanning a total floor area of nearly 10,000m², is designed to provide position-specific training for employees of different ranks, from newcomers to next-generation leaders and future executives, as well as job-specific training for different areas including finance, manufacturing, purchasing, and marketing. A total of 18,725 completed training at the academy in 2021.

Fund Support

Win-Win Fund The Win-Win Fund is designed to help businesses maintain stability by providing low-interest loans of up to KRW 9 billion for facility investment and technological development. We first started this fund in 2010 with KRW 1 trillion for first and second-tier suppliers. In 2018, we expanded to third-tier suppliers with the addition of KRW 400 billion.

Payment Support Fund The Payment Support Fund provides interest-free loans for our suppliers to help them make payments for goods supplied by their sub-suppliers in cash within 30 days. We started this fund with KRW 500 billion in 2017 under the aim of improving payment conditions between first-tier and second-tier suppliers. In 2018, the fund was expanded with an additional KRW 300 billion, bringing the total to KRW 800 billion, to benefit transactions between second and third-tier suppliers as well.

Incentives for Resident Suppliers Since 2010, we have offered productivity and safety incentives for employees of outstanding suppliers based on the results of the annual evaluation of resident companies at our semiconductor business sites. We provided KRW 89.3 billion in 2021 alone, with the program providing a cumulative sum of KRW 514.7 billion.

Semiconductor Technology and Business Consulting

Product Performance Evaluations We operate an R&D support system through which the technological performance and applicability of products developed by domestic materials, parts, and equipment companies are assessed and accredited by our mass production line. We conducted 119 performance evaluations from 2007 to 2021.

Patterned Wafers Patterned wafers manufactured with our equipment are provided to domestic materials, parts, and equipment companies and research institutes to help enhance their technological prowess. Cumulative 7,190 wafers support (From 2015 to 2021)

Semiconductor Business Consulting We provide manufacturing and product quality consulting for semiconductor equipment and parts suppliers. A total of six suppliers have benefited from this service to date. We also offer sector-specific business consulting through our business consulting panel consisting of our executive-level consultants. In 2021, 27 suppliers benefited from this service.

Precision Plumbing Academy

We have operated the Precision Plumbing Academy since 2018 to more systematically foster plumbing specialists. In addition to the existing courses for new plumber cultivation, floor plan and technical accreditation, and pipe removal training, in 2021 we provided support for the development and operation of eight contact-free online courses to respond to the spread of the COVID-19 pandemic. In 2021, a total of 448 trainees, completed the Academy's curriculum, marking a 9% increase from the previous year.

Occupational Health and Safety Management System

We strive to ensure that our suppliers have robust occupational health and safety management systems in place by encouraging them to attain certification for international standards such as **ISO 14001** and **ISO 45001** and reflect related outcomes in the comprehensive supplier evaluations. For our suppliers with semiconductor business sites, we provide our expert consulting service for attaining **KOSHA 18001 certification (Korea Occupational Safety and Health Agency standard)**. Total of 197 suppliers benefited from this service from 2013 through 2021.

Sustainable Supply Chain

We are well aware of the need to manage and support our supply chain in a responsible manner to ensure the development of eco-conscious products and eco-conscious manufacturing processes. We plan to further expand our efforts and cooperation with our suppliers to reduce their environmental impact, mitigate the use of harmful substances, and improve occupational health and safety.

Mitigation of the Environmental Impact of Our Suppliers

Mitigation of GHG Emissions

As an extension of our efforts to mitigate our suppliers' environmental impact, we joined the [CDP Supply Chain program](#) in 2019. We provide incentives such as additional points in the comprehensive supplier evaluations for those companies that submit information in compliance with CDP's criteria and successfully meet GHG emissions mitigation targets. We also organize regular seminars jointly with CDP to improve our suppliers' understanding of this issue. Powered by these efforts, the participation rate, which hovered at 60% in the initial year, rose to 71% in 2020, and reached 77% with the participation of 203 suppliers in 2021. The number of suppliers receiving high ratings in the CDP evaluation also continues to increase. In the future, we plan to expand our training offerings and strengthen programs to increase the use of renewable energy to engage more suppliers in the CDP Supply Chain program.

Harmful Substance Control

To effectively control harmful substances in supplied products and parts, we operate the [Eco-Partner Certification](#) program for all of our suppliers. We issue certification based on the results of the review of their adherence to the Harmful Substance Operating Rules and environment and quality control systems. They are required to submit raw material data collected from their raw material companies in combination with written proof that guarantees the credibility of harmful substance data. We also visit their manufacturing sites to accurately verify the information detailed in the submitted documents. Our suppliers undergo the Eco-Partner Certification review every two years to maintain their status, and those evaluated to have failed to meet our criteria are subject to transaction restrictions.

Safe Use of Chemicals in Manufacturing

We have implemented a variety of programs to ensure the safe use of chemicals throughout the manufacturing process by our suppliers. We perform on-site audits to monitor whether suppliers meeting preset conditions, offer consulting on handling regulated substances and improving related control systems, and support the upgrading of local ventilation equipment, chemical storage facilities, and chemical leak prevention equipment. In 2021, as a result of our on-site audits and consulting for all of our suppliers that handle chemicals, four companies adopted safer chemicals, and 12 companies upgraded their local ventilation equipment.

Environment, Health, and Safety Improvement

Consulting and Training

We have established an organizational unit dedicated to supporting our suppliers' environment and safety management and operate a range of programs to foster EHS model suppliers, provide environment and safety consulting, and improve the work environment of suppliers that handle highly toxic chemicals. In 2021, we conducted our regular environment and safety audits of our 500 primary suppliers and implemented 2,548 improvement tasks including toxic exposure management, health and safety management for hazardous processes, and firefighting equipment and electric facility management, raising their environment and safety standards. The DS Division established the Environment and Safety Academy for the DS Division's suppliers in 2019. In 2021 alone, the academy provided specialized training for approximately 160,000 employees of our suppliers.

Courses offered by the Environment and Safety Academy (For the DS Division's Suppliers)

Category	Number of Courses	Details
Legally required training	2	Entry into business sites permitted after completing legally required training on four essential safety rules for the industrial frontiers and harmful chemicals
Accreditation training	21	Specialists for suppliers fostered by expanding the environment/safety accreditation courses in relation to dealing with hazardous and inflammable substances

* The safety and health management and safety leadership courses were suspended in 2021 due to the spread of the COVID-19 pandemic.

Building a Culture of Proactive Safety Management

We strive to build a safety-centered corporate culture by taking preemptive accident prevention measures. In this context, we conduct risk prediction training for our suppliers and hold an annual risk prediction contest for the DS Division's suppliers. In 2021, 49,134 employees within our supply chain completed the training. We also adopted measures to facilitate risk-related grievance reporting by frontline workers and help them ensure safety at work. We held policy presentations and training for all of the employees of our suppliers to educate them on their right to safety and related processes. Follow-up monitoring was performed on all 3,864 requests for the protection of the right to suspend work submitted in 2021.

CASE

VoC Improvement in the DS Division

In order to improve the work environment of resident suppliers, the DS Division operates a range of communication channels, including the new website opened in April 2021 and offline meetings with on-site managers, to identify their complaints and difficulties and jointly seek solutions.

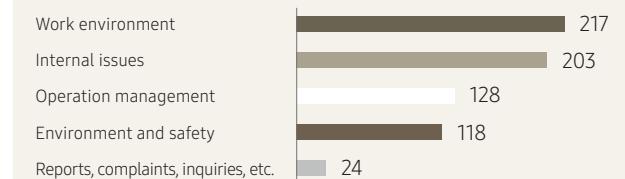
Major Improvements

1. We took measures to prevent accidents by renovating on-site facilities and removing elements of risk (including leveling damaged parts of the line floor and installing banisters, lifts for heavy articles, and awnings at entries for carrying goods).
2. We enhanced the work environment for resident suppliers by upgrading their noise-proofing and air-conditioning systems, replacing outdated equipment and fixtures, and installing extra lounges.
3. We included the coverage of additional expenses for enhanced environment and safety management of our suppliers in our contracts. We also realigned our supervision criteria with work procedures and improved work efficiency by streamlining documentation.

Number of improvements made in different VoC areas

(By the DS Division, in 2021)

(Unit: Number of cases)



Transparent Management of Responsible Minerals

We strive to minimize any possible negative social effects of mineral mining, including human rights abuses, child labor exploitation, sexual violence, and environmental destruction. We take human rights and environmental issues related to mineral mining in conflict-affected and high-risk areas, such as Africa, very seriously. To address these risks, we make sure to use only responsible minerals¹⁾ in strict compliance with the [OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas](#).

1) Minerals mined through a process which respects human rights as well as the environment, lives up to societal responsibilities and denounces financing of conflicts.

obligated to fully comply with our responsible minerals policy. We only accept minerals supplied by smelters and refiners accredited with [RMAP certification](#). As a result, we are able to screen out conflict minerals mined and sourced in an illegal manner from conflict-affected areas, such as the Democratic Republic of the Congo, and only handle minerals supplied by internationally accredited smelters and refiners. In addition to conflict minerals, we also monitor high-risk minerals that raise concerns over environmental damage and human rights abuses to ensure more rigorous management of our supply chain. We continually update the [list of controversial minerals](#) to readily respond to related issues together with our global counterparts.

We will remain committed to sourcing minerals mined in a socially responsible manner with respect for human rights and the wellbeing of the planet and ensure that our supply chains are free from controversial minerals sustaining armed violence, human rights abuses, and environmental degradation.

This project was initiated to seek solutions for improving the work environments of small cobalt mines and the living conditions of local mining communities. In 2020, Volkswagen joined the project as a new partner. As of December 2021, the project has supported 14 artisanal mining cooperatives through safety training and protective gears. The project also conducted agricultural and financial training for local residents and supported the foundation of 72 microbusinesses.

* For more information on responsible minerals, refer to [Samsung Electronics' Responsible Minerals Report](#).

