CREATIVE ENERGY & MATERIALS SOLUTION LEADER

SAMSUNG SDI
Sustainability Report 2019

SAMSUNG SDI SAMSUNG

About this Report

Reporting Principles
This Report was prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core option, and with reference to the International Integrated Reporting Council (IIRC) Framework. Its financial data follows the Korean-International Financial Reporting Standards (K-IFRS).

Reporting Period
This Report outlines Samsung SDI's sustainability management activities and achievements during the period between January 1, 2019 and December 31, 2019. This extends to the first half of 2020 for major achievements. As for quantitative performance, data over the recent three years (2017-2019) is presented to help readers understand its multi-year trajectory.

Reporting Scope
The scope of this Report spans the economic, social and environmental activities and accomplishments of Samsung SDI and its associates. When variations occur in reporting scope and boundary, separate annotations were added for clarification.

Assurance
This Report was assured by KPMG Samjong Accounting Corp. for accounting data, and by the Korea Management Registrar as a third-party assurance provider for non-financial data.

Reporting Cycle
Report Cycling | Annually
Previous Report | Published in June 2019

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CEO MESSAGE

**“Delivering satisfaction to customers and stakeholders as a whole lays the basis for our sustained growth as a company.
Samsung SDI will pursue relentless transformation and innovation to cater to a wide array of stakeholder expectations and requirements, from quality, safety, and green technology leadership to responsible supply chain management.”**

Dear Stakeholders of Samsung SDI,

This year marks the 50th anniversary of Samsung SDI since the Company initiated business in Ulju County, Ulsan City (then Ulju County in South Gyeongsang Province), Korea, back in 1970. Relentlessly pursuing innovation over the past 50 years, Samsung SDI evolved from a CRT maker to a flat panel display company and then a cutting-edge materials and energy business today.

At Samsung SDI, sustainability management is taking its place as a core value in business conduct and as a solution to pursue shared growth with stakeholders. As such, I would like to extend my heartfelt gratitude to our distinguished stakeholders for their unwavering support every step of the way throughout our evolution as a business.

Even in the face of challenging business conditions of 2019, Samsung SDI set a new record-high in sales since its inception and generated solid performance in the small-sized Li-ion battery and electronic materials business. Our automotive battery business also posted the highest-ever sales in our corporate history to place us on a sustained growth trajectory.

We stayed committed to establishing differentiated technology to improve the quality and safety of our products that constitute the core of our business while doing our utmost to fulfill our role as a leading battery maker in creating a sound industrial ecosystem.

Furthermore, we seek mutual growth with stakeholders in generating social and environmental value. We endeavored to develop a globally-competitive sustainable supply chain to establish win-win management and the philosophy of social responsibility, and joined hands in addressing global environmental issues by assessing the environmental impact of our business operations and products and by developing and implementing improvement measures accordingly.

In 2020, Samsung SDI will open a new chapter in its corporate history to rise to new challenges and pursue innovation to become a centennial company. We will never fall into the trap of complacency but rather translate our strengths into an enabler to create a ‘Super Gap’ against our competitors to lead the market.

Throughout this all, we will stay the course on the journey of innovation that we initiated to deliver a more enriching life for all and promote the development of our future generations in conjunction with stakeholders.

It is our dear hope that this Report would serve to publicize our renewed commitment to pushing the boundaries towards Samsung SDI’s sustainability and to candidly communicating with valued stakeholders.

We look forward to your continued encouragement for our new journey of innovation for the upcoming 50 years.

Thank you.

Jun Young-Hyun President and CEO, Samsung SDI

Samsung SDI has explored unchartered territories through ceaseless transformation and innovation over the past 50 years, contributing to the betterment of society at large in so doing.
Indeed, transformation and innovation has always been an inseparable and proud part of the corporate DNA at Samsung SDI.

In 1970, our display business set a goal of localizing the production of vacuum tubes and CRTs in a nation where the electronics industry barely existed, and has moved beyond the domestic market to lead the wider global market.

In 1999, we were renamed Samsung SDI and set a new goal of topping the global market in the four business lines of PDP, mobile display, and Li-ion polymer battery as well as CRT.

In 2009, we declared our 'G·R·S (Green, Responsible, Sustainable) New Vision' with an audacious goal of emerging as a true global leader in automotive battery and ESS as well as in small-sized battery.

In 2014, we merged with CHEIL INDUSTRIES Inc. to take a step forward as a globally-renowned energy and materials business.

In line with the deteriorating environmental pollution and the depletion of fossil fuel energy, the paradigm shift is unfolding from the **'Oil Era'** to the **'Battery Era'** in the energy industry. Leveraging our corporate DNA that has served us successfully throughout our 50-year history and our smart technology capabilities, we will surely stay at the forefront of the battery era.

50-year history of creating value

2009-2012

Apr. 2009
Received the 'Frost & Sullivan' Award for Li-ion battery quality and innovation

May 2009
Declared the 'G·R·S (Green, Responsible, Sustainable) New Vision'

Sep. 2009
Started the construction of a battery plant for next-generation automobiles

Nov. 2010
Completed the construction of an EV battery plant

Dec. 2010
Ranked first in market share in the global small-sized rechargeable battery market

Jun. 2012
Received the Citation at the Korea Green Management Awards 2012

2013-2016

May 2013
Fully launched the mass-production of high-capacity EV 60Ah cells

Sep. 2013
Listed on the DJSI for 10 consecutive years for the first time in Korea

Jul. 2014
Merged with CHEIL INDUSTRIES Inc. to launch Samsung SDI as an integrated corporation

Feb. 2015
Acquired the battery pack business of Magna International

Jul. 2015
Hosted the completion ceremony of the pilot ESS project awarded by Korea Electric Power Corporation

Oct. 2015
Completed the construction of an EV battery plant in Xi'an, China

2017-2019

Feb. 2017
Completed the construction of a polarizing film plant in Wuxi, China

Feb. 2017
Delivered the world's largest scale supply of ESS batteries to AES

May 2017
Completed the construction of an EV battery plant in Hungary

Mar. 2018
Obtained ISO 45001, the international health and safety management system standard, at the Cheonan worksite

Jul. 2019
Formed a strategic partnership with Volvo Group for next-generation e-mobility

Nov. 2019
Signed a next-generation EV battery supply contract with BMW

INDUSTRY CREATOR

2009-2019

From 2009 onwards, Samsung SDI has set business conditions to further focus on the battery business, and is currently securing new customers and establishing a wider global business presence, leading the growth of the eco-friendly energy industry.

1970-1978

Jan. 1970
Founded Samsung-NEC Inc.

May 1970
Produced Korea's first vacuum tubes

Dec. 1970
Produced 12-inch monochrome CRTs

Jan. 1975
Developed the quick start CRT* dubbed ECONO with in-house technology

Jul. 1978
Held the groundbreaking ceremony of the color CRT plant in Suwon

* Quick start CRT: While conventional preheating-type CRTs required 5~10W of electricity during the preheating process, quick start CRTs eliminated such power needs, and reduced power consumption under normal operating conditions to a third of their preheating-type counterparts.

1979-1990

Jan. 1979
Launched an Initial Public Offering (IPO)

Apr. 1979
Produced color CRTs

Nov. 1979
Surpassed the 10 million mark in cumulative production of monochrome CRTs

Feb. 1984
Renamed Samsung Electron Device Co., Ltd.

Oct. 1986
Developed Korea's first Liquid Crystal Display (LCD)

Oct. 1987
Launched the distinctive monitor brand SAMTRON

Aug. 1988
Built a 10 million color CRT production capacity

1991-1998

Oct. 1993
Surpassed the 100 million mark in the cumulative sales of color CRTs

Aug. 1994
Completed the construction of the EMC factory

Aug. 1995
Held the groundbreaking ceremony for the Cheonan Plant

Aug. 1996
Established a color CRT globalization strategy**

Nov. 1997
Initiated the operation of the cylindrical Li-ion battery PP-Line

Mar. 1998
Developed the perfect flat CRT 'Dynaflat'

May 1998
Developed the world's highest-capacity 1650mAh cylindrical Li-ion battery

** Establishing five production bases across major continents to increase the global market share to 25% by 2000

1999-2003

Aug. 1999
Held the groundbreaking ceremony to officially initiate a battery business

Aug. 1999
Developed the industry's highest-capacity 1800mAh cylindrical Li-ion batteries

Dec. 1999
Renamed Samsung SDI Co., Ltd.

May 2000
Celebrated the 30th anniversary and officially launched a PDP business

Jul. 2000
Completed the construction of a rechargeable cell plant in Cheonan and initiated product shipments

Jan. 2002
Completed the construction of an electronic materials mass-production facility in Gumi

Jan. 2003
Developed the world's highest-capacity 2400mAh cylindrical Li-ion batteries

Jun. 2003
Developed the world's first 260,000 full-color AMOLED

2004-2006

Jan. 2004
Developed the world's largest 80-inch PDP

Dec. 2004
Developed the world's largest 102-inch PDP

Oct. 2005
Mass-produced the world's highest-capacity 2600mAh cylindrical Li-ion batteries

Nov. 2005
Granted approval for an AMOLED business and initiated investment in mass-production

May 2006
Held the groundbreaking ceremony for the PDP 4 line

Jun. 2006
Became the world's first to mass-produce PM OLED Main+Sub Dual

Jun. 2006
Became the world's first to develop Ultra Vixlim

2007-2008

Oct. 2007
Became the world's first to mass-produce AMOLED

Dec. 2007
Developed the world's first, world's largest 31-inch AMOLED

Mar. 2008
Ranked first in the overall assessment of Li-ion battery makers performed by International Information Technology (IIT) of Japan

Jul. 2008
Completed the construction of a battery plant in Tianjin, China

Aug. 2008
Established Samsung Mobile Display Co., Ltd.

Sep. 2008
Founded SB LiMotive Inc. as a joint venture between Samsung SDI and Bosch

2009-2012

Apr. 2009
Received the 'Frost & Sullivan' Award for Li-ion battery quality and innovation

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INNOVATION INITIATOR

1970-1998

Following its inception as Samsung-NEC, Samsung SDI initiated Korea's first-ever production of vacuum tubes in just seven months, and constantly expanded its technology portfolio to eventually take the first step of innovation into the display industry.

MARKET LEADER

1999-2008

In 1999, under the new name of Samsung SDI, the Company announced the initiation of its battery business and went on to establish a global position in the energy and advanced materials sectors.

INDUSTRY CREATOR

2009-2019

From 2009 onwards, Samsung SDI has set business conditions to further focus on the battery business, and is currently securing new customers and establishing a wider global business presence, leading the growth of the eco-friendly energy industry.

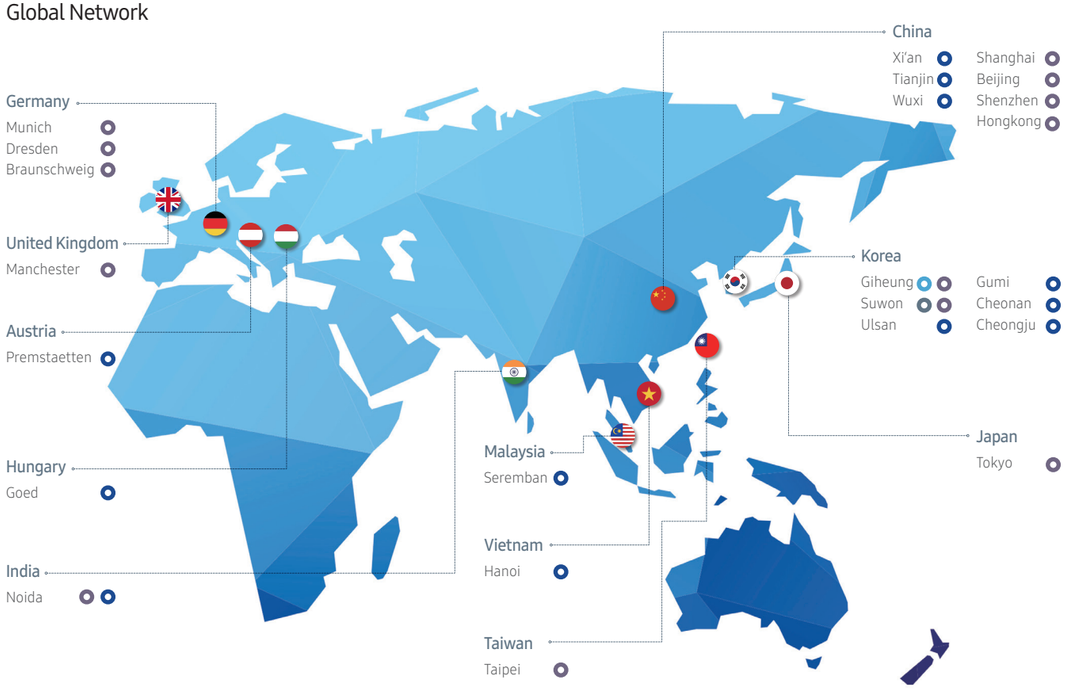
BUSINESS OVERVIEW

Company Overview

Samsung SDI at a Glance

Founded in 1970, Samsung SDI celebrates its 50th anniversary in 2020.
We produce and sell secondary batteries used for IT device, automotive, and Energy Storage System (ESS) applications as well as materials for semiconductors, displays, and photovoltaics, enriching the life of humankind in so doing. Our global network consists of a total of 30 locations, including the Headquarters, the R&D Center, production facilities and sales bases.

Global Network



Company name	Samsung SDI Co., Ltd.	Date of establishment	January 1970	Shareholders with more than 5% ownership (as of Dec. 31, 2019)	Samsung Electronics: 13,462,673 shares (19.58%) National Pension Service: 7,400,009 shares (10.76%)
CEO	Jun Young-Hyun	Headquarters	150-20, Gongse-ro, Giheung-gu, Yongin City, Gyeonggi Province, Korea		

13 production facilities

15 sales bases

1 R&D center

1 Headquarters

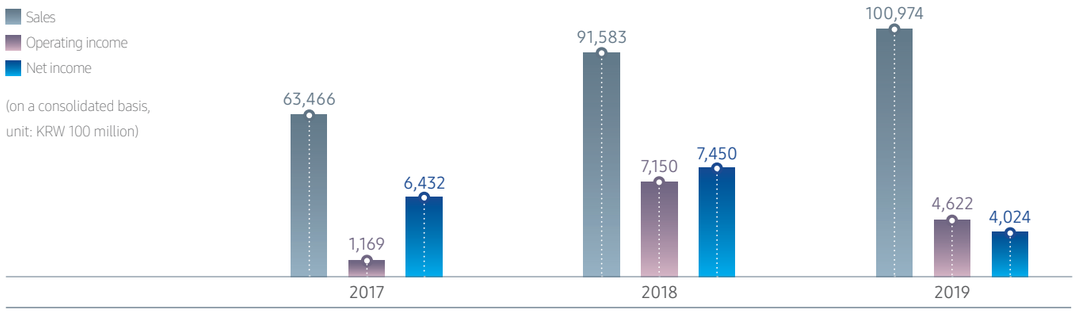
30 locations in total (as of Apr. 2020)

Sales Breakdown by Region

(as of Dec. 31, 2019, unit: KRW 100 million)

Korea	13,430
North America	10,421
Europe, Latin America	27,911
China	30,171
Southeast Asia and others	19,041

Financial Performance



External Sustainability Assessments Made on Samsung SDI

MEMBER OF Dow Jones Sustainability Indices In collaboration with RobecoSAM

Listed on the DJSI World for the **15th** time in 2019

Listed on the Dow Jones Sustainability Index (DJSI) World for 15 times

GLOBAL100

Ranked **80th** in 2020, listed for **3** consecutive years

Named one of the Global 100 Most Sustainable Corporations for 3 consecutive years*

CLEAN200™

Ranked **31st** in 2020

Ranked 31st on the 2020 Clean 200 list**

* Supervised by Corporate Knights and published by the World Economic Forum (WEF)
** Ranks companies for their green business practices under the supervision of Corporate Knights in reducing carbon emissions and waste generation, adopting green materials, and opting for alternative energy sources in the product and service manufacturing process

Value Creation Model

Samsung SDI's Value Creation Model

The resources and expertise accumulated through business conduct are fed back into a company's business model to create new value.
Samsung SDI establishes a management system that considers sustainability factors throughout the entire business operations, from R&D to product and service offering.

(Economic data: On a consolidated basis Social and Environmental data: Domestic and overseas worksites)

In addition, major factors that contribute to value creation are managed as key sustainability management issues in order to ensure sustained performance generation. Samsung SDI will be committed to the transparent and balanced distribution of its business outcomes to all stakeholders.

INPUT

Financial Capital	
Listed on the Korea Stock Exchange in 1979	
Total No. of shares issued (common stock)	68,764,530 shares
Cash dividend payout ratio	18.8%
Financial capital sourced from shareholders and investors	
Disclosure of business status at the general shareholder meeting and others	
Intellectual Capital	
Intangible assets	KRW 831.37 billion
R&D investments (percentage of sales)	KRW 712.41 billion (7.1%)
R&D workforce (Percentage of the Korea/overseas workforce)	2,400 persons in Korea(22.2%) 348 persons overseas(2.2%)
Social and Relationship Capital	
Operation of 30 locations in total	
Employees' engagement in social contribution programs	
Operation of Green Planet Environment School, Green Planet Dreaming School, and Green Planet Future Science School	
Social contribution investment	KRW 6.19 billion
Manufactured Capital	
Production facilities	13 locations
Production capacity	Small-sized Li-ion battery 1,890 million units, EMC 7,123 tons, Polarizing film 97,047,000m²
Tangible assets	KRW 5.4 trillion
Human Capital	
Total No. of employees	26,813 persons
Executive director/ independent directors	3 directors/4 directors
New recruits	6,792 persons
Training expenditures	KRW 10.7 billion
Natural Capital	
Achievement of ISO 14001 certification	
Investment in energy use reduction	KRW 1.5 billion
Energy consumption	21,297TJ

Management System & Operational Activity

01 R&D

We strive to secure advanced technology to develop differentiated products, and ensure systemic project management from the attainment of the set R&D targets and compliance with the set schedules to watertight security of technical information.

- Conduct R&D on product safety
- Develop green batteries

02 Procurement and Purchasing

We operate the optimized purchasing process based on the right timing-right quantity procurement system, and endeavor to build fair and transparent business relationships with partner companies.

- Establish mutual growth practices with partner companies
- Ensure fairness and transparency in contract and construction process management
- Manage conflict minerals and recycle end-of-life batteries

03 Manufacturing

We secure cost competitiveness through plan-based manufacturing on the basis of company-wide resources operation in sync with market and customer demand, and operate an environmental and health & safety management system in compliance with international standards to provide a safe and eco-friendly workplace.

- Improve environmental efficiency
- Increase profitability through workplace safety, environmental management and cost management
- Establish traceability on production/quality information by product

04 Logistics

We improve the visibility of logistics information to prevent logistics operational risks as well as to reduce logistics lead times and expenses, and pursue eco-friendly transportation by shifting to greener transportation modes and improving loading rates.

- Shift to low-carbon transportation modes and routes

05 Marketing

We stay close to customers and constantly monitor market trends to seize order-winning opportunities, and endeavor to explore new technology and products that will lead the future market.

- Analyze market trends
- Analyze customer and technology trends

06 Sales

We deploy artificial intelligence and other 4th Industrial Revolution technologies to better predict customer demand data.

- Establish a global sales network
- Build an AI-enabled customer demand forecast model

07 Service

We prevent any inconvenience that customers may face during the product use phase following the sales phase, and maximize customer satisfaction by operating a maintenance management system.

- Establish and implement a customer satisfaction management system
- Develop a product installation information management system at respective customer sites
- Operate a customer feedback integration process
- Perform customer satisfaction surveys

08 Business Management

We use our human and physical resources effectively and organically to improve sustainability across finance, HR/labor relations, safety/environment, organizational culture, social contribution, and compliance.

- Workplace safety/environmental management
- Organizational culture management
- Social contribution
- Compliance/ethics management
- Risk management

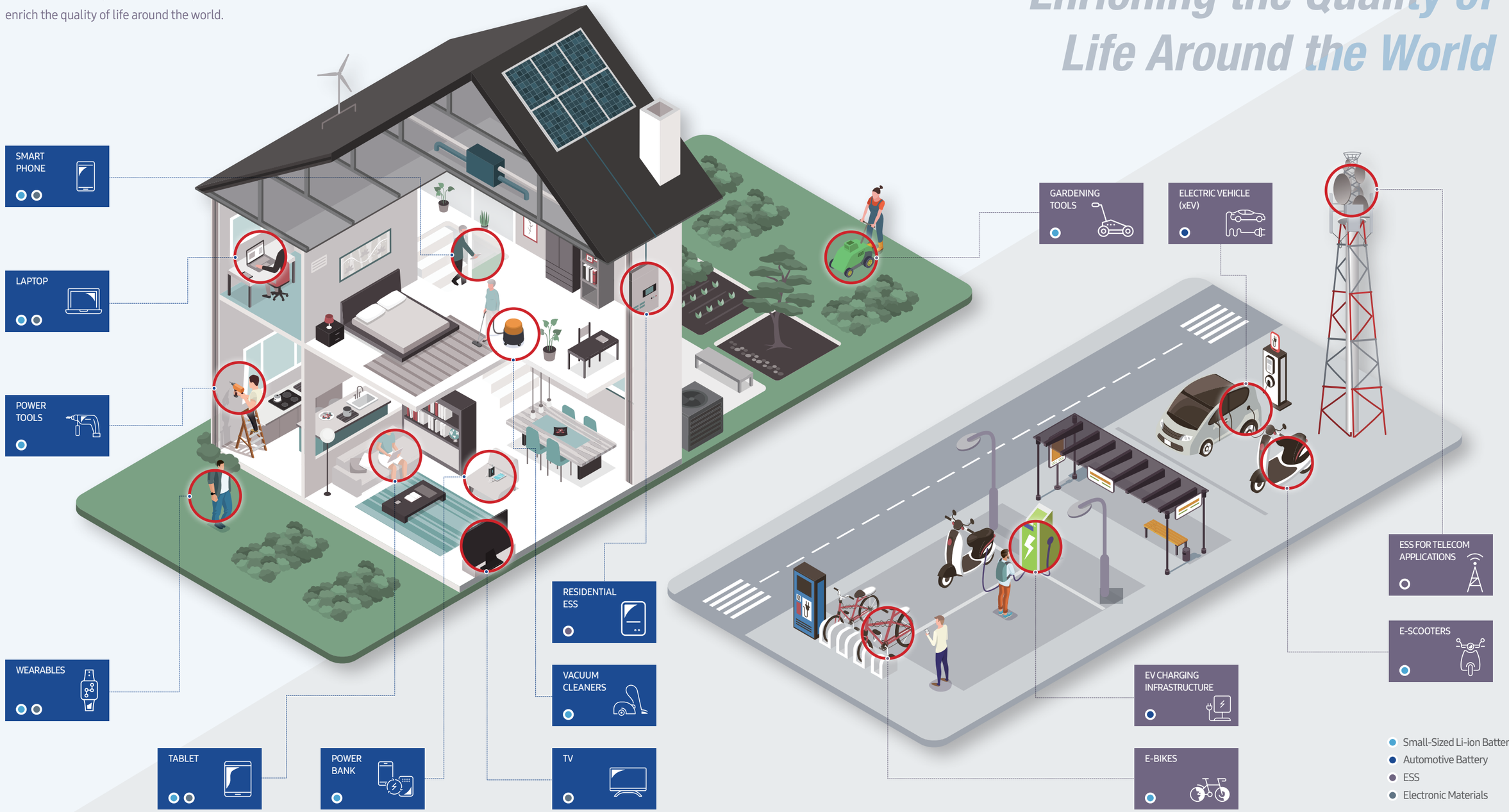
OUTPUT/OUTCOME

Financial Capital	
Sales	KRW 10.1 trillion
Operating income	KRW 462.18 billion
Net income	KRW 402.37 billion
Intellectual Capital	
Strategic directions set and approved for respective business divisions	
Patent registration	16,052 patents
Social and Relationship Capital	
Corporate taxes	KRW 162.28 billion
Partners whose contracts were terminated due to corruption	Zero
Social contribution beneficiaries (cumulative)	Green Planet Environment School 36,836 persons Green Planet Dreaming School 3,751 persons Green Planet Future Science School 4,298 persons
Manufactured Capital	
Main product output	Small-sized Li-ion battery 1,505 million units, EMC 4,085 tons, Polarizing film 91,055,000m²
S-Partners certified	90 companies
Purchases made	KRW 6.2 trillion
Human Capital	
Ratio of locally-hired leaders	55.1%
Ratio of female managers	9.2%
Employee injury rate/loss rate	0.1567 / 15.6411
Natural Capital	
Energy consumption reduced	KRW 3.8 billion saved in fuel consumption, KRW 14.8 billion saved in electricity consumption
GHG emissions	1,275,165tCO₂e

Samsung SDI in Our Daily Life

Our products and services are deployed in the underlying fabric of our life beyond our naked eye in order to enrich the quality of life around the world.

Enriching the Quality of Life Around the World



Business Overview and Growth Strategy

Small-Sized Li-ion Battery

Samsung SDI,
Your Ideal
Business Partner

Business Summary

Our Battery Business develops and sells cylindrical, prismatic, and polymer battery cells.
With its quality-first management philosophy and sustained commitment to technology innovation, Samsung SDI maintains a high market share in the global Li-ion battery industry. We are constantly tapping into new market sectors: power tools, gardening tools, e-bikes, and e-scooters whose key requirements are eco-friendliness and high efficiency due to the emerging trends of tightening environmental regulations and green consumption as well as smartphones, wireless earbuds, wearables and other IT devices that hold future growth potential in line with the spread of the 5G network and IoT.

Application

Small-sized Li-ion batteries are used to power the three major IT devices of mobile phones, laptops, and tablets as well as wireless earbuds and to serve non-IT applications including power tools, e-bikes, and e-scooters.

Cylindrical
Power tools, gardening tools, vacuum cleaners, e-bikes, e-scooters, e-kick scooters

Prismatic
Feature phones, smartphones, laptops, gaming devices

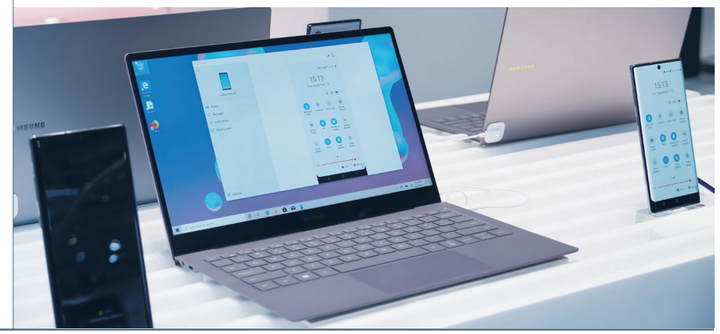
Polymer
Smartphones, tablets, wearables, wireless earbuds

Market Outlook

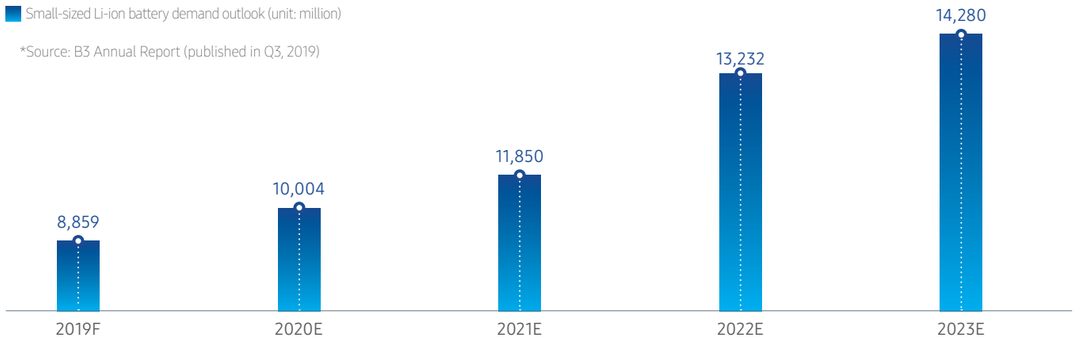
While demand for small-sized Li-ion batteries is not free from uncertainties caused by COVID-19 in 2020, the market is forecast to reach 10 billion cells in total, up by 13% from the previous year.
The IT market is poised to witness a broader application of IoT technology that combines 5G services with artificial intelligence (AI), and specifically, demand for wireless earbuds and wearables is expected to grow.
In the non-IT market, e-scooters and e-kick scooters will drive the growth of the cylindrical battery market in line with the increasing market size of electric vehicles, with Tesla playing a central role, and micro-mobility sharing services. As such, Samsung SDI plans to lead the innovation of rechargeable battery technology in both the IT and non-IT sectors to further solidify its market leadership.

Business Approach

Samsung SDI delivers solutions optimized for diverse IT devices, from smartphones and laptops to wearables. In parallel, we also leverage our differentiated technology in the new small-sized Li-ion battery segment that is growing rapidly in response to the increasing importance of eco-friendliness and high efficiency in order to broaden our business presence and pioneer the market.
As Samsung SDI surpassed the break-even point in 2019, the Company plans to increase its sales and improve its bottom line to pursue continued growth in 2020. In the polymer battery segment, we will continue to expand our sales with differentiated products equipped with high capacity and fast charging technology to keep pace with the growth of 5G smartphones, foldable phones and wireless earbuds. In the cylindrical battery segment, we will double our endeavors to develop and launch differentiated products in the micro-mobility market including EVs, e-scooters, and e-kick scooters while maintaining our market share in the conventional markets of power tools and others.



