



Sustainability with Stakeholders

2020 Sustainability Report

HYOSUNG

ABOUT THIS REPORT

After the first publication in 2012, Hyosung has been publishing the Sustainability Report every year since 2018 to actively communicate with stakeholders. The 2020 Hyosung Sustainability Report is the fifth sustainability report Hyosung has published. Through this report, we would like to share and transparently disclose the company’s sustainable management activities and achievements across the economic, social and environmental sectors.

Reporting Principles

The 2020 Hyosung Sustainability Report was prepared in accordance with the core options of the GRI Standards of the Global Reporting Initiative (GRI). In addition, external sustainability initiatives and indicators including SASB, TCFD, EcoVadis, ISO26000, and UN SDGs have been considered and further reflected so that we meet varied interests and criteria of different stakeholders.

Reporting Period and Scope

The reporting period for this report is from January 1, 2020 to December 31, 2020. When it comes to provision of trend data, time range has been set to include last three years from 2018. In case of qualitative activities and achievements the report may include data up until April 2021. All financial data is based on the criteria of K-IFRS (Korean International Financial Reporting Standards).

Hyosung was divided into the holding company and 4 operating companies, Hyosung Corporation, which is in charge of group-wide investment plans and management of subsidiaries – Hyosung TNC Corp., Hyosung Heavy Industries Corp., Hyosung Advanced Materials Corp. and Hyosung Chemical Corp., whose business area covers textile · trading, heavy industries · construction, industrial materials and chemicals, respectively. Reporting period of financial information for each company ranges from the date of the division to December 31, 2020.

The scope of this report includes all domestic and overseas business sites in Hyosung Corporation and its four operating companies. For matters required attention to the scope of the report, a separate explanation is provided to avoid confusing readers. For your convenience, we use the abbreviations of company names. Some business performance and activities described in the report may not be applicable to entire business operations. When any correction is required for historical data reported in the previous report, the data has been recalculated as of 2020, and the corresponding reason and result of the correction are indicated separately at the bottom of the content.

Verification

In order to ensure the credibility and fairness of this report, DNV has verified this report in accordance with the AA1000AS(2008) principles as well as with the verification procedures based on data and process reliability principles of DNV's verification protocol, VeriSustain. The related results of the verification can be found on page 104 of the report.

Inquiries

Hyosung Green Management Team

119 Mapodaero, Mapo-gu, 04144, Seoul, Republic of Korea

T. 02-707-7043

F. 02-707-7664

Email. csr_hs@hyosung.com

Additional Information

This report has been created in the form of an interactive PDF which includes hyperlink features to direct readers to the relevant page both within and outside the report.

Glossary for Major Terms

PG: Performance Group

PU: Performance Unit



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Dear respected stakeholders,
I appreciate your interest in and support for
Hyosung.

We sincerely thank our stakeholders, including shareholders, customers, business partners, local communities and employees, for your continued interests and support for Hyosung. The whole world is suffering tremendously from COVID-19 pandemic which started last year. It is time for all of us to gather wisdom and overcome such difficulties together. Fully aware of its role as a global citizen, to fulfill environmental responsibilities including climate change response and create a sustainable society, Hyosung will communicate more actively with stakeholders to share difficulties.

Dear stakeholders,
New IT technologies make synergistic effects through convergence, changing the industrial paradigm at an alarming pace. The AI (Artificial Intelligence) technologies will bring the new world order, and it will become more difficult to survive in the market without creating new innovations and values.

Hyosung has been striving to become a reliable and trustworthy company that fulfills its roles and responsibilities for ESG (Environment, Society and Governance) in order to protect its precious and timeless values. As a result of implementing improvement tasks in every aspect of sustainability and establishing a working-level consultative body to regularly check the progress, Hyosung Corporation and its four business companies have received outstanding results from the ESG evaluations. We have made a remarkable achievement so far but will not settle for it.

Hyosung would like to become the most trusted brand that could fulfill its roles and responsibilities for environment and society. We will pursue honest and transparent management as well as innovation that could bring differentiated values beyond price. Our values will be realized in pursuit of protecting human rights within our entire value chain and fulfilling corporate social responsibility. Hyosung is now running vigorously toward its goal after crossing the starting line. In order to arrive at the destination, I believe that we need to instill strong faith in our stakeholders.