Responsible Minerals Management System

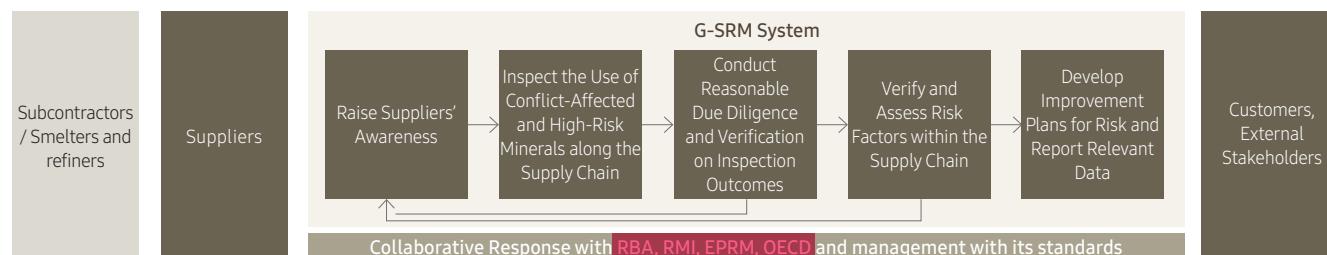
We focus on raising awareness of responsible minerals issues, conducting investigations on the status of responsible minerals use, and identifying and remedying risk factors in relation to all our mass-produced materials suppliers based on the [OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas](#). We block the inflow of materials sourced in a manner not in compliance with our [responsible minerals policy](#) from the initial point of purchase. Additionally, we regularly disclose our responsible minerals management activities via our website and Sustainability Report and publish the Samsung Electronics Responsible Minerals Management Report to more effectively accommodate to the diversifying needs of global stakeholders. All of our suppliers are

External Cooperation

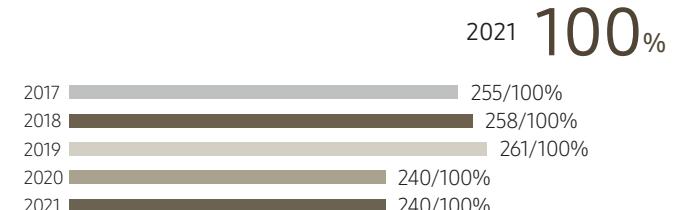
To minimize any adverse social and environmental impacts of our supply chain, and ensure we source minerals in a responsible manner, we have established a responsible minerals management system and standardized smelter accreditation by joining a number of campaigns, such as the [Responsible Minerals Initiative \(RMI\)](#) and [European Partnership for Responsible Minerals \(EPRM\)](#).

We also undertook the [Cobalt for Development](#) project in collaboration with [Deutsche Gesellschaft für Internationale Zusammenarbeit \(GIZ\)](#), [Samsung SDI](#), [BMW Group](#), and [BASF](#), to contribute to resolving human rights abuses and environmental destruction incurred by cobalt mining in the Democratic Republic of the Congo.

Samsung Electronics Responsible Minerals Management

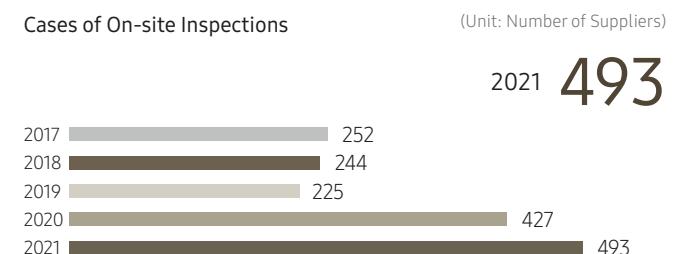


RMAP certified smelters (Conflict Minerals) (Unit: Number of Refiners, %)



*Number of cobalt refiners: 35 (as of 2021)

Cases of On-site Inspections



SUSTAINABILITY FOUNDATION

Materiality Assessment	85
Alignment with UN SDGs	86
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Materiality Assessment

We conduct materiality assessment annually to identify key interests of stakeholders and significant issues related to the business. We disclose those issues through our sustainability report for transparent communication with the stakeholders.

The Sustainability Report 2022 presents the notable findings from the double materiality assessment. Double materiality is a concept identified in the EU's Corporate Sustainability Reporting Directive (CSRD). Various sustainability-related global standards, including GRI, have reinforced their reporting requirements based on this concept.

For the double materiality assessment, we first pool all of the major materiality issues, analyze the findings related to social and environmental materiality and financial materiality, and prioritize the issues accordingly.

Social and environmental impact refers to the degree of a company's business activities on society and the environment, and it is assessed by analyzing media reports in Korea and abroad as well as our scores on various global ESG standards. Financial impact refers to a company's ESG risks and opportunities, and possible degree of positive and negative impacts on its sustainability risks and opportunities and the degree of positive and negative impact that can have on the value of a company. It is assessed by identifying shareholders' and investors' concerns, analyzing costs and profits, and considering the opinions of investment and assessment institutions.

Pooling material issues	Assessing social and environmental materiality	Assessing financial materiality
<ul style="list-style-type: none"> Created a comprehensive list of material issues including those already identified in the previous report and new global issues Identified 22 issues based on global sustainability standards (GRI, UN SDGs, TCFD, and SASB), domestic indicators (K-ESG and KCGS), and analysis of the latest industry trends 	<ul style="list-style-type: none"> Assessing the social and environmental materiality of individual material issues through the quantification of the issues covered by the media for the last two years, our competitors' material issues, and analysis results based on various international ESG standards Analysis of media reports (25%) Analysis of competitors' issues (25%) Analysis of scoring based on international standards (50%) 	<ul style="list-style-type: none"> Assessing the financial materiality of individual material issues based on the findings of the analysis of ESG information by key investment and assessment institutions, shareholders' and investors' issues, and internal cost and profit analysis Shareholders' and investors' issues (33%) Cost and profit analysis (33%) Analysis of ESG information disclosure by investment and assessment institutions (33%)

Material issues	Major activities	Sections for reference
Compliance and ethics	<ul style="list-style-type: none"> Placed the Compliance Team directly under the CEO to reinforce its independence Operated the Samsung Compliance Committee, an independent external monitoring organization 	Our Company (Compliance and Ethics)
Corporate governance	<ul style="list-style-type: none"> Ensured the independence and diversity of the Board of Directors 	Our Company (Corporate Governance)
Climate action and energy management, circular economy, water resource management, and waste management	<ul style="list-style-type: none"> Expanded the use of renewable energy Developed high energy-efficiency products Assessed and reduced water resource risks Introduced eco-conscious packaging for more products, designed products with higher reparability, and strived for zero waste to landfill 	Environment
Community development and corporate citizenship and stakeholder engagement	<ul style="list-style-type: none"> Operated youth training programs to help foster creative problem-solving skills and capabilities in relation to future technologies Provided support for SMEs to build smart factories 	Empowering Communities
Privacy protection and data security and freedom of speech	<ul style="list-style-type: none"> Enhanced privacy protection measures and operated the Samsung Privacy Site Updated our security development process and mobile security 	Digital Responsibility
Human rights management, diversity and inclusion, talent development and work-life balance of employees, and occupational safety and health	<ul style="list-style-type: none"> Reinforced internal policies and employee training on labor and human rights Expanded our vision, policies, and programs concerning diversity 	Our Employee
Responsible sourcing and partner companies' labor practices	<ul style="list-style-type: none"> Provided consulting for our partner companies on work environment monitoring and improvement and supported their EHS improvement activities 	Sustainable Supply Chain



- ① Climate action and energy management
- ② Human rights management
- ③ Sustainable supply chain
- ④ Talent development and work-life balance
- ⑤ Circular economy
- ⑥ Corporate governance
- ⑦ Compliance and Ethics
- ⑧ Occupational safety and health
- ⑨ Waste management
- ⑩ Community development and corporate citizenship
- ⑪ Water resource management
- ⑫ Diversity and inclusion
- ⑬ Privacy protection / data security and freedom of speech
- ⑭ Product safety and quality
- ⑮ Responsible marketing and customer relations management
- ⑯ Harmful substance management
- ⑰ Accessibility
- ⑱ Stakeholder engagement
- ⑲ Transparent information disclosure
- ⑳ Responsible technology use
- ㉑ Air pollution control
- ㉒ Responsible Procurement

Alignment with UN SDGs

Adopted at the United Nations General Assembly in September 2015, the Sustainable Development Goals (SDGs) aim to mobilize the international community's efforts to establish a sustainable world by engaging in **community outreach, environmental preservation, and inclusive economic growth activities**. The program began in earnest in 2016 and with the aim of achieving the goals by 2030. As a responsible corporate citizen, we have strived to help advance the achievement of the SDGs through our business operations. We have identified the goals with the highest relevance to our business areas and promote various activities according to the goals.

SDGs	Our Objectives	Activities	Relevant aspects of our sustainability management
3 GOOD HEALTH AND WELL-BEING	We focus on creating a work environment that ensures the health and safety of our employees. We also strive to minimize the impact of harmful chemicals on the environment and our employees' health.	<ul style="list-style-type: none"> Offering a yearly employee medical check-up program Operating diabetes and obesity management programs Operating an in-house clinic, fitness center, physical therapy center, musculoskeletal system disorder prevention center, and mental health counseling center Updating and publishing the list of substances banned for use 	Environment, Our Employees
4 QUALITY EDUCATION	We help youth around the world develop the capabilities required to build a better future based on our ICT expertise and knowledge.	<ul style="list-style-type: none"> Samsung Solve for Tomorrow Samsung Innovation Campus Samsung Smart School Samsung Software Academy for Youth 	Empowering Communities
5 GENDER EQUALITY	Based on our belief that access to equal opportunities is the key to economic growth, political stability, and positive social change, we strive to offer ample opportunities for women around the world to improve their lives.	<ul style="list-style-type: none"> Offering leadership training and mentoring for female employees Providing support for childbirth and childcare Certified as a family-friendly company by the Korean Ministry of Gender Equality and Family 	Our Employees
6 CLEAN WATER AND SANITATION	We strive to ensure the efficient use of water resources by reducing water consumption and reusing and recycling water. For wastewater treatment at our business sites around the world, we follow internal standards that are more stringent than local legal regulations to ensure safety and minimize our impact on water resources.	<ul style="list-style-type: none"> Celebrating World Water Day Selected as an outstanding company in the CDP¹⁾ 	Environment
7 AFFORDABLE AND CLEAN ENERGY	We strive to expand our use of renewable energy to combat climate change. We take a variety of different measures at our global business sites, from solar panel and geothermal unit installation to renewable energy supply contracting and green pricing.	<ul style="list-style-type: none"> Expanding the use of renewable energy 	Environment
8 DECENT WORK AND ECONOMIC GROWTH	We focus our resources on fostering startups to drive social innovation and secure new growth engines. We also provide support for established and emerging SMEs to promote R&D and productivity.	<ul style="list-style-type: none"> C-Lab (Creative Lab, Korea) Smart factory support (Korea) Future Technology Cultivation Initiative (Korea) 	Empowering Communities, Our Employees, Sustainable Supply Chain