Global Small-Sized Li-ion Battery Demand Outlook



2019 BUSINESS CASE

Cooperation to Establish Infrastructure in the Electric Motorcycle Market

Samsung SDI signed a memorandum of understanding (MOU) with Daelim Motor to develop electric motorcycle batteries and battery sharing stations. The Korean government set a plan to reach 50,000 units in the distribution of electric motorcycles by 2022 to resolve the particulate matter issue, and is granting subsidies to consumers for their purchase of these green vehicles. While electric motorcycles deliver eco-friendly transportation without any emission of exhaust gas or particulate matter, their short driving range and lack of battery charging stations are limiting their broader dissemination. This prompted us at Samsung SDI to continuously cooperate with Daelim Motor to develop batteries with improved driving range and to build infrastructure that allows motorists to switch to fully-charged batteries when the need arises.

Business Overview and Growth Strategy

Automotive Battery

Battery is the Key to Sustainable Innovation in Automobiles

Business Summary

The development of Li-ion battery technology is accelerating the transition into the era of electric vehicles. Samsung SDI relentlessly pursues technological advancement to ensure that EV drivers can travel farther while enjoying dynamic yet safer driving experiences. We are also committed to developing low carbon, eco-friendly automotive battery technology, positioning ourselves as a leading provider of clean energy solutions in the automotive market.

As Samsung SDI supplies high-efficiency, high-capacity Li-ion rechargeable batteries to global car OEMs, this enables us to minimize CO_2 and other air pollutants emitted from internal combustion engine (ICE) vehicles, advancing sustainability through the products that we serve.

Application

EV — Electric Vehicle (EV)
We adopt materials that deliver optimal service life and high-capacity features and design optimized battery components to pursue innovation in extending the driving range of EVs.

PHEV — Plug-in Hybrid Vehicle (PHEV)
As it is essential to strike the right balance between energy density required for electric-mode driving and power density that supports the engine operation, Samsung SDI is in constant search for the optimal point of balance by staying ahead of the competition in developing battery technology.

HEV — Hybrid Electric Vehicle (HEV)
We provide solutions that improve fuel efficiency and vehicle performance to ensure cost effectiveness against investments while successfully responding to the electrification of vehicles.

MHEV — Mild Hybrid Electric Vehicle (Mild HEV)*
We continue to develop solutions to bring improved fuel efficiency and vehicle performance to a wide array of vehicle types in a cost-effective and efficient manner.

* Mild HEVs combine the strengths of the Idle Stop and Go (ISG) system and hybrid vehicles by maintaining the voltage of the power supply equipment under 60V

Market Outlook

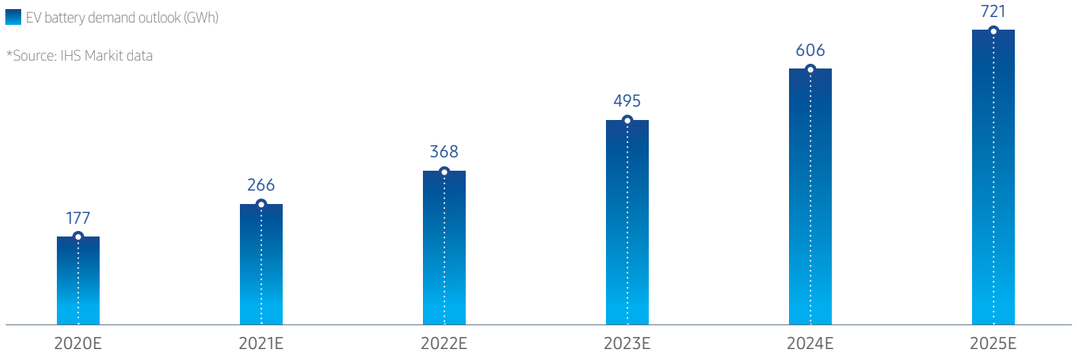
In 2019, the global xEV market posted a 25% y-o-y growth, largely thanks to increases in EV sales in such key markets as China, Europe, and the Americas. Automakers plan to continuously launch more new EV models that travel longer distances, and those models equipped with long range and autonomous driving are expected to drive the market. By 2023, annual EV sales may exceed 15 million units to account for more than 15% of the total automobile market. In Europe, more stringent regulations took effect this year to limit GHG emissions to spur the full-fledged growth of the EV market while the U.K., Norway, the Netherlands, and Sweden are poised to ban the sales or operation of ICE vehicles. In China, the world's largest automobile market, a mandatory quota has been introduced for EVs and PHEVs and this is forecast to significantly grow the EV market over the mid-to-long term.

Business Approach

Countries around the world are introducing varying environmental regulations to curb the emission of CO_2 and air pollutants generated from ICE vehicles. Presently, major global car OEMs are competing to develop EVs at full throttle to cater to market needs and governmental policies. As such, Samsung SDI is focused on the development of high-efficiency high-energy density batteries for low emission vehicles, building on its know-how accumulated in the mobile device battery segment.

Notably, we are making continuous investments to launch a wider array of products capable of delivering new technology features including energy density and fast charging in Europe, the Americas, and emerging markets that are expected to enjoy sustained growth. Not only does Samsung SDI deliver optimal automotive battery solutions to car makers, but also the Company is willing to fulfill its role and responsibility as a partner that pursues the mutual growth of both upstream and downstream EV sectors.

Global EV Battery Demand Outlook



2019 BUSINESS CASE

Cooperation with Volvo to Develop Electric Truck Batteries

In 2019, Samsung SDI signed a memorandum of understanding (MOU) to develop electric truck battery packs in conjunction with the global automaker Volvo. While Samsung SDI develops battery cells and modules specialized for Volvo's diverse electric truck models, Volvo will build on this to independently manufacture battery packs to equip its trucks. As battery capacity mounted on every electric truck is approximately 4~7 fold higher than that of passenger cars, and the electrification of trucks is expected to accelerate rapidly in major countries, this cooperation is set to drive the qualitative growth of Samsung SDI's battery offerings in line with the commercialization of Volvo's electric trucks.

Business Overview and Growth Strategy

ESS
(Energy Storage System)

From kWh to MWh,
Samsung SDI has
Solutions to Offer

Business Summary

Samsung SDI's ESS business has been fully launched since 2011. Harnessing the stability of our rechargeable batteries achieved in battery business, we post a high market share in the ESS market while deploying EV batteries for ESS applications to establish the qualitative reliability of our ESS offerings. Our products serve a broad range of applications, from general residential to commercial & industrial, utility, UPS, and telecom base stations. Our globally-recognized battery pack design capability and standardized modules enable us to deliver total ESS solutions that cater to diverse customer needs.

Application

Utility
We contribute to ensuring the stability of power grids and standardizing renewable energy power generation in the power supply system spanning from power generation to transmission and distribution. Installation | Power companies, microgrids within industrial complexes, etc.

Commercial & Industrial (C&I)
We improve the stability of power operation and the availability of self-consumption by lowering day-time maximum loads in office buildings including office spaces, public institutions, schools, and hospitals. Installation | Buildings, factories, etc.

Residential
We ensure the 24/7 supply of eco-friendly energy through alignment with photovoltaic power systems. This, in turn, increases energy self-consumption rates while reducing electric bills. Installation | Detached and row houses

UPS
We help protect data centers from unexpected operational disruptions by ensuring reliable power quality and continuity while minimizing total power consumption and reducing facility investments. Installation | Factories, financial institutions, IT companies (servers), etc.

Telecom
We deliver lifetime performance as well as reduced weight, smaller volume, and higher energy density, and bring a dramatic reduction in maintenance expenses through the use of Li-ion batteries. Installation | Base stations, repeaters

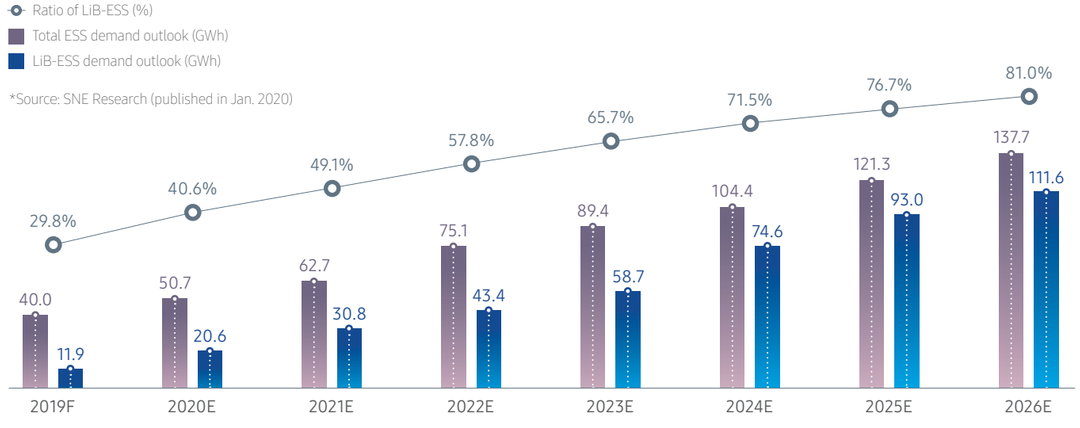
Market Outlook

The emerging global trends of denuclearization and decarbonization have given rise to interest in renewable energy, and its wider adoption increases the need for energy storage, emergency power for possible power outages, and efficient power demand management, which further highlights the importance of ESS. As such, the global Li-ion battery ESS market is forecast to continually post a high CAGR of 41%, from 12GWh in 2019 to 93 GWh in 2025.
The U.S. Japan, Australia, and countries in Europe are undertaking large-scale demonstration projects to maintain and repair their aging power grid systems, promote renewable energy, and secure emergency power supply. Furthermore, they provide institutional support for ESS dissemination by passing bills that obligate the installation of ESS and granting subsidies for connecting renewable energy with ESS. In Korea, the government is also promoting the ESS industry in accordance with its 'Renewable Energy 3020 Implementation Plans' and the policy to offer Renewable Energy Certificate (REC) weightings for linking renewable energy power generation facilities with ESS, which is expected to create sustained demand in this sector. Recently, emerging countries are also joining this global trend.

Business Approach

With ESS batteries as a flagship product, Samsung SDI is increasing its ESS market share across Korea, the U.S., Japan, Europe and other mature markets, and is also focused on further advancing into emerging markets. We are also improving the availability of our offerings to span even broader applications from utility and C&I to residential and UPS uses. As ESS is increasingly adopted as a key component in enhancing the efficiency of power grids well into 2020, Samsung SDI will continue to tap into new markets in Southeast Asia and the Middle East in addition to expanding its business presence in such high-growth markets as the U.S. and Europe. In particular, we are developing strategies to meet utility ESS demand as a way to stabilize the power grid system in line with photovoltaic and wind power generation, and plan to increase our sales in commercial & industrial ESS, residential ESS, and other applications in response to the growing needs for Virtual Power Plants (VPP) and photovoltaic self-consumption. In the UPS/telecom sectors where acid-lead batteries account for more than 90% of the total, we will harness our improved performance and affordable prices to drive the shift towards Li-ion batteries.

Global LiB-ESS Demand Outlook



2019 BUSINESS CASE

Developing Li-ion Battery-based ESS to Contribute to Building Greener Ships

Large vessels normally require stronger power for their navigation, and this inevitably generates such environmental pollutants as SOx and particulate matter. As such, the International Maritime Organization (IMO) introduced more stringent regulations on the pollutants emitted from ships from 2020 onwards through the international agreement.
In reflection of this industrial trend, Samsung SDI developed an ESS battery system for ships in conjunction with Samsung Heavy Industries. This system is highly versatile as its modular approach allows for scalability to increase battery capacity according to the size of ships and power consumption, and can be immediately deployed on board to reduce the emission of pollutants and operational expenses. This ESS battery system also became Korea's first to be awarded the type approval certificate from DNV-GL.

Business Overview and Growth Strategy

Electronic Materials

Beyond the Naked Eye,
There is an Underlying Power
of Digital Transformation

Business Summary

Samsung SDI first initiated its electronic materials business by developing EMCs for the semiconductor manufacturing process in 1994. Its spirit of challenging the status quo and pursuit of self-motivated innovation have driven the growth of the Company to develop and sell materials consumed in the semiconductor, display and next-generation energy sectors.
While reinforcing market dominance in the conventional semiconductor and LCD markets, we also strive to establish leadership in the OLED materials, rechargeable battery separator, and other next-generation cutting-edge materials segments. Our advanced technology and expert capability serve not only the semiconductor and display markets but also the rechargeable battery and solar cell materials markets.

Application

Semiconductor
We produce patterning materials (SOH, SOD, and slurry) used to form semiconductor wafer patterns as well as packaging materials (EMC) that protect semiconductors and chips from the external environment.

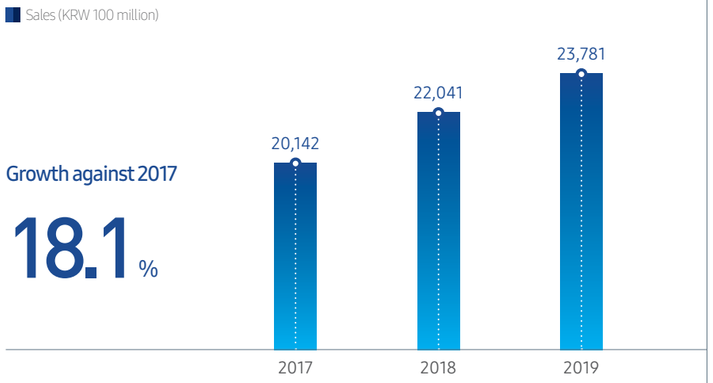
Display
Our electronic materials are mainly adopted for LCD, OLED and other display panels, and are sold in the form of films or base composite materials. They include films such as POL (polarizing film) and FOCA and process materials such as OLED materials and color Photo Resist (color PR).

Next-generation energy
We produce photovoltaic pastes that are highly-viscous conductive materials that form solar cell electrodes, and membrane separators that serve as an interlayer that prevents short circuits between the cathode and the anode within rechargeable batteries to ensure their safety.

Market Outlook

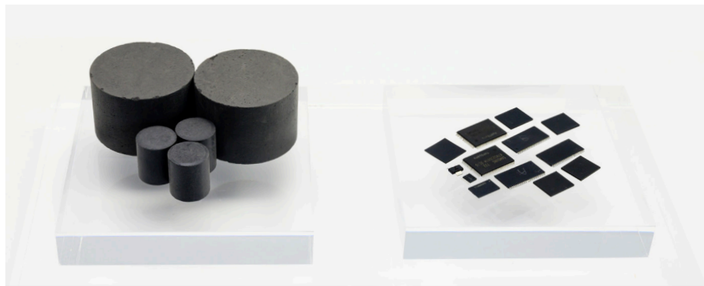
In 2019, the semiconductor market experienced a rather difficult time, decoupled from the continued boom over the past several years. Even though COVID-19 gives rise to uncertainties in supply and demand in 2020, new semiconductor demand for data server investment and 5G dissemination is forecast to facilitate market recovery.
While the display market continues to deteriorate due to overcapacity in China, the launching of various products that leverage OLED as the leading technology is shifting the focus of this market. As demonstrated by foldable smartphones that debuted in the market in 2019, wide-ranging new products powered by bold innovation have been unveiled and this is set to further intensify competition among companies wishing to move ahead of the game with cutting-edge technology.

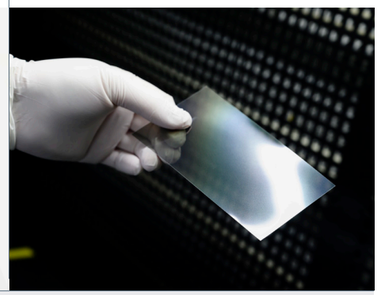
Electronic Materials Sales



Business Approach

Companies conducting technology-intensive electronic materials business are required to accurately predict changes in the product cycle and technology trends across the semiconductor, display and other upstream IT segments and to swiftly launch new products based on differentiated technology. Samsung SDI is securing core technology through technology cooperation and R&D with customers to build such differentiated technology competitiveness while creating a business structure that minimizes upstream market risks through rigorous quality management and product portfolio development.
As an even fiercer competition is forecast to unfold in the upstream market in 2020, we will further reorganize and reinforce our current profit/loss structure to lay the basis for future growth. This, in turn, will serve to increase our investment in new business items to set the trend in the rapidly-changing technology sector.
Building on our accumulated technology capabilities, we will outpace competitors to advance into such high growth potential sectors as Quantum Dot (QD), OLED, foldable display and ultra-fine semiconductor materials in order to establish our technology leadership in these next-generation product categories.





2019 BUSINESS CASE

Technology Development to Improve the Visibility of LCD TVs

Samsung SDI became the world's first to develop technology to improve side visibility on the basis of film making technology accumulated over the years. This is attributable to our bold attempt to think outside the box even amid challenging business conditions of limited growth in the mature upstream market. In combination with polarizing films, this technology can be adopted for premium LCD TVs and significantly improved the visibility of LCD TVs to help customers strengthen their product capacity. This technological breakthrough has also paved the way for Samsung SDI to establish technology dominance in the ultra-large-size, ultra-premium TV segment in the upcoming years, and is expected to serve as a key technology in the 8K LCD TV market.

R&D

R&D Approach

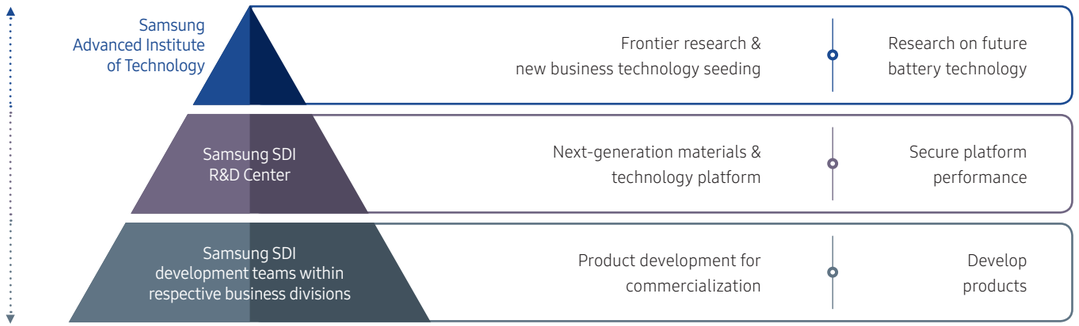
The battery industry is witnessing the diversification of new applications in line with the rising needs for eco-friendliness as well as the increasing demand for battery safety performance. This prompted Samsung SDI to reinforce its R&D on new products and technology to lead the rapidly-shifting technology and market landscape and to secure future growth momentum. As a 'leading total solution provider of world-class eco-friendly materials and energy', we are broadening our business portfolio from parts to advanced materials to elevate our technology competitiveness in energy as well as in secondary batteries, IT devices and automotive materials.

R&D Organization

Samsung SDI operates R&D organizations within Battery Business, Automotive and ESS Business, and Electronic Materials Business in conjunction with the SDI R&D Center, and is reinforcing its global technology leadership through collaboration across these business divisions. We also strengthen our R&D efforts on rechargeable battery materials and ensure a stable supply of raw materials. The characteristics of materials determine the performance of batteries from energy density to service life and power. Most of all, these materials account for a large share of the total costs, which highlights the utmost importance of competitive materials.

Our Electronic Materials Business has moved into the Samsung Future Technology Campus (Samsung Electronics Materials Research Complex) to generate synergy through joint R&D endeavors. In 2019, our battery and automotive & ESS business development locations, evaluation facilities, and other relevant functional infrastructure were all placed together at our Giheung worksite to lay the basis to create synergy in battery R&D and improve the efficiency of battery development.

R&D System



R&D Outcomes in 2019

Research Project	Expected Benefits
IT device rechargeable battery pouch demonstration research to assess their performance and adoption by corporate consumers	Develop high-reliability pouches that meet global industrial standards
Development of high-efficiency, high-stability cell structures for xEVs	Maximize the use of spaces within the battery and improve processability and safety
Development of high-capacity, high-output xEV batteries that meet industry's highest standards	Contribute to moving ahead of the competition in the premium EV market with specialized fast charging performance
Development of functional EMCs	Become the world's first to launch high heat dissipation products applicable to high-end products
Development of next-generation SOH	Contribute to expanding new demand by substituting V-NAND(V-NAND Flash Memory) ACL(Amorphous Carbon Layer)
Development of polarizing films with improved visibility	Create a high-end product market for TV applications and increase sales
Development of optical films for foldable smartphones	Advance into a new OLED materials segment with YOUM* bottom films

* A flexible OLED panel developed by Samsung Display

Expanding Open Innovation

Samsung SDI expands industry-academia cooperation with external institutions and universities to secure next-generation technology while facili-tating university-institution exchanges to nurture talented individuals with expertise. Since 2016, we have consistently promoted industry-academia cooperation with Seoul National University, Hanyang University, Sungkyunkwan University, POSTECH and UNIST that are pioneering battery research as a way to develop next-generation battery technology. Such cooperation spans the entire spectrum of battery research, from the development of materials that improve product performance to the development of testing methodology to render our battery products even safer.

In addition, we engage in strategic cooperation with battery pack developers to broaden our market presence and strengthen our competitive edge in future business. In the materials sector, we are pursuing cooperation with specialized institutions and universities in Germany, Japan, and the U.S. to differentiate our technology, and are committed to extending areas of cooperation continuously.

Green R&D

Samsung SDI produces Energy Storage Systems (ESS) required to use Li-ion batteries as a key component of EVs and renewable energy.

As OEMs increasingly demand that recycled metals be adopted for battery manufacturing to reduce CO_2 emissions in line with environmental regulations introduced by countries around the world, we are forging strategic partnerships with companies capable of recovering and recycling useful materials qualified for new battery production from end-of-life batteries.

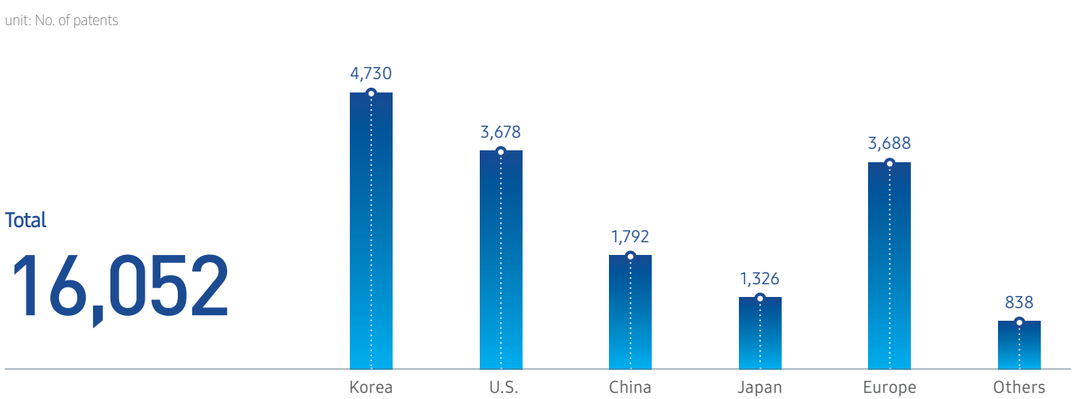
Patent Management

Samsung SDI's patent registration and management aims to lead future technology in the ever-changing technology landscape. In the rechargeable battery segment, our outstanding patent portfolio covers wide-ranging technology areas to cater to respective applications, from small-sized batteries for IT devices to mid/large-sized batteries for automobiles and ESS.

In the electronic materials sector, we also possess competitive patents on a broad array of technologies, from display materials (OLED, QD) to semiconductor materials.

As a result of such endeavors, the number of patents registered amounts to 4,730 in Korea and 11,322 in the U.S., Europe, China, Japan and other major countries around the globe.

Cumulative Patent Registrations in 2019



SUSTAIN-ABILITY OVERVIEW

Sustainability Management System

Approach to Sustainability Management

Samsung SDI set its sustainability management vision of 'Sustainable Development Innovator' with an aim to become a company that is 'contributing to society through sustainable development based on strong leadership in the economic, social and environmental spheres'. On the basis of the Triple Bottom Line (TBL) that refers to economy, environment and society, we chose the three domains of 'Sustainable Growth', 'Win-Win Partnership', and 'Creation of Environmental Value' and their respective focus areas to pursue balanced development and growth for all stakeholders.

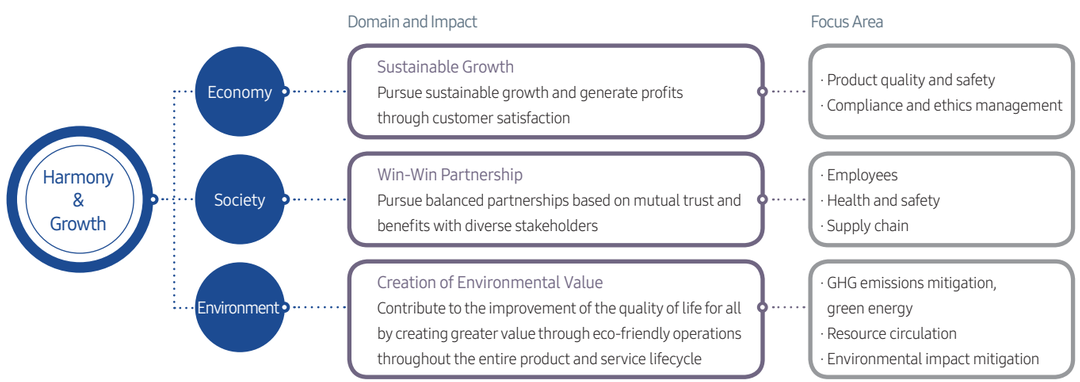
Stakeholder Engagement

At Samsung SDI, stakeholders are defined as those who interact with the Company concerning economic, social and environmental issues that may arise in business conduct. We ensure continuous communication with these stakeholders to gather their feedback and reflect it into business operations to improve our sustainability as a company. Our major stakeholder groups include customers, partner companies, governments, industry associations-universities-research institutes, shareholders-investors, employees, and local communities-civic organizations.

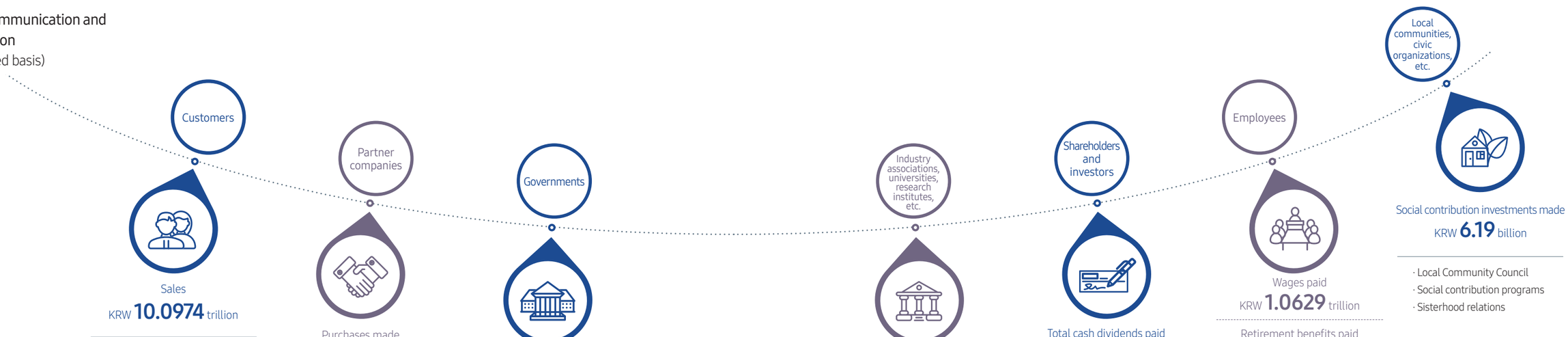
Sustainability Management Strategy

Vision — Sustainable Development Innovator

Contributing to society through sustainable development based on strong leadership in the economic, social and environmental spheres



Stakeholder Communication and Value Distribution
(on a consolidated basis)



Implementation of the UN SDGs

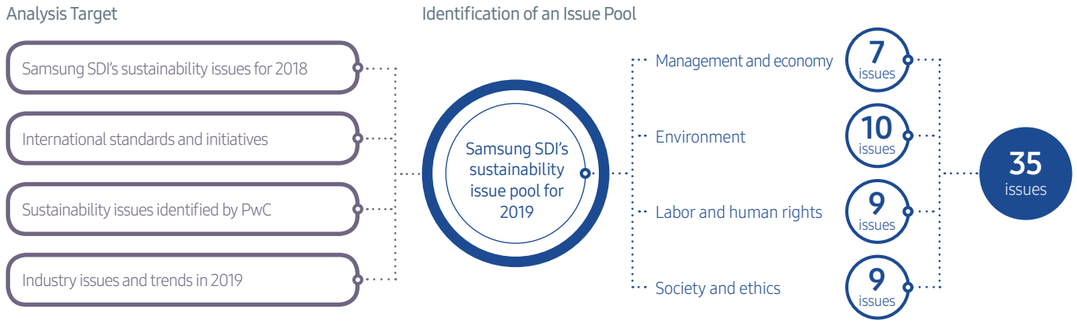
Samsung SDI fully endorses the Sustainable Development Goals (SDGs) suggested by the United Nations to promote the sustainable development of the international community, and takes wide-ranging actions accordingly based on its sustainability management implementation strategy.