We will not only simply declare our commitment but also practice it through various activities. These activities will be seen as concrete actions, not just declarative slogans. Accordingly, we made efforts to objectify various sustainability management data in this report. This will give you trust and look forward to discussing it together.

Dear respected stakeholders,
In this present time of crisis, Hyosung seeks to overcome the crisis wisely together with all stakeholders. We will continue to create new values for the future with our ceaseless spirit of challenge in the belief that with every crisis comes opportunity.

Thank you for your continued support.

CEO & Chairman **HYUN-JOON CHO**

Hyosung, Creating Customer Value

Hyosung’s changes are based on a process of endless challenges aimed for new technologies that could increase customer value. Hyosung’s history, which has always pioneered a better path for tomorrow without fear, goes on today. Hyosung aims to lead a better life for mankind based on the high-end technologies and management capabilities along with HYOSUNG WAY, a value system dedicated to making dreams come true for Hyosung people all around the world. Always keeping in mind that it is a member of the society, Hyosung will endeavor to contribute to the society.

Company Profile

Company name	Hyosung Corporation
Date of establishment	November 3, 1966
CEO	Hyun-Joon Cho, Kyoo-Young Kim
Headquarter location	119 Mapodaero, Mapo-gu, Seoul, Republic of Korea (Gongdeok-dong)
Main business area	Management and investment of shares of the affiliated business companies, research service, group CI management, interior, etc.
Major business countries	29 countries incl. Korea, China and Vietnam

*Major business countries are based on Hyosung Corporation and its four business companies, including Hyosung TNC, Hyosung Heavy Industries, Hyosung Advanced Materials, and Hyosung Chemical, as of the end of December 2020.

2021 Group Management Policy

Customer Value Management Based on VOC
Increasing brand value through best quality and service
Practicing responsibility management through transparent communication
Practicing data-driven management based on IT technologies
ESG management for enhancing sustainability management system

Financial Performance

Sales	KRW 2.78trillion
Group sales	KRW 15.14trillion

ESG Management Performance

KCGS rating	CDP rating
B ⁺	A ⁻
Family-friendliness certification	CSR in the Community

Global Network

Hyosung has been expanding its production sites worldwide so that it can respond to local markets abroad in a timely and stable manner in order to successfully achieve overseas expansion and growth. In addition, we are striving to provide differentiated products and services by establishing a global production system for flagship products at 109 business sites located in 29 countries in the world, in order to produce products that can win customers’ trust and affection based on clear understanding of market features. In particular, we are expanding our business in emerging and fast-growing markets such as Vietnam, India, China, Brazil, and Turkey, based on localization strategies targeting global markets and proactive facility investments to solidify our dominant position in the region. In 2020, we continued to make large-scale investments to establish new production corporations and plants in China and Vietnam, and have been working on development and mass production of core products targeting global markets. Hyosung will continue to establish a strategic global network with the goal of continuous overseas business development and strengthening global competitiveness.



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Maximizing Customer Value through Innovative Textile Technologies and Global Trade Network

Hyosung TNC’s Textile Division is globally competitive in technology, product quality and customer service, thus leading the global chemical industry by supplying yarn, textiles and dyed products such as spandex, nylon and polyester. In addition, Trade Division, which is equipped with more than 50 overseas branches worldwide, is providing top-notch marketing services covering various fields such as distribution and logistics, focusing on steel and chemicals. Based on its rich experience and expertise, Hyosung TNC is steadily growing at the center of world trade scene.

Company Profile

Company name	Hyosung TNC Corporation
Date of establishment	June 4, 2018
CEO	Yong-seup Kim
Headquarter location	119 Mapodaero, Mapo-gu, Seoul, Republic of Korea (Gongdeok-dong)
Main business area	Textile, trade, etc.