SDGs	Our Objectives	Activities	Relevant aspects of our sustainability management
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	We strive to improve the accessibility of our IT devices and technologies to ensure that all individuals benefit equally from our innovations. We comply with international laws and regulations related to cybersecurity to protect consumers and maintain world-class product and service security.	<ul style="list-style-type: none"> Developing products based on the 4C Design Principles for Accessibility Implementing the Samsung Knox platform 	Empowering Communities, Digital Responsibility
 10 REDUCED INEQUALITIES	We make sure to offer equal opportunities for employees and job seekers at all our business sites. We do not discriminate against anyone based on gender, race, ethnicity, nationality, religion, age, marital status, sexual orientation, sexual identity and representation, social status, disability, pregnancy, military service status, genetic information, political inclination, etc., in relation to personnel affairs.	<ul style="list-style-type: none"> Operating support programs for employees with disabilities Promoting ERG¹⁾ activities Improving the inclusion of female directors on the Board 1) Employee Resource Group 	Our Employees
 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	We seek to minimize our environmental impact by reusing and recycling resources. To this end, we strive to increase our use of recycled materials, improve product durability, reduce the number and volume of packaging items, decrease the mining of new resources, and extend our product life cycles.	<ul style="list-style-type: none"> Increasing the use of recycled materials including recycled ocean-bound plastics Expanding the use of eco-conscious packaging Enhancing product reparability Expanding business sites with Zero Waste to Landfill certification Sourcing responsible minerals 	Environment, Sustainable Supply Chain
 13 CLIMATE ACTION	We identify and prioritize climate change issues based on the magnitude of their impacts on our operations and the probability of their occurrence. These factors are considered when we analyze risk and opportunity factors to establish response measures. We also invest in the installation and optimization of GHG emissions reduction equipment.	<ul style="list-style-type: none"> Mitigating GHG emissions of our business sites Developing highly energy efficient products Mitigating GHG emissions from supply chains, logistics, employee and business trips and converting to EVs 	Environment
 15 LIFE ON LAND	We take action to minimize any possible adverse impacts of our business sites on biodiversity. We strive to preserve ecosystems by identifying endangered flora and fauna near our business sites, and engage in activities to preserve their habitats.	<ul style="list-style-type: none"> Preserving river ecosystems 	Environment
 17 PARTNERSHIPS FOR THE GOALS	We share our advanced technologies to contribute to the resolution of a diverse range of social issues (education, healthcare, employment, and environment). We also operate programs that have been optimized for different local communities in cooperation with stakeholders.	<ul style="list-style-type: none"> Joining the United Nations Global Compact Samsung Global Goals app Galaxy-UNESCO partnership Participating in the government-private council in the AI ethics sector 	Empowering Communities, Digital Responsibility

Sustainability Value Creation

Since 2016, we have used the **KPMG 'True Value' methodology** to measure the positive and negative effects of our sustainable management activities and achievements in sustainable value creation. To convert our sustainable value creation activities to monetary value, we reviewed and selected measurement indices. Our sustainability value is composed of **1) financial, 2) socio-economic and 3) environmental values** and each are expressed in positive (+) or negative (-) numerical values.

Value Assessment Methods

Categories		Types	Assessment Methods ¹⁾
Financial value		Benefits	Net income created over the past year
Socio-economic value	Investor value	Benefits	Dividends and interest paid to shareholders, investors, and creditors
	Supplier support	Benefits	Funding for the Win-Win Fund
	Local Community Development	Benefits	Donations to resolve local community issues
			ROI (118%) of investments in training projects ²⁾
			ROI (250%) of investments in infrastructure establishment projects ³⁾
			ROI (550%) of investments in hygiene facility development projects ⁴⁾
Environmental value	GHG emissions from business sites	Costs	Social costs of GHG emissions ⁵⁾
	Impact on the air environment	Costs	Social costs of air pollutants (NOx, SOx, and PM) emission ⁶⁾
	Impact on the water environment	Costs	Social costs of water use based on the level of water scarcity of regions where our business sites are located ⁷⁾
	Waste impact on the environment	Costs	Social costs of waste landfill, incineration, and recycling ⁸⁾

1) The exchange rate is KRW 1,186 per USD and KRW 1,342 per euro as of December 31, 2021.

2) G. Psacharopoulos and H.A. Patrinos, Returns to investment in education: a further update (2004)

3) BCG, The cement sector: a strategic contributor to Europe's future

4) G. Hutton, Global costs and benefits of drinking-water supply and sanitation interventions to reach the MDG target and universal coverage (2012)

5) EPA, Technical update of the social cost of carbon for regulatory impact analysis (2013)

6) EEA, Revealing the cost of air pollution from industrial facilities in Europe (2011), Transportation Cost and Benefit Analysis II – Air Pollution Costs, Victoria Transport Policy Institute (2011)

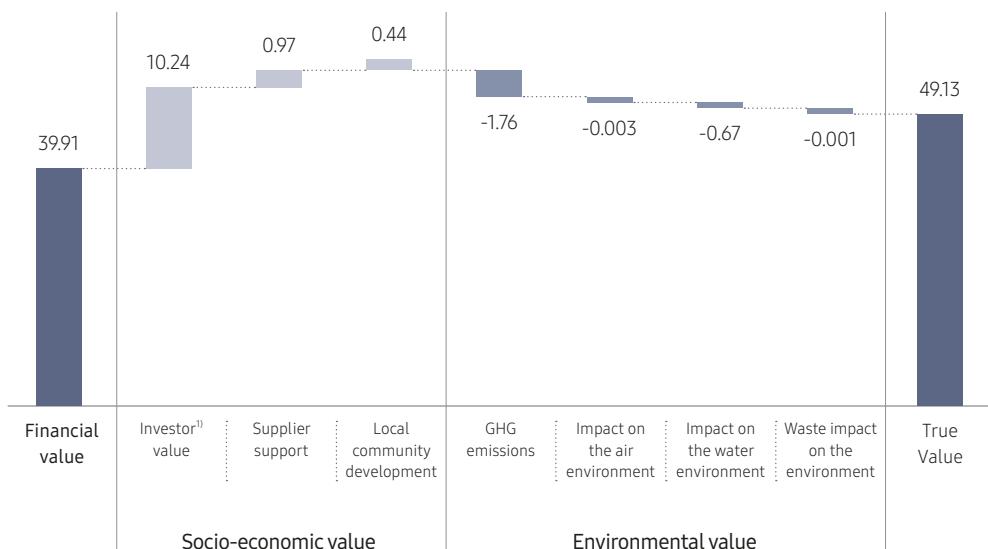
7) TruCost PLC, Natural capital at risk: the top 100 externalities of business (2013)

8) A. Rabl, J. V. Spadaro and A. Zoughaib, Environmental impacts and costs of solid waste: a comparison of landfill and incineration (2009)

Our Sustainability Values in 2021

Over the period from January 1 to December 31, 2021, we created sustainability management values equivalent to KRW 49.13 trillion. Among them, the financial value stands at KRW 39.91 trillion, a 34% increase from 2020 due to the rise in net income. We continually pursue the creation of socioeconomic and environmental values through diverse activities. We promote the development of local communities by providing training for future generations and support for SMEs and startups. We fully converted our business sites in the US, Europe, and China to 100% renewable energy use, while steadily expanding renewable energy use in Brazil, Mexico, etc. As a result, our socioeconomic and environmental values in 2021 are calculated to reach KRW 9.22 trillion.

Our Sustainability Management Values in 2021 (Unit: KRW trillion)



1) Sustainability Value was calculated based on the figures in the Free Cash Flow Statements. 2021 Special dividends (KRW 10.7 trillion) are not included in the investor values, since they were reflected in our Sustainability Values for 2020.

As an extension of our efforts to more accurately assess the values created by our sustainability activities, we have monitored the latest developments in research on social and environmental value assessment around the world. In this context, we plan to include wages and taxes in the assessment from 2023 onwards considering the significance of these two items and global trends.

→ Including wages and taxes, we estimate our sustainability values for 2021 at approximately KRW 98 trillion.

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Economic Performance

Key Financial Performance (based on consolidated financial statements)		2019	2020	2021	Unit
Sales	230.4	236.8	279.6	KRW trillion	
	Operating profit	27.8	36.0	51.6	KRW trillion
	Net income	21.7	26.4	39.9	KRW trillion
Sales by business and region (based on net sales)		2019	2020	2021	Unit
Sales by business ³⁾	VD/DA, etc ¹⁾	45.3 ²⁾	48.2	55.8	KRW trillion
	MX/Networks ¹⁾	107.3	99.6	109.3	KRW trillion
	Semiconductor	64.9	72.9	94.2	KRW trillion
	Display	31.1	30.6	31.7	KRW trillion
	Harman	10.1	9.2	10.0	KRW trillion
Sales by business	VD/DA, etc ¹⁾	18 ²⁾	18	19	%
	MX/Networks ¹⁾	41 ²⁾	38	36	%
	Semiconductor	25	28	31	%
	Display	12	12	11	%
	Harman	4	4	3	%
Sales by region	Americas	73.9	78.3	97.9	KRW trillion
	Europe	42.7	46.0	50.3	KRW trillion
	China	38.0	37.8	45.6	KRW trillion
	Korea	34.2	37.0	44.0	KRW trillion
	Asia and Africa	41.6	37.7	41.8	KRW trillion
Sales by region	Americas	32	33	35	%
	Europe	19	19	18	%
	China	16	16	16	%
	Korea	15	16	16	%
	Asia and Africa	18	16	15	%

1) The above table is based on the system prior to the integration of the CE (VD/DA, etc) Division and IM (MX/Networks) Division into the DX Division in December 2021.

2) The Health and Medical Equipment Business was integrated into the CE (VD/DA, etc) Division in 2020, and the CE Division's data for 2019 was updated accordingly.

3) The sales figures for each business include internal transactions between different businesses.

Economic Value Distribution		2019	2020	2021	Unit
[Suppliers] Purchasing costs		173.3	168.7	192.0	KRW trillion
[Local communities] CSR costs		0.5	0.5	0.4	KRW trillion
[Shareholders and investors] Dividends		9.6	20.3	9.8	KRW trillion
[Shareholders and investors] Dividend payout ratio		45	78	25	%
[Creditors] Interest costs		0.7	0.6	0.4	KRW trillion
[Employees] Personnel expenses		28.1	31.0	34.6	KRW trillion
[Government]	Total amount	9.7	11.1	14.8	KRW trillion
	Regional taxes and public duties	Asia	15	11	%
		Korea	69	73	80
		Americas and Europe	14	14	10
		Others	2	2	2

Percentages of Distributed Economic Value (Unit: %)

Suppliers ¹⁾	Local communities ²⁾	Shareholders and investors ³⁾	Creditors ⁴⁾	Employees ⁵⁾	Government ⁶⁾
76.2	0.1	3.9	0.2	13.7	5.9

1) Costs in relation to all products and services purchased for business

2) Total cost of corporate citizenship activities.