Goals	Target	Samsung SDI's Contribution	Reporting Page
4 QUALITY EDUCATION — Quality Education	4.1	- We provide education to adolescents through our flagship social contribution programs – Green Planet Environment School, Green Planet Dreaming School, and Green Planet Future Science School – to contribute to the change of future generations.	76~77
	4.4	- We operate learning courses to help employees strengthen their capacity in development, process, and equipment technology as well as training courses provided through industry-academia alignment and license acquisition support programs. - We operate quality training at domestic/overseas corporations to help employees' capacity building on product quality and safety.	73, 91
5 GENDER EQUALITY — Gender Equality	5.5	- We endeavor to increase the ratio of female managers, and appointed a female independent director in 2020 to provide women with leadership opportunity.	68, 90
7 AFFORDABLE AND CLEAN ENERGY — Affordable and Clean Energy	7.2	- We manufacture ESS batteries and supply them to the global market to contribute to the creation of a global clean energy industry ecosystem. - Our Korean corporations joined the Ministry of Trade, Industry and Energy's Green Pricing pilot project to introduce green energy, and our overseas corporations are currently reviewing green energy-related systems.	22~23, 45
	7.3	- Our domestic/overseas corporations undertook energy consumption mitigation tasks to save a total of KRW 18.6 billion in 2019. - We take the Life Cycle Assessment (LCA) approach to reduce energy use throughout the entire product manufacturing cycle from R&D and raw material procurement to product use.	45, 46
	7.A	- We are jointly developing electric truck batteries in cooperation with a global car OEM, and have signed an agreement to develop electric motorcycle batteries and battery switching stations in order to facilitate accessibility to clean energy.	19, 21
8 DECENT WORK AND ECONOMIC GROWTH — Decent Work and Economic Growth	8.7	- We perform thorough monitoring and due diligence in procuring conflict minerals including cobalt and graphite that pose high risk of causing human rights and health & safety issues in order to prevent relevant risks from occurring. - We manage the impact our worksites have on human rights and labor issues in accordance with the checklist created on the basis of the Responsible Business Alliance (RBA) Code of Conduct in order to assess our worksites for their level of human rights and labor performance and to identify and manage factors that give rise to any adverse impact.	61~63, 72
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE — Industry, Innovation and Infrastructure	9.4	- We set a goal of reducing our GHG emissions by 30% or more from BAU levels by 2020. - Our domestic and overseas corporations implemented energy use reduction tasks to save a total of KRW 18.6 billion in 2019.	44, 45
	9.5	- We launched campus recruitment events at domestic and overseas universities to continuously secure R&D workforce. - The percentage of our R&D investments against sales rose by 0.5% from 2018 to 7.1% in 2019.	27, 91
11 SUSTAINABLE CITIES AND COMMUNITIES — Sustainable Cities and Communities	11.6	- We endeavor to increase recycling to reduce waste generated from the product manufacturing process, and recover and recycle end-of-life batteries and scraps from the production process to help lower waste discharge. - We install and manage adequate control equipment to treat air pollutants, and adopt internal standards that are more stringent than legally-applicable regulations in measuring pollutants and managing their trajectory.	47, 82~83
12 RESPONSIBLE CONSUMPTION AND PRODUCTION — Responsible Consumption and Production	12.2	- We performed Reasonable Country of Origin Inquiries (RCOI) and third-party audits on minerals, including cobalt and conflict minerals, that are consumed for battery production.	61~63
	12.4	- We conduct pre-purchase reviews and assessments on any and all chemicals that enter our worksites through our environmental safety system (G-EHS). - Our worksites comply with internal standards that are stricter than the legal regulations imposed by the government for pollutant management in order to mitigate environmental impact in the entire business conduct and throughout the production and consumption process.	81, 82
	12.5	- We establish and operate a resource recovery process to retrieve end-of-life batteries and recycle them as raw materials, and closely cooperate with professional recycling service providers to improve resource recycling. - We outsource waste management to professional waste disposal businesses to ensure all waste that we generate is processed in conformity with applicable environmental regulations, and strive to increase the recycling of waste.	47, 83
	12.6	- We publish sustainability reports every year, and use them as a channel to faithfully report on our sustainable consumption and production. - We manufacture products in accordance with our internal quality and safety policy, and ensure periodical reporting on this.	50~55
13 CLIMATE ACTION — Climate Action	13.3	- We sell batteries equipped on eco-friendly vehicles and Energy Storage Systems (ESS) to indirectly contribute to mitigating climate change in the product use phase. - We continuously take action to reduce GHG emissions generated from the manufacturing process. - We operate Green Planet Environment School, our green and energy educational program for children and adolescents, to help them learn about the importance of proper energy use.	20~23, 44, 76~77
16 PEACE, JUSTICE AND STRONG INSTITUTIONS — Peace, Justice and Strong Institutions	16.2	- We manage the impact our worksites have on human rights and labor issues in accordance with the checklist created on the basis of the Responsible Business Alliance (RBA) Code of Conduct in order to assess our worksites for their level of human rights and labor performance and to identify and manage factors that give rise to any adverse impact.	72
	16.5	- We operate compliance programs to strictly prevent any possible occurrence of corruption and bribe-taking, and perform annual corruption risk assessments on our worksites. - In 2020, seven Samgsung affiliates, including Samsung SDI, have established Samsung Compliance Committee to keep a close watch on compliance management.	70~71

Identification of Material Sustainability Issues and Reporting Topics

Issue Identification

To conduct annual sustainability management materiality analyses, Samsung SDI comprehensively analyzes the sustainability issues addressed by international standards and initiatives as well as internal/external business agendas and trends for the year in order to update its pool of sustainability issues. In 2019, a pool of 35 issues was created as a result of the materiality analysis process, and this served to identify material issues and plan the preparation of this Report.



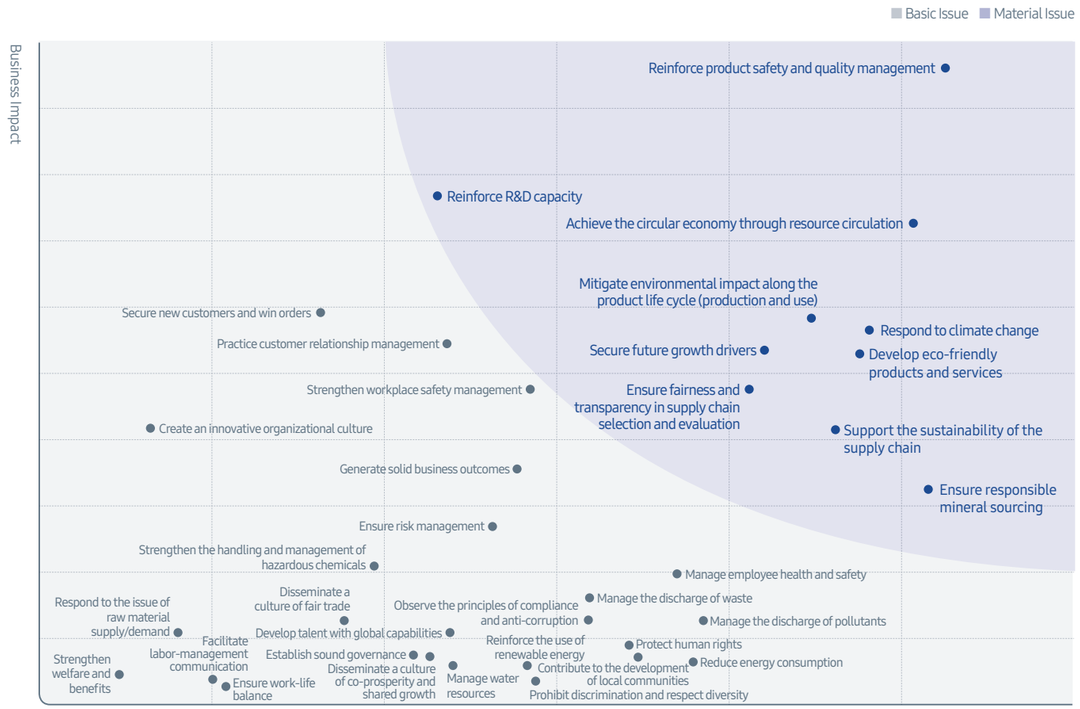
Materiality Analysis

The materiality test was performed to identify sustainability-related issues that have major impact on Samsung SDI's business operations and garner high interest among stakeholders.

Materiality Assessment Process

Materiality Matrix

In 2019, a total of 10 issues were identified as Samsung SDI's material issues.



Material Issue Reporting

Ranking	Material Issue	Reporting Topic	Reporting Page	GRI Standards Disclosure
1	Reinforce product safety and quality management	Material Issue > 2. Product Safety	50~55	416-1~2
2	Achieve the circular economy through resource circulation	Material Issue > 1. Climate Change	42~49	301-2
3	Respond to climate change	Material Issue > 1. Climate Change	42~49	201-2, 305-1~5
4	Mitigate environmental impact along the product life cycle (production and use)	Material Issue > 1. Climate Change	42~49	Non-GRI
5	Develop eco-friendly products and services	Business Overview > R&D	26~27	Non-GRI
6	Reinforce R&D capacity	Business Overview > R&D	26~27	Non-GRI
7	Secure future growth drivers	Business Overview > Business Overview and Growth Strategy	18~25	Non-GRI
8	Support the sustainability of the supply chain	Material Issue > 3. Sustainable Supply Chain	56~63	Non-GRI
9	Ensure fairness and transparency in supply chain selection and evaluation	Material Issue > 3. Sustainable Supply Chain	56~63	308-1~2, 414-1~2
10	Ensure responsible mineral sourcing	Material Issue > 3. Sustainable Supply Chain	56~63	308-1~2, 414-1~2

Total Impact Measurement & Management (TIMM)

Impact Measurement Background and Methodology

Businesses directly generate or induce economic, social and environmental effects in their business conduct, and this exerts direct and indirect impacts on stakeholders surrounding these businesses for their quality of life and sustainability. As a member of society who grows hand-in-hand with stakeholders, Samsung SDI strives to broaden this definition of impacts by considering even those impacts generated by way of its business decision-making and business operation. As such, we chose PwC's Total Impact Measurement and Management (TIMM) methodology to assess the impacts generated from our financial and non-financial performance in the course of 2019.

Samsung SDI Impact Measurement Aspects

Under this methodology, 'impacts' refer to how much a company or society changes either positively or negatively as a result of outcomes (change in company or society vis-à-vis activities). The target of impact assessments can be the outcomes of a single program when such assessments are made in specific areas, such as company-wide business outcomes or social-giving activities. The data used to assess impacts includes the public disclosures made by the Company in conformity with applicable laws and regulations, statistics from government agencies and international organizations, and outcomes from relevant domestic/international research papers. To improve the reliability and objectivity of the assessment process and its results, sources of evidence and reference data considered significant are separately annotated. In 2019, Samsung SDI's impacts were measured on a total of 15 factors.

Economical Impact

Current or future impact on GDP (Gross Domestic Product)

- Wage: Sum of employee wages and retirement benefits, estimated wages of partner employees, and estimated per-capita consumption expenditures of employee family members
- Profit: Net income (profits generated from the current period)
- Tangible asset: Sum of depreciation of tangible assets and invested properties (contribute to the generation of future profits)
- Intangible asset: Sum of separately-acquired intangible assets and R&D expenditures (contribute to the generation of future profits)

Tax Impact

Impact on public finance made through tax payments

- Corporate tax: Sum of corporate tax payments estimated based on the Company's corporate taxes paid and the sales of partner companies who supply raw materials consumed to manufacture Samsung SDI's products

Environmental Impact

Impact on the natural environment

- Air pollutant: Social costs caused by the emission of SOx, NOx, and dust
- Greenhouse gas (product): Social value generated from the sale of EV batteries
- Greenhouse gas (production): Social costs caused from GHG emissions generated from the process
- Waste: Social costs caused by the discharge of waste
- Water resources: Social costs caused by the use of water resources

Social Impact

Impact on members of society leading a better life

- Contribution to the resolution of social issues
  - ·Increased educational opportunity for children and adolescents: Impacts on the beneficiaries of Green Planet Environment School, Green Planet Dreaming School and Green Planet Future Science School from their access to opportunity to explore career paths and learn about Samsung SDI's business
  - ·Support for the medically-underserved: Impact on beneficiaries calculated in consideration of the Disability Weights (DW) improved through the free-of-charge vision recovery surgeries performed, the life expectancy of beneficiaries (difference between country-specific average life expectancy and the average life expectancy of beneficiaries), and Values of a Statistical Life (VSL) that reflects country-specific income elasticity
- Support for share growth: Impact from the lower interest rates offered through the win-win growth funds as well as from the credit assistance for partner companies in paying molding fees
- Health and safety: Losses from the health and safety incidents involving employees
- Social contribution investment: Impact from production activities, added values, and increased employment on the part of beneficiaries
- Employee welfare and benefits: Social value created by contributing to improving the quality of life for employees

* The measurement of social value was performed based on the performance data managed by the Company in accordance with the reasonable assumptions made by leveraging official statistics from governmental agencies and international organizations as well as a range of current research outcomes, and the currency value of the concerned year is subject to change later on.

Samsung SDI Impact Measurement Outcomes

* Reference data: Samsung SDI business report (for the 50th period), Global Burden Disease (GBD) data from the Institute for Health Metris and Evaluation (IHME), the inter-industry table from the Bank of Korea (2015), VSL data from the Korea Environment Institute, national statistics from Statistics Korea, statistics from the World Bank, etc.

Scope and Nature

POSITIVE	Direct Impact	Positive impact generated from Samsung SDI's business conduct
POSITIVE	Indirect Impact	Positive impact from the business conduct of partner companies influenced by Samsung SDI
POSITIVE	Induced Impact	Positive impact generated by employees working at Samsung SDI and its partner companies in leading their life
NEGATIVE	Direct Impact	Negative impact generated from Samsung SDI's business conduct
NEGATIVE	Indirect Impact	Negative impact from the business conduct of partner companies influenced by Samsung SDI
NEGATIVE	Induced Impact	Negative impact generated by employees working at Samsung SDI and its partner companies in leading their life

Total Impact Measurement & Management (TIMM)

Identification of Impact Management Plans and Reporting

Samsung SDI identified its impact on stakeholders for each of the measurement factors in order to expand positive impacts while improving on negative impacts, and formulated management plans on the basis of its value chain.

Management needs / Samsung SDI's category-specific factor			Samsung SDI plays a pivotal role in the nation's development and economy in its capacity both as a company that seeks profits and as a member of society. Samsung SDI primarily contributes to economic growth by creating added value and inducing employment in its product and service manufacturing process, and these business activities in turn impact the supply chain that supports such activities as well as the economic performance of customers who receive the Company's services.	Tax payment is related to a company's business continuity as well as its reputation management. While the focus was previously placed on the faithful fulfillment of tax obligations for compliance purposes, today's society is increasingly interested in taxation that is sufficient and convincing for all stakeholders. Such interest and requirement from the stakeholder side imply 'social acceptability' and companies need to be aware of relevant potential impact.
			Economics	Tax
	TIMM factor		Wage (+) / Profit (+) / Tangible asset (+) / Intangible asset (+)	Corporate tax (+)
Impact on stakeholders	Stakeholder	Customers	High quality and reasonable pricing, improved safety and convenience in product use	
		Partner companies	Sales expansion through delivery volume increases and unit price guarantee, opportunity to explore new growth drivers	
		Governments		Contribution to national fiscal soundness and the improved quality of life for the public
		Industry associations, universities and research institutes		
		Local communities and civic organizations		
		Employees	Contribution to income growth and the improved quality of life	
		Shareholders and investors	Increases in interest income and dividend income	
	Impact measurement results		KRW 2,063.22 billion / KRW 1,014.33 billion / KRW 3,599.04 billion / KRW 883.82 billion	KRW 412.3 billion
			Economical Impact: KRW 7,560.42 billion	Tax Impact: KRW 421.30 billion
			Total Impact	
Management plans for maximum impact	Value chain	R&D	Diversify new applications in line with increasing needs for eco-friendliness, and secure battery safety performance	
		Purchasing	Select and maintain outstanding partner companies	
		Manufacturing	Improve equipment efficiency & safety, manage partners' quality performance and expand relevant support	
		Logistics		
		Sales	Develop a global sales network, secure new customers and increase orders granted, explore new markets	
		Service	Facilitate customer communication and manage tailored customer value	
		Marketing	Analyze market trends, Analyze customer and technology trends	
		Business administration	Ensure transparent performance appraisal and compensation	Ensure clarity in profit/loss management	Ensure transparent accounting in acquisition, management, and disposal	Manage tax risks and fulfill tax-paying obligations
Pool of sustainability issues for 2019			- Reinforce welfare and benefits	- Generate solid business outcomes - Secure new customers and win orders	- Secure future growth drivers	- Reinforce R&D capacity	- Observe the principles of compliance and anti-corruption
Reporting page			91	86~87	86	26~27, 86, 91	87, 88

These management plans will be fully reflected in our future sustainability management, and our performance for the year 2019 is presented in detail through this Report.

Humans are heavily dependent upon natural capital, from the air and the ocean to minerals. Still yet, no clear definitions exist as to the expenses that arise in using natural capital that is inherently considered as public assets as well as adverse impact that could occur on natural capital. As a result of harnessing natural capital, businesses in return face risks from the external stakeholder side, ranging from compliance with new environmental regulations and financial losses caused by the violation of environmental regulations to consumers' boycott campaigns and damage to their brand value. Ultimately, such risks come down to the issue of expenses. As such, companies need to come forward to understand and manage their environmental impact on natural capital.

When a company provides its employees, employees from its partner companies, and members of its local communities with educational and welfare opportunities, this could contribute to improving the quality of life for all. In addition, a company's production and corporate philanthropy could contribute to building social capital for its stakeholders. A portion of these activities may rather have negative impact on the company's bottom line due to the payment of fines and compensations. Businesses need to carefully measure their social impact on wide-ranging stakeholders and look for ways to benefit its business operations.

		Environment	Society
		Air pollutant (NOx, SOx) (-) / GHG (product) (+) / GHG (production) (-) / Waste (-) / Water resources (-)	Contribution to the resolution of social issues (education for children and adolescents/support for the medically-underserved) (+) / Partner company support (+) / Employee health & safety (-) / Social contribution investment (+) / Employee welfare and benefits (+)
Impact on stakeholders	Customers	Expansion of the green market, opportunity to explore new growth drivers	
	Partner companies		Financial stability and strengthened technology competitiveness / Reduction in employee work efficiency and health
	Governments	Development of new environmental policies and regulations	Development of new environmental policies and regulations
	Industry associations, universities and research institutes		
	Local communities and civic organizations	Contribution to air pollution and negative ecosystem impact / Contribution to climate change – global warming, floods, droughts, and rising sea levels / Contribution to soil pollution and negative ecosystem impact / Contribution to community water resources depletion	Increased learning opportunity for children and teens and support for the medically-underserved / Development of local communities and protection of the vulnerable
	Employees		Reduction in employee work efficiency and health / Improved quality of life for employees
	Shareholders and investors		
	Impact measurement results	- KRW 6.71 billion / KRW 127.11 billion / - KRW 49.84 billion / - KRW 120 million / - KRW 250 million	KRW 12.91 billion / KRW 27.77 billion / - KRW 1.25 billion / KRW 11.79 billion / KRW 648.82 billion
		Environmental Impact: KRW 70.19 billion	Social Impact: KRW 700.04 billion
		KRW 8.7519 trillion	
Management plans for maximum impact	Value chain: R&D	Strengthen product eco-friendliness and develop eco-friendly products	
	Purchasing	Develop measures to source eco-friendly raw materials	Strengthen support for partner companies' sustainability / Strengthen the operation of the equipment safety certification process
	Manufacturing	Improve on equipment and deploy discharge control equipment / Improve equipment and adoption of renewable energy generation equipment / Increase waste recycling and strengthen scrap retrieval / Increase water recycling and minimize effluent discharge	
	Logistics		
	Sales		
	Service	Develop and implement end-of-life product recovery	
	Marketing		
	Business administration	Facilitate corporate philanthropy	Develop and implement shared growth strategies / Improve workplace safety and manage employee health / Ensure transparency in the execution of donations / Support and improve welfare and benefits programs
Pool of sustainability issues for 2019		- Manage the discharge of pollutants	- Develop eco-friendly products and services - Mitigate environmental impact along the product life cycle (production and use)	- Mitigate environmental impact along the product life cycle (production and use) - Respond to climate change - Reduce energy consumption - Reinforce the use of renewable energy	- Achieve the circular economy through resource circulation - Manage the discharge of waste	- Manage water resources - Manage the discharge of pollutants	- Contribute to the development of local communities	- Support the sustainability of the supply chain - Disseminate a culture of co-prosperity and shared growth	- Strengthen the handling and management of hazardous chemicals - Strengthen workplace safety management - Manage employee health and safety	- Contribute to the development of local communities	- Strengthen welfare and benefits
Reporting page		82, 89	46	44~45, 88	83, 89	82, 89	76~77, 93	59~60, 92~93	78~81, 92	93	75, 94

MATERIAL ISSUE

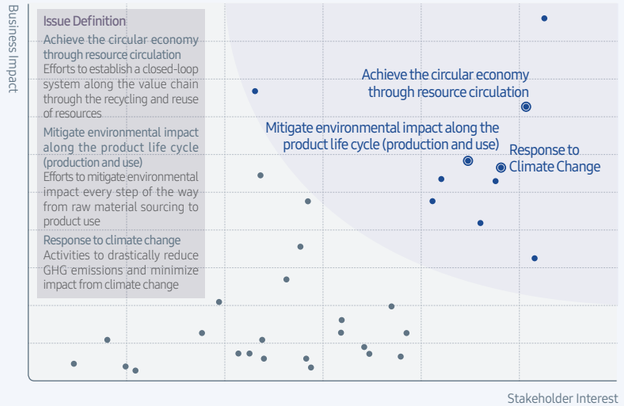
Climate Change

01

Background Behind the Selection of the Issue

Not only do greenhouse gas (GHG) issues concern country-specific institutional implementation to reduce their emissions, but also they serve as international trade barriers as demonstrated by discussions over carbon border taxes. As Renewable Energy 100% (RE100) is emerging as a global leadership initiative to mitigate GHG emissions, this requires businesses to make voluntary efforts to reduce GHG emissions in addition to complying with regulations. In particular, the technological advancement of the battery industry has driven the transition from the Internet of Things (IoT) era to the Battery of Things (BoT) era, and this makes wide-ranging stakeholders turn their attention to Samsung SDI's battery business itself and the eco-friendliness of batteries.

Alignment with Samsung SDI's 2019 Material Sustainability Issues



Samsung SDI's Response to the Issue

Samsung SDI's production bases are located in major countries who signed the Paris Climate Agreement.
As for our corporations based in Korea, they continue to manage and reduce their GHG emissions and energy consumption in conformity with the Korea Emission Trading Scheme (K-ETS).
Our overseas corporations are in full compliance with local environmental regulations, and set their own targets to consistently manage and reduce GHG emissions and energy consumption.
Furthermore, Samsung SDI strongly believes that the wider adoption of renewable energy serves as a key tool in the sustained reduction of GHG emissions, and thus is actively participating in the Korean government's pilot project on green pricing designed to join the RE 100 initiative.

Benefits Expected through Response to the Issue

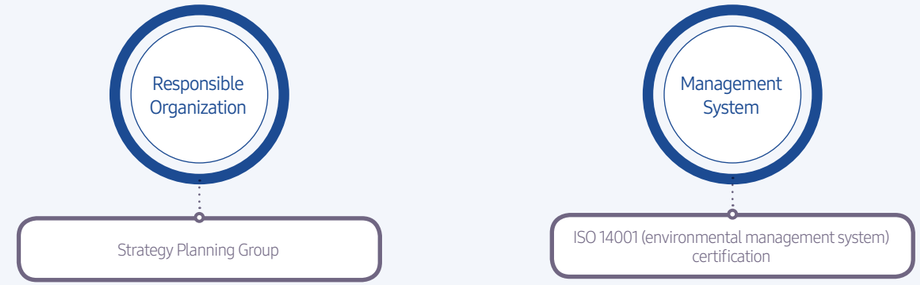
Customers
Seize opportunity to expand the green market and identify new growth drivers in line with the increasing eco-friendliness of products

Governments
Prevent penalty payments and sanctions through regulatory compliance

Local communities and civic organizations
Build trust from local communities and civic organizations and elevate corporate reputation by managing impact from climate change on the areas surrounding worksites

Shareholders and investors
Attract and induce investments in ESG funds and socially responsible funds

Samsung SDI's Management System



2019 Achievements and 2020 Targets

(●: Achieved, ◐: Partially achieved, ○: Under preparation)
* The 2020 target applies to battery business only

KPIs	Unit	2019 Target	2019 Achievement	Level of Achievement	2020 Target
GHG emissions	tCO_2e	1,439,321	1,275,165	●	Achieve a 30% reduction from BAU levels in 2020*

Contribution to the Sustainable Development Goals

Management Strategy and Approach

Climate Change Response Strategy

In 2015, the UN Climate Change Conference held in Paris (COP21) adopted the Paris Climate Agreement to create a new climate regime for 2020 and beyond. While its predecessor, the Kyoto Protocol, set legally-binding commitment targets for advanced nations only, the Paris Agreement imposed such obligations to reduce GHG emissions on all Parties.
Samsung SDI sets GHG mitigation targets and has their implementation verified by external verification organizations. Our goal is to reduce our GHG emissions by more than 30% from Business As Usual (BAU) levels by 2020, and we are making progress to reach this goal.
Furthermore, we have joined the Korea Emissions Trading System (K-ETS) since 2015, and disclosed information on our climate change strategy and GHG emissions reduction activities through the Carbon Disclosure Project (CDP).

GHG Emissions Management at Overseas Corporations

The Samsung SDI Headquarters is directly offering GHG management training to assist overseas corporations in improving their GHG management performance. In 2019, two overseas corporations were visited to support their use of Samsung SDI's energy management system dubbed s-GEMS. In 2020, the application of this system will further extend to other corporations to reinforce our GHG management across the entire global operations.

Broader Introduction of the Energy Management System

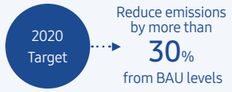
In 2019, MAXIMO, our facility management system, was deployed across all worksites both at home and abroad to maintain the operational efficiency of utility facilities and ensure a stable supply of energy. This allows us to constantly monitor the status of major utility facilities and maintain the optimal supply efficiency in order to improve cost efficiency while reducing energy consumption and GHG emissions. In 2020, we aim to take a step further by adopting an Energy Efficiency System (EES) at our Cheonan worksite as a way to introduce a system to monitor and analyze the operational data of utility facilities.

01-1. Response to Climate Change

Establishment of Goals for Reducing GHG Emission

As the Korean government set a goal of achieving more than 30% reduction in GHG emissions from BAU levels by 2020, Samsung SDI is also fully committed to attaining this goal.

GHG Emissions Mitigation Goal*



* Applicable to battery business only

Participation in the Emissions Trading System

Samsung SDI has joined the Korean Emissions Trading System (K-ETS) that took effect back in 2015 to respond to global climate change regulations. To this end, we have established a carbon management system under the principles of Monitoring, Reporting, and Verification (MRV), and are promoting systemic target management based on the s-GEMS, our IT energy management system. We utilize this target management approach to lower GHG emissions, and monitor allowance prices on a monthly basis and identify our GHG emissions generated to reduce legal risks.

Response to the CDP

The Carbon Disclosure Project (CDP) is a non-profit organization that evaluates the world's largest 500 companies by market capitalization for their response to its official request to disclose their environmental data, including GHG emissions and energy data. In line with the increasing demand from stakeholders, Samsung SDI is transparently disclosing information on its climate change strategy and its activities taken to lower GHG emissions through the CDP. In response to the growing importance of financial impact a company has on climate change, we are also putting efforts into analyzing such impact more objectively. In 2019, we made it onto CDP's A- list.

Global Company-wide Achievement in Reducing GHG Emissions

* Mitigation performance increased in line with change in emission factor

Category	Unit	2017	2018	2019*
Fuel	tCO_2e	10,205	9,878	16,306
Electricity & steam	tCO_2e	47,305	42,998	104,073
Total	tCO_2e	57,510	52,877	120,379

01-2. Energy Use Management

Major Activities to Reduce Energy Use

At Samsung SDI, respective business divisions are operating an energy target management system while a company-wide energy conservation task force is up and running to reduce energy consumption. From the second half of 2019, technical support has been provided to overseas corporations to assist them in implementing the major energy-saving activities that have been already undertaken at their domestic counterparts. As a result, our Xian and Wuxi corporations identified a total of seven and five improvement tasks respectively to eventually save KRW 590 million and KRW 300 million in energy expenses. In 2019, the energy savings generated through energy consumption conservation at our domestic and overseas corporations amounted to 1,679TJ in total.
In 2020, the focus of our energy efficiency improvement will shift from reducing the energy consumption of major facilities to improving the energy efficiency of both major and auxiliary facilities.

Global Company-wide Energy Investments and Achievements in Reducing Energy Use

Category		Unit	2017	2018	2019
Total investments		KRW million	3,522	1,840	1,495
Fuel saving activity		Case	71	78	88
Electricity & steam saving activity		Case	390	634	543
Savings generated	Total energy reduced	TJ	1,176	1,081	1,679
	- Fuel reduced	TJ	201	197	321
	- Electricity & steam reduced	TJ	975	884	1,358
	Total savings generated	KRW 100 million	102	89	186
	- Fuel savings generated	KRW 100 million	11	10	38
	- Electricity & steam savings generated	KRW 100 million	91	79	148

Achievements Made in Reducing Energy Consumption among Domestic Corporations

* Condenser: A component that cools vapors to turn them into liquids

Worksite	Activity Taken	Achievement Made
Cheonan	Deployment of condensers* to recover flash steam	Recover heat and reuse energy through heat exchange between flash steam and cooling water
Ulsan	Shift from manual to automated operation of steam and chilled water for air handling units and out air handling units	Minimize valve opening through the shift to automatic operation mode as well as PID (Proportional Integral Derivative) adjustments
Gumi	Adoption of screw compressor inverters	Lower base power rates as a result of reductions made in electricity expenses (based on comparative analyses of energy consumption)
Cheongju	Reduce energy consumption to improve the capacity of heat exchangers installed at the cooling filter system	Increase the capacity of heat recovery equipment and reduce warming and cooling expenses

01-3. Green Energy

Adoption of Green Energy

While interest is growing at home and abroad in the Renewable Energy 100% (RE100) initiative as a sustainable solution to reducing GHG emissions, businesses in Korea are facing limitations in using renewable energy due to the lack of systems and conditions that allow them to purchase such energy sources or certificates. To assist domestic corporations in introducing green energy, Samsung SDI proactively offered its feedback in the policy discussions held in 2018, and joined the green pricing pilot project led by the Ministry of Trade, Industry and Energy in 2019.
A wide array of green energy systems are also under consideration mainly among our overseas locations. In 2019, our Austrian corporation met 75% of its total power consumption needs through the use of renewable energy. Going forward, we will encourage each and every worksite to follow suit and embrace green energy.