Number of Employees1,528persons

Financial Performance

SalesKRW 5.16trillion

Operating profitKRW 266.6trillion

ESG Management
Performance

KCGS ratingA+Win-win corporation program ratingA

Family-friendliness certificationCSR in the Community

Business Divisions

Textile Division			Trade Division			
Spandex PU	Nylon Polyester Fiber PU	Fabric Dyeing PU	Steel & Metal Products PU I, II	Chemical Products PU	LED Business Division	Sebitseom Business Division
<ul style="list-style-type: none">Global no.1 market shareGlobal no.1 spandex brand, 'creora'Selected as 'World Best Product' by Korean government	<ul style="list-style-type: none">No.1 nylon yarn in KoreaWorld's first microfiber developmentKorea's first PET-recycled yarn, 'regen'Selected as 'World Best Product' (m2, aerocool, askin)	<ul style="list-style-type: none">Supplying various textile materials, incl. high-performance clothing, protective clothing, and cleanersFinestar®, the cleaner product made of ultra-fine fibers.Nylon two-way spandex - 700,000 yards per monthDyeing capacity of 2.5 million yards per month	<ul style="list-style-type: none">Leading the trade of steel products by strengthening import/export partnership with international clients	<ul style="list-style-type: none">A leading chemical-specialized company providing the best service for customer satisfaction	<ul style="list-style-type: none">Leading LED business, the next-generation growth engine / providing energy solutions based on LED lighting	<ul style="list-style-type: none">Sebitseom, the water culture complex on the Han River.

Spandex PU

Development of Bio-based Spandex

Hyosung TNC is developing spandex that uses natural raw materials to meet the growing interest in eco-friendly materials worldwide. We succeeded in developing a bio-based spandex product using raw materials derived from vegetable ingredients, and we expect to start selling the products in earnest in 2021.

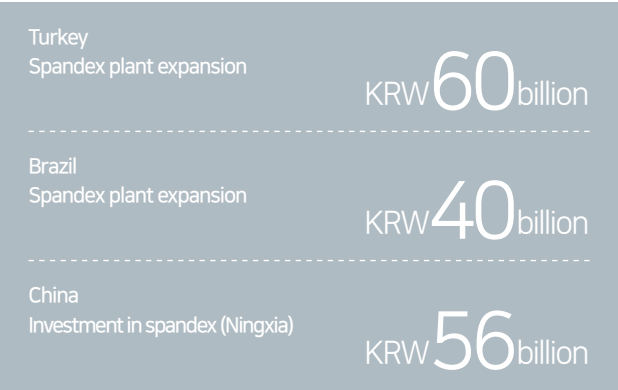


Bio-based spandex

Overseas Investment for Market Expansion

Hyosung T&C is expanding its overseas production capacity by expanding its overseas spandex production plants. We will continue the investment to meet the demand for spandex in overseas markets and to increase market share.

Investment Scale for Spandex by Country in 2020



Nylon Polyester Fiber PU

Athletic Leisure Masks in Collaboration with an Athleisure Brand, ‘Andar’

Hyosung TNC has introduced face masks made of antimicrobial fabrics devoid of bad odors in collaboration with ‘Andar’, a leading athletic leisure brand in Korea. The Andar face masks were applied with Hyosung TNC’s fabric products such as ‘Creora® Fresh’, a spandex fabric featuring excellent deodorant function and elasticity, as well as ‘Aerosilver’, a polyester fabric featuring antimicrobial function.



ANDAR Reup Face Mask applying Creora® and Aerosilver

MIPAN®regen robic

Hyosung TNC has developed ‘MIPAN® regen robic’, world’s first eco-friendly high-tenacity nylon brand, recycled from reclaimed waste from production process of textile products.



Osprey Talon applying MIPAN®regen robic

Regen®- Recycled Polyester Yarn Made of Waste PET Bottles

Hyosung TNC’s ‘regen®’ is Korea’s first eco-friendly polyester yarn which is made of substances extracted from waste PET bottles. We can significantly reduce landfill waste and carbon emissions with regen®.

Promoting ‘Recycle Project’ of regen®

As a follow-up project of regen®Jeju, Hyosung TNC carried out regen® Seoul project jointly with Geumcheon-gu, Yeongdeungpo-gu, and Gangnam-gu of Seoul Metropolitan City. As a result, products were launched as ‘Love Seoul’ edition by PLEATSMAMA.



Love Seoul Edition by regen®seoul X PLEATSMAMA

K-ECO Samdasoo Collection by regen®jeju X NORTH FACE

Steel & Metal Products PU I, II, Chemical Products PU, LED Business Division, Sebitseom Business Division

Distribution, Logistics, LED Business and Sebitseom Project

Hyosung TNC exports and imports steel products, raw materials, and steel processing facilities in the steel sector, and petrochemicals, precision chemical products and raw materials in the chemical sector. LED business division is promoting LED lighting as well as LED-based energy solution and video information display business, leading eco-friendly business. Furthermore, we run Sebitseom, the world’s first waterborne architecture, built in Banpo Han River Park, and it serves as a cultural complex, providing various entertainment options.