3) Dividends

4) Interest costs

5) Sum of wages, retirement benefits, and welfare benefits included in sales costs, R&D expenses, and SG&A expenses

6) Sum of consolidated corporate income taxes, other taxes, and public duties (based on accrual accounting)

Social Performance

Compliance and Ethics	2019	2020	2021	Unit
Compliance training ¹⁾	110,919	115,787	141,723	Persons
Ethics training ²⁾	279,255	187,228	198,592	Persons
Compliance whistleblowing ³⁾	116	549	911	Cases
Ethics whistleblowing ⁴⁾	584	728	929	Cases

1) Scope of data collection: Employees in Korea (including cases of cross-attendance)

2) Scope of data collection: Employees in Korea and abroad

3) Based on our compliance management site (<https://sec-compliance.net>)

4) Based on our ethical management site (<https://sec-audit.com>)

Corporate Citizenship	2019	2020	2021	Unit	
Hours of employees' volunteer work	878,448	635,564	824,329	Hours	
Hours of volunteer work per employee ¹⁾	3.06	2.37	3.04	Hours	
Cumulative sum of beneficiaries of our youth training programs in Korea and abroad	Samsung SW Academy for Youth Samsung Dream Class Samsung Smart School ²⁾ Samsung Junior SW Academy Stepping Stone of Hope Samsung Blue Elephant Samsung Solve for Tomorrow Samsung Innovation Campus	500 103,143 4,237 57,874 7,884 NA 1,785,684 17,275	2,250 107,070 4,237 84,140 8,612 93,862 1,948,186 35,802	4,450 112,570 5,917 112,341 10,522 353,201 2,146,951 74,984	Persons

1) Hours of employees' volunteer work / Number of employees in Korea and abroad

2) Samsung Smart School in India is under development, and thus, the number of beneficiaries at the respective school will be calculated from 2022 onwards.

* The number of beneficiaries of Samsung Smart School herein includes only those in Korea.

SME Support	2019	2020	2021	Unit
Number of beneficiaries of smart factory support	Total Number of partner companies Number of non-partner SMEs	566 41 525	369 ¹⁾ 70 299	286 43 243
				Companies

1) Number change due to 4 companies which dropped Smart Factory Business after 2020 Sustainability Report publication.

Privacy Protection	2019	2020	2021	Unit
In-house consulting	4,749	5,716	6,273	Cases

Labor and Human Rights	2019	2020	2021	Unit
Number of employees ¹⁾	Total Overseas Korea	287,439 185,380 102,059	267,937 161,607 106,330	266,673 155,547 111,126
Number of employees by employment type	Non-fixed-term employees Fixed-term employees ²⁾	282,874 4,565	264,030 3,907	262,794 3,879
Number of employees by age group	Under 30 30s 40 and above	124,442 105,862 57,135	99,823 106,236 56,380	89,911 108,469 68,293
Number of employees by job type ³⁾	Product development Manufacturing Quality assurance and EHS Sales and marketing Others	69,370 144,744 20,555 24,067 28,703	71,539 127,256 19,354 22,704 27,084	75,229 122,809 19,459 23,267 25,909
Number of employees by rank	Working level ⁴⁾ Manager level Executive level ⁵⁾	213,826 72,175 1,438	190,394 76,057 1,486	184,607 80,540 1,526
Number of employees by region	Korea Southeast Asia, Southwest Asia, and Japan China North America and Central and South America Europe Middle East Africa	102,059 121,819 20,649 25,270 14,061 3,008 573	106,330 101,929 18,099 25,004 12,861 3,160 554	111,126 94,583 17,820 25,695 12,704 4,171 574
Turnover rate ⁶⁾	Overseas Korea	19.5 2.5	18.1 2.1	15.7 2.4
Welfare benefit expenses in Korea and abroad		4,490	4,655	5,073
				KRW billion

1) The figures exclude workers dispatched by subcontractors, workers on leave, interns, and full-time students.

2) The figures include those categorized as fixed-term employees pursuant to the [Act on the Protection of Fixed-Term and Part-Time Employees](#) in Korea and subcontractors and apprentices working at our overseas business sites.

3) "Manufacturing" was divided into "manufacturing" and "quality assurance and EHS".

4) Working-level employees encompass those opting for flexible work arrangements and those not categorized under the manager and executive levels.

5) The figures include those at the Vice President level and higher, including Masters and Fellows, at our overseas subsidiaries.

6) The ratio of those who resigned during the respective fiscal year to the total number of employees

Social Performance

Diversity and Inclusion		2019	2020	2021	Unit
Percentage of female employees ¹⁾		40.2	37.3	36.3	%
Percentage of female employees by job type ²⁾	Product development	17.5	18.0	18.8	%
	Manufacturing	53.2	48.9	46.8	%
	Quality assurance and EHS	41.3	41.3	42.3	%
	Sales and marketing	31.2	31.5	32.3	%
	Others	36.1	35.8	36.0	%
Percentage of female employees by region	Korea	24.9	24.9	25.1	%
	Southeast Asia, Southwest Asia, and Japan	56.3	52.7	51.4	%
	China	34.9	33.4	33.8	%
	North America and Central and South America	35.1	35.4	34.9	%
	Europe	34.5	33.8	34.0	%
	Middle East	14.0	11.3	14.5	%
	Africa	37.7	42.4	42.5	%
Percentage of female employees by rank	Working level	49.0	46.3	45.3	%
	Manager level	14.7	15.3	16.1	%
	Executive level ³⁾	6.3	6.3	6.5	%
Number of employees on parental leave ⁴⁾		3,894	3,897	3,935	Persons
Rate of return to work after parental leave ⁴⁾		93.7	98	98.3	%
Maximum number of children accommodated at in-house daycare centers ⁴⁾		3,080	3,020	3,050	Persons
Number of in-house daycare centers ⁴⁾		15	13	13	Centers
Number of employees with disabilities ⁴⁾		1,589	1,465	1,574	Persons
Percentage of employees with disabilities ⁴⁾		1.6	1.5	1.6	%

1) The figures are based on the total number of employees.

2) "Manufacturing" was divided into "manufacturing" and "quality assurance and EHS".

3) The figures include those at the Vice President level and higher, including Masters and Fellows, at our overseas subsidiaries.

4) The figures are based on the number of employees at our domestic business sites.

Career Development		2019	2020	2021	Unit
Number of employees training	Total	242	734	818	10,000 cases
	Abroad	143	350	366	10,000 cases
	Korea	99	384	452	10,000 cases
Average training hours per employee ¹⁾	Total	67.2	55.8	54.9	Hours
	Abroad	61.7	46.0	45.7	Hours
	Korea	78.9	70.8	67.7	Hours
Training expenses	Total training expenses ²⁾	1,465	1,014	1,321	KRW100 million
	Training expenses per target employee ³⁾	1,435	953	1,188	KRW1,000
	Ratio of training expenses to sales ⁴⁾	0.06	0.04	0.05	%
	Ratio of training expenses to personnel expenses ⁵⁾	1.3	0.6	0.8	%
Number of those who applied for re-employment through the Career Development Center ⁶⁾		7,319	7,561	7,940	Persons
Number of those re-employed through the Career Development Center ⁷⁾		6,432	6,679	6,982	Persons
Percentage of those re-employed through the Career Development Center		87.9	88.3	87.9	%

1) Online training and offline training combined

2) Employees in Korea

3) Total training expenses / Total number of employees in Korea

4) Total training expenses / Total sales based on consolidated financial statements

5) Total training expenses/Total employee compensation of domestic headquarters

6), 7) Based on the cumulative sum since 2001

Safety and Health		2019	2020	2021	Unit
Frequency rate ¹⁾		0.059	0.031	0.094	%
Injury rate ²⁾		0.009	0.006	0.020	%

1) (Number of incidents / Total working hours for the year) x 1,000,000; based on employees in Korea and those at overseas production sites

2) (Number of injured employees / Number of on-site employees) x 100; based on employees in Korea and those at overseas production sites

Social Performance

Sustainable Supply Chain		2019	2020	2021	Unit
Supplier Evaluation	Suppliers evaluated ¹⁾	86	92	93	%
	Suppliers rated outstanding	70	73	68	%
	ISO 14001- certified suppliers ²⁾	84	86	88	%
	OSHAS18001- certified suppliers ³⁾	42	43	47	%
Investment in the Win-Win Fund	Total	8,630	9,736	9,734	KRW100 million
	First-tier suppliers	6,274	7,294	6,590	KRW100 million
	Second and third-tier suppliers ⁴⁾	2,356	2,442	3,144	KRW100 million
Supplier incentives		741	777.2	892.8	KRW100 million
Number of suppliers that benefited from supplier training	Total	890	720	911	Suppliers
	First-tier suppliers	558	511	520	Suppliers
	Second-tier suppliers	332	209	391	Suppliers
Number of individual participants in supplier training ⁵⁾	Total	20,144	16,756	18,725	Persons
	First-tier suppliers	15,170	13,107	17,423	Persons
	Second-tier suppliers	4,974	3,649	1,302	Suppliers
Number of primary suppliers that benefited from innovation support	Total	145	28	30	Suppliers
	Overseas	23	0	0	Suppliers
	Korea	122	28	30	Suppliers
Management of suppliers' working environments	Third-party audit	93	78	108	Suppliers

1) The annual comprehensive evaluation is performed across eight areas on all of our suppliers that have remained in our supply chain for at least one year.

2) The Basic Supplier Agreement requires all our suppliers to be certified with ISO 14001 or meet the equivalent standards.

3) The figure for 2021 includes 12 suppliers with SA8000 certification.

4) Third-tier suppliers have been included since 2018.

5) The figures include cases of cross-attendance.

Responsible Minerals Sourcing		2019	2020	2021	Unit
On-site audit of suppliers ¹⁾		225	427	493	Suppliers

1) On-site audit is aimed at blocking the use of conflict minerals in our supply chain.