Electric Vehicle and Bus Infrastructure Development

Samsung SDI formed a business partnership with the bus manufacturer ZYLE Daewoo Commercial Vehicle and the battery system company PMGROW in 2017 and has since been engaged in the development and production of electric buses. In 2019, we adopted the two-step electric bus developed as a result of this partnership for employee commuting at our Giheung worksite. This bus is equipped with the 187kWh-capacity battery developed by Samsung SDI, and capable of traveling nearly 200km per single charge. As a pure battery-powered electric vehicle, this bus also does not generate particulate matter while improving on noise and vibration. Furthermore, our Giheung worksite has installed EV charging infrastructure in its parking lot to enable employees to plug in their EVs for charging.

Electric bus used for employee commuting

Inside of the luggage compartment of a battery-powered electric bus

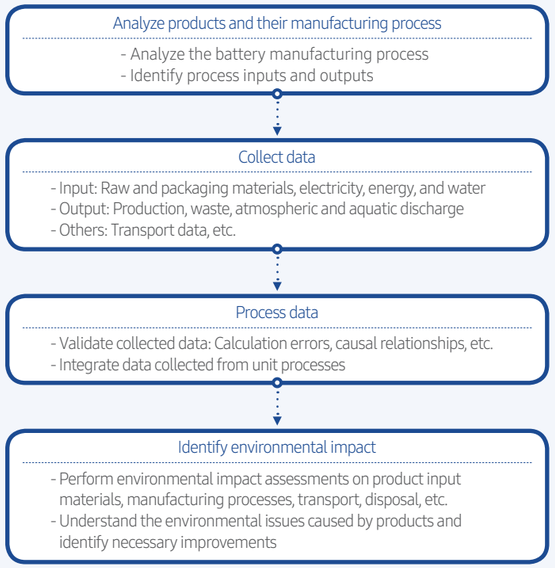
01-4. Management of Product Environmental Impact

Life Cycle Assessment (LCA)

Samsung SDI performs Life Cycle Assessments (LCA) to manage the environmental impact generated by its products. We identify the environmental load that inevitably occurs along the entire product life cycle from raw material sourcing to product disposal, and analyze its actual impact on the environment in order to develop improvement measures. Our definition of environmental impact extends from the local discharge of environmental pollutants to wider categories including global warming, the depletion of resources and energy sources, and ecological health.

The LCA process follows the principles stipulated by ISO14040/44. Environmental data on utility and energy consumed in the manufacturing and parts sourcing process is collected through our integrated energy and GHG management system (e-GEMS) while Bill of Material (BOM) data that shows the material composition of products as well as the environmental safety system (G-EHS) are used to calculate the input of materials and the output of waste. Such data is then fed back into the LCA system internally developed by Samsung SDI to identify our environmental impact, and assessment outcomes serve to develop strategies to minimize our environmental impact.

Battery Product LCA Process



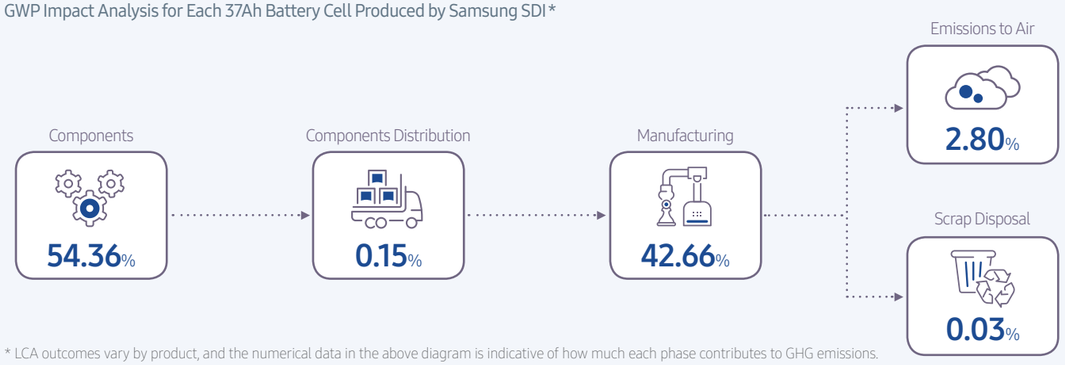
Categories of Environmental Impacts Analyzable through LCA

Global warming | Abiotic resource depletion | Acidification | Eutrophi-cation | Ozone depletion | Photo-chemical oxidation creation | Human toxicity | Freshwater aquatic ecotoxicity | Marinewater aquatic ecotoxicity | Terrestrial ecotoxicity

LCA Outcomes on Specific Mid-sized Battery Products

The following outlines the outcomes generated as a result of the LCAs performed on our battery cells, and specifies how much each impact factor contributes to the Global Warming Potential (GWP), one of the widely-used environmental impact indicators. Samsung SDI leverages such LCA results to formulate strategies to minimize the environmental impact its products generate.

GWP Impact Analysis for Each 37Ah Battery Cell Produced by Samsung SDI *



* LCA outcomes vary by product, and the numerical data in the above diagram is indicative of how much each phase contributes to GHG emissions.

01-5. Recycling

Background

Li-ion rechargeable batteries are part of our daily lives today and play an essential role in society, with the market posting skyrocketing growth rates. In proportion this rapid market growth, the generation of end-of-life batteries is also expected to increase dramatically. Presently, no internationally-applicable guidelines nor national regulations exist to govern the disposal and recovery of end-of-life Li-ion rechargeable batteries. Samsung SDI is keenly aware of its responsibility as a battery producer, and is currently recovering scraps generated at its plants as a way to promote recycling.

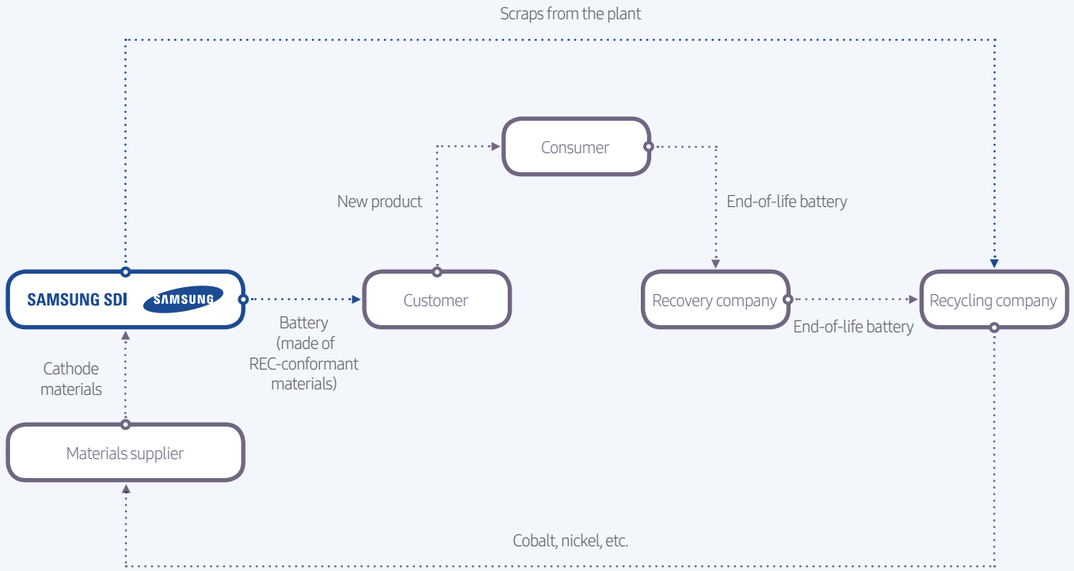
Achievements and Plans

In 2019, we established a scrap circulation system starting with our Cheonan worksite. Those scraps generated from the worksite are sent to professional recycling service providers and are recycled into cobalt sulfate. This is then delivered to materials suppliers each year, who, in turn, produce cathode materials and supply them to Samsung SDI. Going forward, we aim to expand the scope of a similar cooperative circulation system to other worksites in Hungary and Malaysia as well as our Ulsan worksite.

Resource Recovery Process

End-of-life batteries can be recovered in two distinctive ways: the first is to retrieve the scraps generated from the manufacturing process at the plant, and the second is to recover end-of-life batteries used by consumers in their disposal phase. Samsung SDI is closely cooperating with professional recycling companies to dispose of scraps generated from its plants. Once recovered, scraps undergo grinding and chemical treatment to be recycled as raw materials for major metals. We plan to consider potential partnerships with automotive OEMs to develop a closed-loop resource recovery system.

Samsung SDI's Resource Recovery Process



01-6. Climate-related Financial Disclosure

Countries across the globe agreed to keep the increase in global average temperature to below 2°C above pre-industrial levels through the Paris Climate Agreement in 2015, and this has given rise to increasingly stronger demand for GHG emission regulations and information disclosures on the part of industries.

In June 2017, the Task-Force for Climate-Related Financial Disclosures (TCFD) of the Financial Stability Board announced its recommendations on climate change information disclosures, and is currently providing a climate change information disclosure framework applicable to a range of sectors and regions. Samsung SDI assessed its status on 'governance', 'strategy (risk and opportunity)', 'risk management', and 'metrics and targets' on the basis of TCFD recommendations to present to its customers, investors and other stakeholders the sustainability of its business operations in relation to climate change issues.

To ensure the reliability of these assessments, we deployed the analysis methodology offered by 'ECO&PARTNERS2°C' and 'S&P Global Trucost'.

Assessment Item

Governance: Governance to manage the risks and opportunities of climate change

At Samsung SDI, its Board of Directors deliberates and decides on the major risk issues that may have grave impact on the Company.

Major issues and response strategies on climate change (use of renewable energy, GHG emission mitigation targets and strategies, etc.) are discussed and managed at the senior management level, including the Company CEO. Our Planning Team is responsible for identifying risks and opportunities across the sustainability management sectors including environment and society, and for developing risk management and response strategies. As the team is in charge of business strategy and investment operations, this facilitates the alignment between decision-making on climate change issues and our business strategy.

In addition, the EHS & Infra Team calculates GHG emissions generated from business operations and implements energy-saving tasks to help mitigate GHG emissions.

Strategy: Potential impact of climate change risks and opportunities on an organization's business, strategy, and finance planning

Risk Factor

To identify risk factors on climate change, we assessed impacts caused by 'transition risks' and 'physical risks'.

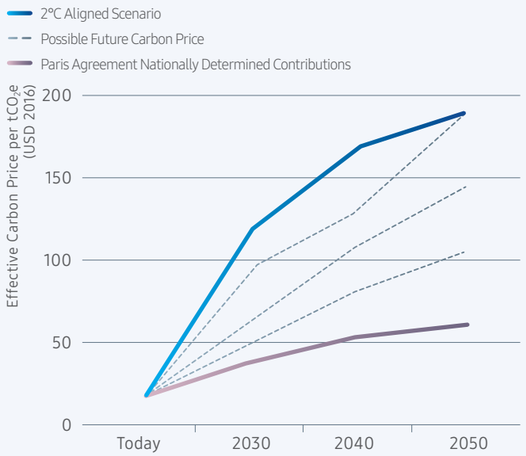
Transition risks refer to risks that may arise as a result of the transition towards a low carbon economy in the international community, and can be classified into policy risks, market risks, technology risks and reputation risks.

Policy risks include impacts that affect businesses as a result of carbon prices increasing due to tightening climate change regulations. We assessed these risks based on three carbon price pathways – a high price scenario (full implementation to meet the Paris Agreement goal of 2°C), a medium price scenario (future possible carbon prices), and a low price scenario (full implementation of countries' nationally determined contributions) as well as on future GHG emissions prospects.

While policy risks may not have significant financial impacts on Samsung SDI in the short term, their mid/long-term implications could expose us to additional carbon cost risks due to production increases in the growing EV battery and ESS markets and rising carbon prices. Therefore, this requires us to explore mid/long-term countermeasures to reduce our carbon emissions.

Market risks refer to the impact of climate change on our market demand. Samsung SDI believes that increases in carbon operation expenses at its major customers may not have sizeable impact on their product purchasing power.

Global Average Carbon Price Scenario Analysis to Meet the 2°C Paris Agreement Goal



* Source: IEA and IRENA (2017); Trucost Analysis. Data as of Jun. 2017

Technology risks could occur when existing products and services migrate to their low-carbon versions or existing products are replaced with low-carbon substitutes. As Samsung SDI offers low-carbon products and services, including EV batteries and ESS, and continues to expand R&D investments in such green offerings, our exposure to technology risks is considered low.

As to physical risks, abnormal weather conditions caused by global warming may expose our Chinese and Korean worksites to the impact of heat waves, fires, and floods (inundation) while our Hungarian worksite that serves as the key production base of EV batteries faces low risks.

Risk Analysis Outcomes

Risk		Expected Impact	Risk Impact: Short-term (0-1 year)	Risk Impact: Medium-term (1-5 years)	Risk Impact: Long-term (5 years and beyond)	Assessment Basis
Transition Risk	Policy	Increasing climate-related policy and regulatory risks	Low	Low	High	Samsung SDI GHG emission prospects and future regional carbon prices based on climate change scenarios * Analytical tool: S&P Trucost
	Market	Low impact of climate change on the financial status of major customers	Low	Low	Low	Financial impact assessments on customer industries and major customers * Analytical tool: S&P Trucost
	Technology	Low risk in consideration of low-carbon product and service offerings and R&D investments	Low	Low	Low	Ratio of sales in low-carbon related industries, ratio of investments in and R&D on low-carbon technology * Analytical tool: S&P Trucost
Physical Risk	Precipitation and Inundation	Risk of floods due to increases in average global temperature	Low	Low	Low	Risk impact assessments made in consideration of the regional proportion of business locations * Analytical tool: Think Hazard index
	Heat Wave	Rising expenses to maintain the operational conditions of manufacturing	Low	Low	Medium	Risk impact assessments made in consideration of the regional proportion of business locations * Analytical tool: Think Hazard index

Opportunity Factor

Samsung SDI provides high-capacity, high-density EV batteries and ESSs that are connectable with renewable energy to contribute to the transition towards a low carbon economy. As the low carbon industry serving a pivotal role under the 2°C Aligned Scenario, the battery industry is expected to witness an enormous increase in global demand by 2030, and this will further add to opportunity factors.

Risk Management and Target Setting

Samsung SDI is making use of the outcomes of assessments performed in accordance with TCFD recommendations to minimize climate change-related risks while maximizing opportunities.

First of all, we plan to realign our climate change-related organization and work process to strengthen senior management reporting and working-level consultations. We will also finetune the identification and assessment of climate change risk factors as well as the GHG monitoring system and management indicators.

Furthermore, mid/long-term GHG emission mitigation targets will be set in consideration of TCFD assessment outcomes and mid/long-term business strategies, and phase-specific implementation strategies will be developed accordingly.

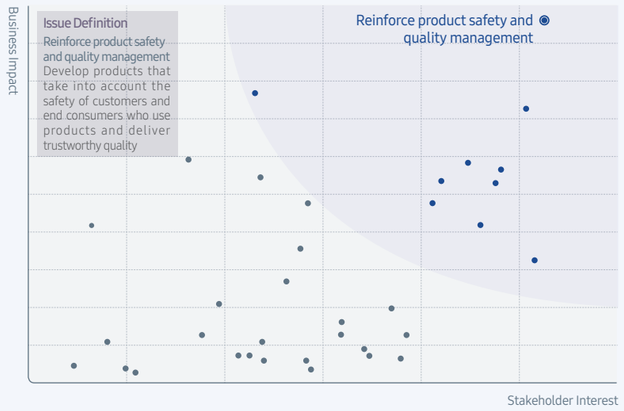
Product Safety

02

Background Behind the Selection of the Issue

While the focus was placed on fulfilling customer requirements on product safety and quality over the years, businesses today need to exceed customer expectations by applying internal standards that are more stringent than international safety and quality standards and specifications and by proactively advancing product safety and quality management. This is possible when they establish a safety and quality management system that spans the entire process from raw material sourcing and management to product design, manufacturing and disposal. In particular, those industries that deploy rechargeable batteries consider exceptional safety performance as their top priority and the most essential requirement.

Alignment with Samsung SDI's 2019 Material Sustainability Issues



Samsung SDI's Response to the Issue

Samsung SDI analyzes market requirements and consumer needs to provide the optimal batteries and electronic materials. This naturally prompts us to develop products that deliver quality and safety under diverse use conditions. Specifically, we strengthened our pre-verification, accelerated verification, and certification process to ensure swift and accurate quality verifications and robust designs in so doing while pursuing uniform quality throughout our entire global operations through preemptive change management and the thorough verification of mass-producibility. To this end, we nurture quality professionals to secure quality expertise in respective areas.

Benefits Expected through Response to the Issue

Customers
Improve product safety and quality to expand the existing transactions and establish new business transactions, and strengthen customer trust

Partner companies
Improve partner companies' product safety and quality competitiveness to establish a sustainable supply chain

Employees
Nurture product safety and quality professionals through support for employees' capacity-building

Samsung SDI's Management System

2019 Achievements

(●: Achieved, ◐: Partially achieved, ○: Under preparation)

KPIs		Unit	2019 Target	2019 Achievement	Level of Achievement
Certified national quality experts (cumulative)		No. of persons	240	240	●
Ratio of quality management auditors	ISO 9001	%	21.3	21.7	●
	IATF 16949, VDA6.3, etc.	%	34.8	47.5	●

Contribution to the Sustainable Development Goals

4 QUALITY EDUCATION

4.4
Offer quality training to domestic and overseas corporations to help employees strengthen work capacity on product quality and safety

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

12.6
Manufacture products in accordance with internal quality and safety policies, and periodically report on this

Management Strategy and Approach

Quality Management Strategy

Samsung SDI places product safety and quality first, and supplies products that cater to customer needs through close mutual cooperation. Our quality innovation spans both the development and mass-production phases to establish a company-wide quality operation system in order to deliver product safety. In 2019, our battery business improved the verification of specification and design conformance for materials and semi-finished products to promote the upward standardization of small/medium-sized battery quality and to secure product safety. Notably, our efforts were focused on ensuring the uniform quality of products through manufacturing standardization and automation.
Our Electronic Materials Business has reinforced raw material management concerning metals, impurities, and residual solvents to secure quality upfront. To this end, evaluation techniques were supplemented and quality improvement was strengthened of impurities, residual solvents and secondary materials.

Quality Management System

Samsung SDI operates its development (PLM), manufacturing (MES) and quality (IQMS, LIMS) systems in accordance with such quality management system standards as ISO 9001 and IATF 16949. Furthermore, we are in full compliance with our 8-Step Quality Process and in constant search for necessary improvements to make progress continuously.

8-Step Quality Process

Quality Management Code of Conduct

Deliver value to customers to earn their trust

We enhance customers' value by lending an attentive ear even to their potential needs and fully reflecting them in our products. We address the Voice of Customers (VOC) in a speedy, accurate and cordial manner to forge close and trust-based partnerships with customers.

Place the environment and safety first

We believe that product quality is a matter of our collective conscience and thus can never be compromised. As such, we faithfully comply with international environmental management standards, and value quality awareness and responsibility in accordance with our Zero Defect philosophy in order to put customer safety first.

Continuously improve the quality management system and process

Samsung SDI's quality management policy is in compliance with ISO 9001 and IATF 16949. We clearly define, strictly follow and continuously improve phase-specific procedures and judgment criteria of our development (PLM), manufacturing (MES), and quality (IQMS, LIMS) systems as well as the 8-Step Quality Process.

02-1. Commitment to Improved Product Safety

Proactive Safety and Quality Assurance

Samsung SDI's safety and quality management spans the entire product life cycle from raw material sourcing to delivery to customers. Specifically, we have reinforced our preliminary quality verification methodology to ensure design robustness and development completeness while expanding the coverage of verification assessments. While we were more focused on manual inspections such as safety verifications performed under real-life customer environments and harsh conditions of use, we have switched gears in our safety and quality management with the introduction of preemptive inspection methodology. Furthermore, design risks are verified even from the development phase: in developing new products, previous failures are reflected in conducting design verifications based on Quality Failure Mode and Effect Analysis (Q-FMEA) and new assessment methodology is adopted. In addition, we identify and manage critical safety factors to secure safety-related quality for our global mass-production operations, and establish a statistics-based quality management system to strengthen monitoring for preemptive quality management.

Strengthened Quality Assurance

Our Electronic Materials Business established quality assurance test methodology to deliver stable quality on the mass production of new products in 2019. To further improve quality assurance on existing products, test methodology that imitates customer processes was also developed.

Statistics-based Quality Management System

Samsung SDI is reinforcing statistical data analyses to improve its process capacity on major process factors that are related to product safety. Notably, positive results were demonstrated through the adoption of a quality system by our Battery Business to detect process variations through statistical analyses and generate early alerts on the signs of anomaly affecting processes and equipment, and its application is underway for our Automotive & ESS Business.

02-2. Strengthening Product Safety and Quality from the Customer Viewpoint

Products that Reflect Customer Feedback

Samsung SDI manages Voice of Customers (VOC), customers' defect rates, and other customer-related items as its management Key Performance Indicators (KPI) to improve product quality competitiveness. Customer feedback is collected through diverse communication channels, and such feedback is uploaded and managed within our system to conduct item-specific analyses and make necessary improvements. This VOC handling system is operated separately at respective business divisions.
Our battery business manages such effective customer indicators as customer inline defects and process defect rates to promptly review customer issues. This allows us to better identify customer issues and make theme-based improvements on customer issues. Specifically in 2020, a quality innovation task force is up and running through cooperation between respective business divisions and the manufacturing center to analyze chronic defect issues for each product type and customer and focus our efforts on their improvement and to reinforce the competitive edge of our cylindrical battery products.
Our Electronic Materials Business adopted the quality issue management system dubbed 'Focus 119' to monitor in real time those quality issues that occur in the product use phase. This is systematically complemented by the development of improvement measures.

Customer Satisfaction Score by Business Division in 2019
(unit: Point)

* As there are various types of products among businesses dealing with electronic materials, there is no overall score for customer satisfaction

Customer Environment Test (CET)

We have raised the bar on our Customer Environment Test (CET) operation to secure performance stability while minimizing risks in the product use phase that may occur due to the diversification of battery-powered applications. CET aims to improve safety risks by reviewing product use conditions upfront. While the widely-adopted practice is to apply a company's own quality standards, CET examines the appropriateness of cell applications under the conditions set by customers. Jointly analyzing customers' new products as well as product use environments or design conditions of new customers, Samsung SDI delivers cell products in their optimal conditions. This, in turn, helps prevent fires experienced by consumers due to their improper product use and large-scale quality incidents caused by misdesign or miss-matching on the part of customers.
In 2020, four categories were chosen internally to receive intensive management - waterproofness, overdischarge, imbalance, and charging conditions – with an aim to prepare for any safety incidents that may occur in relation to e-kick scooters and other micro-mobility modes. For concerned requirements, we offer guidance to companies adopting Samsung SDI cells in producing battery packs to fully comply with such requirements.
To cater to customer needs to swiftly deploy our products, we are improving and systemizing our CET process with a goal of reducing our CET response lead times by 30% within 2020.

Strengthened Management of Product Environmental Performance

Our Electronic Materials Business mainly produces materials that are consumed for the manufacturing of semiconductors and displays, among others. We are managing these materials for their containment of hazardous substances as well as the content of these substances in case they are included in accordance with the product environmental standards required by our customers who produce semiconductors and displays. In the event that product raw materials contain hazardous substances, we focus on their reduction or elimination from the development phase. In managing the content of such hazardous chemicals, we apply standards that are even more stringent that domestic/international environmental regulations to fully assist our customers in manufacturing eco-friendly products and improving their occupational safety.

Customer Satisfaction Management and Improvement

At Samsung SDI, respective business divisions perform detailed surveys to identify customer satisfaction, and monitor a range of indicators including R&D capacity, service, and delivery as well as product quality. In particular, customer feedback collected during the survey period is reviewed in the post-mortem meetings hosted by respective business divisions to take a second look at all aspects of the issue that has occurred. This enables them to learn about vivid feedback from customers on their product and service quality and to understand the current status quo and set directions for future improvements.
In our small-sized Li-ion battery business, Customer Satisfaction Index (CSI) surveys were performed on 21 major customers in 2019 to analyze their complaints and make necessary improvements in respective categories including quality characteristics and quality satisfaction performance. Our Electronic Materials Business surveyed its customers on the five categories of quality, technical support, development capacity, supply, and sales response to identify issues and improve on them.

02-3. Expansion of Quality Improvement Support

Support for Partner Companies with Quality Improvement

In 2019, we expanded the application of our partner company quality management system and this helped our partner companies to detect process and quality anomalies to prevent quality incidents accordingly.
Our battery business is advancing its partner company quality management system to establish infrastructure that allows for system-based quality management across all partner companies. In parallel, periodic quality consultations will be made with partner companies to help them deliver stable quality. For partner companies who have overseas presence, we offer them stabilization support early on to upward standardize their quality level. Our Battery Business assisted its partner companies in need of their own automotive quality management system (IATF 16949) to develop such a system, and our Automotive & ESS Business supported partner companies with the resolution of chronic defect issues through task force operation to improve on defects that stem from improper management.
Our Electronic Materials Business organized a dedicated unit to provide technical support to overseas partner companies for their quality improvement and management in response to the growing demand for mobile and IT device polarizing films. In particular, it is cooperating with raw material suppliers on quality assurance in order to control the foreign substances found in polarizing films and impurities contained in raw materials.

Support for Overseas Corporations with Quality Improvement

Samsung SDI is focused on the improvement of mass production quality with a goal of building a sustained strong global competitive edge through the upward standardization of quality across the entire domestic and overseas production bases.
Our Automotive & ESS Business continues to send its mass production quality management experts to our Hungarian corporation which initiated mass production in 2018 to support its quality stabilization, and offers stage-specific training to staff in Hungary to further localize its quality management operation. To help Korean partner companies who joined our entry into the Hungarian market to achieve and stabilize IATF 16949, our Headquarters sent component quality experts to support them with quality training, process improvement, and quality system development so that these locally-based partners can establish their own quality management process and become a self-sustaining business.
Our Electronic Materials Business hold meetings attended by Korean experts to help employees at overseas corporations improve their work skills. Professionals in the areas of manufacturing, technology, and quality at the Cheongju worksite transfer their know-how on manufacturing polarizing films to locally-hired staff and expatriates, and host discussions on problem-solving as a way to disseminate quality improvement practices to our overseas corporations.

Improve the quality of mass-production with a goal of continuously strengthening global competitiveness through the upward standardization of quality across the entire production bases in Korea and abroad

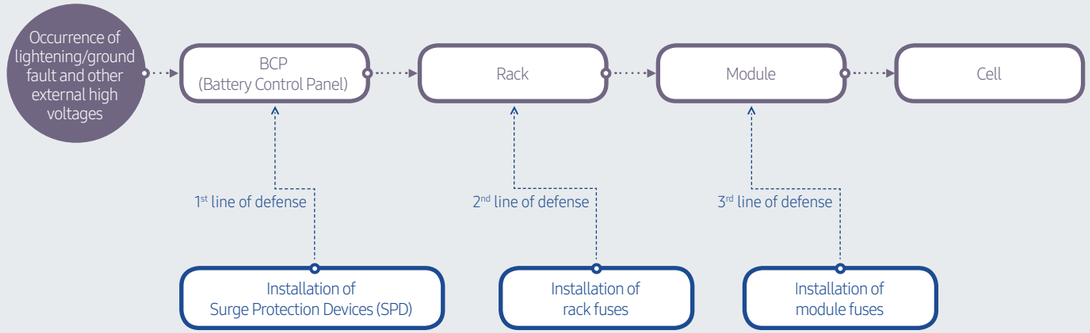
SPECIAL SECTION

02-4. ESS Safety Improvement

Fuse and Sensor Installation to Prevent Externally-Applied High Voltages/Currents

When high voltages are externally applied as in the case of lightening, ground faults, or abnormal voltages affecting the Power Conditioning System (PCS), Battery Control Units (BCU) suffer damages and short circuits. Such occurrence of high voltages may cause fires, which could spread to battery modules and even to cells. To prevent any and all possibility of fires, Samsung SDI has established a triple defense system for its ESS offerings to fundamentally prevent externally-applied high voltages from causing fires.

Triple Fire Defense System



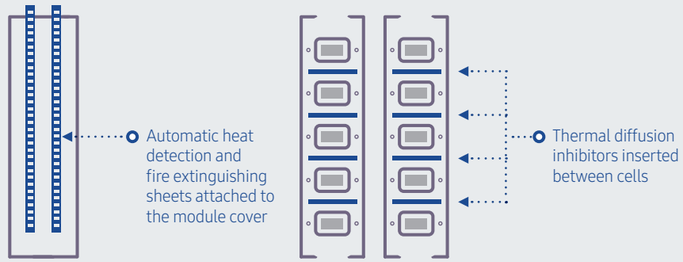
Firmware Upgrade to Detect Seemingly Defective Cells and Initiate Automatic Shut-off

We continuously upgrade the firmware installed to detect seemingly defective cells and initiate automatic shut-off upon the detection of such defects in order to strengthen the safety of our products. This firmware is specifically upgraded to discover abnormal cells early on and set off the emergency suspension of battery operation in the event of anomalies. The version released in April 2019, compared to its predecessors, has adopted more elaborate and stringent criteria on voltage difference detection, low voltage protection and others. This also comes with an added function of halting the operation of the entire ESS even when anomalies occur in a portion of the modules. In 2020, we plan to develop a real-time remote cell monitoring system to impose tighter fire controls.