Leading Green Growth through Future Power Grid System and Eco-friendly Construction

Hyosung Heavy Industries is boasting the world's best technology in the field of heavy electric devices, which is the backbone of industrial energy. It is recognized for its excellence in power facilities such as transformers and breakers, motors and gears, and is focusing on developing core technology necessary for building future power grid system such as energy storage system (ESS), static synchronous compensator (STATCOM), and power facility asset management. In addition, based on rich experience and trust, we are actively participating in various construction projects such as housing, business and commercial facilities, civil engineering and environment, and SOC projects.

Company Profile

Company name	Hyosung Heavy Industries Corporation
Date of establishment	June 4, 2018
CEO	Kim Dong-woo / Takeshi Yokota
Headquarter location	119 Mapodaero, Mapo-gu, Seoul, Republic of Korea (Gongdeok-dong)
Main business area	Heavy industries, construction, etc.

Number of Employees3,154persons

Financial Performance

SalesKRW 2.98trillion

Operating profitKRW 44.1billion

ESG Management

KCGS ratingA

Family-friendliness certification

CSR in the Community

Business Divisions

Heavy Industries Division			Construction Division
Power Systems PU	Industrial Machinery PU	Wind Energy Business Division	Construction PU
<ul style="list-style-type: none">Producing 70% of core products required for power supply in KoreaKorea's first, world's sixth 765kV ultra-high voltage transformer developed in 1992World's first 800kV ultra-high voltage gas insulated substation (GIS) developed in 1999	<ul style="list-style-type: none">No. 1 motor manufacturer in KoreaProviding optimized solutions with a wide range of industrial product lineup	<ul style="list-style-type: none">National project – developing 5.5MW offshore wind power system (International certification acquired in 2019)Korea's first 750kW, 2MW wind power system	<ul style="list-style-type: none">Introducing villa-type residential culture for the first time in Korea

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Power Systems PU

Developing Eco-friendly Electric Equipment

Hyosung Heavy Industries is a leader in electric power devices such as transformers and switchgears, which are the main devices of the power transmission and distribution network, and is advancing the development and supply of eco-friendly products that replace insulation materials of electric equipment with eco-friendly ones.

Eco-friendly insulating oil transformer	Eco-friendly gas-insulated switchgear
<ul style="list-style-type: none">• Replacing SF₆ gas with eco-friendly gas (CO₂, fluornitrile mixed gas)	<ul style="list-style-type: none">• Replacing mineral oil with ester oil

Market Expansion of Electric Equipment

Based on the long-accumulated expertise in domestic market, Hyosung Heavy Industries is actively expanding the business in global overseas markets such as in Europe, America, and the Middle East Asia, that require high-end technology and strict quality assurance.

Iceland	<ul style="list-style-type: none">• A supply contract signed for 245kV GIS (Gas Insulated Switchgear) of digital substation
Australia	<ul style="list-style-type: none">• Five units of 30kV PST (Phase-shifting Trans-former) ordered
USA & Sri Lanka	<ul style="list-style-type: none">• USA: A contract signed for aging STATCOM facility replacement project• Sri Lanka: A contract signed for supplying STATCOM
Korea	<ul style="list-style-type: none">• A supply contract signed for MV/LVDC (Medium/Low Voltage Direct Current) system



Static Synchronous Compensation (STATCOM) by Hyosung Heavy Industries

Increased Supply of ESS (Energy Storage System)

ESS is a device which enables excess energy to be stored when power demand is low to use it afterwards, and Hyosung Heavy Industries supplies ESS for various purposes. In March 2021, we entered the European market by winning an order for 50MW-scale high-capacity ESS in Southampton, UK, along with Downing, the UK's largest power investment developer.



Energy Storage System (ESS) by Hyosung Heavy Industries

Industrial Machinery PU

Expanding Hydrogen Charging Stations and Developing Supply Technology

Hyosung Heavy Industries is supplying gas hydrogen charging systems in parallel with the expansion of hydrogen fuel cell vehicles and commercial hydrogen vehicles based on the emerging hydrogen economy. It also signed a joint venture investment contract with Linde Group to promote liquid hydrogen business. Through this contract, Linde Hydrogen plans to build liquid hydrogen plants at Yongyeon plant site and Hyosung Hydrogen plans to establish liquid hydrogen charging infrastructure in 21 locations in Korea.