Supplier Compliance with Key Third-Party Audit Items¹⁾

Major Items		2019	2020	2021	Unit
Labor and Human Rights	Voluntary labor ²⁾	99	97	98	%
	Guarantee of freedom of movement	100	99	99	%
	Prohibition of child labor	100	100	100	%
	Protection of underage workers	99	98	100	%
	Working hour management	82	82	87	%
	Guarantee of one day off per week	94	92	97	%
	Wages and benefits ³⁾	96	90	91	%
	Humane treatment	100	100	100	%
	Non-discrimination ⁴⁾	100	100	100	%
	Freedom of association ⁵⁾	98	99	99	%
Health and Safety	Occupational safety	96	94	96	%
	Emergency preparedness	96	96	95	%
	Occupational injury and illness	96	99	99	%
	Physically demanding work	100	95	99	%
	Safety maintenance of dangerous machinery	99	98	99	%
	Sanitation, food & housing	97	95	99	%
Environment	Pollution prevention	100	99	98	%
	Hazardous substance management	97	97	99	%
	Waste water and solid waste management	97	99	100	%
	Air pollution	99	100	100	%
	Restricted product contents	97	100	100	%
Ethics	Business ethics	99	96	98	%
	Prohibition of improper gains	97	94	98	%
	Information disclosure	99	97	100	%
	Intellectual property	100	100	100	%
	Identity confidentiality and prohibition of retaliation	100	97	100	%
	Privacy protection	100	100	99	%
Management System	Commitment to compliance	96	99	100	%
	Management responsibility	99	96	100	%
	Risk assessment	92	87	97	%
	Training	95	95	100	%
	Engagement and communication	99	96	99	%
	Employee feedback	98	100	99	%
	Corrective action	93	91	98	%
Business improvement target management		96	90	98	%

1) The figures include the improvement implementation results based on each year's third-party audit (performed on 108 suppliers in 2021).

2) Prohibition of forced labor and establishment of relevant policies, mandating of written labor contracts in native language, guarantee of freedom of movement, prohibition of keeping the original copy of an employee's identification document, etc.

3) Accurate calculation and payment of wages, provision of wage statements, prohibition of delay in the payment of wages, prohibition of unfair penalty imposition, proper payment of any social insurance fees or withholding taxes, etc.

4) Prohibition of discrimination based on gender and other personal traits to ensure access to equal opportunities and pay, establishment of anti-discrimination policies and procedures, provision of spaces for religious gathering, etc.

5) Guarantee of the right to establish and join labor unions, right to collective bargaining, freedom of assembly and association, prohibition of discrimination against labor union members, etc.

Environmental Performance

GHG Emissions Management		2019	2020	2021	Unit
GHG emissions from business sites ^{1,2)}		13,800	14,806	17,400	1,000 tonnes CO ₂ e
Direct emissions (Scope 1)		5,067	5,726	7,604	1,000 tonnes CO ₂ e
Indirect emissions (Scope 1) ³⁾		8,733	9,079	9,796	1,000 tonnes CO ₂ e
CO ₂		9,845	10,266	11,005	1,000 tonnes CO ₂ e
CH ₄		2	3	3	1,000 tonnes CO ₂ e
N ₂ O		335	329	489	1,000 tonnes CO ₂ e
HFCs		530	685	902	1,000 tonnes CO ₂ e
PFCs		2,912	3,322	4,787	1,000 tonnes CO ₂ e
SF ₆		176	202	214	1,000 tonnes CO ₂ e

1) Calculated by applying the [GHG regulations and management guidelines](#) of each respective country, [PICC's guidelines](#), and ISO [14064 standards](#)

2) Location-based GHG emissions that do not reflect renewable energy use: 16,065,000 tonnes CO₂e in 2019, 17,571,000 tonnes CO₂e in 2020, and 20,173,000 tonnes CO₂e in 2021

3) Market-based GHG emissions that reflect renewable energy use

Energy Efficiency of Our Products ¹⁾		2019	2020	2021	Unit
Amount of GHG emissions reduced in the product use phase	Cumulative amount of reduction ²⁾	270	301	334	Million tonnes CO ₂ e
	Amount of reduction in the calendar year	26,592	31,671	32,906	1,000 tonnes CO ₂ e
Reduction rate of our products' energy consumption ³⁾		42	32	33	%

1) Scope of data collection: 7 major product categories (refrigerator, air conditioner, washer, TV, monitor, laptop, and mobile phone)

2) Cumulative from 2009

3) Annual energy consumption in each calendar year against average annual energy consumption in 2008

Resource Efficiency of Our Products		2019	2020	2021	Unit
Recycled plastic usage ¹⁾	Cumulative amount used ²⁾	245,981	276,972	310,291	Tonnes
	Amount used in the calendar year	30,753	30,992	33,319	Tonnes
	Rate of recycled plastic used	5.3	4.3	4.4	%
	Amount of recycled packaging material ³⁾	12,394	13,529	13,788	Tonnes

1) Based on the total weight of plastic containing recycled materials

2) Cumulative from 2009

3) Scope of data collection: Korea

Take-Back and Recycling of End-of-Life Products		2019	2020	2021	Unit
Cumulative amount of end-of-life products recovered ¹⁾		4,033,528	4,540,155	5,070,184	Tonnes
Amount of end-of-life products recovered	Asia and Oceania	486,741	506,627	530,029	Tonnes
	Europe	187,899	185,299	195,655	Tonnes
	Americas	251,544	279,902	290,897	Tonnes
		47,298	41,426	43,477	Tonnes
		98,420	113,850	120,718	Tonnes
Amount of end-of-life products recovered in the calendar year by product type ²⁾	Temperature exchange Equipment	87,235	97,544	75,463	Tonnes
	IT&Telecommunication Equipment	4,253	6,948	9,249	Tonnes
	Display	1,036	4,170	3,292	Tonnes
	Large&Small Equipment	5,896	5,188	32,715	Tonnes
Amount of recycled material ²⁾		88,886	97,815	103,716	Tonnes
	Scrap metal	38,980	52,666	55,843	Tonnes
	Nonferrous metal	10,236	11,779	12,489	Tonnes
	Synthetic resin	29,761	26,741	28,354	Tonnes
	Glass	4,922	2,883	3,057	Tonnes
	Others	4,987	3,747	3,973	Tonnes

1) Cumulative from 2009

2) Scope of data collection: Korea.

* based on the e-waste classification criteria updated in 2021 (previous classification: large-sized equipment, communication and office equipment, mid-sized equipment, small-sized equipment)

Environmental Performance

Waste management		2019	2020	2021	Unit
Waste generated	General waste	1,099,197	1,181,741	1,324,972	Tonnes
	Hazardous waste ¹⁾	777,570	835,875	903,753	Tonnes
		321,627	345,866	421,219	Tonnes
Waste processed	Recycled	1,099,197	1,181,741	1,324,972	Tonnes
	Incinerated (off premises)	1,045,122	1,125,037	1,268,985	Tonnes
	Landfilled (off premises)	30,664	30,146	31,293	Tonnes
Waste recycling rate		23,410	26,558	24,694	Tonnes
		95	95	96	%

1) Based on the monitoring criteria of individual countries where we operate

Water management		2019	2020	2021	Unit
Water usage	Municipal water (surface water)	134,479	141,648 ³⁾	163,660	1,000 tonnes
	Underground water	133,823	141,063 ³⁾	157,691	1,000 tonnes
		657	585	5,969	1,000 tonnes
Wastewater discharge		108,460	109,201	130,955	1,000 tonnes
Reused water ¹⁾		68,555	70,181	93,949	1,000 tonnes
Ultra-pure water reused	Supply amount	55,039	57,226	61,986	1,000 tonnes
	Recovery amount	15,005	19,691	22,543	1,000 tonnes
Suppliers' water usage ²⁾		68,286	70,028	84,737	1,000 tonnes

1) Including rainwater, wastewater, and reused manufacturing process water

2) Based on the survey of water used for the manufacturing of our products by the top 90% of our suppliers by transaction volume

3) Water usage data for 2020 corrected

Chemical management ¹⁾		2019	2020	2021	Unit
Chemical consumption ²⁾		384	455 ³⁾	520	1,000 tonnes
Leakage of major harmful substances		0	0	0	Cases

1) Scope of data collection: Korea

2) Based on Pollutant Release and Transfer Registers (PRTR) from 2018

3) 2020 Numerical Error Correction

Pollutant management ¹⁾		2019	2020	2021	Unit
Air pollutant emissions	NOx	661	652	717	Tonnes
	SOx	13	6	19	Tonnes
	Dust	227	210	163	Tonnes
	NH ₃	60	71	68	Tonnes
	HF	13	18	22	Tonnes
Volatile organic compound emissions		186	289	314	Tonnes
Water pollutant discharge	COD	1,047	1,033	906	Tonnes
	BOD	415	315	266	Tonnes
	SS	315	377	393	Tonnes
	F	342	428	520	Tonnes
Heavy metals		9	9	13	Tonnes
Consumption of ozone depleting substances (CFC-11 eq.) ²⁾		2	2	1	Tonnes

1) To mitigate air pollutant emissions, we are pushing ahead with the introduction of a NOx reduction system, implementation of a catalytic oxidation process, and installation of electric dust collection facilities. In accordance with the Montreal Protocol, all of our business sites are gradually replacing refrigerants of freezers and air conditioners with alternatives with less ozone depletion potential (ODP). We are also working to remove water pollutants through our optimized wastewater treatment facilities prior to wastewater discharge.

2) Scope of data collection: Korea

Business site environment management		2019	2020	2021	Unit
Investment in environment and safety ¹⁾		15,176	9,412	13,997	KRW100 million
Violations of environmental regulations		0	0	0	Cases

1) Environment and safety investment planned in 2022: KRW1,944.1 trillion

Customer value enhancement		2019	2020	2021	Unit
Customer service ¹⁾	Korea	69.9	74.4	80.6	%
	VD/DA, etc	81.8	83.1	85.0	%
	MX/Networks	64.9	68.0	69.2	%
	Overseas VD/DA, etc	57.6	61.8	64.4	%
MX/Networks					

1) Customer satisfaction with our services scored on a scale of 100 points (assessed from 2019)

* The above table is based on the system prior to the integration of the CE (VD/DA, etc) Division and IM (MX/Networks) Division into the DX Division in December 2021.

Environmental Performance

Water Resources by Region

We use water resources from nine regions and 16 countries around the world. By collecting data on each region's basins and reviewing related risks, we develop effective water resources management strategies. In 2021, our water withdrawal stood at 163,660,000 tonnes, water discharge at 130,955,000 tonnes, water use at 32,706,000 tonnes, and water reuse at 93,949,000 tonnes globally.