Recovery of Battery Modules in Korea to Equip Them with Firebreaks

To fulfill its responsibility for product safety as a manufacturer, Samsung SDI recovered the battery modules installed at all domestic sites regardless of occurrence of fires or their causes and then equipped them with firebreaks. These firebreaks adopted automatic heat detection and fire extinguishing sheets so that fire extinguishing agents could be sprayed if the temperature reaches 120°C (cell-level thermal runaway occurs in the ranges of 150~160°C). In addition, thermal diffusion inhibitors were inserted between cells to prevent thermal spread. These upgraded firebreaks will be applied to installed battery modules for eight months between October 2019 and May 2020, and new products whose shipment started from September 30, 2019 are equipped with these fire prevention devices during their shipment phase.

Battery Module Firebreaks



Sustainable Supply Chain

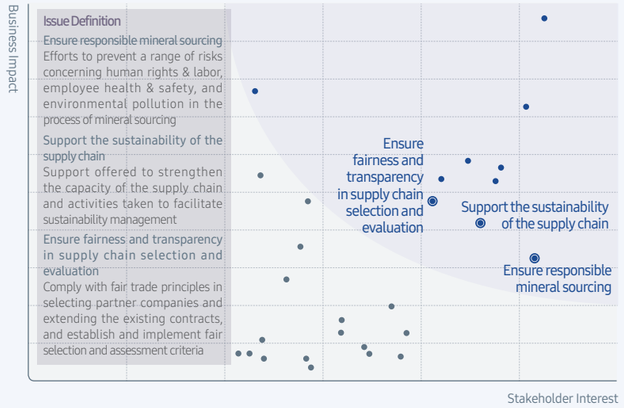
03

Background Behind the Selection of the Issue

Building a global supply chain through close cooperation with competitive business partners is increasingly gaining importance as a key factor to secure a strong competitive edge. In line with the globalization of the supply chain, numerous businesses are facing more diverse risks and this is emerging as a new type of risk for them. Furthermore, international regulations and stakeholder requirements are also increasing in relation to social responsibility along the supply chain.

All of such changes urge companies to comply with all applicable laws and regulations in the areas where their business partners operate, identify and improve on risks in the areas of economy, environment, and society, and lay the basis to seek shared growth with business partners.

Alignment with Samsung SDI's 2019 Material Sustainability Issues



Samsung SDI's Response to the Issue

Samsung SDI aims to create a virtuous cycle within the business ecosystem as a way to pursue shared growth as a global leader. As such, we are establishing fair trade practices to assist partner companies in strengthening their capabilities and seek sustained growth in so doing. As the fulfillment of social responsibility emerges as an essential risk factor that concerns the competitive edge of the supply chain, we are operating the S-Partner system to identify and improve supply chain risks in the areas of human rights & labor, ethics, environment, and health & safety. We are also cooperating closely with customers, partner companies, and stakeholders working in relation to industry initiatives in order to secure transparency across the entire supply chain, from mineral mining to processing and sourcing.

Benefits Expected through Response to the Issue

Customers
Meet customer needs by fulfilling social responsibility along the supply chain

Partner companies
Secure and retain top-performing partner companies through support for fair trade practices and win-win cooperation

Governments
Prevent the imposition of penalties and sanctions through regulatory compliance

Local communities and civic organizations
Fulfill social and environmental responsibility in mineral sourcing to earn trust from local communities and civic organizations and elevate corporate reputation

Shareholders and investors
Fulfill social responsibility along the supply chain to minimize relevant risks

Samsung SDI's Management System

2019 Achievements and 2020 Targets

(●: Achieved, ◐: Partially achieved, ○: Under preparation)
* The S-Partner certification target for 2020 is primarily for overseas partners, and thus has been lowered from the previous year's target
** Including smelters and refiners currently receiving third-party audits

KPIs		Unit	2019 Target	2019 Achievement	Level of Achievement	2020 Target
Shared Growth	Finance support	KRW 100 million	Continued expansion	594	●	Continued expansion
	Support for talent development	No. of persons	1,120	821	◐	1,000
Social Responsibility	S-Partner certification	No. of certifications awarded	90	90	●	60*
	Third-party audits on cobalt smelters and refiners **	%	-	88	-	100

Contribution to the Sustainable Development Goals

8 DECENT WORK AND ECONOMIC GROWTH

8.7
Efforts to prevent the issues of human rights and health & safety in sourcing graphite, cobalt, and other conflict minerals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

12.2
Conduct RCOIs and third-party audits on cobalt, conflict minerals and any other minerals used for battery production

Management Strategy and Approach

Definition of Partner Companies

Samsung SDI classifies its supply chain partners into first, second, and third-tier partners and manages them accordingly. Specifically, suppliers of raw materials used for product manufacturing are recognized as a main component of the supply chain and they receive intensive support to promote shared growth and ensure fair trade. First-tier partners are defined as the suppliers of raw materials and parts that are consumed to manufacture Samsung SDI's components and products, and second/third-tier partners are those who supply raw and subsidiary materials to first-tier partners.

Supply Chain Risk Management

To make sure that our partner companies manage their social and environmental risks, we set forth the Supplier Code of Conduct and made it mandatory for all our partner companies to comply with this set of standards.
In case of any violation of the Supplier Code of Conduct, concerned partners are recommended to take improvement measures, and if such violations continue to occur or no improvement is made, restrictions are imposed on future transactions with them.
To promote transparency and fairness in selecting and managing partner companies, written assessments and on-site audits are performed, and this allows us to manage such non-financial risks as workplace safety, environment and labor rights as well as financial status, production capacity, and quality.
In addition, our S-Partner certification system enables us to monitor partner company risks in the areas of labor, ethics, environment, and health & safety, and to make necessary improvements as a way to fulfill our social responsibility along the supply chain.

Supplier Code of Conduct

Any and all partner companies who do business with Samsung SDI are obligated to comply with the 'Samsung SDI Supplier Code of Conduct' that presents behavioral guidelines on the aspects of human rights, labor, health & safety, environment, and ethics. The code is based on the Responsible Business Alliance (RBS) Code of Conduct and on ILO and ISO standards. Each and every partner company is required to sign the agreement to observe the Supplier Code of Conduct in concluding contracts with Samsung SDI.

2020 Win-Win Cooperation Promotion Plan

03-1. Compliance with Fair Trade Principles

Fair Trade Policy

To establish reasonable and fair trade practices, we make it a rule to use standard contract forms in doing business with partner companies, and observe the following four principles in proceeding with the contract process.

4 Action Principles

- Execution of desirable agreements
- Fair selection and registration of partners
- Operation of unfair trade practice prevention and monitoring systems
- Issuance and retention of written agreements

Expanding Fair Trade among First, Second, Third-tier Partners

Samsung SDI's endeavors to create a culture of fair trade extend beyond its first-tier partners and into second/third-tier partners. Notably, official documents calling for cooperation are sent and relevant notices are made at diverse events to encourage the signing of standard subcontract agreements between first and second-tier partners, and the application of such agreements is monitored. We also support partner companies in concluding the fair trade agreement and guide them in improving payment criteria so that payments could be made in cash within 30 days.

2019 Performance in Supporting the Signing of the Fair Trade Agreement

Category	Performance
Samsung SDI – First-tier partners	109 partners
First-tier – second-tier partners	120 agreements
Second-tier – third-tier partners	42 agreements

03-2. Capacity-Building for Partner Companies

Support for Innovative Manufacturing Competitiveness

The increasing global demand for Energy Storage Systems (ESS) highlights the need for a stable supply chain. This prompted us to support PowerLogics, our long-time partner company, to build its Battery Management System (BMS) for ESS applications in 2019. The BMS is responsible for gauging the environment through the information gathered by sensors and controlling the battery to maintain its optimal state.

Samsung SDI and PowerLogics joined hands to undertake innovation tasks designed to 'establish a production line with proven quality and productivity' and 'stabilize its operation early on'. This resulted in the completion of 43 out of a total of 46 tasks related to quality, productivity, and equipment automation (three uncompleted tasks were confirmed not applicable following reviews made by Samsung SDI's relevant departments).

Innovation Task Execution Outcomes

Category	Completion	Total
Quality	91.7%	93.5% completed
Productivity	93.3%	
Automation	100%	

Support for Partner Companies to Provide Employment for Youth

Leveraging the training system and top-tier infrastructure available at our Consortium for HRD Ability Magnified Program, we assist partner companies in building their employee capacity. Courses that address 22 topics including job skills, quality management, process management, and business administration are provided to help partner companies strengthen their competitive edge. In 2019, this training initiative was joined by 821 employees at 111 partner companies, and 7 partner companies were able to create jobs for 70 persons through the nurturing of specialized workforce.

Benefit Sharing System

Under the benefit sharing system, companies placing orders and companies receiving such orders collaborate in diverse ways to attain the set common goal, and share the benefits generated accordingly. This system enabled Samsung SDI to identify and undertake eight tasks with six partner companies in the first and second half of 2019 respectively. The goals, defined to reduce defect rates, increase production quantity per man hour, and improve quality, were all reached and partner companies secured their manufacturing competitive edge through the productivity gains achieved.

03-3. Laying the Basis for Sustained Growth

Samsung SDI Partners' Association

The Samsung SDI Partners' Association (SSP) aims to expand interactions between Samsung SDI and its partner companies. The 8th SSP consisted of 38 partner companies in the three subcommittees of materials, components and equipment. Association activities launched by these 38 members include general meetings, overseas benchmarking, seminars, subcommittee meetings, and Shared Growth Day events, and they serve to encourage partner companies to share information and build on this to create business opportunities.

Support for Smart Factory Benchmarking

In 2019, we assisted partner companies from different industries in benchmarking each other to help them improve sustainability. These partners were given an opportunity to visit SHINSUNG E&G and Youngsin Metal Industrial that operate Korea's leading smart factories to learn their process management methodology. This was intended to ensure that participating companies apply the lessons learned through benchmarking to transform their plants into smart factories to ultimately build a stronger competitive edge. Such benchmarking support will continue in the upcoming years.

Smart Factory Benchmarking Outcomes in 2019

Category	Youngsin Metal Industrial Co., Ltd.	SHINSUNG E&G
Business Overview	Produce bolts and screws and supply them to domestic and overseas car OEMs	Manufacture products related to high-efficiency solar cells and clean rooms
Strength	- Introduce the MES → share equipment's operational state and status in real time → automate product measurement and documentation	- Korea's first energy self-sufficient plant - ICT-powered intelligent shop floor
Participant	27 persons, 21 companies	30 persons, 17 companies


Smart factory benchmarking

S-Partner Certification System

Our S-Partner certification system targets new partner companies and major raw/subsidiary material suppliers. They are provided with annual training to raise their sustainability awareness, and receive biennial assessments on their compliance with our 'Supplier Code of Conduct' which is based on the Responsible Business Alliance (RBA) Code of Conduct. Specifically for such critical categories as child labor, forced labor, pollutant discharge, and environmental approval, the zero tolerance principle is applied to demand their thorough compliance.
Prior to on-site audits performed by external professional consultants, our new partners and all major raw/subsidiary material suppliers are required to conduct self-assessments. This is followed by on-site audits led by external professionals, and re-audits are performed for those who failed to meet mandatory compliance requirements or the set score threshold. For issues in need of improvement identified as a result of on-site audits, partner companies are required to submit their improvement plans within one month. In 2019, these audits were conducted on 70 domestic and 20 overseas partners, and all of them either maintained or achieved the S-Partner certification. This includes four partners who ranked at the bottom in 2018 and thus received re-audits.

S-Partner Certification Assessment Outcomes in 2019

(unit: No. of companies)

Category	Certification Terminated	New	Re-audit	Total
Domestic	50	16	4	70
Overseas	20	-	-	20
Total	70	16	4	90

S-Partner Certification Maintained/Achieved

S-Partner Certification **100%**

Major Improvement Items in 2019

1. Environment

- Effluent and solid waste management programs and procedures
- Six major GHG management and documentation

2. Environment/health & safety system

- Business Continuity Planning (BCP) on core business operations

3. Health/safety

- Procedures to protect workers from high-risk machinery
- Provision of protective gear for safety hazards and creation of relevant supporting documents
- Appropriate placement of fire and emergency response manuals prepared in working languages
- Compliance with MSDS (Material Safety Data Sheet) requirements

4. Labor

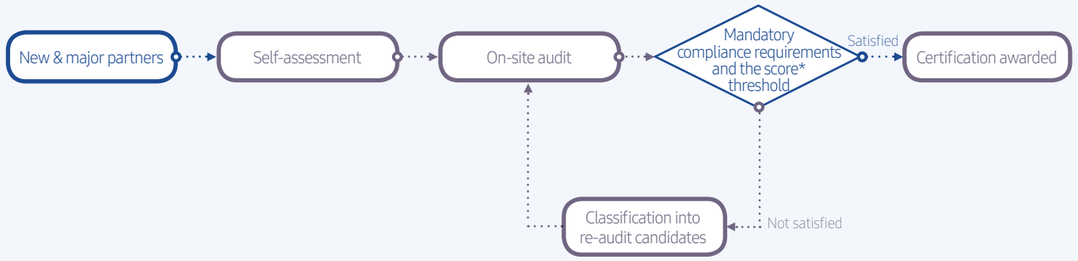
- Operation of procedures to verify the forced imposition of compulsory labor and human trafficking
- Operation of regulations for disciplinary purposes concerning penalties and pay cuts
- Operation of grievance-handling regulations to address sexual harassment or threats against employees

5. Ethics

- Assessment of compliance with ethical regulations and other requirements and operation of regular internal audits

S-Partner Certification Assessment Process

* 70 points for new partners, 80 points for existing partners



03-4. Responsible Mineral Sourcing

Samsung SDI is committed to the sustainable and ethical sourcing of minerals and the establishment of responsible sourcing practices along the supply chain.

Policy

In 2017, Samsung SDI established the zero tolerance principle concerning responsible mineral sourcing in conformity with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, and revised and announced its Partner Code of Conduct accordingly. We have since monitored all our raw/subsidiary material suppliers for their compliance with our responsible mineral sourcing policy.
In addition, annual training, meetings, notices, and other diverse methods are used to publicize our policy and improve awareness among internal/external stakeholders including customers, investors, senior management and the purchasing department as well as partner companies.

Responsible Mineral Sourcing Initiative

In May 2020, Samsung SDI joined the Responsible Minerals Initiative (RMI) to make concerted efforts with the international community to improve mineral sourcing practices and to utilize diverse information on high-risk minerals concerning their smelters and refiners as well as their place of origin. Founded in 2008, the RMI is responsible for tracing and investigating four major conflict minerals (gold, tin, tantalum, and tungsten) for their country of origin and smelters and refiners, and for operating the smelter and refiner certification program led by third-party audits. Our RMI membership will allow us to harness the information and resources provided by the organization in complying with global standards, including but not limited to the OECD Due Diligence Guidance, in order to launch more systemic activities to advance responsible mineral sourcing in the upcoming years.

Cobalt

Cobalt, a raw material used to manufacture smartphones and EV batteries, is experiencing a sharp increase in demand recently. This critical commodity, however, is giving rise to social responsibility issues globally that occur in its mining and production process mainly in the Democratic Republic of the Congo (DRC).

In particular, small-scale artisanal cobalt mines are exposed to a wide range of risks, from child labor, human rights abuses, lack of protective gears that ensure the safety of workers, and safety incidents to health issues, air and water pollution, and bribe-taking.

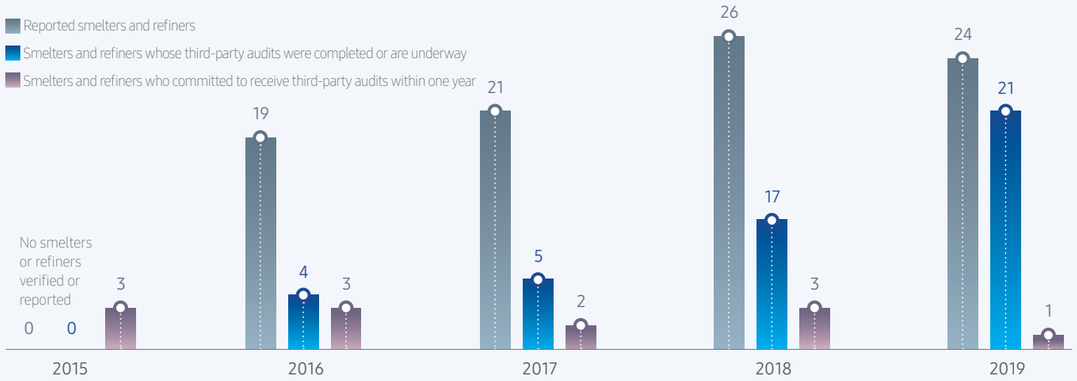
Traceability of the Supply Chain

Each year, Samsung SDI assesses all of its suppliers using cobalt through the application of RMI's Cobalt Reporting Template (CRT) to ensure traceability and transparency of its cobalt supply chain. In 2019, a survey was conducted on all 20 partner companies that supply raw and subsidiary materials containing cobalt and the response rate amounted to 100% while a total of 24 smelters and refiners were verified. Going forward, we plan to use information from external initiatives and perform on-site audits on partners to further validate the consistency of survey outcomes in order to establish full traceability of our cobalt supply chain.

Third-Party Audit

Samsung SDI aims to ensure that all its verified smelters and refiners complete either the third-party audits performed by the RMI or other corresponding independent audits. To this end, we send official documents or hold meetings to strongly demand that all smelters and refiners who have yet to join the RMI Responsible Minerals Assurance Program (RMAP) to participate in this program designed to conduct third-party audits on smelters and refiners. Out of 24 smelters and refiners assessed in 2019, three of them are RMI-Conformant, and 16 of them are included in the active list and currently engaged in the RMAP process. Out of five smelters and refiners who are neither RMI-Conformant nor included in the active list, two of them were reported to have completed corresponding independent third-party audits.

Y-o-Y Trajectory of Cobalt Smelters and Refiners along the Samsung SDI Supply Chain



Reported Cobalt Smelters and Refiners

Cobalt Smelters and Refiners	Country
01. Ambatovy	Madagascar
02. Chemaf Etoile	Democratic Republic of the Congo
03. Chemaf Usoke	Democratic Republic of the Congo
04. Ganzhou Yi Hao Umicore Industry Co., Ltd.	China
05. Ganzhou Tengyuan Cobalt New Material Co., Ltd.	China
06. Gem (Jiangsu) Cobalt Industry Co., Ltd.	China
07. Guangdong Jiana Energy Technology Co., Ltd.	China
08. Hunan Yacheng New Materials Co., Ltd.	China
09. Hunan Zoomwe New Energy Science & Technology Co., Ltd.	China
10. Jiangsu Xiongfeng Technology Co., Ltd.	China
11. Jiangxi Jiangwu Cobalt industrial Co., Ltd.	China
12. Jingmen GEM Co., Ltd.	China
13. JSC Kolskaya Mining and Metallurgical Company (Kola MMC)	Russia
14. Kamoto Copper Company	Democratic Republic of the Congo
15. Lanzhou Jinchuan Advanced Materials Technology Co., Ltd.	China
16. New Era Group Zhejiang Zhongneng Cycle Technology Co., Ltd.	China
17. Quzhou Huayou Cobalt New Material Co., Ltd.	China
18. SungEel HiTech Co.,Ltd.	Republic of Korea
19. Tianjin Maolian Science & Technology Co., Ltd.	China
20. Umicore Finland Oy	Finland
21. Umicore Olen	Belgium
22. Vale	New Caledonia
23. ZheJiang Huayou Cobalt Co., Ltd.	China
24. Zhuhai Kelixin Metal Materials Co., Ltd.	China

Reported Countries of Origin

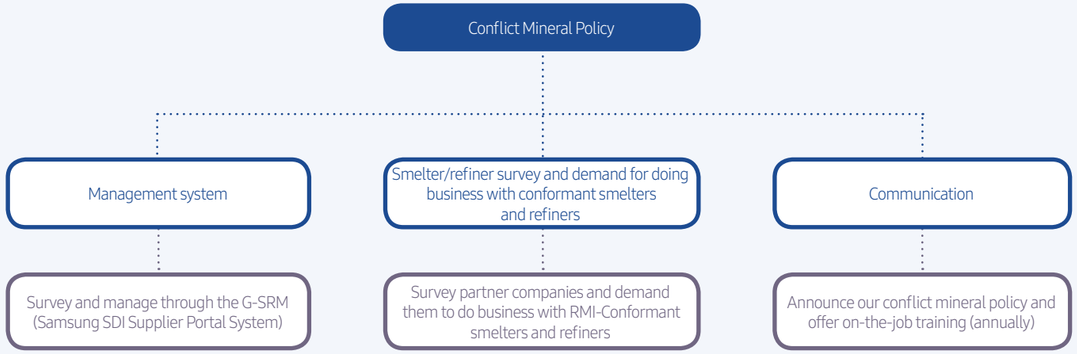
1	Australia	2	Democratic Republic of the Congo	3	New Caledonia	4	Madagascar	5	Russia

‘Cobalt for Development’ Project

In 2019, Samsung SDI announced in its sustainability report that the Company joined hands with likeminded companies to launch the Cobalt for Development Project, a privately financed partnership project intended to improve on the issue of small-scale artisanal mines in Democratic Republic of the Congo (DRC). The aim of this project is to provide better working and living conditions for artisanal cobalt mines and their surrounding communities. To this end, training will be provided and the dissemination of personal protective equipment will be expanded to create a better working environments. In the nearby community, the project is carrying out capacity development activities on financial literacy and alternative incomes.

Conflict Minerals

Conflict minerals refer to Tantalum, Tungsten, Tin and Gold (3TG) that are sourced in conflict-affected zones in Africa, and are often used to fund armed groups and known to cause severe human rights infringement and environmental pollution in their mining process. To fundamentally resolve these issues, the Dodd–Frank Wall Street Reform and Consumer Protection Act enacted in the U.S. back in 2010 made it mandatory to trace and report the countries of origin for such conflict minerals extracted in conflict areas in order to curb the direct/indirect funding of armed groups. To respond to the request of the international community on these conflict mineral issues, Samsung SDI established its own policy to ban the use of conflict minerals as well as a system to survey and manage its supply chain. This system enables us to gauge the current status of our supply chain by surveying our partner companies every year on their smelters and refiners, and we strongly demand that each and every partner does business with RMI-Conformant smelters and refiners. As a result of the survey performed in 2019, all smelters and refiners of 3TG used for Samsung SDI products were fully conformant with the RMI certification standards.



Management of Controversial Minerals

The mineral mining process gives rise to a wide range of issues on human rights and environmental degradation as demonstrated by environmental contamination observed in the vicinity of Chinese graphite mines and water shortages experienced at salt lakes used for lithium extraction in Latin America, in addition to conflict minerals and cobalt. This prompted us at Samsung SDI to step up our endeavors to investigate such issues and identify relevant risks concerning major minerals used for our products. For instance, on-site audits are conducted every two years on Chinese graphite mines to discover issues and make necessary improvements, and the second round of such on-site audits is scheduled for the second half of 2020. For lithium, nickel and other major minerals that may cause any issues, we examine related partner companies and hold meetings with them to review risks and identify the countermeasures being taken.

Response to COVID-19

The coronavirus disease ('COVID-19' hereinafter) was first reported in December 2019 and has since spread widely to make the World Health Organization (WHO) declare COVID-19 a pandemic, at its highest alert level. COVID-19 is exerting grave impact on the global economy as well as individual and public health, and is presenting unprecedented challenges to numerous companies across nations and industries. To address this emergency, Samsung SDI is developing a response system and is taking actions to minimize the impact of COVID-19 on its raw material sourcing, production, and employee health.

Protecting Employees from COVID-19 and Preventing Its Spread

Samsung SDI is fully committed to protecting its employees from COVID-19 amid the rapid spread of this pandemic. We place employee health first before anything else, and have taken emergency measures since the early days of the COVID-10 outbreak including the operation of the COVID-19 task force, the placement of stringent facility controls, the operation of thermal imaging cameras, and the distribution of face masks and hand sanitizers.

COVID-19 Task Force Operation

Our COVID-19 task force was organized in January 2020 to serve as a control tower to prevent the spread of this disease among employees. With task force members coming from the Corporate HR Team, the Financial Management Team, the Communication Team, and EHS departments at the Headquarters, the task force has set forth standards and manuals on domestic/overseas business travels, business site access controls, access to multi-purpose facilities, group activities, employees with symptoms of fever, and disease control activities. Any and all updated standards are posted on our company-wide board to be shared across the company to help each and every employee to make proper responses and to prevent any possible confusion.
Our employees are also asked to fill out mobile-format questionnaires during weekends and holidays to check whether they visited high-risk areas or show symptoms of fever and other specific medical conditions so that they could take self-quarantine measures if necessary. A work-from-home policy was also implemented for expectant mothers and those who gave birth less than six months ago and thus whose immune system is relatively vulnerable.

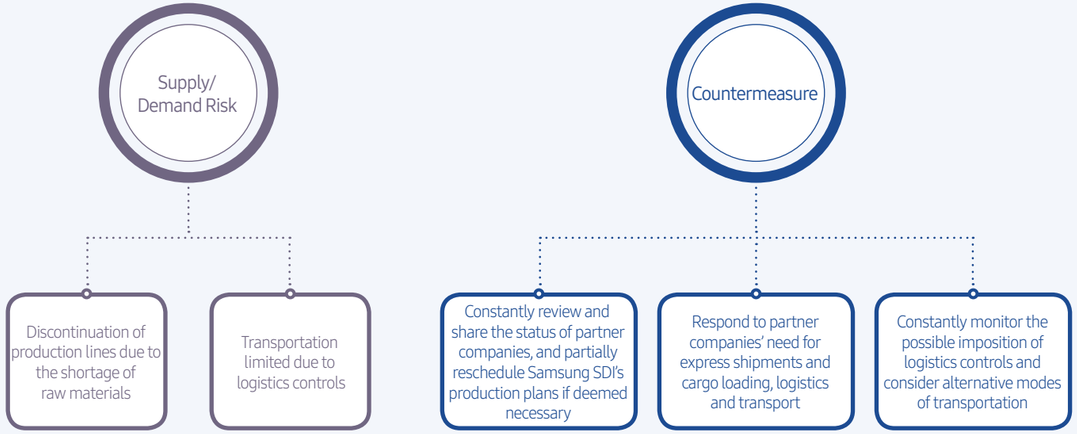
Stronger Efforts for 'Social Distancing' among Employees

Stringent disease control measures were taken on worksites, dormitories, commute buses and other facilities used by employees, and elevators, handrails and other areas exposed to frequent physical contacts are disinfected frequently more than once every day. For some of our worksites, the operation of commute buses was expanded so that employees could seat with at least one seat empty between each other. Our in-house cafeterias extended their business hours and arranged all seats to face the same direction to minimize physical contacts between employees. The operation of in-house gyms, club rooms, and other multi-use facilities was suspended while teleconferencing was facilitated and on-the-job training and organizational events were temporarily discontinued. Samsung SDI considers employee health as its top priority and is fully committed to support the Korean government's 'social distancing' policy.

Identifying and Addressing Impact on the Supply Chain

Constant Review of Raw Material Supply/Demand Risks and Countermeasure Development

Samsung SDI is identifying supply and demand risks that may occur due to the nationwide health concern of COVID-19, and is developing countermeasures to minimize impact on its manufacturing and sales.



Countermeasures to Address Mid/Long-term Raw Material Supply/Demand Risks

As a range of issues emerge across global regions, including but not limited to import restrictions imposed by Japan and the COVID-19 outbreak, this further highlights the importance of raw material supply/demand risk management. This prompted us at Samsung SDI to secure liquidity and perform preliminary verifications across our supply bases for the four primary materials (cathode, anode, electrolyte, and separator) and for major at-risk materials and components.

Expanded Support for Shared Growth with Partner Companies

Samsung SDI has expanded support for partner companies who face difficulties due to the spread of COVID-19. The credit line of the Win-Win Cooperation Funds was raised to up to KRW 5 billion and early payments were made to partner companies to help them stabilize their business operations. Given that on-the-job training is not viable under current circumstances, online training courses were launched to continuously assist partner companies in building their employee capacity.

BASIC ISSUE

Governance

2019 Achievements

BOD Attendance of Directors (Average)

93.9%

All independent directors newly appointed

(as of 2020)

BOD Composition

Samsung SDI's Board of Directors (BOD) consists of three executive directors and four independent directors as of March 31, 2020. The BOD is mandated to deliberate and decide on the matters stipulated by applicable regulations and the Articles of Incorporation, the matters delegated by general shareholder meetings, and major issues related to the Company's basic management policy and business execution. To improve the accountability of directors and the flexibility of BOD operations, the Chair of the BOD is appointed among directors through the decision made by the BOD, and independent directors can be nominated as candidates for the chairmanship.