Hydrogen charging station by Hyosung Heavy Industries

Customization and Green Products

Hyosung Heavy Industries specializes in producing rotating devices such as motors, generators and gears, as well as industrial machinery such as chemical equipment and gas charging stations. Along with such specialty, Hyosung Heavy Industries developed a shaft generator motor system, which is an eco-friendly hybrid propelling device, jointly with Daewoo Shipbuilding & Marine Engineering. As the government started to legally mandate construction of eco-friendly vessels in 2020, orders have been increasing even for small vessels including government vessels, coastal shipping vessels and fishing boats.

Construction PU

Business Diversification and Overseas Market Expansion

Hyosung Heavy Industries is focusing mostly on housing/construction projects which are considered to be highly profitable based on its financial soundness and brand value, and is working on securing stable growth momentum by entering new business areas such as street-housing renewal project and renovation. In addition, it has entered architecture and housing construction market in Vietnam that has high growth potential by utilizing its expertise and strengths in the domestic business, and plans to expand to non-residential projects such as logistics centers.

Expansion of Construction Projects for Data Centers and Logistics Centers

In response to increase in data and expansion of e-commerce market caused by COVID-19, Hyosung Heavy Industries has acquired the logistics center project and will participate as a constructor in the data center construction project. While executing the construction project of the logistics center, we plan to secure construction technologies and establish robust sales network to participate in other similar projects further on.



Dongtan warehouse center bird's-eye view

Making Customers’ Safety and Happiness the First Priority by Delivering the Best Advanced Materials

Hyosung Advanced Materials is producing high-strength industrial yarn, fabric and steel wire that are widely used in a variety of industries including automotive, civil engineering/construction, agriculture and military products. We maintain and enhance our competitive edge by development and commercialization of new materials that can induce sustainable growth along with tire cords, automobile seat belt yarn and airbag fabrics, which account for the largest global market share.

Company Profile

Company name	Hyosung Advance Materials Corporation
Date of establishment	June 4, 2018
CEO	Jungmo Hwang
Headquarter location	119 Mapodaero, Mapo-gu, Seoul, Republic of Korea (Gongdeok-dong)
Main business area	High strength industrial yarn and fabrics, steel wire materials, etc.

Number of Employees	Domestic business sites	Overseas business sites
	1,000 persons	9,805 persons

Financial Performance

Sales	KRW 2.39 trillion
Operating profit	KRW 34.2 billion

ESG Management

KCGS rating	CDP leadership group
A ⁺	A
Win-win corporation program rating	CSR in the Community
A	Family-friendliness certification

Business Divisions

Tire & Industrial Reinforcements PU	Technical Yarn PU	GST(Global Safety Textiles)	Interior PU	Aramid Business Division	Carbon Business Division
<ul style="list-style-type: none">No. 1 market shareSupplying 55% of car tires in the world	<ul style="list-style-type: none">No.1 seat belt yarn market share in the worldNo.1 industrial yarn market share in Korea	<ul style="list-style-type: none">World's largest airbag fabric manufacturer	<ul style="list-style-type: none">No.1 rolled / tiled carpets market share in KoreaAsia's only carpet manufacturer equipped with its own production facilities from raw materials to finished products	<ul style="list-style-type: none">ALKEX® - successfully commercialized high-strength aramid fiber	<ul style="list-style-type: none">TANSOME® - Korea's first high-strength intermediate modulus carbon fiber

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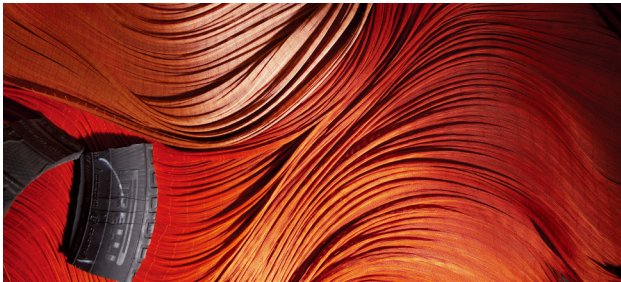
Tire & Industrial Reinforcements PU

Development of Tire Cords for Lightweight Tires

Lightweight tires enable rolling resistance to be reduced, thus, effectively improving vehicles’ fuel economy and reducing carbon emissions. Hyosung Advanced Materials has developed high-strength EV steel cords and high-strength textile tire cords to produce lighter tires.