Region	Water withdrawal								Water discharge		Amount of water used	Amount of water reused	Basins	(Unit: 1,000 tonnes)				
	Total amount of withdrawal	Withdrawal from third-party sources (municipal governments, water utility companies, etc.)		Direct withdrawal		Total amount of discharge	Water discharge											
		Surface water	Underground water	Surface water	Underground water		Direct discharge to freshwater ecosystems	Treatment and discharge by third-party agencies										
Korea	121,272	115,615	-	-	5,657	97,720	64,974	32,746	23,552	64,787	4 including the Han River							
China	18,716	18,716	-	-	-	15,327	-	15,327	3,389	22,271	3 including the Yellow River (Huang He River)							
Europe	208	205	-	-	3	97	-	97	111	3	2 including the Danube River							
Russia	100	100	-	-	-	31	-	31	68	44	The Volga River							
Southeast Asia	11,977	11,977	-	-	-	9,729	203	9,526	2,248	2,729	4 including the Hong River							
Southwest Asia	426	426	-	-	-	54	-	54	372	215	2 including the Ganges River							
North America	10,380	10,380	-	-	-	7,654	-	7,654	2,727	3,824	4 including the Colorado River							
Central and South America	334	25	-	-	309	117	100	17	217	13	2 including the Amazon River							
Africa	247	247	-	-	-	226	-	226	22	61	2 including the Nile River							
Total	163,660	157,691	-	-	5,969	130,955	65,276	65,679	32,706	93,949								

Performance by Business Division

Sustainable Supply Chain		DX	DS	Total	Unit
Comprehensive evaluation of suppliers (including those cross-evaluated by DX and DS)	Percentage of suppliers evaluated ¹⁾	97	82	93	%
	Percentage of suppliers rated outstanding ²⁾	65	77	68	%
	Percentage of suppliers certified with ISO 14001 ³⁾	88	89	88	%
	Percentage of suppliers certified with OSHAS 18001	45 ⁴⁾	56	47	%
Supplier training	Number of participating suppliers	535	376	911	Suppliers
	Number of participating employees	6,641	12,084	18,725	Persons
Management of suppliers' working environments	Third-party audit	84	24	108	Suppliers

1) All suppliers that have remained in our supply chain for at least one year were evaluated in eight areas.

2) For DX, DS cross- evaluations, higher ratings are applied.

3) Compliance with ISO 14001 or equivalent certification is mandated in the standard supplier contract.

4) This figure includes 12 suppliers certified with SA8000.

Environment	DX Division	DS Division	Total	Unit
GHG emissions from business sites	1,790	15,610	17,400	1,000 tonnes CO ₂ e
	263	7,341	7,604	1,000 tonnes CO ₂ e
	1,527	8,269	9,796	1,000 tonnes CO ₂ e
Energy consumption at business sites	4,396	27,926	32,322	GWh
	3,143	22,624	25,767	GWh
	1,253	5,302	6,555	GWh
Renewable energy use	556	4,722	5,278	GWh
Waste generation	348,427	976,545	1,324,972	Tonnes
	290,851	612,902	903,753	Tonnes
	57,576	363,643	421,219	Tonnes
Water usage	19,392	144,269	163,660	1,000 tonnes
	18,833	138,858	157,691	1,000 tonnes
	558	5,411	5,969	1,000 tonnes
Chemical usage at business sites ⁵⁾	8	512	520	1,000 tonnes

1) Market-based GHG emissions that reflect renewable energy use

2) Based on the monitoring standards of each country

3) Scope of data collection: Korea

APPENDIX

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Independent Assurance Report

To the management of Samsung Electronics Co., Ltd.

We have undertaken an engagement requested by Samsung Electronics (the "Company") to review the information established in Samsung Electronics Sustainability Report 2022 (the "Report Report"). It is the responsibility of the management to prepare the Report, and it is our responsibility to perform a limited assurance engagement and issue a statement based on the information collected.

Responsibilities of the Company and Ernst & Young Han Young

The Company is responsible for collecting and presenting the data within the Report. This responsibility involves structuring, implementing, and maintaining the relevant corporate system so that there is no critical misstatement due to fraud or error. Our responsibility, in line with the contract, is to perform a 'limited level' of assurance regarding the selected quantitative and qualitative performance stated in the Report. We shall hold no responsibility whatsoever to any other purpose, individual or organization in respect to the result of the limited assurance performed. The decision made by the third party based on the Report is the sole responsibility of the third party.

Scope and context

The limited assurance was performed based on the following information.

GRI index: p101~p103

Facts&Figures: p90~p97

Description of procedures performed

We conducted the assurance engagement in accordance with [IAES3000^{1\)}](#) developed by IAASB.

The following procedures were performed to reach our conclusion on the Report:

- Identified the Company's processes for stakeholder engagement
- Identified the Company's processes for determining material issues of key stakeholders
- Examined media coverage of the Company's environmental, social and governance ("ESG") issues during the reporting period
- Analyzed recently reported ESG issues of the Company's global competitors
- Conducted interviews with respective personnel regarding the Company's ESG activities and reporting Process during the reporting period
- Inspected data regarding the Company's ESG performance, supporting evidence for assertions, and intranet source data
- Identified the Company's process for collecting and consolidating ESG performance data
- Reviewed whether the financial performance data has been appropriately extracted from the Company's audited financial statements.

Level of assurance

We conducted our limited assurance engagement in accordance with [IAES 3000](#). Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than in a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Conclusion on limited assurance

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Report is not prepared, in all material respects, in accordance with the standard adopted by the Company.

Independence

We comply with the [Code of Ethics issued by the International Federation of Accountants](#).

Our engagement team

This engagement was performed by an [assurance team of extensive experience and expertise in the ESG sector](#).

17 June, 2022

Ernst & Young Han Young

¹⁾ International Standard on Assurance Engagements: Assurance Engagements Other than Audits or Reviews of Historical Financial Information issued by International Federation of the Accountants

Verification Statement on 2021 Samsung Electronics Co.,Ltd., Greenhouse Gas Emission



Introduction

Korean Foundation for Quality (hereinafter 'KFQ') has been engaged by Samsung Electronics Co.,Ltd (hereinafter the 'Company') to independently verify its 2021 Greenhouse Gas Emission Report of domestic corporations and 24 overseas subsidiaries. It is the responsible of the Company to compile the Greenhouse Gas Emission Report according to the 'Guidelines for GHG emission reporting and certification of GHG emission trading scheme (Notification No. 2021-278 of Ministry of Trade, Industry and Energy)', GHG Protocol Scope 2 Guidance' and 'ISO 14064-1:2006' and KFQ has responsibility to conduct verification based on 'ISO 14064-3:2006' to provide verification opinion on compliance of the Report against verification criteria.

Verification Scope

In this verification, domestic corporations and 24 overseas subsidiaries under operational control of Samsung Electronics Co.,Ltd, and reported emission is including Scope 1 and Scope 2 emission.

Verification Procedure

The Verification has been planned and conducted by the "Greenhouse Gas and Energy Target Management Scheme", and to reach reasonable level of assurance.

Limitations of verification

Accuracy and completeness of emission data reported in the 'GHG Inventory' are subject to inherent limitations due to their nature and the methodology used in determining, calculating and estimating such data.

Conclusion/Opinion

Through the verification process according to the 'ISO 14064-3:2006' KFQ could obtain reasonable basis to express following conclusion on the Greenhouse Gas Emission Report

1) 2021 Samsung Electronics Co.,Ltd., Greenhouse Gas Emission Report was prepared against 'Samsung Electronics Co.,Ltd., Greenhouse Gas Inventory Guideline' developed based on the 'Guidelines for GHG emission reporting and certification of GHG emission trading scheme', GHG Protocol Scope 2 Guidance' and 'ISO 14064-1:2006'

2) As a result of materiality assessment on 2021 domestic Greenhouse Gas Emission, material discrepancy is less than the criteria of 2.0% for the organization which emits more than 5,000,000 tCO₂-eq/year in accordance with the requirements of the 'Guidelines of verification for Greenhouse gas emission trading scheme'.

3) For the 24 overseas subsidiaries, document review was conducted for entire 24 subsidiaries as well as Company self-assessment. The result of material discrepancy is less than 2.0%.

- 4) As reported Greenhouse Gas Emission purchased electricity, process emission by fluorinated gas use and LNG consumption take more than 99% of total emission. Activity data of these emission sources were checked through the objective evidence provided by supplier therefore KFQ could confirm that these activity data is valid itself.
- 5) The efficiency of process emission reduction technology that affects the calculation of greenhouse gas emissions has to reflect the values guaranteed by the government and third parties. However, the efficiency was calculated based on the Company's own methodology, and errors are not included in the verification opinion. For the overseas subsidiaries, each national net calorific value and electricity emission factor were preferentially used but net calorific value and electricity emission factor were adopted from IPCC Guidelines or Korean Energy Law Enforcement Regulation in any change of these parameters or factors. Also, in case of buying credits(ex. RECs) in the market, the offset credit is applied to evaluate the emission and record separately in market base section.
- 6) Except unconsidered emission source in the 'Samsung Electronics Co.,Ltd, Greenhouse Gas Inventory Guideline', material error, omission or insignificant issues was not found in 2021 Samsung Electronics Co.,Ltd., Greenhouse Gas Emission Report.

2021 Greenhouse Gas Emissions of Samsung Electronics CO.,Ltd., (Unit: kiloton CO₂ eq)

Division	Total		Domestic		Overseas	
	Location based	Market based	Location based	Market based	Location based	Market based
Direct Emission(Scope 1)	7,604	7,604	5,695	5,695	1,909	1,909
Indirect Emission(Scope 2)	12,566	9,796	8,801	8,576	3,765	1,220
Sub total	20,170	17,400	14,496	14,271	5,674	3,129

May 10th, 2022

Ji Young Song

CEO Ji-Young Song
Korean Foundation for Quality (KFQ)

GRI Index

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	102-2	Activities, brands, products, and services	●	3
	102-3	Location of headquarters	●	4
	102-4	Location of operations	●	4
	102-5	Ownership and legal form	●	X
	102-6	Markets served	●	4
	102-7	Scale of the organization	●	3-4
	102-8	Information on employees and other workers	●	91-92
	102-9	Supply chain	●	4, 77-83
	102-10	Significant changes to the organization and its supply chain	●	X
	102-11	Precautionary Principle or approach	●	7-9
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	102-14	Statement from senior decision-maker	●	2
Ethics and Integrity	102-15	Key impacts, risks, and opportunities	●	26, 85
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GRI102 General Disclosures				
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	102-36	Process for determining remuneration	●	X
	102-37	Stakeholders' involvement in remuneration	○	X
	102-38	Annual total compensation ratio	○	X
	102-39	Percentage increase in annual total compensation ratio	○	X
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	102-41	Collective bargaining agreements	●	63-64
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	102-44	Key topics and concerns raised	●	19
	102-45	Entities included in the consolidated financial statements	●	X
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	102-47	List of material topics	●	85
	102-48	Restatements of information	●	X
	102-49	Changes in reporting	●	85
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Market Presence	202	Management Approach	○	X
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Procurement Practices	204	Management Approach	●	76	
	204-1	Proportion of spending on local suppliers	○	X	
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	205-2	Communication and training about anti-corruption policies and procedures	●	7-9	
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TAX	207	Management Approach	●	X	Refer to the company website
	207-1	Approach to tax	●	X	Refer to the company website
	207-2	Tax governance, control, and risk management	●	X	Refer to the company website
	207-3	Stakeholder engagement and management of concerns related to tax	●	X	Refer to the company website
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Biodiversity	304	Management Approach	●	X	Refer to the company website