Executive Director

Name	Young Hyun Jun	Gender	Male
First appointment	Mar. 24, 2017 (reappointment on Mar. 24, 2020)	Expertise	General management
Career	Current CEO and President of Samsung SDI		
Role within the BOD	Chair of the BOD, and the Management Committee/member of the Independent Director Candidates Recommendation Committee		

Name	Young No Kwon	Gender	Male
First appointment	Mar. 23, 2018	Expertise	Management in general
Career	Current Executive Vice President, Business Management Office, Samsung SDI		
Role within the BOD	Member of the Management Committee, the Independent Director Candidates Recommendation Committee, and the Compensation Committee		

Name	Tae Hyuk Ahn	Gender	Male
First appointment	Mar. 20, 2019	Expertise	Management in general
Career	Current Executive Vice President, Automotive & ESS Business, Samsung SDI		
Role within the BOD	Member of the Management Committee and the Independent Director Candidates Recommendation Committee		

Independent Director

Name	Oh Kyung Kwon	Gender	Male
First appointment	Mar. 18, 2020	Expertise	Electrical and electronics industry
Career	Current Professor of Electronic Engineering at Hanyang University		
Role within the BOD	Member of the Audit Committee/chair of the Related Party Transactions Committee/ member of the Independent Director Candidates Recommendation Committee, and the Compensation Committee		

Name	Duk Hyun Kim	Gender	Female
First appointment	Mar. 18, 2020	Expertise	Law and human rights
Career	Current Attorney of the law firm Jin-Sung		
Role within the BOD	Member of the Audit Committee, the Related Party Transactions Committee, and the Independent Director Candidates Recommendation Committee		

Name	Tae Ju Park	Gender	Male
First appointment	Mar. 18, 2020	Expertise	Labor policies and labor relations
Career	Current senior researcher, Korea University Institute for Research on Labor and Employments		
Role within the BOD	Member of the Audit Committee, the Related Party Transactions Committee, the Independent Director Candidates Recommendation Committee, and the Compensation Committee		

Name	Won Wook Choi	Gender	Male
First appointment	Mar. 18, 2020	Expertise	Accounting and tax
Career	Current Professor at School of Business, Yonsei University		
Role within the BOD	Chair of the Audit Committee/member of the Related Party Transactions Committee, and the Independent Director Candidates Recommendation Committee		

* Independent directors are not allowed to hold more than two positions outside the Company, and those who are major shareholders of the Company or have special interest in the Company are limited in their appointment as an Independent director.

Appointment of Directors

Independence of Directors

At Samsung SDI, director candidates are nominated by the BOD and the Independent Director Candidates Recommendation Committee and appointed through the approval granted at the general shareholder meeting. The BOD and the Independent Director Candidates Recommendation Committee review director candidates for any potential disqualifications as set forth in applicable regulations, including the commercial law (Clause 3, Article 382 and Clause 8, Article 542 of the Commercial Act) in order to ensure the independence of directors. There has been no case of independent directors appointed in spite of their disqualifications as defined in independence-related criteria. Furthermore, independent directors make up the majority of the BOD (four independent directors) to ensure that the BOD can function properly independent of senior management and controlling shareholders.

Diversity of Directors

Samsung SDI does not place any limitations in appointing directors on the grounds of gender, race, religion, ethnicity, nationality, or cultural background in order to ensure the diversity of directors.

BOD Attendance in 2019(%)

Meeting	Executive Director	Independent Director	Total
1st regular meeting	66.7	100	85.7
2nd regular meeting	66.7	100	85.7
3rd regular meeting	100	100	100
4th regular meeting	100	100	100
1st ad-hoc meeting	100	75	85.7
5th regular meeting	100	100	100
6th regular meeting	100	100	100
Average attendance	90.5	96.4	93.9

BOD Operation

Samsung SDI hosts regular BOD meetings and ad-hoc meetings when the need arises. BOD meetings are convened by the BOD Chair, and six regular meetings and one ad-hoc meeting were held in 2019 to deliberate and decide on 25 agenda items. Specifically, one ad-hoc meeting served to discussed the implementation of ESS safety improvement measures. BOD agenda items are decided by a majority of the directors present and voting for, given the quorum is reached (a majority of the total number of directors), and directors who may have conflicts of interest are banned from exercising their voting rights. Our BOD operates five subcommittees to advance management accountability and assist professional decision-making. By delegating a portion of its authorities to these subcommittees, our BOD improves expertise and efficiency in making critical decisions.

Expertise of Independent Directors

Our independent directors are appointed for their qualifications set forth in applicable regulations or the Articles of Incorporation as well as their extensive knowledge and experience in business administration, economy and the electronics and battery industries in general. They are provided with materials early on to sufficiently review the agenda items to be addressed at BOD or subcommittee meetings.

In 2019, all independent directors attended a training course that addressed the changing roles of the audit committee in the introductory phase of the new Act on External Audit of Stock Companies. In 2020, all independent directors were newly appointed in consideration of their expertise across diverse areas. As a result, professionals from essential business-related backgrounds were chosen as independent directors, from a professor who brings his technical expertise to the table in the fields of electrical and electronic engineering and electronic materials to those involved in law and ethics, labor and labor relations, and finance and accounting.

BOD Subcommittees

Committee	Composition	Role
Management Committee	3 executive directors	- Perform work in accordance with the Articles of Incorporation and BOD regulations and decisions - Deliberate and decide on the matters delegated by the BOD
Audit Committee	4 independent directors	- Perform accounting and work audits
Related Party Transactions Committee	4 independent directors	- Ensure transparency in related party transactions and comply with fair trade principles
Independent Director Candidates Recommendation Committee	3 executive directors, 4 independent directors	- Nominate independent director candidates
Compensation Committee	1 executive director, 2 independent directors	- Deliberate on the limit of remuneration for registered directors - Deliberate on other matters delegated by the BOD

BOD Performance Appraisal and Remuneration

Independent Director Performance Appraisal

Our independent directors receive annual performance appraisals in accordance with internal appraisal criteria. These criteria consist of quantitative indicators (meeting attendance rates, deliberations made on agenda items, and committee memberships) and qualitative indicators (expertise and understanding of business), and comprehensive appraisals are performed on each independent director. Appraisal results are used as reference data in deciding their reappointment.

BOD Remuneration

In conformity with Article 388 of the Commercial Act, the limit on director remuneration is decided by the general shareholder meeting. The Compensation Committee deliberates on the maximum limit of director remuneration as an agenda item to be addressed at the general shareholder meeting in order to review its appropriateness. Director remuneration is paid within the boundary approved by the general shareholder meeting. Executive director remuneration consists of position-specific base salary and performance-based bonus. Performance-based bonus is calculated in consideration of quantitative indicators related to financial performance (sales, net income, and stock prices) and of non-quantitative indicators related to environmental and social performance (safety, labor relations, insolvency, corruption, security, and compliance). Independent director remuneration includes base pay calculated in consideration of their responsibility and the time taken to fulfill their role as well as diverse expenses paid to perform work as an Independent director. For independent directors, however, their remuneration is not aligned with their appraisal results as it is believed that determining independent director remuneration based on their performance outcomes may degrade the independence of their decision-making.

BOD Remuneration in 2019

Category	Unit	2019
Net payment	KRW million	3,669
Total remuneration for executive directors	KRW million	3,330
Total remuneration for independent directors	KRW million	339
Average remuneration per executive director	KRW million	833
Average remuneration per independent director	KRW million	85

* Four independent directors are members of the Audit Committee, and the above data on the number of directors and total remuneration includes those directors and auditors who resigned during the fiscal year of 2019.

Compliance

2019 Achievements

Penalties and sanctions imposed due to the violation of applicable laws and regulations

Zero

Samsung Compliance Committee organized

Compliance Management System

Compliance Program

Samsung SDI operates and manages a compliance program to establish and disseminate a culture of compliance that serves as an anchor of its business operations. This program follows the process of 'prevention–review & monitoring-follow-up management', and its focus areas include cartel, related party transactions, trade secrets, anti-corruption, and subcontracts. In 2019, Samsung SDI and other major Samsung affiliates joined forces to organize and operate Samsung Compliance Committee ("The committee") as an external independent body, and The committee was initiated in 2020. Samsung SDI will reinforce its company-wide compliance management system through interactions with The committee.

Operational Regulations

Samsung SDI set forth and operates the 'Compliance Control Regulation' in conformity with the Commercial Act as fundamental principles to be followed by employees in their business conduct to ensure their full compliance with applicable laws and regulations. These regulations specify operational principles for compliance management, authorities and obligations of the Compliance Officer, employees' compliance obligations, regulatory compliance reviews, and measures to be taken for violations. In 2020, a partial revision was made to the Compliance Control Regulation to reinforce our compliance management and the revised regulations will be applied across our compliance management operations.

Compliance Organization

Dedicated compliance unit was created under the Legal Compliance & IP Team in 2019, and this unit was reorganized into the Compliance Team under the direct leadership of the CEO. While the head of the Legal & IP Team also served as the Compliance Officer, this was changed to appoint a separate Compliance Officer to further highlight the importance of company-wide compliance oversight. With dedicated compliance unit playing a central role, compliance implementation units were set up in respective organizations and compliance implementation managers (to be changed into compliance chief managers in department head positions from 2020 onwards) were appointed starting from 2019. Compliance implementation managers encourage and support their organization members to join such compliance activities as compliance training and self-reviews to advance working-level compliance management. These managers were also provided with year-round newsletters and updates on major regulatory enactments and revisions as well as periodical training to support their capacity improvement.

Compliance System

Samsung SDI operates a compliance system to raise employees' compliance awareness. Our employees can use this system to check compliance guides and manuals and learn about domestic and overseas compliance issues that are updated regularly. The system offers easily accessible assistance to help employees address work-related compliance issues through a range of functionalities including reporting on the contacts made with industry peers, making inquiries, and whistleblowing. In 2019, a new functionality was added in relation to the agreement signed with partner companies on the provision of technical data to prevent the risk of violating technical data-related regulations that are increasingly tightening recently and to improve convenience in managing such data. In 2020, we plan to develop and operate a company-wide system to handle technical data provision issues.

Compliance Operation

Compliance Training

Regular job level-specific training is provided to all employees. Furthermore, special training is offered to employees in charge of handling major risks and employees working at overseas corporations to reinforce their compliance awareness and prevent compliance-related risks. Notably, company-wide training was operated in online format through the use of animations, pictograms, and videos in 2019, and feedback from trainees will be collected and reflected in designing training courses and making reviews in the upcoming years. Special training led by lawyers is provided to expatriates and employees working at overseas corporations to improve their compliance awareness.

Review and Monitoring

We perform compliance reviews and monitoring to prevent the risk of regulatory violations. These reviews consist of on-site face-to-face reviews and non-face-to-face reviews.

- On-site face-to-face reviews: Review employees' work methods and measures taken to identify risks related to socially significant issues and take prompt countermeasures
- Non-face-to-face reviews: Review compliance with work-related internal regulations and processes through system data collection and analyses as well as checklist/paper-based examinations made on employees

Monitoring ensures that preliminary consensus building on compliance is included as an essential component of the work process to prevent the risk of regulatory violations and improve awareness on the importance of compliance. Review and monitoring outcomes of 2019 will be reflected in conducting training and reviews and updating relevant regulations and guides in 2020.

Counseling and Whistleblowing Channels

Samsung SDI offers a range of channels including e-mail, phone, and fax to assist whistleblowers to report on any unjustifiable behaviors of its employees in relation to business conduct. Once submitted, such reports are handled in a confidential manner and the anonymity of whistleblowers is protected. In 2020, our whistleblowing channels, which were separately operated for ethics management and compliance management respectively, were integrated to improve accessibility and convenience for whistleblowers.

Samsung Compliance Committee

In February 2020, seven Samsung affiliates, including Samsung SDI, have established Samsung Compliance Committee ("The committee") as an external body to oversee group-wide compliance management. The committee is responsible for independently supervising and controlling the senior management of Samsung affiliates for their violation of compliance obligations and for directly reviewing issues that pose high risk of compliance violations and offering its opinions to Samsung affiliates. The committee will also receive periodic briefings on the compliance oversight systems of Samsung affiliates to review these systems for their effective operation and make recommendations on necessary improvements.

Talent Management

2019 Achievements

No. of employees

26,813 persons

Ratio of female managers

9.2%

(1% up from 2018)

New hires in Korea and abroad

6,792 persons

* Quantitative data over the past three years is available in the Appendices section of this Report.

Respect for and Protection of Human Rights

Human Rights Management

Samsung SDI respects human rights and the freedom of association as a way to protect human dignity. We are in full compliance with the UN Universal Declaration of Human Rights, International Labour Organization (ILO) conventions, the Responsible Business Alliance (RBA) Code of Conduct, and labor laws and regulations in the regions where we operate. This means that we abide by the standards and regulations of international organizations and bodies working in relation to labor and human rights. To this end, self-reviews are conducted each year either under the supervision of the Headquarters or independently by our worksites to ensure that human rights violations do not occur concerning child labor and forced labor, work hours, wages and benefits, humanitarian treatment, non-discrimination, and the freedom of association. Continuous reviews and improvements are also made on the status of human rights management at our partner companies with the help of the S-Partner certification system. As a result of our 2019 reviews, no violation or discrimination in relation to the ban on child labor and forced labor occurred.

Human Rights and Labor Impact Management at Workplace

At Samsung SDI, annual assessments are made on the status of human rights and labor management to manage vulnerable areas and worksites accordingly. Factors that adversely affect human rights management are also identified to fundamentally prevent the reoccurrence of the same issue. In 2019, human rights and compliance self-assessments were made on 14 overseas corporations (eight production facilities, five sales bases, and one research center) to review relevant risks. For issues identified through these assessments, mid/long-term tasks were chosen to make necessary improvements.

Human Rights Training

We provide training to prevent sexual harassment and improve awareness on people with disabilities as a way to awaken all our employees to the importance of assuring and protecting basic human rights. To fulfill the requirement to offer such legally-mandatory training and improve training outcomes, we reflect constantly changing internal/external conditions and social needs in designing the training curriculum and introduce new training contents.

The 'It Basic' bulletin board created within our in-house website serves to provide basic-level guides on human rights issues to abide by fundamental human rights principles to eventually establish a sound corporate culture. The board posts anti-sexual harassment training materials and elaborates on action guidelines for employees to follow in order to take cautions and make proper responses to prevent sexual harassment and verbal violence and to improve on drinking culture.

In line with the Workplace Harassment Prevention Law that took effect in 2019, we launched a company-wide training course to 'promote a culture of mutual respect' and uploaded relevant training materials on the It Basic board. Our employees can use this board to file their reports or complaints on human rights issues, and strict measures are taken in accordance with applicable regulations for those issues identified and confirmed.

Development of a HR System at the Hungarian Corporation

Samsung SDI's Hungarian corporation, whose manufacturing plant has initiated the full mass-production of automotive batteries since 2018 following the start of its construction back in 2016, serves as one of the Company's major production facilities with 2,842 employees as of the end of 2019. This corporation is also known as a truly global workplace for its diversity with employees coming from diverse national and cultural backgrounds. Its HR system was established in the areas of recruitment, appraisal, compensation, and training in consideration of its specificities and in compliance with applicable local regulations and standards. As such, we continue to create a work environment that respects the diversity of employees.

Talent Recruitment and Development

Recruitment of Outstanding Talent

Samsung SDI applies fair and equal standards in recruiting outstanding individuals. In 2019, a large number of competent individuals was hired in the areas of technology and manufacturing mainly across our domestic and global production bases in Cheonan, Ulsan, Hungary and Vietnam to secure technology professionals. To maintain our global pool of technology workforce, we also launched campus recruitment events that target graduates and undergraduates in the Americas as well as in Korea.

Talent Development System

We operate systemic capacity-building training to nurture top-tier talent. Continuous investments are also made in training infrastructure to improve the efficiency of training. To set the trend in the rapidly-developing technology landscape, we are strengthening our training on process and equipment technology as well as on development to support our employees to improve their capacity in these areas and to build a comparative advantage in technology competitiveness. In addition to in-house training, training courses arranged through industry-academia alignment and a license acquisition support program are operated to help employees develop job-specific expertise and strengthen capacity.

Reinforcement of Training Infrastructure

We have expanded training rooms and upgraded facilities at the Human Resource Development Centers located at respective worksites since 2019. At our Giheung worksite, 12 training facilities were created including a 240-seat auditorium in 2018, and another large 120-seat lecture room was added in 2019. Continuous facility upgrades were made, including the upgrade of training facilities and equipment at the Human Resource Development Center at our Cheonan worksite, opening of new training facilities at our Suwon worksite, and the expansion of the computer training facilities at our Cheongju worksite in order to provide new recruit training and job training as well as language learning courses. Going forward, we will make steady investments in our training infrastructure to deliver a pleasant learning environment for employees.

Development of Job Experts

We operate on-the-job and online training courses that address all job categories, including development, technology, manufacturing, sales & marketing, and management support to help employees strengthen their job capacity. Specifically, technology training for development, process & equipment, and quality operations was systematized to operate the SDI Technology Education Program, a technical training course led by in-house instructors. As on-the-job and online training alone may fall short of training needs, we also fully support department-level in-house seminars and learning cells. In addition, master/doctorate degree courses and non-degree courses are provided through industry-academia collaboration to nurture experts in development and technology. A license acquisition support program is also up and running to encourage employees to obtain internationally/nationally-recognized qualifications in the areas of purchasing, quality, management, and finance in order to promote the development of job experts across all fields.

Technology Training Center

Our Technology Training Center is responsible for swiftly securing basic equipment technology capabilities of new recruits and employees relocated from other departments, strengthening common technical capabilities among our technical workforce, and systemically nurturing process and equipment technology professionals. Tailor-made training is provided from introductory to practical levels, and training equipment, made of core components and modules that are deployed under real-life conditions, is used to provide one-person one-kit training with a focus on theoretical understanding and hands-on practice. Under the principle of self-initiated learning, a component technology expert course that covers core equipment components in general as well as a process and equipment expert course intended to resolve equipment-related challenges and chronic process quality issues are operated to help employees reinforce their expertise and assume broader roles.

Technology Training Center will expand its role as a test bench for engineers to directly verify the viability of their ideas while constantly identifying technology capabilities required by the Company and developing training courses accordingly.

Talent Management

2019 Achievements

Company-wide Change Agents

272 persons

Grievance handling rate

100%

Upgraded parental leave program

Extension of leave by 1 more year

(legally-mandatory period is one year per child)

Expansion of coverage to include

children aged 12 and under

(legally-mandatory coverage is eight years old and under)

* Quantitative data over the past three years is available in the Appendices section of this Report.

Talent Development

Global Capacity Building

Samsung SDI provides a range of language courses to help employees improve their foreign language skills and support their self-development to meet the needs of today's globalization era. These courses, made available across our six nationwide worksites, include the 'foreign language learning residence program', a global capacity-building program to learn languages, business practices, and cultures, and the 'global practical business writing program' as well as 'in-house foreign language courses' and 'OPIc/TSC special lectures' intended to support employees to obtain language qualifications. As our overseas business presence broadens, this alerted us to the importance of English and Chinese conversational skills and to open a 'one-week intensive course' from 2020 onwards to encourage employees to focus on achieving conversational skill grades with a goal of increasing the number of employees with high language skill grades.

In addition, regional expert and on-site expert programs are under operation as part of the key global leader development courses to promote intensive language learning and local research in overseas regions. In 2019, our regional experts were sent to China, Vietnam, Hungary and other regions of the world, following their completion of the foreign language learning residence program, to improve their own capabilities through regional research, language learning, and hands-on experience at their assigned overseas corporations and to support overseas corporations with capacity-building.

Hall of Fame for Technical Meisters at the Gumi worksite

Training for Overseas Sales Bases

Samsung SDI has provided its overseas corporations with Headquarters-based training and on-site training. Our annual Global Sales Subsidiary and Engineering Training (GSET) has been under operation on a regular basis since 2018. In 2019, top-performing employees at sales bases in China, Taiwan, the U.S., and Germany were invited to Korea to share Samsung SDI's basic principles, including Samsung and Samsung SDI's core values and compliance and security policies. They also had a chance to visit our Cheonan and Ulsan worksites to receive training on battery technology and manufacturing operations.

In 2019, the Global Leadership Course (GLC) was created to engage top-performing department heads from respective corporations to provide leadership training to help them develop essential leadership capabilities such as communication (interview) skills, performance management, and understanding of cultural diversity. The GLC program will be offered on an annual basis and support from the Headquarters will continue to assist corporations to independently develop and operate this program.

Strengthened Technical Leadership

At Samsung SDI, the 'Technical Meister' title is awarded to employees with three job-related master technician (national technical qualifications granted to technicians) certificates or with two master technician certificates and one technician certificate. This program, introduced in 2013, contributes to emphasize the importance of employees' job expertise and to establish a culture of self-directed learning. For these Technical Meisters, copper plates are made in their honor and exhibited in the hall of fame at their worksite. Our Technical Meister program was expanded to include all our worksites in 2016, and each and every Samsung SDI worksite is currently producing their own Technical Meisters. Not only does this program help improve individual employees' work capabilities through self-initiated learning, but also contributes to establishing technical self-reliance on the shop floor through technical transfer from senior to junior employees.

Great Work Place

Expansion of Work-Life Balance Programs

Samsung SDI has expanded the operation of the in-house parental leave program, in addition to supporting its maternity protection and work-life balance programs designated by the Ministry of Employment and Labor. While employees can take one-year parental leave per child according to applicable legal regulations, we have extended this by up to one additional year. Furthermore, we raised the age threshold of parental leave from 8 as stipulated by law to 12 to help ease employees' childcare burden in consideration of their different circumstances, and to fully focus on their work. Our employees can also take leave to care for their family members and use flexible work hours to strike the right work-life balance.

Work-Life Balance

At Samsung SDI, various programs are up and running to help employees enjoy work-life balance. In addition to flexible work hours, we are also operating selective work hours and relevant systems to allow employees to control their own work hours and improve their work engagement in so doing. Furthermore, we encourage employees to manage their holiday plans and to use all their paid time off so that they can enjoy a quality leisure life. Maternity protection rooms are arranged for expectant mothers, and all our worksites operate daycare centers to create a workplace where employees can both work and take care of their children.

Welfare and Benefits Programs

Samsung SDI employees can use a wide array of welfare and benefits programs. As part of our selective welfare and benefits programs, welfare points are awarded to employees each year to be used for culture, education, leisure, and other diverse purposes. To promote the residential stability of employees who have not yet purchased a home, we assist them in paying interests for three years on the loans extended with Samsung SDI's approval to purchase or rent a house in size of 85m² or under, which is considered as a standard national house by the Korean government.

*For further information on Samsung SDI's welfare and benefits programs, please visit the following website
https://www.samsungsdi.co.kr/career/talent-development.html

Facilitation of Labor-Management Communication

Works Council

Samsung SDI operates the Works Council composed through equal representation between labor and management. The council hosts regular and ad-hoc meetings to discuss the pending issues of wages and labor conditions among others between the two parties as well as employee health & safety, work environment improvements, and other issues relevant to protecting and improving employee rights and interests. Any change brought upon through council meetings is immediately shared among all employees, and issues that require bilateral consultations are notified to employees in accordance with country-specific applicable regulations. Outcomes of council meetings apply to all employees.

Grievance Handling

At Samsung SDI, the grievance channel dubbed 'Sisicolcol' is under operation to file varying grievances. Once submitted, grievances are reviewed in line with our internal operational standards and proper actions are taken accordingly. In 2019, 1,083 grievances were submitted and 100% of them were all handled. Protecting anonymity when deemed necessary and proactively gathering employee feedback to make improvements will surely help Samsung SDI to create a sound corporate culture.

Fall Companion event engaging employees

Advanced Organizational Culture

Improving Samsung SDI's Organizational Culture through Change Agents

To encourage working-level employees to take the lead in advancing our organizational culture, we have appointed 272 Change Agents (CA) at respective departments. These CAs are responsible for planning and operating activities such as improving on work inefficiencies within the organization, facilitating communication and collaboration, and increasing the vitality of the organization.

Organizational Management Indicators

Our department-level organizational management indicators aim to improve the soundness of the organization, and support our organizational culture change management tools. While these indicators include most basic ones that are essential for organizational management, additions or revisions are also made each year in line with major issues. There are 10 indicators in five categories and two domains in total that address such topics as communication & collaboration and work-life balance. In 2019, an integrated organizational management system was launched to increase its operational efficiency. This system visually presents information in tri-colored light format to show the weaknesses of respective organizations, and also enables employees to perform self-assessments.

CA activity – Culture Fair

Social Contribution

2019 Achievements

Employees' participation in social contribution programs

98%

Beneficiaries of Green Planet Environment School

10,626 students

Beneficiaries of Green Planet Dreaming School

3,354 students

Beneficiaries of Green Planet Future Science School

4,298 students

*Quantitative data over the past three years is available in the Appendices section of this Report.

Approach to Social Contribution

Guided by our CSR vision of 'Together for Tomorrow! Enabling People!', we have made effective use of our capabilities both at the company-wide and individual employee level to help children and adolescents who will lead our future to dream a big dream and unleash their full potential and to make the world a better place. In particular, the share of 'adolescent education' which also constitutes the core of our CSR vision has risen and approximately KRW 1 billion was invested in our flagship educational programs in 2019. In addition, a variety of educational donations are made to focus our efforts on bringing positive change to future generations.

The sum of our collective endeavors to contribute to education and the culture of sharing was recognized as we were honored with the Commendation of the Minister of Education, the 'First Prize at the Educational Donation Awards 2019'.

In 2020, we will continue to expand the ratio of adolescent education in our social contribution portfolio to contribute to creating a more flourishing tomorrow for all.

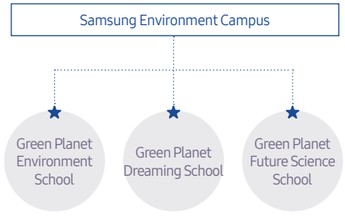
Vision

Together for Tomorrow! Enabling People

Theme

Education for Future Generations

Major Educational Programs



Flagship Educational Programs

Green Planet Environment School

We provide green and energy education for children and adolescents who are the leaders of our future. 'Green Planet Environment School' that targets elementary school students is a hands-on learning program that addresses the importance of environmental protection and proper energy use. Since 2011, our employees have served as instructors to help children access various environmental education and experience-based activities on such topics as renewable energy, global warming, and green transportation. The excellence of this program independently development by Samsung SDI was recognized with the Environmental Education Program Certification awarded by the Korean Ministry of Environment to further elevate its credibility as a learning program.

'Green Planet Environment School' specifically has in mind those elementary schools that are located in remote island and mountainous areas in the vicinity of our worksites and thus could not provide a sufficient hands-on learning environment due to their financial and geographical limitations. To help address inequalities in educational opportunities, this program is operated in two different formats: summer camps open during the summer vacation period while itinerant Green Planet Environment School buses directly visit beneficiary schools during the semester. Garnering huge interest among children and support from parents, this program was attended by 10,626 students in 2019 to reach 36,836 in total cumulative number of beneficiaries since its launching.

First Prize Awarded at the Educational Donation Awards 2019

Green Planet Dreaming School

As the nation-wide introduction of the free-semester system across middle schools in Korea spurred demand for educational donation programs led by businesses to respond to this new governmental policy, Samsung SDI initiated 'Green Planet Dreaming School', an educational program aligned with the free-semester system, in 2019. Designed for middle school students, this program introduces future business areas linked with Samsung SDI's main business and offers an opportunity for students to develop appropriate understanding on rapidly-shifting future social trends and proper ways to use energy to respond to climate change so that these students can explore their future career paths from new perspectives and broadened horizons.

Green Planet Dreaming School consists of general education offered in four sessions with a focus on science study classes under the free semester system as well as career concerts through which Samsung SDI employees working in related industrial sectors share their knowledge and experience.

Following the pilot phase operation in 2018, this educational program was provided to 3,354 students in 2019 to benefit a total of 3,751 students on a cumulative basis.

Our plan for 2020 is to extend the scope of beneficiaries to include middle schools in the vicinity of our six worksites (Yongin, Suwon, Cheonan, Cheongju, Gumi, and Ulsan). The duration of this program will also extend from four to eight sessions to allow for more in-depth sharing of our employees' professional capabilities and the evolution of this program into a more advanced one that enables students to generate their creative outcomes. By offering students an opportunity to search a range of career options and have hands-on experiences, we will contribute to nurturing future talent.

Green Planet Future Science School

'Green Planet Future Science School' is operated on a monthly basis for underprivileged children who spend most of their after-school hours at local children centers near six Samsung SDI worksites nationwide. This provides them with an opportunity to have hands-on science experience, produce tangible outputs, and conduct experiments that are hardly available under the ordinary curriculum so that they can develop advanced understanding on science and develop convergence and creativity-driven thinking skills. Our employees make talent donations by serving as professional instructors in operating this program.

In addition to general education provided at local children centers, Green Planet Future Science School also hosts annual science camps: children who have participated in this program before are invited to the Company to attend the science concert led by professionals, join experimentation classes with our employees, and experience our business infrastructure. In 2019, this benefited 4,298 children at 27 local children centers in the vicinity of our six worksites. To help narrow the educational divide, we will continue to provide science learning opportunities for children from low-income families and serve as a corporate leader in making educational donations in so doing.

Green Planet Environment School – summer camp

Green Planet Dreaming School – general education

Green Planet Future Science School – general education

Green Planet Environment School – learning on the bus

Green Planet Dreaming School – career concert

Green Planet Future Science School – science camp

Workplace Safety

2019 Achievements

EHS meetings supervised by the CEO

6 occasions

Acquisition of national health and safety engineer qualifications

Industrial safety engineer and above 60%

Master engineer and above 30%

(11% increase from 2018)

Completion of safety job qualification training

100%

*Quantitative data over the past three years is available in the Appendices section of this Report.