Development of Green PET Tire Cords

Hyosung Advanced Materials undertake various research projects to replace existing yarn materials with Bio-PET, that makes use of Bio-EG, extracted from plant-based raw materials, and recycled polyester chips.

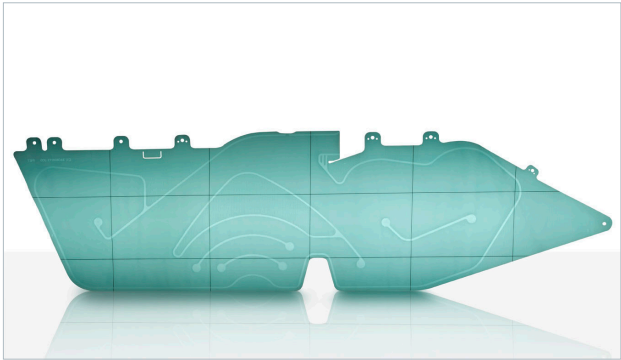


Tire cord

Global Safety Textiles

World’s Largest Airbag Fabric Manufacturer

Hyosung Advanced Materials produces flat fabrics for airbags, cushions, and OPW (one piece woven), and is ranked No. 1 in global flat fabric market share in close cooperation with major global automotive companies. We are featuring high-end technology such as state-of-the-art weaving and cutting processes as well as patents for OPW process. Based on such technical competitiveness, we supply various product groups to meet our customers’ needs.

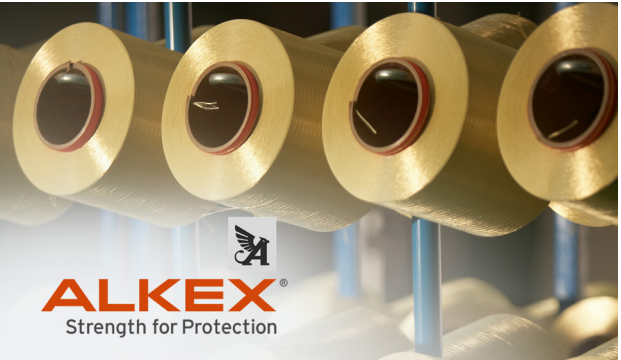


One Piece Woven (OPW)

Aramid Business Division

Production Expansion of Aramid ALKEX®

Hyosung Advanced Materials is supplying Aramid yarn product, ALKEX®, which is highly resistant to high temperature and chemicals. Thanks to its high-strength quality, ALKEX® is widely used in bulletproof jackets, helmets, automobile hoses and belts, fiber-optic cables and reinforcements for construction. Recently, Aramid has emerged as a representative reinforcement material for fiber-optic cables necessary for establishment of 5G network infrastructure, and its production, therefore, has been expanded in 2020.



ALKEX® - Aramid fiber

Technical Yarn PU

Production of Versatile Industrial Yarn

Hyosung Advanced Materials, which develops and sells nylon 66 and polyester yarn used in airbags for the first time in Korea, is producing industrial yarn for various uses such as seat belts and civil engineering in Korea, China, and Vietnam. We are especially striving to develop and produce recycled yarn by applying for Global Recycled Standard (GRS) certification to proactively respond to customers’ environmental interests and needs.



Seatbelt yarn

Interior PU

Product Development Using Recycled Materials

We managed to develop automobile carpets using high-strength recycled polyester yarn and nylon, made of waste plastic-extracted materials, and recycled polyester chips. Meanwhile, we supply automobile foot mats by utilizing industrial Bio-PET that is made of Bio-EG extracted from eco-friendly plant-based raw materials. We also carry out research to apply recycled materials widely to our polyester products.



Automotive carpet

Carbon Business Division

Production of New Material Fiber, TANSOME®

The carbon fiber, TANSOME®, contributes to emissions reduction by improving fuel efficiency through weight reduction of vehicles. It is applied in various products in recognition of its excellent stability as well as intensity, and is actively used in green energy industries, including CNG and compressed hydrogen storage. Hyosung Advanced Materials has been equipped with 4,000 tons of annual production capacity since its expansion line started operation in 2020.