GRI Standards			Status	Page	Comments
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	304-2	Significant impacts of activities, products, and services on biodiversity	●	39	
	304-3	Habitats protected or restored	●	39	
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Occupational Health and Safety	401-1	New employee hires and employee turnover	●	91	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	○	X	
	401-3	Parental leave	●	92	
Facts & Figures	402	Management Approach	●	63-64	
	402-1	Minimum notice periods regarding operational changes	○	X	
	403	Management Approach	●	69-72	
Sustainability Foundation	403-1	Occupational health and safety management system	●	69-72	

GRI Index

GRI Standards			Status	Page	Comments
Occupational Health and Safety continued	403-2	Hazard identification, risk assessment, and incident investigation	●	69-72	
	403-3	Occupational health services	●	69-72	
	403-4	Worker participation, consultation, and communication on occupational health and safety	●	69-72	
	403-5	Worker training on occupational health and safety	●	69-72	
	403-6	Promotion of worker health	●	69-72	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	●	69-72	
	403-8	Workers covered by an occupational health and safety management system	●	69-72	
	403-9	Work-related injuries	●	92	
	403-10	Work-related ill health	○	X	
Training and Education	404	Management Approach	●	73	
	404-1	Average hours of training per year per employee	●	92	
	404-2	Programs for upgrading employee skills and transition assistance programs	●	73	
	404-3	Percentage of employees receiving regular performance and career development reviews	●	73, 92	
Diversity and Equal Opportunity	405	Management Approach	●	65-68	
	405-1	Diversity of governance bodies and employees	●	68	
	405-2	Ratio of basic salary and remuneration of women to men	●	65	We do not discriminate on any basis in all processes including promotion, compensation and disciplinary measures
Non-Discrimination	406	Management Approach	●	65	
	406-1	Incidents of discrimination and corrective actions taken	●	63-64	
Freedom of Association and Collective Bargaining	407	Management Approach	●	60-64	
	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	●	60-64	
Child Labor	408	Management Approach	●	60	
	408-1	Operations and suppliers at significant risk for incidents of child labor	●	62	
Forced or Compulsory Labor	409	Management Approach	●	60	
	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	●	62	
Security Practices	410	Management Approach	●	54	
	410-1	Security personnel trained in human rights policies or procedures	○	X	
Rights of Indigenous Peoples	411	Management Approach	○	X	
	411-1	Incidents of violations involving rights of indigenous peoples	○	X	

GRI Standards			Status	Page	Comments
Human Rights Assessment	412	Management Approach	●	60-62	
	412-1	Operations that have been subject to human rights reviews or impact assessments	●	62	
	412-2	Employee training on human rights policies or procedures	●	60-61	
	412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	○	X	
	413	Management Approach	●	41	
	413-1	Operations with local community engagement, impact assessments, and development programs	●	42-45	
	413-2	Operations with significant actual and potential negative impacts on local communities	○	X	
	414	Management Approach	●	76-77	
	414-1	New suppliers that were screened using social criteria	●	93	
Supplier Social Assessment	414-2	Negative social impacts in the supply chain and actions taken	●	77-80	
	415	Management Approach	●	7-9	
	415-1	Political contributions	●	X	Global Code of Conduct prohibits contribution to political parties
Customer Health and Safety	416	Management Approach	○	X	
	416-1	Assessment of the health and safety impacts of product and service categories	○	X	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	●	X	Refer to the business report
Marketing and Labeling	417	Management Approach	●	X	Refer to the company website
	417-1	Requirements for product and service information and labeling	●	X	Refer to the company website
	417-2	Incidents of non-compliance concerning product and service information and labeling	○	X	
Customer	418	Management Approach	●	X	Refer to the business report
	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	○	X	
	419	Management Approach	●	7-9	
Socioeconomic Compliance	419-1	Non-compliance with laws and regulations in the social and economic area	●	X	Refer to the business report

TCFD Index

We disclose the following information based on the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) to share our track record of climate action with our stakeholders.

TCFD Recommendation	Related Contents	Page / Reference
Governance	a) Describe the board's oversight of climate-related risks and opportunities. Regulatory and supervisory developments related to climate change and the continued emergence of physical climate impacts directly affect our business operations and financial performance. Thus these climate change issues and our responses to address them are reported to the Board of Directors, our overarching decision-making body responsible for the oversight of our climate action and resource circulation management.	P.23 CDP : CC1.1a, CC1.1b
	b) Describe management's role in assessing and managing climate-related risks and opportunities. The CEO is given the responsibility and authority to finalize company-wide measures, such as establishing climate change response strategies, developing relevant tasks, and implementing investments. The performance of our executive management is also assessed based on KPIs that include climate change-related metrics to ensure the substantive fulfillment of given roles. The CEO leads the Sustainability Council comprising the executives in charge of the major business areas and the consultative body consisting of the executives responsible for environment to establish and review the implementation status of relevant plans. The Environmental Management Task Force develops and oversees environmental management tasks including climate change responses. The EHS Council under each business unit monitors relevant issues at individual business sites and explores ways to resolve them. The Eco-Council advances strategies to develop eco-conscious products and reviews outcomes.	P.23 CDP : CC1.2a
Strategy	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. Risks and opportunities incurred by climate change affect not only products and services but also manufacturing processes, supply chains, R&D, and other business activities. We regularly monitor the risks facing our business sites around the world in accordance with procedures and manuals established for different areas of environment and safety, climate change and energy, and compliance. To identify the financial impacts of these risks, we categorize them into conversion risks and physical risks and analyze opportunity factors as well. In the short term, we view emissions permit price increases, extreme weather events, and the requirement to introduce high-efficiency technologies as potential risks and emissions permit purchasing and reduced energy costs as opportunities. We project changing consumption patterns and expanded renewable energy use as medium-term opportunities and the physical impacts of climate change (warming temperatures, etc.) as long-term risks. We establish response measures for long-term risks based on the country-specific emissions mitigation plans pursuant to the Paris Agreement , emissions scenarios of the Intergovernmental Panel on Climate Change (IPCC) , and Energy Technology Perspectives of the International Energy Agency (IEA) . For more details, refer to the section entitled "Risks and Opportunity Analysis" on page 26 herein.	P.23, P.25 CDP : CC2.2c, CC2.3a, CC2.4a, CC3.1c
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. As climate change continues to have adverse effects around the world, many countries are strengthening their relevant regulations. The costs related to natural disaster recovery and lost business opportunities are expected to rise in line with the aggravation of climate change. We continue to make investments in the areas of environment and safety and disaster-proof equipment to preempt the impacts of natural disasters as much as possible, which in turn will decrease our insurance premiums. As a company subject to Korea's emissions trading scheme , we project that our costs for responding to reinforced GHG emissions regulations and renewable energy purchasing will inevitably increase. In addition, failure to comply with global regulations and implement proper climate actions may compromise our brand value and adversely affect our sales.	P.26 CDP : CC2.5, CC2.6
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. Climate change-related risks are anticipated to have far-reaching effects through a set of highly complex channels. We strive to identify the socioeconomic impacts of climate change on our business through various scenarios, which are classified into aggressive action scenarios that require our global stakeholders to reach more ambitious targets and passive action scenarios that focus on maintaining the status quo. In accordance with the aggressive action scenarios, products with low energy efficiency ratings are projected to decrease in sales in the long term, while eco-conscious, high-efficiency products are expected to record continued sales growth. To remain prepared for such scenarios, we plan to make continued investments to develop ultra-low-power semiconductors and improve the energy efficiency of the representative models of the six main product categories. We will also take active measures to ensure GHG emissions mitigation and full conversion to renewable energy, while also promoting the energy efficiency enhancement of all of our products.	P.26-31 CDP : CC3.1c, CC3.1d

TCFD Index

TCFD Recommendation	Related Contents	Page / Reference
Risk Management	<p>a) Describe the organization's processes for identifying and assessing climate-related risks.</p> <p>Our climate change-related risks concerning business operations, product planning, and industry trends are assessed regularly by related organizational units based on the environmental management frameworks of ISO 14001 and ISO 50001. Individual business sites are required to enter their GHG data (electricity, fuel, manufacturing process gases, etc.) into the EHS System, and we review their changes on a monthly basis and analyze the causes of such changes. Respective organizational units control GHG emissions in an integrated manner accordingly, and annual third-party audits are conducted to ensure the credibility and alignment of emissions data.</p> <p>b) Describe the organization's processes for managing climate-related risks.</p> <p>To more effectively manage climate change-related risks, the company-wide organizational unit in charge of EHS monitors our energy consumption, GHG emissions, and renewable energy use as well as the physical impacts of climate change. Relevant issues already faced by or expected to affect our business sites around the world are discussed at the EHS Council of each business unit and other regularly convened consultative bodies to seek optimal solutions.</p> <p>The Sustainability Council discusses relevant risks and opportunities from a company-wide perspective and makes necessary decisions. The Eco-Council examines climate change-induced business opportunities and shares the findings with pertinent business units for execution.</p> <p>c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.</p> <p>Semiconductor manufacturing requires a massive amount of power, and thus emissions permits and renewable energy prices are closely monitored and managed as factors that directly affect our business competitiveness. As the climate change-related regulations of individual countries influence our business activities and reputation, compliance with them is also managed within our company-wide risk management system.</p>	P.25 CDP : CC1.2a, CC2.2b P.23 CDP : CC2.2d P.25-26 CDP : CC2.2
Metrics and Targets	<p>a) Disclose the metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.</p> <p>To more accurately assess and manage the risks and opportunities related to climate change, we monitor diverse metrics including the GHG emissions, per-unit GHG emissions , energy consumption, renewable energy use, and water consumption of individual business sites as well as the share of recycled materials in products, amount of e-waste collected, and average power consumption of individual products.</p> <p>b) Disclose Scope 1 (direct emissions), Scope 2 (indirect emissions), and Scope 3 (miscellaneous indirect scope) greenhouse gas (GHG) emissions, and the related risks.</p> <p>We disclose our Scope 1, 2, and 3 emissions via the Sustainability Report and CDP Report. Our direct emissions (Scope 1) in 2021 stand at 7.6 million tonnes and our indirect emissions (Scope 2) reflecting renewable energy use at 9.8 million tonnes.</p> <p>For total GHG emissions and emissions of individual GHGs over the last three years, refer to page 94 herein.</p> <p>c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</p> <p>To curtail our GHG emissions, we have continued to expand our use of renewable energy. In June 2018, we announced the plan to power our business sites in the US, Europe, and China with 100% renewable energy by 2020. We also released the plan to install solar and geothermal power generation facilities in the parking lots, rooftops, and new buildings of the Suwon, Hwaseong, and Pyeongtaek sites for the promotion of renewable energy use in Korea. We installed renewable energy facilities of 1.9MW in 2018 and 1.5MW in 2019 at the Suwon and Gheung sites, respectively. From 2018 to 2020, we established and implemented action plans optimized for individual regions, from solar power generator installation to REC purchasing, PPA adoption, and Green Pricing. As a result, our renewable energy use in 2020 increased nearly three-fold compared to 2018, and all the preset targets were reached. In 2021, our renewable energy use increased by 30% from 4,030GWh in 2020 to 5,278GWh.</p> <p>To reduce manufacturing process gases and thereby achieve emissions mitigation by over 90%, we are striving to develop new catalysts to enhance gas disposal efficiency and expand gas disposal facilities. For reduced fossil fuel use, we will fully leverage waste heat to phase out LNG-fueled boilers.</p>	P.27-31, P94-95 CDP : CC11.3 P.31, P94 CDP : C6, C7 P.28, P31 CDP : C4