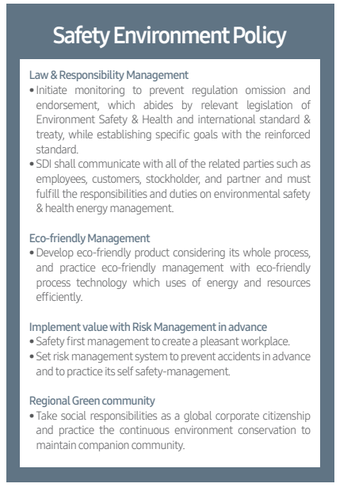
Workplace Safety Management System

Health & Safety Management Policy

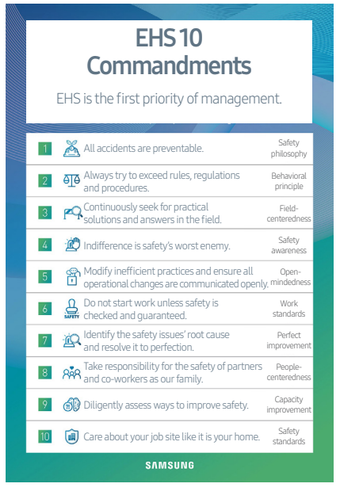
Prior to the complete revision of Korea's Occupational Safety and Health Act in January 2020, we performed impact analyses for respective articles on its pre-announced legislation and realigned our internal processes accordingly. In line with tightening provisions on subcontracts, we specifically identified pre-work health & safety impacts based on our integrated EHS management system. This allowed us to establish processes to preliminary verify our compliance with health & safety regulations and internal standards and eliminate risk factors to ensure workplace safety for employees of our subcontractors. We are also increasing staffing of EHS Group at the Headquarters and respective worksites to respond to the reinforced government policy and strengthen safety for employees and subcontractors.

Operational Standards

In addition to our existing EHS regulations and rules, we established the EHS 10 Commandments as the overarching code of conduct. The 'EHS 10 Commandments Declaration Ceremony' was hosted in attendance of senior management and employees at all worksites, including overseas corporations, which was initiated by the signing ceremony supervised by the CEO. To make these commandments an essential part of daily business routines rather than a short-lived slogan, we distributed promotional materials to all employees and made them chant these commandments in meetings.



Safety Environment Policy



EHS 10 Commandments

Workplace Safety Management

Dedicated Health & Safety Organization

Our dedicated health and safety organization is responsible for preemptively reviewing health & safety risks that may occur among employees and local communities and for developing and implementing countermeasures. Training and monitoring is also provided for all employees to recognize and prevent such risks. This organization also operates various channels to communicate with local communities to inform them of actual impacts in the event of incidents and accidents. Furthermore, an internal process is up and running to proactively respond to incidents and accidents.

Integrated EHS System

We operate an integrated EHS system for safety, health, environment, chemicals, and disaster control to prevent safety incidents and perform real-time monitoring. To elevate the objectivity of this system, internal audits are conducted and certification is awarded by independent professional certification bodies.

Emergency Response System

Samsung SDI is establishing an emergency response system to prepare for any and all possible incidents and accidents. Training and exercises are conducted to take emergency response measures through swift and close collaboration across the board, from senior management to working-level employees, in the event of emergency. In particular, professional emergency responders are assigned to each worksite and available 24/7 to address any possible emergency.

Reinforced Facility Safety Certification Process

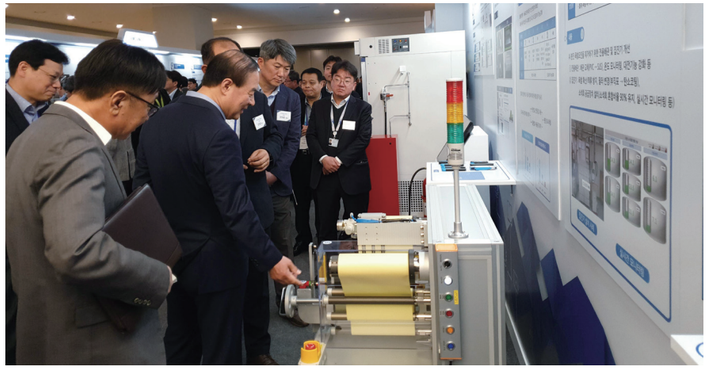
We have reinforced the existing facility safety certification process in line with our expanding overseas presence and tightening regulations. The safety of facilities is verified by third-parties at respective worksites, and unverified facilities are not provided with electricity to fundamentally eliminate risk factors. In addition, facilities under operation received safety certification audits in accordance with reinforced standards.

Inspection and Monitoring

At Samsung SDI, periodical assessments are made on the entire EHS sectors on a daily, weekly, and monthly basis. Furthermore, 24/7 monitoring is performed by professionals through the computing system in charge of safety, environment, health, chemicals, and disaster management.

Potential Risk Identification

We identify potential risks as a way to preemptively discover and improve on risks that may occur at workplaces and facilities, and reward best practices. This activity is undertaken at overseas worksites as well as domestic worksites, and potential risks identified as such are uploaded on our computer system to be shared across the board. In 2020, we plan to take a step further to introduce an AI-powered big data analytics program to link potential risks discovered on the shop floor with our production and facility management systems.



Best practice exhibition on EHS Innovation Day

Firefighting drill

Workplace Safety

Behavior Based Safety (BBS) Activity

We have launched a special shop-floor safety program that adopted Behavior Based Safety (BBS) methodology to promote the safety of our employees. In 2019, one overseas worksite was chosen to operate this program with the help of seven experts. During approximately four months, applicable work procedures and actual behaviors of workers were verified and synchronized. In addition, work that had been arbitrarily performed by workers was identified to create appropriate work procedures while unnecessary or risky work was discontinued. This BBS-driven safety program helped improve safety awareness among overseas corporation employees and their participation in safety activities, and even minor incidents did not occur following the initiation of this program. From 2020 onwards, we plan to extend the scope of this program to domestic worksites and a portion of our overseas worksites.

Occupational Health & Safety Training

Samsung SDI provides company-wide health & safety training. Managers, new hires, and those handling hazardous substances and high-risk machinery receive tailor-made training in consideration of their job category and job level, and employees are also offered such personalized training prior to their work assignment and switch to a different work process. In line with the growing interest among employees in health & safety, our training curriculum consists of more than 200 courses to meet their distinctive training needs. In particular, a process is up and running for new hires in manufacturing positions to provide them with pre-assignment training and to make work assignments only when they score above the set threshold. Furthermore, professional instructors are regularly invited for training, and wide-ranging health & safety training programs are made available, including external hands-on safety training.

Establishment of Safety Culture

We make use of internal safety culture assessment tools to measure the level of our safety culture among domestic and overseas employees and make necessary improvements. In making such assessments, our domestic operations are categorized into manufacturing, development, and office administration, and overseas operations into manufacturing and technology. To ensure objectivity in this regard, this is further complemented by interviews conducted on department heads and employees to monitor the level of our safety culture and improve and manage those areas falling short of the required standards.

Dissemination of Safety Culture among Subcontractors

As our responsibility for safety management expands along the supply chain in line with the complete revision of the Industrial Safety and Health Act, we extended the scope of our safety management from 57 in-house subcontractors to a total of 238 subcontractors, including equipment makers and infrastructure construction subcontractors as well. We increased staffing mainly in charge of health and safety operations to prevent any possible accidents, and introduced a preliminary risk factor evaluation program to identify risk factors at construction sites and proactively develop safety measures. On the day of performing construction work, confirmation is made by three departments in charge of execution, approval and safety of high-risk construction respectively to ultimately ensure that all safety measures were completely taken prior to granting work approval.

Battery Safety Management

Safety comes first before anything else in the battery industry. As such, Samsung SDI strengthened its safety process to check battery safety even from the product development phase. We also went the extra mile to realign our standards on battery handling and storage according to their risk level to prevent any and all fires from occurring. In preparation for such accidents that do occur in spite of our best efforts, we constantly build emergency response preparedness by performing fire drills for domestic and overseas firefighting crews to ensure prompt emergency response.

Chemicals Management

Chemicals Management System

Our Global Environment, Health & Safety (G-EHS) system system ensures that chemicals are inspected for their possible conflict with applicable laws and regulations to manage their entry and use at our worksites. Any and all chemical substances that enter our worksites (raw/subsidiary materials, development materials, and consumables) receive impact reviews and assessments across EH&S categories prior to their purchase, and a system is up and running to ensure that these substances are verified for their legal compliance during the purchasing and worksite entry process. Furthermore, this system is applied to our overseas worksites as well to disseminate practices to use chemicals safely.

Workplace Chemicals Management

To protect our employees from health impairments and work-related diseases, we reflect regulations on harmful substances to human body (e.g. carcinogens) as well as regulated substances in creating and managing a list of internally-regulated chemical substances. These substances are then graded into Group A, B, and C, and an approval system is operated accordingly so that chemicals that enter our worksites are verified for their inclusion in the prohibited substances list, applicable substitution and mitigation plans, and protective measures prior to their entry and consumption at our worksites.

In addition, total inspections are conducted on chemical substances at least every quarter to identify the overall status of chemicals used and stored at our worksites, and regulatory compliance concerning Material Safety Data Sheet (MSDS) and warning sign installation is monitored.

Work Environment Measurement

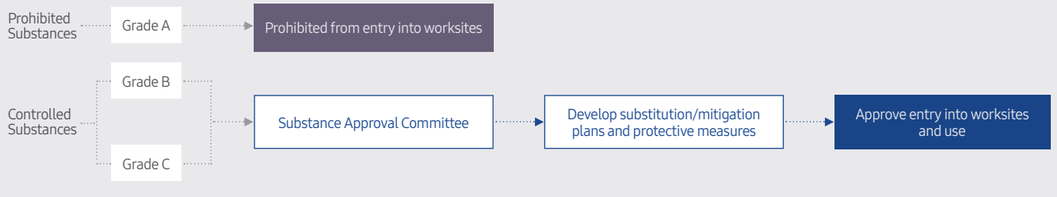
Our production and R&D processes that inevitably handle various hazards receive work environment measurements performed by external measurement organizations on a biannual basis. Year-round measurements are also made on process changes and newly-introduced substances to comply with applicable legal standards. For hazards that emanate from the entire process in general, we set our internal exposure limit at less than 30% of the legal threshold, and this is even further tightened to less than 10% of the legal threshold for carcinogenic, mutagenic, or reprotoxic substances that require special management. In case there are processes that exceed our internally-set exposure limits, improvement measures are developed to replace or mitigate hazards, seal affected equipment, and improve ventilation in order to deliver a safe work environment for employees.

Local Exhaust Ventilation Equipment Management

Our processes that handle chemicals are equipped with local exhaust ventilation to create a safe work environment free from process-induced hazards. Such local air ventilation equipment is inspected and assessed at least every year, and hoods, ducts, and fans are managed to maintain their exhaust velocity above the mandatory legal threshold. At domestic worksites, regular deep-dive assessments are performed through consulting offered by external professional organizations. In 2019, equipment investments were made to block and seal the source of hazards and to improve the air flow efficiency of ventilation equipment. These improvements made at domestic worksites are being disseminated to overseas worksites to improve their work conditions.

Grading and Approval of Internally Regulated Substances

* Classified into Grade A, B, and C according to their level of hazards



Health and Healthcare Management

Employee Health Improvement

We support all our employees to receive regular health checkups as stipulated in the Industrial Safety and Health Act, and diagnose and prevent diseases early on through comprehensive life-cycle health checkups. Based on health checkup results, employees with medical conditions and those who belong to high-risk groups are referred to the Samsung SDI medical clinic (health care office) to receive healthcare counseling. Key opinion leaders in the healthcare sector are invited to provide training, and health promotion activities are undertaken in connection with local health centers to support employees' healthcare management.

To prevent work-related musculoskeletal disease burden, relevant work processes are regularly inspected for possible hazards, and their work procedures are modified in collaboration with relevant departments if deemed necessary based on inspection outcomes in order to improve on such work.

Our Cheonan and Gumi worksites operate the musculoskeletal center to help employees improve on their musculoskeletal symptoms caused by their daily habits as well as work-related ones. In particular, our Cheonan worksite launched the Total Health Care program for employees who belong to high-risk groups through the alignment among its in-house clinic and gym and the Medifit program. This helps employees measure their physical strength, do strength exercises, and receive manual therapy to regain their health.

Environmental Management

2019 Achievements

Water consumption intensity

0.07

kilotons/KRW 100 million

(Fell by 0.02 kilotons/ KRW 100 million from 2018)

Effluent discharge intensity

0.03

kilotons/KRW 100 million

(Fell by 0.01 kilotons/ KRW 100 million from 2018)

Waste generation intensity

1.22

kilotons/KRW 100 million

Waste recycling

Domestic **92.7** %

Overseas **85.1** %

* Quantitative data over the past three years is available in the Appendices section of this Report.

Water Resources Management

Water and Effluent Management

At Samsung SDI, we take an extremely elaborate approach to our use of water and the generation and treatment of effluents to conserve water resources and reduce the discharge of water pollutants.

The effluents generated from the battery cleaning process are selectively recovered to be reused as gray water, and the effluents generated exclusively from the manufacturing process are recycled through the reverse osmosis (R/O) system. All effluents from our worksites are treated for pollutants through our on-premise effluent treatment facility, and the effluents treated as such move to the regional sewage treatment plant for secondary processing.

Effluent Discharge in 2019

(unit: ton)

Category		2019
Domestic	Giheung	318
	Suwon	11,968
	Cheonan	729,475
	Cheongju	340,047
	Gumi	388,137
	Ulsan	643,270
	Subtotal	2,113,215
Overseas	Malaysia	357,992
	Tianjin	57,721
	Xian	61,491
	Wuxi	549,525
	Hungary	129,488
	Subtotal	1,156,217
Total		3,269,432

Pollutant Management

Management of Air Pollutant Emissions

To ensure the complete treatment of air pollutants generated from our worksites, we install appropriate control equipment at each of our emitting facilities. Pollutants that are emitted to the atmospheric environment following their treatment are proactively monitored and their status is observed to measure the generation of pollutants and manage their trajectory.

To reduce the generation of particulate matter that is emerging as a serious environmental issue recently, we have replaced once-through boilers with low-NOx burners at our worksites, and improved on fillings to increase their pollutant mitigation capacity. As such, we are continuously committed to properly treating and reducing pollutants.

Management of Water Pollutant Discharge

To facilitate the treatment of water pollutants, we apply stringent standards in operating and managing effluent treatment facilities. In particular, our internal pollutant treatment standards that were separately developed ensure that effluents are discharged at concentrations that are well below applicable legal requirements. Periodic monitoring is also performed to manage the trajectory of pollutants generated.

Furthermore, annual 'water quality analysis capacity assessments' are made on those companies that measure water quality at our worksites to maintain the reliability of water pollutant measurement data.

Domestic Discharge of Pollutants in 2019

(unit: kg)

Category		2019
Water Pollutant	BOD	7,677
	COD	16,458
	SS	23,707
Air Pollutant	NOx	24,651
	SOx	7,946
	Dust	20,482

Waste Management

Endeavors to Ensure Safety in Waste Management and Reduce Waste Generation

Samsung SDI applies internal standards that are stricter than the legally-permissible standards set by the government in treating pollutants. Any and all waste generated from the manufacturing process is treated by outsourcing companies specialized in waste treatment, and these companies are assessed annually and verified frequently for their regulatory compliance to doubly make sure that waste is treated in accordance with applicable regulations. Meanwhile, we also increase the recycling of end-of-life batteries and scraps generated from the manufacturing process to ultimately reduce the generation of waste.

Waste Management in 2019

(unit: ton)

Domestic

Waste recycling

92.7 %

Category	2019
Total generation	58,246
- General waste	28,082
- Designated waste	30,164
Waste recycled	53,975
Landfills	4,270

Overseas

Waste recycling

85.1 %

Category	2019
Total generation	65,176
- General waste	39,828
- Designated waste	25,348
Waste recycled	55,451
Landfills	9,725

Environmental Efficiency Goals

We set environmental efficiency goals to mitigate our environmental impact that arises from the manufacturing process. These goals concern our water consumption, use of harmful substances, discharge of waste and recycling, and we are committed to attaining these goals by 2020.

Environmental Efficiency Goals

	2015	2020 Goals
Water consumption	0.11 kilotons/KRW 100 million	200 % + improvement
Harmful substance consumption	0.43 kilotons/KRW 100 million	200 % + improvement
Waste discharge	0.97 kilotons/KRW 100 million	200 % + improvement
Waste recycling	96 %	95 % and above
Waste landfill	4 %	5 % and under

* Scope of data (except water pollutant and air pollutant data) collection: All production facilities in Korea and abroad, the Headquarters, and the R&D Center (excluding sales bases and offices, and including those production facilities only that have production records for 2019)

APPENDICES

Financial Performance

Consolidated Statements of Financial Position

50th as of Dec. 31, 2019
49th as of Dec. 31, 2018
48th as of Dec. 31, 2017
(unit: KRW)

Item	End of 50th	End of 49th	End of 48th
Assets			
Current assets	5,181,414,896,890	5,519,342,209,666	3,584,576,077,532
Cash and cash equivalents	1,156,295,420,684	1,516,585,546,977	1,209,015,663,790
Account receivables and other receivables	2,015,345,598,328	1,851,185,858,690	1,230,256,403,435
Inventories	1,707,920,528,827	1,745,650,833,399	966,571,644,365
Other investments	147,307,932,765	150,531,067,707	113,795,179,915
Other current assets	154,545,416,286	198,560,107,177	64,937,186,027
Non-current assets held for sale	-	56,828,795,716	-
Non-current assets	14,670,681,551,114	13,830,378,974,263	12,157,129,300,725
Account receivables and other receivables	27,812,097,927	23,168,938,800	3,379,614,318
Investments in associates	6,763,177,128,524	6,554,633,768,115	6,219,349,912,456
Property, plant and equipment	5,426,843,174,367	4,608,333,985,853	2,930,339,325,646
Intangible assets	831,370,661,521	866,271,119,300	897,447,247,322
Investment property	153,656,745,607	149,725,014,028	149,914,778,172
Deferred tax assets	85,799,169,237	51,799,609,019	41,407,873,779
Other investments	1,268,769,438,700	1,495,631,279,112	1,785,846,776,491
Other non-current assets	113,253,135,231	80,815,260,036	129,443,772,541
Total assets	19,852,096,448,004	19,349,721,183,929	15,741,705,378,257
Liabilities			
Current liabilities	3,741,522,650,216	4,012,822,498,262	2,664,061,476,102
Account payables and other payables	1,835,800,150,659	2,145,075,054,015	1,485,918,600,167
Income taxes payable	72,873,576,031	35,623,226,493	20,807,947,629
Advance received	60,860,323,805	69,598,588,790	44,172,530,214
Unearned revenue	5,513,614,118	6,304,689,548	33,857,200,178
Short-term borrowings	1,766,474,985,603	1,739,389,710,470	1,079,305,197,914
Derivative liabilities	-	15,202,782,348	-
Non-current liabilities held for sale	-	1,628,446,598	-
Non-current liabilities	3,450,228,602,652	3,111,679,469,477	1,625,644,404,713
Account payables and other payables	338,467,511,795	291,312,664,392	181,119,003,713
Long-term unearned revenue	5,259,529,488	27,083,906,195	44,139,747,984
Long-term borrowings	1,801,994,890,105	1,514,282,000,856	345,303,351,571
Employee benefit liabilities	61,489,160,231	70,146,754,408	25,621,629,290
Derivative liabilities	2,420,075,456	29,866,610,049	20,220,577,592
Deferred tax liabilities	1,240,597,435,577	1,178,987,533,577	1,009,240,094,563
Total liabilities	7,191,751,252,868	7,124,501,967,739	4,289,705,880,815
Total shareholders' equity			
Equity attributable to owners of the Parent Company	12,324,936,720,467	11,934,022,744,253	11,257,301,680,704
Capital stock	356,712,130,000	356,712,130,000	356,712,130,000
Capital surplus	5,001,974,693,202	5,037,936,783,944	5,042,698,139,239
Other capital items	-345,131,583,767	-345,131,583,767	-345,131,583,767
Accumulated other comprehensive income	404,513,003,532	271,989,660,350	602,435,774,875
Retained earnings	6,906,868,477,500	6,612,515,753,726	5,600,587,220,357
Non-controlling interests	335,408,474,669	291,196,471,937	194,697,816,738
Total stockholders' equity	12,660,345,195,136	12,225,219,216,190	11,451,999,497,442
Total liabilities and equity	19,852,096,448,004	19,349,721,183,929	15,741,705,378,257

Consolidated Statement of Comprehensive Income

50th as of Dec. 31, 2019
49th as of Dec. 31, 2018
48th as of Dec. 31, 2017
(unit: KRW)

Item	End of 50th	End of 49th	End of 48th
Revenue	10,097,426,164,132	9,158,272,454,945	6,346,606,593,493
Cost of sales	7,882,255,450,606	7,118,188,528,425	5,180,761,473,455
Gross profit	2,215,170,713,526	2,040,083,926,520	1,165,845,120,038
Selling, general and administrative expenses	1,752,994,251,257	1,325,113,320,369	1,048,950,333,520
Operating income	462,176,462,269	714,970,606,151	116,894,786,518
Other income	82,720,339,943	127,102,697,630	196,226,647,012
Other expenses	89,624,717,352	193,470,665,337	183,023,147,146
Finance income	314,411,076,884	384,164,315,917	250,012,082,221
Finance costs	383,670,661,559	338,715,140,922	251,450,264,219
Share of profit of equity accounted investees	178,629,731,183	342,181,823,994	695,404,774,170
Profit before income taxes	564,642,231,368	1,036,233,637,433	824,064,878,556
Income tax expenses	162,275,801,799	291,184,451,986	180,871,015,592
Profit for the year	402,366,429,569	745,049,185,447	643,193,862,964
Other comprehensive income	138,715,909,426	51,278,320,541	-6,154,449,821
Items that will never be reclassified to profit or loss	36,230,016,544	36,023,582,593	16,421,113,526
Remeasurements of defined benefit liability	5,897,603,445	-29,815,080,893	21,529,601,753
Unrealized net changes in fair value of FVOCI financial assets	41,532,379,368	77,282,456,975	-
Related tax	-11,199,966,269	-11,443,793,489	-5,108,488,227
Items that are or may be reclassified to profit or loss	102,485,892,882	15,254,737,948	-22,575,563,347
Gain/Loss on valuation of available-for-sale financial assets	-	-	171,461,576,116
Change in equity of equity-method accounted investees	21,850,440,243	-6,897,968,336	-1,625,771,441
Effective portion of unrealized changes in fair values of cash flow hedges	28,819,436,259	-25,658,003,955	-
Change in gain on translation of foreign operations	60,421,135,318	39,557,923,656	-156,923,295,181
Related tax	-8,605,118,938	8,252,786,583	-35,488,072,841
Total comprehensive income	541,082,338,995	796,327,505,988	637,039,413,143
Profit attributable to:			
Owners of the Parent Company	356,548,860,592	701,166,336,925	657,236,340,934
Non-controlling interests	45,817,568,977	43,882,848,522	-14,042,477,970
Total comprehensive income attributable to:			
Owners of the Parent Company	493,820,676,756	748,427,028,644	685,105,833,682
Non-controlling interests	47,261,662,239	47,900,477,344	-48,066,420,539
Earnings per share			
Ordinary share - Basic earnings per share (unit: KRW)	5,331	10,484	9,824
Preferred share – Basic earnings per share (unit: KRW)	5,381	10,534	9,874

Sales by Business Division

(on a consolidated basis, unit: KRW 100 million)

Category	50th	49th	48th
Energy Solution	77,193	69,542	43,324
Electronic Materials	23,781	22,041	20,142
Total	100,974	91,583	63,466

Sustainability Performance

Economic Performance

Production

Category		Unit	2017	2018	2019
Energy Solution	Small-sized battery	Million	1,158	1,514	**1,505**
Electronic Materials	EMC	Ton	6,236	6,341	**4,085**
	Polarizing film	1,000 m^2	66,046	84,874	**91,055**

Market Share

Source: * B3 Annual Report, ** SNE research , *** Samsung SDI forecasts

Category		Unit	2017	2018	2019
Energy Solution	Small-sized battery*	%	19	19	**19**
	- Cylindrical	%	22	24	**25**
	- Prismatic	%	24	20	**15**
	- Polymer	%	14	12	**10**
	Automotive battery*	%	7	5	**5**
	ESS**	%	35	46	**29**
Electronic Materials	EMC***	%	7	6	**7**

Taxes Paid by Country and Continent

Category	Unit	2017	2018	2019
Korea	KRW	8,824,497,593	141,334,370,420	**16,712,913,854**
Japan	KRW	290,658,958	296,685,442	**419,806,405**
Americas and Europe	KRW	12,894,296,835	28,867,605,982	**25,575,647,189**
China and Southeast Asia	KRW	7,728,617,834	38,368,707,784	**18,667,713,476**
Latin America	KRW	73,937,862	4,338,053,536	**30,445,256**
Hong Kong	KRW	1,306,399,754	2,059,600,327	**1,866,373,510**

Samsung SDI complies with tax laws in countries where it operates and faithfully fulfills its tax filing and payment obligations. We assess tax risks from multiple aspects, and review our global worksites and respective business partners to prevent tax-related risks. To respond to regulations intended to prevent tax avoidance and tax evasion, we constantly monitor how tax authorities respond at the country and regional level and reflect their responses in our tax policy.

Environmental Performance

GHG Emissions

Category		Unit	2017	2018	2019
Total emissions		tCO_2e	919,382	1,129,564	**1,275,165**
Direct/indirect emissions	Direct emissions	tCO_2e	143,581	154,704	**162,873**
	Indirect emissions	tCO_2e	775,801	974,860	**1,112,292**
	Direct/indirect emission intensity	tCO_2e/KRW 100 million	14.49	12.33	**12.63**
Other emissions	Employees' business travel	tCO_2e	4,331	4,385	**5,529**
	Product transport	tCO_2e	516	562	**574**
By region	Domestic	tCO_2e	438,399	511,379	**536,928**
	Overseas	tCO_2e	480,983	618,185	**738,237**
By business division	Battery Business	tCO_2e	467,140	566,356	**667,370**
	Automotive & ESS Business	tCO_2e	221,133	331,027	**371,585**
	Electronic Materials Business	tCO_2e	197,008	189,661	**190,291**
	R&D and others	tCO_2e	34,101	42,520	**45,919**

Energy Consumption

Category	Unit	2017	2018	2019
Company-wide consumption	TJ	14,988	18,947	**21,297**
- Domestic consumption	TJ	8,609	10,509	**11,145**
- Overseas consumption	TJ	6,379	8,438	**10,152**
Company-wide consumption intensity	TJ/KRW 100 million	0.24	0.21	**0.21**

Water Resources Consumption

Category	Unit	2017	2018	2019
Company-wide consumption	Kiloton	6,408	7,927	**7,385**
- Domestic consumption	Kiloton	3,484	3,485	**3,370**
- Overseas consumption	Kiloton	2,924	4,442	**4,015**
Company-wide consumption intensity	Kiloton/KRW 100 million	0.10	0.09	**0.07**

Effluent Discharge

Category	Unit	2017	2018	2019
Company-wide discharge	Kiloton	3,020	3,465	**3,269**
- Domestic discharge	Kiloton	1,960	2,324	**2,113**
- Overseas discharge	Kiloton	1,060	1,141	**1,156**
Company-wide discharge intensity	Kiloton/KRW 100 million	0.05	0.04	**0.03**

Waste Generation and Recycling

Category		Unit	2017	2018	2019
Company-wide generation		Ton	72,730	106,712	**123,422**
- Domestic generation		Ton	46,705	68,746	**58,246**
- Overseas generation		Ton	26,025	37,966	**65,176**
Company-wide generation intensity		Ton/KRW 100 million	1.15	1.17	**1.22**
Generation of designated waste		Ton	25,225	39,682	**55,512**
Domestic	Recycling	%	99	93.3	**92.7**
	Landfill	%	1	6.7	**7.3**
Overseas	Recycling	%	92	92.9	**85.1**
	Landfill	%	8	7.1	**14.9**

Waste Treatment in 2019

Category	Unit	2019
Incineration	Ton	**17,797**
Landfill	Ton	**2,534**
Recycling	Ton	**105,223**
Total	Ton	**125,554**

Generation of Pollutants (domestic)

Category		Unit	2017	2018	2019
Water pollutant discharge intensity	BOD	kg/KRW 100 million	0.12	0.06	**0.08**
	COD	kg/KRW 100 million	0.41	0.20	**0.16**
	SS	kg/KRW 100 million	0.36	0.24	**0.23**
Air pollutant emission intensity	NOx	kg/KRW 100 million	0.14	0.21	**0.24**
	SOx	kg/KRW 100 million	0.02	0.11	**0.08**
	Dust	kg/KRW 100 million	0.09	0.19	**0.20**
Ozone depleting substances	Company-wide emissions	kgCFC11eq	52.5	352.6	**379.1**
	- Domestic emissions	kgCFC11eq	52.2	239.5	**235.2**
	- Overseas emissions	kgCFC11eq	0.3	113.1	**143.9**
	Company-wide emission intensity	kgCFC11eq/KRW 100 million	0.001	0.004	**0.004**

Hazardous Chemicals Consumption

Category	Unit	2017	2018	2019
Company-wide consumption	Ton	26,097	47,103	**70,043**
- Domestic consumption	Ton	24,228	41,338	**41,040**
- Overseas consumption	Ton	1,869	5,764	**29,004**
Company-wide consumption intensity	Ton/KRW 100 million	0.41	0.51	**0.69**

Annotations on Environmental Performance

* The scope of data collection includes all production facilities in Korea and abroad, the Headquarters, and the R&D Center, excluding sales bases and offices (including those production facilities only that have production records for 2019).
* Intensity figures were calculated based on consolidated sales.
* Hazardous chemicals data was based on the substances regulated by Korea's Hazardous Chemicals Control Act.