TANSOME® - carbon fiber

Delivering Convenience in Daily Lives through Hyosung's Chemical Technologies

Hyosung Chemical produces a variety of products including polypropylene (PP), high-purity terephthalic acid (TPA), industrial/packaging/optical PET film and nylon film, and NF₃ and TAC film used in state-of-the-art semiconductor and display industries. Polyketone, which was successfully commercialized for the first time in the world, is a eco-friendly new ENPLA material, and is rising as a core material that will lead the global components/parts industry.

Company Profile


Company name	Hyosung Chemical Corporation
Date of establishment	June 4, 2018
CEO	Kun-jong Lee
Headquarter location	235, Banpo-daero, Seocho-gu, Seoul, Republic of Korea (Banpo-dong)
Main business area	Chemicals, etc.

Number of Employees

1,183persons


Financial Performance

Sales



KRW 1.82trillion

Operating profit



KRW 60.9billion

ESG Management

KCGS rating



A⁺

Family-friendliness certification



CSR in the Community



Business Divisions

Chemical Division				Film Division	
PP/DH PU	TPA PU	Neochem PU	POK Business Division	Film PU	Optical Film PU
<ul style="list-style-type: none">Globally competitive polypropylene brand, TOPILENE®No. 1 in the global market with products for pipesPlanning to operate 600,000 tons in 2021 after the establishment of Hyosung Vietnam in 2018	<ul style="list-style-type: none">TPA (Tere-phthalic Acid) is used as a main raw material for polyester fiber/film, tire cords, and PET bottles.	<ul style="list-style-type: none">Producing NF₃, F₂/N₂ (NF₃: Nitrogen Tri-fluoride) gas used in production process of state-of-the-art semiconductor and display industries	<ul style="list-style-type: none">POKETONE™, a polyketone brand based on eco-friendly new ENPLA materialNon-toxic to human body, and exhibiting resistance, abrasion resistance, chemical resistance, fuel resistance and gas barrier	<ul style="list-style-type: none">PET/nylon film brand, Filmore®, widely used for packaging, industrial and optic materialsNo. 1 in domestic nylon film market and No.3 in global market	<ul style="list-style-type: none">Producing TAC, Acryl films that protect PVA film used in TV, monitors and smartphones.No. 3 in global market (TAC: Tri-acetyl Cellulose)

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PP/DH PU

Product Lineup Focusing on Specialized Products and Market Expansion
We operate our polypropylene product line focusing on differentiated specialized products based on self-produced propylene and try to increase customer value by supplying products for a variety of application including pipes and medical packaging materials. By participating in water pipe promotion and expansion project by Indian government in 2020, we continue to discover new market demands for PPR pipes and develop new markets and clients in collaboration with a local partner company.



PPR pipe

TPA PU

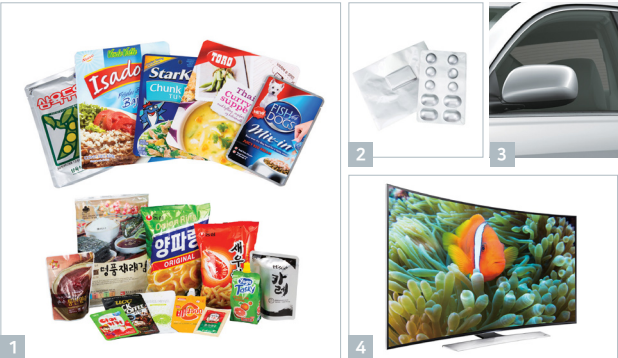
Production of PTA, High-performance Polyester Textile Raw Material
PTA (Purified Terephthalic Acid) is used as a main raw material of high-performance polyester textiles, and its demand is increasing not only for textiles but also for packaging films, PET bottles, packaging materials for beer and milk, tire cords, paint and glue. We are also striving to conserve environment by developing clean process technologies, operating high-end pollution protection facilities and carrying out activities to reduce environment pollutants.



TPA

Film PU

Development of Films for Various Uses
Using PET (Polyethylene Terephthalate) and NYLON (PolyAmide6) materials, we manufacture high-quality products optimize for each application, covering from packaging and pharmaceutical films widely used in daily lives to industrial optical films used for mobile products, windows, TVs, and tablets.