SASB Index

HARDWARE

Sustainability Disclosure Topics & Accounting Metrics

Topic	Code	Accounting Metric	Page/Reference
Product Security	TC-HW-230a.1	Description of approach to identifying and addressing data security risks in products	p. 50-53
Employee Diversity & Inclusion	TC-HW-330a.1	Percentage of gender and racial/ethnic group representation for (1) management, (2) technical staff, and (3) all other employees	p. 92
Product Lifecycle Management	TC-HW-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	Samsung Electronics complies with national laws and global regulations (EU RoHS, REACH, etc.) and conducts rigorous pre-inspection and post-management of all parts and raw materials used in products. Please refer to p. 40 of the Sustainability Report for Samsung Electronics' efforts in managing hazardous substances.
	TC-HW-410a.2	Percentage of eligible products, by revenue, meeting the requirements for EPEAT registration or equivalent ¹⁾	<ul style="list-style-type: none"> · Computers: 34% · Mobile Phones: 67% · Display: 18%
	TC-HW-410a.3	Percentage of eligible products, by revenue, meeting ENERGY STAR® criteria ¹⁾	<ul style="list-style-type: none"> · Audio Devices: 77% · Computers: 92%
	TC-HW-410a.4	Weight of end-of-life products and e-waste recovered, percentage recycled	p. 35, p. 94
Supply Chain Management	TC-HW-430a.1	Percentage of Tier 1 supplier facilities audited in the RBA Validated Audit Process (VAP) or equivalent, by (a) all facilities and (b) high-risk facilities	p. 93
	TC-HW-430a.2	Tier 1 suppliers' (1) non-conformance rate with the RBA Validated Audit Process (VAP) or equivalent, and (2) associated corrective action rate for (a) priority non-conformances and (b) other non-conformances	p. 78-79
Materials Sourcing	TC-HW-440a.1	Description of the management of risks associated with the use of critical materials	p. 83

1) Based on 2020 North American (The U.S., Canada) Revenue.

Activity Metrics

Code	Topic	Page/Reference
TC-HW-000.A	Number of units by product category	2021 Business Report (II. Business Overview) p. 28-32
TC-HW-000.B	Surface Area and location of manufacturing facilities	p. 4
TC-HW-000.C	Percentage of production from owned facilities	2021 Business Report (II. Business Overview) p. 28-32

SASB Index

SEMICONDUCTORS

Sustainability Disclosure Topics & Accounting Metrics

Topic	Code	Accounting Metric	Page/Reference
Greenhouse Gas Emissions	TC-SC-110a.1	(1) Gross global Scope 1 emissions, and (2) amount of total emissions from perfluorinated compounds	p. 31, p. 94
	TC-SC-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	p. 27-31
Energy management in Manufacturing	TC-SC-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	p. 94
Water Management	TC-SC-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	p. 37, p. 95-96
Waste Management	TC-SC-150a.1	Amount of hazardous waste from manufacturing, percentage recycled	p. 95
Employee Health & Safety	TC-SC-320a.1	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	p. 69-72
	TC-SC-320a.2	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	2021 Business Report (XI. Other Information) p. 506-509
Recruiting & Managing a Global & Skilled Workforce	TC-SC-330a.1	Percentage of employees that are (1) foreign nationals and (2) located offshore	p. 91-92
Product Lifecycle Management	TC-SC-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	Samsung Electronics complies with national laws and global regulations (EU RoHS, REACH, etc.) and conducts rigorous pre-inspection and post-management of all parts and raw materials used in products. Please refer to p. 40 of the Sustainability Report for Samsung Electronics' efforts in managing hazardous substances.
	TC-SC-410a.2	Processor energy efficiency at a system-level for: (1) servers, (2) desktops, and (3) laptops	N/A
Materials Sourcing	TC-SC-440a.1	Description of the management of risks associated with the use of critical materials	p. 83
IP Protection & Competitive Behavior	TC-SC-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	2021 Business Report (XI. Other Information) p. 506

Activity Metrics

Code	Topic	Page/Reference
TC-SC-000.A	Total production	2021 Business Report (II. Business Overview) p. 28-32
TC-SC-000.B	Percentage of production from owned facilities	2021 Business Report (II. Business Overview) p. 28-32

Customer Communication and Customer Satisfaction

Integrated Voice of Customer (VoC) Management System

We collect customers' complaints and opinions related to the purchase, repair, and use of our products through various channels, from contact centers to online sites and apps. We analyze customers' needs based on the data accumulated through the integrated VoC management system and seek ways to resolve them together with the related divisions.

Customer Satisfaction Surveys

Since 1994, we have regularly conducted customer satisfaction surveys targeting the users of our services and taken action to make improvements.

Standing of Our Products and Services in Domestic Satisfaction Surveys in 2021

Surveys	Conducted by	Ranked first for
Korea Customer Satisfaction Index	Korea Management Association Consulting	TV, refrigerator, washer, air conditioner, kimchi refrigerator, smartphone, PC, and cordless vacuum cleaner [Point of contact] After-sales services for home appliances and mobile phones
Korean Service Quality Index	Korea Management Association Consulting	[Call center] Outstanding call center in the home appliance service sector
National Customer Satisfaction Index	Korea Productivity Center and The Chosun Ilbo	Refrigerator, dryer, smartphone, and PC
Korean Standard Quality Excellence Index	Korean Standards Association	TV, refrigerator, front load washer, kimchi refrigerator, dryer, cordless handheld vacuum cleaner, air conditioner, cooling and heating devices , smartphone, tablet, and PC
Korean Standard Service Quality Index	Korean Standards Association	After-sales services for computers, home appliances, and mobile phones
Korean Standard Call Center Quality Index	Korean Standards Association	Home appliance and mobile phone
Global Customer Satisfaction Index	Global Management Association	TV, refrigerator, washer, vacuum cleaner, kimchi refrigerator, dryer, clothing care system, air purifier, air conditioner, smartphone, and PC

<Our Accolades Abroad in 2021>

Countries	Accolades
Germany	German Service Awards 2021 (February) - Presented by Deutsches Institut Für Service-Qualität - Included in the Top 3
Mexico	National Excellence Awards in CX Experience and CC (March) - Presented by Instituto Mexicano de Teleservicios - Best Data Analytics Strategy (First Prize)
Russia	2021 Russia CX World Awards (April) - Presented by CX World Forum - CX in COVID-19 (Grand Prize), CX in Contact Center (Grand Prize), and Offline CX (Excellence Prize)
Mexico	LATAM Awards: The Best Organization for Customers (May) - Presented by Alianza Latinoamericana de Organizaciones para la Interaccion con Clientes - Best Strategy in Customer Experience (Third Prize)
Austria	Top Service Awards (June) - Presented by Emotion Banking, Die Presse, and Universität Mannheim - Included in the Top 5
Dubai	2021 Dubai Quality Global Awards (June) - Presented by the Department of Economic Development of Dubai - Winner of DQGA
Turkey	CX Gold Awards (June) - Presented by Awards International - Best CX Strategy (Gold Prize) and CX Transformation (Gold Prize)
Serbia	Sign Language Contributions (September) - Presented by the National Organisation of Persons with Disabilities of Serbia - Best Brand in Social Contributions (CSR) (Grand Prize)
Russia	Consumer Rights and Quality Service Awards (October) - Presented by the Consumer Protection Board of Russia - Winner in Retail SVC (CE's brand engineer project), Retail SVC (SMP's premium service), and Consumer's Choice (SMP's premium service)
Russia	Leader of Climate Development 2021 (November) - Presented by the Department of Nature Management and Environmental Protection of the city of Moscow - Winner in Ecology and Business
Italy	Campioni del Servizio (Service Champion Awards) (November) - Presented by ITQF (German Institute for Quality and Finance) - Ranked first in service satisfaction (in the sectors of TV, mobile phone, NPC, home appliance, and air conditioner)

About this report

This is our 15th Sustainability Report, published in 2022 under the aim of transparently sharing our ESG performance and activities with our stakeholders.

Reporting Standard

This report aligns with the **Global Reporting Initiative (GRI) Standards: Core Option**, which are global standards for sustainability reporting. This report also reflects the indicators of the **Sustainable Development Goals (SDGs)**, **Task Force on Climate-Related Financial Disclosures (TCFD)**, and **Sustainability Accounting Standards Board (SASB)**.

Covered Activities

This report covers the **ESG activities** of all of our business sites in Korea and abroad as well as all of our partner companies in our supply chain. Our financial performance is described based on **K-IFRS**, and our performance in relation to workplace environments is based on data collected from our 32 domestic and overseas production sites.

Covered Period

This report illustrates our **ESG** performance and activities during the period of January 1–December 31, 2021. Information through May 2022 has also been used in some areas. Data for the last three years is provided to measure yearly changes in quantitative performance.

Reporting Cycle

Once a year (previous period's report published in June 2021)

Third-Party Verification

EY Hanyoung Accounting Corp., an independent verification body, conducted a third-party verification to ensure confidence in the report-making process and information posted. The verification criteria are **ISAE3000**.

Related Information

- Samsung Electronics website
<http://www.samsung.com/sec>
- Sustainability
<http://www.samsung.com/sec/aboutsamsung/sustainability>
- IR
<http://www.samsung.com/sec/ir>
- Samsung Newsroom
<http://news.samsung.com/kr>
<http://news.samsung.com/global>

Organizational Unit in Charge

- Samsung Electronics Corporate Sustainability Center
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- Email: csr.partner@samsung.com

References

Annual Business Report
Corporate Governance Report
Responsible Minerals Report
CDP Report
Global Code of Conduct
Guidelines on the Global Code of Conduct

SAMSUNG