Sustainability Performance

Social Performance

Employee Data

* Domestic dispatched employees mainly assume positions of executive secretaries, administrative assistants, interpreters, and drivers, and overseas dispatched employees are responsible for manufacturing and packaging inspection.

Category		Unit	2017	2018	2019
Total		No. of persons	22,142	24,718	**26,813**
Gender	Male	No. of persons	16,211	18,307	**20,364**
	Female	No. of persons	5,931	6,411	**6,449**
By region	Korea	No. of persons	9,258	10,268	**10,833**
	Asia (excluding Korea)	No. of persons	11,858	12,242	**12,121**
	Europe	No. of persons	895	2,037	**3,632**
	Americas	No. of persons	131	171	**227**
By age	Under 30	No. of persons	4,595	12,185	**12,636**
	Between 30 and 50	No. of persons	16,553	11,384	**12,794**
	50 and older	No. of persons	994	1,149	**1,383**
By employment type	Full-time	No. of persons	20,078	22,410	**23,347**
	Contract	No. of persons	1,364	1,387	**1,871**
	Dispatched*	No. of persons	700	921	**1,595**

Diversity and Social Equality

* Leader positions including group and team leaders.
** Managers refer to employees in director and higher positions.

Category		Unit	2017	2018	2019
Employees with disabilities		No. of persons	133	152	**169**
Local recruitment	Leaders* at overseas worksites	No. of persons	180	184	**205**
	Locally-hired leaders	No. of persons	105	109	**113**
	Ratio of locally-hired leaders	%	58.3	59.2	**55.1**
Female	Managers**	No. of persons	3,715	3,858	**4,117**
	Female managers	No. of persons	303	316	**380**
	Ratio of female managers	%	8.2	8.2	**9.2**

Recruitment

Category		Unit	2017	2018	2019
Recruitment		No. of persons	8,006	8,188	**6,792**
Gender	Male	No. of persons	4,999	6,046	**5,413**
	Female	No. of persons	3,007	2,142	**1,379**
By region	Domestic	No. of persons	684	1,128	**502**
	Overseas	No. of persons	7,322	7,060	**6,290**

Turnover*

* Turnover data is calculated by 'annual No. of resignees/annual average No. of employees'.

Category		Unit	2017	2018	2019
Turnover		%	27.4	22.2	**18.1**
- Domestic turnover		%	2.4	2.5	**1.6**
- Overseas turnover		%	45.6	35.9	**29.6**
Gender	Male	%	23.9	21.1	**17.4**
	Female	%	36.6	25.4	**20.2**
By region	Asia	%	48.1	37.2	**30.0**
	Europe	%	13.9	26.4	**27.6**
	Americas	%	11.5	28.7	**26.6**
By age	Under 30	%	45.2	35.2	**31.3**
	Between 30 and 50	%	12.0	11.3	**8.0**
	50 and older	%	5.4	6.6	**5.6**

Compensation

Category	Unit	2017	2018	2019
Wage	KRW million	759,356	977,764	**1,062,900**
Retirement benefits	KRW million	65,489	64,183	**74,780**
Ratio of base pay by gender	Male/female	1:1	1:1	**1:1**

Employee Grievance Handling (domestic)

Category	Unit	2017	2018	2019
Grievances submitted	No. of grievances	441	887	**1,083**
Grievance handling rate	%	95.2	99.9	**100.0**

Works Council (domestic)

Category	Unit	2017	2018	2019
Representatives at the Works Council	No. of persons	52	52	**52**

Organizational Culture

Category	Unit	2017	2018	2019
Samsung Culture Index (SCI) assessment score	Point	70.3	70.0	**71.4**
No. of Change Agents	No. of persons	245	250	**272**

Training

* Domestic

Category	Unit	2017	2018	2019
Total training expenditures	KRW 100 million	83	97	**107**
Cumulative No. of trainees	No. of persons	43,760	49,036	**64,063**
Training hours per employee*	No. of persons	103	123	**101**
Training expenses per employee*	KRW/No. of persons	990,632	984,151	**1,120,602**

Capacity-building of Sales/Marketing Workforce

Category		Unit	2017	2018	2019
No. of sales/marketing employees	Domestic	No. of persons	314	328	**338**
	Overseas	No. of persons	160	185	**181**
Ratio of sales/marketing workforce	Domestic	%	3.4	3.2	**3.1**
	Overseas	%	1.2	1.3	**1.1**
Sales/marketing training expenditures		KRW million	12	9	**8**

Capacity-building of R&D

Category		Unit	2017	2018	2019
No. of R&D employees	Domestic	No. of persons	2,215	2,260	**2,400**
	Overseas	No. of persons	410	375	**348**
Ratio of R&D workforce	Domestic	%	24.2	22.2	**22.1**
	Overseas	%	3.2	2.6	**2.2**
R&D investments	Investments made	KRW 100 million	5,259	6,040	**7,124**
	Percentage of sales	%	8.3	6.6	**7.1**

Development of Quality Workforce

Category		Unit	2017	2018	2019
No. of quality professionals		No. of persons	74	43	**76**
Quality management training hours		Hour	1,346	704	**739**
Ratio of quality management auditors	ISO 9001	%	15	20.2	**21.7**
	IATF 16949, VDA3.6, etc.	%	26	33.1	**47.5**

Compliance and Ethics Training

* The number of trainees dropped in 2018 as special and online training was not provided.
** The number of trainees fell as we did not provide special training, online training and dissemination training while focusing on offline training to improve the effectiveness of training for new hires and expatriates in 2019.

Category		Unit	2017	2018	2019
Samsung SDI	Anti-corruption (domestic, cumulative)	No. of persons	9,377	4,591*	**1,020****
	Compliance and ethics (domestic, cumulative)	No. of persons	4,097	5,412	**9,697**
Supply chain	Compliance and ethics	No. of companies	80	53	**80**

Safety Job Qualification Training*

* This was created in 2019 and its data has been calculated since 2019.

Category	Unit	2017	2018	2019
Training targets	No. of persons	-	-	**1,225**
Trainees	No. of persons	-	-	**1,225**

Occupational Injury

Category		Unit	2017	2018	2019
Employees	Injuries	No. of injuries	7	8	**10**
	Accident rate	-	0.0334	0.0377	**0.0376**
	- Domestic	-	0.0327	0.0763	**0.0554**
	- Overseas	-	0.0339	0	**0.0254**
	Illness rate	-	0	0.0054	**0**
	No. of fatalities	No. of persons	0	0	**0**
In-house partners	Injuries	No. of injuries	0	1	**3**
	Accident rate	-	0	0.0459	**0.0513**

Detailed Data on Occupational Injuries in 2019

* (No. of injuries/No. of annual work hours)X1,000,000
** (No. of lost work days/No. of annual work hours)X1,000,000
(annual work hours = 8 hoursX300 days X No. of employees)

Category			Domestic	Overseas	Total
Employees	Injury frequency rate*	Based on 300 days	0.2308	0.1058	**0.1567**
	Loss rate**		33.6164	3.2798	**15.6411**
	Injury rate (accidents + illnesses)		0.0554	0.0254	**0.0376**
In-house partner companies	Injury frequency rate*		0.1719	0.2432	**0.2137**
	Loss rate**		23.7211	13.8646	**17.9487**
	Injury rate (accidents + illnesses)		0.0413	0.0584	**0.0513**
Employees + in-house partner companies	Injury frequency rate*		0.22	0.1304	**0.167**
	Loss rate**		31.8071	5.1706	**16.0573**
	Injury rate (accidents + illnesses)		0.0528	0.0313	**0.0401**

Purchases Made along the Supply Chain

* Maintenance, Repair & Operation (MRO) purchases include packaging materials.

Category	Unit	2017	2018	2019
Total purchases made	KRW 100 million	44,087	70,685	**61,926**
- Raw/subsidiary material purchases made	KRW 100 million	37,512	55,921	**53,967**
- Equipment purchases made	KRW 100 million	5,191	12,729	**5,482**
- MRO purchases made*	KRW 100 million	1,384	2,035	**2,477**
Ratio of local purchases made by partners (based on our battery business)	%	40.6	39.0	**35.0**

Shared Growth Agreement

Category	Unit	2017	2018	2019
Samsung SDI – first-tier partners	No. of companies	110	111	**109**
First-tier partners – second-tier partners	No. of agreements signed	120	129	**120**

Shared Growth Support and Performance

* For first, second, third-tier partners
** Support for creating jobs for youth (aged 15 and older and 30 and under)

Category		Unit	2017	2018	2019
Financial support	Direct support (credit assistance for molding fees, etc.)	KRW 100 million	97.1	160	**144**
	Mixed support (contribution to the win-win fund)*	KRW 100 million	270	325	**450**
	Special support (training, etc.)*	KRW 100 million	11.8	4	**2**
Direct/indirect management support	On-the-job training (partners)	No. of persons	759	910	**821**
		No. of companies	75	137	**111**
	Online training (partners)	No. of persons	146	111	**0**
		No. of companies	14	11	**0**
	Recruitment support**	No. of persons	65	81	**70**
		No. of companies	7	4	**7**
	Innovation guidance	No. of companies	12	12	**8**
Performance in technology support and protection	Public-private joint investment and development projects	No. of cases	2	0	**0**
	Conditional purchases (localization tasks)	No. of cases	5	0	**0**
	Original trade secret certification system	No. of cases	19	47	**74**
	Technology escrow system	No. of cases	8	8	**10**
Performance in new market penetration	Hosting of buyer meetings	No. of cases	6	6	**11**
	Operation of trade fair exhibitions for partners	No. of cases	1	1	**1**
	Support for overseas benchmarking	No. of cases	2	2	**2**
	Attendance in overseas corporations' info sessions with investment agencies	No. of cases	-	1	**1**
	Support for attendance in overseas tech exhibitions	No. of cases	1	1	**1**

S-Partner Certification

Category	Unit	2017	2018	2019
Total	No. of cases	90	91	**90**
- Domestic	No. of cases	70	60	**70**
- Overseas	No. of cases	20	31	**20**
Partners who failed to meet the certification criteria	No. of companies	0	0	**0**

Social Contribution Investment*

* Program-specific expenditure management criteria were modified in 2017, and detailed data is available from the year of 2018.
** Samsung year-end love your neighbor funds, etc.

Category	Unit	2017	2018	2019
Total expenditures	KRW 100 million	40.2	49.9	**61.9**
- Educational program	KRW 100 million	-	6.4	**9.6**
- Special program	KRW 100 million	-	1.0	**1.0**
- Community program	KRW 100 million	-	15.1	**11.3**
- Donations made**	KRW 100 million	-	27.4	**40.0**

Employees' participation in social contribution

Category	Unit	2017	2018	2019
Participation in social contribution programs	%	97.0	98.0	**97.8**
Volunteer hours per employee in Korea	No. of hours/No. of persons	13.7	13.7	**13.0**

Major social contribution achievements

* Green Planet Dreaming School, following its pilot operation in 2018, has been officially initiated since 2019.
** Green Planet Future Science School was officially launched in 2019.

Category		Unit	2017	2018	2019
Green Planet Environment School	Beneficiaries	No. of persons	8,477	9,149	**10,626**
	Beneficiaries (cumulative)	No. of persons	17,061	26,210	**36,836**
Green Planet Dreaming School*	Beneficiaries	No. of persons	-	397	**3,354**
	Beneficiaries (cumulative)	No. of persons	-	397	**3,751**
Green Planet Future Science School**	Beneficiaries	No. of persons	-	-	**4,298**
	Beneficiaries (cumulative)	No. of persons	-	-	**4,298**

Worksite Corruption Risk Assessment

Category	Unit	2017	2018	2019
Total No. of worksites	No. of worksites	30	30	**30**
No. of worksites with corruption risks	No. of worksites	2	2	**2**
Ratio of worksites with corruption risks	%	7	7	**7**

Corruption Audits and Resulting Disciplinary Measures

Category	Unit	2017	2018	2019
Disciplinary measures taken as a result of corruption audits (domestic)	No. of persons	20	2	**9**
Business partners whose contract was terminated in relation to corruption	No. of companies	-	-	**-**

Compliance Audit

Category	Unit	2017	2018	2019
Compliance audits performed	No. of audits	17	17	**17**

Customer Satisfaction Score

* Total customer satisfaction scores were not presented for our Electronic Materials Business given the variety of its products.

Category		Unit	2017	2018	2019
Small-sized Li-ion Battery	Customer satisfaction score	Point	81.9	82.0	**85.7**
	No. of companies surveyed	No. of companies	21	23	**21**
	No. of customers surveyed	No. of persons	24	25	**21**
Automotive Battery & ESS	Customer satisfaction score	Point	86	90	**82.8**
	No. of companies surveyed	No. of companies	4	4	**5**
	No. of customers surveyed	No. of persons	4	4	**5**
Electronic Materials	Customer satisfaction score*	Point	-	-	-
	No. of companies surveyed	No. of companies	33	26	**25**
	No. of customers surveyed	No. of persons	190	169	**138**

EHS(Environment, Health & Safety) Audit

* No. of improvement tasks rose from 2018 due to an increase in audit projects.

Category		Unit	2017	2018	2019
Meetings supervised by the CEO		No. of meetings	4	4	**6**
Improvement tasks identified through EHS audits	Domestic	No. of tasks	188	81	**660***
	Overseas	No. of tasks	168	266	**259**

Acquisition of National Health & Safety Engineer Qualifications

Category	Unit	2017	2018	2019
Industrial safety engineer and above	%	83	68	**60**
Master engineer and above	%	37	21	**32**

Welfare and Benefits

* Ratio of employees who returned to work in the concerned year after taking parental leave the previous year.
** Ratio of employees who worked 12 months and longer among those who returned to work after taking parental leave the previous year.

Category		Unit	2017	2018	2019
Welfare and benefits expenditures		KRW million	255,013	297,369	**332,563**
Parental leave	Return-to-work ratio*	%	82.1	95.8	**99.4**
	Return-to-work and retention ratio **	%	80.7	96.5	**99.1**

GRI Standards Index

Universal Standards (GRI 100)

Topic	Disclosure		Pages	Note
GRI 102: General Disclosure 2016				
Organizational Profile	102-1	Name of the organization	13	
	102-2	Activities, brands, products, and services	16~25	
	102-3	Location of headquarters	13	
	102-4	Location of operations	12~13	
	102-5	Ownership and legal form	13	
	102-6	Markets served	12~13	
	102-7	Scale of the organization	12~13, 90	
	102-8	Information on employees and other workers	90	
	102-9	Supply chain	58	
	102-10	Significant changes to the organization and its supply chain	58	
	102-11	Precautionary Principle or approach	58, 88	
	102-12	External initiatives	32~33, 61, 62	
	102-13	Membership of associations	31	
Strategy	102-14	Statement from senior decision-maker	4~5	
	102-15	Key impacts, risks, and opportunities	18~25	
Ethics and Integrity	102-16	Values, principles, standards, and norms of behavior	30~31, 72	
	102-17	Mechanisms for advice and concerns about ethics	71, 75	
Governance	102-18	Governance structure	68	
	102-22	Composition of the highest governance body and its committees	69	
	102-23	Chair of the highest governance body	68	
	102-24	Nominating and selecting the highest governance body	69	
	102-26	Role of highest governance body in setting purpose, values, and strategy	69	
	102-28	Evaluating the highest governance body's performance	69	
	102-35	Remuneration policies	69	
	102-36	Process for determining remuneration	69	
Stakeholder Engagement	102-40	List of stakeholder groups	30~31	
	102-41	Collective bargaining agreements	72, 75	
	102-42	Identifying and selecting stakeholders	30~31	
	102-43	Approach to stakeholder engagement	30~31	
	102-44	Key topics and concerns raised	30~31	
Reporting Practice	102-45	Entities included in the consolidated financial statements	-	Annual Report p.3~4
	102-46	Defining report content and topic Boundaries	34~35	
	102-47	List of material topics	35	
	102-48	Restatements of information	-	Annotations were made when deemed necessary
	102-49	Changes in reporting	-	Annotations were made when deemed necessary
	102-50	Reporting period	2	
	102-51	Date of most recent report	2	
	102-52	Reporting cycle	2	
	102-53	Contact point for questions regarding the report	2	
	102-54	Claims of reporting in accordance with the GRI Standards	2	
	102-55	GRI content index	95~97	
	102-56	External assurance	98~99	
GRI 103: Management Approach 2016				
Management Approach	103-1	Explanation of the material topic and its boundary	42~43, 50~51, 56~57	
	103-2	The management approach and its components	42~44, 50~52, 56~58	
	103-3	Evaluation of the management approach	43, 51, 57	

GRI Standards Index

Economic Performance (GRI 200)

Topic	Disclosure		Pages	Note
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	30~31	
	201-2	Financial implications and other risks and opportunities due to climate change	48~49	
	201-3	Defined benefit plan obligations and other retirement plans	91	
GRI 202: Market Presence 2016	202-2	Proportion of senior management hired from the local community	90	
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	93	
	203-2	Significant indirect economic impacts	36~39	
GRI 204: Procurement Practices 2016	204-1	Proportion of spending on local suppliers	92	
GRI 205: Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	94	
	205-2	Communication and training about anti-corruption policies and procedures	70~71	
	205-3	Confirmed incidents of corruption and actions taken	-	no such case
GRI 206: Anti-competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	-	no such case

Environmental Performance (GRI 300)

Topic	Disclosure		Pages	Note
GRI 301: Materials 2016	301-2	Recycled input materials used	47	
GRI 302: Energy 2016	302-1	Energy consumption within the organization	88	
	302-3	Energy intensity	88	
	302-4	Reduction of energy consumption	45	
GRI 303: Water and Effluents 2018	303-1	Interactions with water as a shared resource	82	
	303-2	Management of water discharge-related impacts	82	
	303-5	Water consumption	89	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	88	
	305-2	Energy indirect (Scope 2) GHG emissions	88	
	305-3	Other indirect (Scope 3) GHG emissions	88	
	305-4	GHG emissions intensity	88	
	305-5	Reduction of GHG emissions	44	
	305-6	Emissions of ozone-depleting substances (ODS)	89	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	89	
GRI 306: Effluents and Waste 2016	306-1	Water discharge by quality and destination	89	
	306-2	Waste by type and disposal method	89	
	306-3	Significant spills	-	no such case
	306-5	Water bodies affected by water discharges and/or runoff	82	
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	-	no such case
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	60	
	308-2	Negative environmental impacts in the supply chain and actions taken	60	

Social Performance (GRI 400)

Topic	Disclosure		Pages	Note
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	90	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	75	
	401-3	Parental leave	94	
GRI 402: Labor/Management Relations 2016	402-1	Minimum notice periods regarding operational changes	75	
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	78	
	403-2	Hazard identification, risk assessment, and incident investigation	78~81	
	403-5	Worker training on occupational health and safety	80, 92	
	403-6	Promotion of worker health	81	
	403-9	Work-related injuries	92	
	403-10	Work-related ill health	92	
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	91	
	404-2	Programs for upgrading employee skills and transition assistance programs	73~74	
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	68~69	
	405-2	Ratio of basic salary and remuneration of women to men	91	
GRI 406: Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	-	no such case
GRI 412: Human Rights Assessment 2016	412-1	Operations that have been subject to human rights reviews or impact assessments	72	
	412-2	Employee training on human rights policies or procedures	72	
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	76~77	
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	60	
	414-2	Negative social impacts in the supply chain and actions taken	60	
GRI 415: Public Policy 2016	415-1	Political contributions	-	No political donations were made in accordance with Article 31 of the Political Fund Act.
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	52~53	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-	no such case
GRI 417: Marketing and Labeling 2016	417-2	Incidents of non-compliance concerning product and service information and labeling	-	no such case
	417-3	Incidents of non-compliance concerning marketing communications	-	no such case
GRI 418: Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	-	no such case
GRI 419: Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	-	no such case

Independent Assurance Statement

Third Party's Assurance Statement

To the Readers of 2019 SAMSUNG SDI Sustainability Report:

Foreword

Korea Management Registrar Inc. (hereinafter "KMR") has been requested by of SAMSUNG SDI to verify the contents of its 2019 SAMSUNG SDI Sustainability Report (Hereby referred to as "the Report"). SAMSUNG SDI is responsible for the collection and presentation of information included in the Report. KMR's responsibility is to carry out assurance engagement on specific data and information in the assurance scope stipulated below.

Scope and standard

SAMSUNG SDI describes its efforts and achievements of the corporate social responsibility activities in the Report. KMR performed a type2, moderate level of assurance using AA1000AS (2008) and SRV1000 from KMR Global Sustainability Committee as assurance standards. KMR's assurance team(hereinafter "the team") evaluated the adherence to Principles of Inclusivity, Materiality and Responsiveness, and the reliability of the selected GRI Standards indices as below, where professional judgment of the team was exercised as materiality criteria.

The team checked whether the Report has been prepared in accordance with the 'Core Option' of GRI Standards which covers the followings.

- ◆ GRI Standards Reporting Principles
- ◆ Universal Standards
- ◆ Topic Specific Standards
  - Economic Performance : 201-1, 201-2, 201-3
  - Market Presence : 202-2
  - Indirect Economic Impacts : 203-1, 203-2
  - Procurement Practices : 204-1
  - Anti-Corruption : 205-1, 205-2, 205-3
  - Anti-Competitive Behavior : 206-1
  - Materials : 301-2
  - Energy : 302-1, 302-3, 302-4
  - Water and Wastewater : 303-1, 303-2, 303-3, 303-4, 303-5
  - Emissions : 305-1, 305-2, 305-3, 305-4, 305-5, 305-7
  - Waste : 306-1, 306-2, 306-3, 306-5
  - Environmental Compliance : 307-1
  - Supplier Environmental Assessment : 308-1, 308-2
  - Employment : 401-1, 401-2, 401-3
  - Labor/Management Relations : 402-1
  - Occupational Health and Safety : 403-1, 403-2, 403-9, 403-10
  - Training and Education : 404-1, 404-2
  - Diversity and Equal Opportunity : 405-1, 405-2
  - Non-Discrimination : 406-1
  - Human Rights Assessment : 412-1, 412-2
  - Local Communities : 413-1
  - Supplier Social Impact Assessment : 414-1, 414-2
  - Public Policy : 415-1
  - Customer Health and Safety : 416-1, 416-2
  - Product and Service Labeling : 417-2, 417-3
  - Customer Privacy : 418-1
  - Social Environment Compliance : 419-1

This Report excludes data sand information of joint corporate, contractor etc. which is outside of the organization, i.e. SAMSUNG SDI, among report boundaries.

Our approach

In order to verify the contents of the Report within an agreed scope of assurance in accordance with the assurance standard, the team has carried out an assurance engagement as follows:

- ◆ Reviewed overall report
- ◆ Reviewed materiality test process and methodology
- ◆ Reviewed sustainability management strategies and targets
- ◆ Reviewed stakeholder engagement activities
- ◆ Interviewed people in charge of preparing the Report

Our conclusion

Based on the results we have obtained from material reviews and interviews, we had several discussions with SAMSUNG SDI on the revision of the Report. We reviewed the Report's final version in order to confirm that our recommendations for improvement and our revisions have been reflected. When reviewing the results of the assurance, the assurance team could not find any inappropriate contents in the Report to the compliance with the principles stipulated below. Nothing has come to our attention that causes us to believe that the data included in the verification scope are not presented appropriately.

◆ Inclusivity

Inclusivity is the participation of stakeholders in developing and achieving an accountable and strategic response to sustainability

- SAMSUNG SDI is developing and maintaining stakeholder communication channels in various forms and levels in order to make a commitment to be responsible for the stakeholders. The assurance team could not find any critical stakeholder SAMSUNG SDI left out during this procedure.

◆ Materiality

Materiality is determining the relevance and significance of an issue to an organization and its stakeholders. A material issue is an issue that will influence the decisions, actions, and performance of an organization or its stakeholders.

- SAMSUNG SDI is determining the materiality of issues found out through stakeholder communication channels through its own materiality evaluation process, and the assurance team could not find any critical issues left out in this process.

◆ Responsiveness

Responsiveness is an organization's response to stakeholder issues that affect its sustainability performance and is realized through decisions, actions, and performance, as well as communication with stakeholders.

- The assurance team could not find any evidence that SAMSUNG SDI's counter measures to critical stakeholder issues were inappropriately recorded in the Report.

We could not find any evidence the Report was not prepared in accordance with the 'Core Option' of GRI standards.

Recommendation for improvement

We hope the Report is actively used as a communication tool with stakeholders and we recommend the following for continuous improvements.

- ◆ Samsung SDI recognized "climate change", "product safety", and "sustainable supply chain", global issues for energy and advanced materials industries, as key sustainability initiatives and provided a detailed report on them. In addition, it presented demand forecasts and future directions of individual businesses, faithfully communicating the company's growth potential to stakeholders. It sought to enhance transparency by disclosing the social and environmental performance of overseas operations and the results of the supply chain assessment including elements to be improved. The company is advised to enhance the related management system in the future. Furthermore, the company can gain more trust from stakeholders by developing mid- to long-term ESG strategies and goals at the company level and including them in the report.

Our independence

With the exception of providing third party assurance services, KMR is not involved in any other SAMSUNG SDI's business operations that are aimed at making profit in order to avoid any conflicts of interest and to maintain independence.

May, 25th, 2020

KMR 한국경영인증원 Korea Management Registrar | SRV1000 Sustainability Committee Assurance | AA1000 Licensed Assurance Provider 000-129

CEO E. J Hwang

GHG Verification Statement

kfq Korean Foundation for Quality

IQNet KFQ, Partner of IQNet — THE INTERNATIONAL CERTIFICATION NETWORK

Third Party's Verification Statement

■ Introduction

Korean Foundation for Quality (hereinafter 'KFQ') has been engaged by Samsung SDI Co., Ltd.(hereinafter the 'Company') to independently verify its 2019 Greenhouse Gas Emission Report of domestic corporations and 8 overseas subsidiaries.
It is the responsibility 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. 2018-78 of Ministry of Trade, Industry and Energy)', 'Verification Guidelines for the operation of GHG Emission Trading Scheme (Notification No. 2018-70 of Ministry of Environment)', and 'ISO 14064-1:2006', and KFQ has responsibility to conduct verification based on the ISO 14064-3 to provide verification opinion on compliance of the Report against verification criteria.

■ Verification Scope

In this verification, domestic corporations and 8 overseas subsidiaries under operational control of Samsung SDI Co., Ltd., and reported emission in including Scope 1(Direct) and Scope 2(Indirect) emission. Scope 3(Indirect-business trip and domestic logistics) is also considered in total Greenhouse Gas Emission.

■ Verification Opinion

Through the verification process according to the ISO 14064-3, KFQ could obtain reasonable basis to express following conclusion on the Greenhouse Gas Emission Report.

1) 2019 Samsung SDI Co., Ltd., Greenhouse Gas Emission Report was prepared against 'Guidelines for emission reporting and certification of greenhouse gas emission trading scheme', and 'ISO 14064-1:2006':
2) As a result of materiality assessment on 2019 domestic Greenhouse Gas Emission(Scope 1 and Scope 2), material discrepancy is less than the criteria of 2.5% for the organization who emits greater than 500,000 tCO2e/yr and less than 5,000,000 tCO2e/yr in accordance with the requirements of the 'Verification Guidelines for the operation of GHG Emission Trading Scheme':
3) For the 8 overseas subsidiaries, material assessment was conducted according to the document review result and it shows that material discrepancy is less than 2.5%.
4) Among reported Greenhouse Gas Emission purchased electricity and LNG consumption take most 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.
   For the overseas subsidiaries, national net caloric value and electricity emission factor were preferentially used but net caloric value in 'Guidelines for GHG emission reporting and certification of GHG emission trading scheme' was used in case of nonexistence of it. For the Scope 3 of the domestic corporation, its emission was calculated according to the Company methodology considering travel distance for business trip only by objective evidence. And for the factors considered in emission calculation, the latest factor was used thus consistency and correctiveness is substained in 2019 Greenhouse Gas Emission Report against Samsung SDI Co., Ltd., internal guideline.
5) Except unconsidered emission source in the 'Samsung SDI Co., Ltd., Greenhouse Gas Inventory Guideline', material error, omission or insignificant issues was not founded in 2019 Samsung SDI Co., Ltd., Greenhouse Gas Emission Report.

(Unit: ton CO_2 eq)

Report year		2019.1.1~2019.12.31	
Verification Scope		Domestic	Overseas
GHG emission	Direct Emission (Scope 1,2)	536,928	738,237
	Indirect Emission (Scope 3: Business trip and logistics for the domestic corporation)	6,101	–

[2019 Samsung SDI Co., Ltd., Greenhouse Gas Emission]

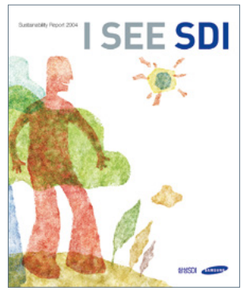
April 13rd, 2020

Ji Young Song

Ji Young Song
President & CEO Korean Foundation for Quality

Previous Sustainability Reports

2003



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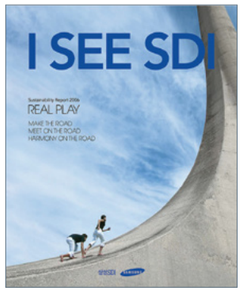


2006

2007

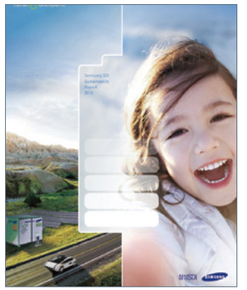
2008

2009

2010

2011

2012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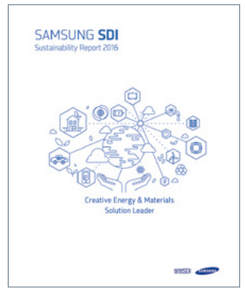
2014

2015



2016

2017

2018

SAMSUNG SDI

www.samsungsdi.com