Applications: 1. food packaging, 2. pharmaceutical, 3. window, 4. optical

Neochem PU

Development of Special Industrial Gas in Response to Customers' Needs
We are producing NF₃ gas and 20% F₂/N₂, which are special gas used in production process of semiconductors and display products. In 2020, we have commercialized Cl₂ gas as a new product and expanded the market. Additionally, HCl gas is under product development.



Nitrogen trifluoride (NF₃)

POK Business Division

Production of New Material ENPLA POKETONE
Being non-toxic to human body, POKETONE has acquired FDA certification and green certification and boasts excellent performance such as chemical resistance, high resistance and abrasion resistance. It is widely used for food-contacting conveyors, packaging materials for cosmetic products, and toys for babies. Its application is being expanded to automotive connectors, electric/electronic gears, and crude oil mining pipes.



POKETONE

Optical Film PU

Development of TAC Film for Polarizer and Application in Next-generation Display Products
Optical Film PU is the only manufacturer in Korea to produce TAC (Tri-Acetyl Cellulose) film which protects the PVA polarizing film inside LCD polarizers, which are fitted into TVs, monitors, and laptops. In addition, it has developed thin acryl film with solvent casting method for the first time in the world. Based on such technical competitiveness, our films are applied to OLED and foldable display products, expanding the share in the market.



TAC film

Hyosung's Hydrogen Economy

Hydrogen economy is considered a key pillar of Green New Deal initiative. Hyosung maintains its core value chain for hydrogen economy as **'production – storage – transport – supply – use'** while creating synergistic effect among affiliated companies.

Hydrogen Economy Value Chain

Production

Hyosung Heavy Industries Establishment of World's Largest Liquid Hydrogen Plant in 2022
We are planning to build a liquid hydrogen plant on the 30,000 m² site at Yongyeon plant in Ulsan. Once the plant is completed, 13,000 tons of liquid hydrogen can be produced per year.



Yongyeon Plant

Hyosung Chemical Production of byproduct hydrogen
We are equipped with PDH (Propane De-Hydrogenation) facilities capable of producing byproduct hydrogen. Currently, 12,000 tons of byproduct hydrogen is produced and sold annually.



Yongyeon PDH Plant

Storage

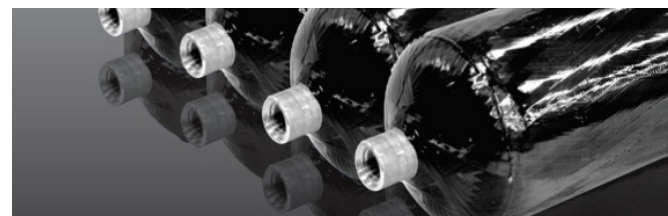
Hyosung Advanced Materials Expansion of Carbon Fiber Plants
Carbon fiber is a key material for hydrogen fuel tanks that are used in hydrogen vehicles. In 2020, the plant was expanded to cover 4,000 tons of annual capacity. In April 2021, a mid to long-term carbon fiber supply contract was signed with Hanhwa Solution, a hydrogen storage tank manufacturer in Korea.



Jeonju Plant

Use

Hyosung Advanced Materials High-pressure Fuel Storage Container for Hydrogen Vehicles
Based on high-strength quality of TANSOME[®], it has been delivered for many years not only to domestic but also to global companies treating high-pressure storage containers. In particular, high-pressure fuel storage container, which is essential for hydrogen vehicles, are contributing to fuel efficiency improvement and emissions reduction by utilizing carbon fiber to reduce material weight.



High-pressure hydrogen tank applying TANSOME[®]

Supply

Hyosung Heavy Industries Market Share No. 1 in Hydrogen Charging Stations in Korea
Among 43 hydrogen charging stations nationwide, Hyosung Heavy Industries operate 13 stations which account for 30% of total. Additionally, we are expecting to actively receive orders in the future, following the government's policy to expand infrastructure for hydrogen charging stations.



Hydrogen charging station at the National Assembly

Transport

Hyosung Advanced Materials Reinforcement Material for Hydrogen Fuel Transport Container
Hyosung Advanced Materials plans to launch a new product related to hydrogen tube trailer, following the high-pressure hydrogen fuel tank which is made of TANSOME[®].



Tube trailer high-pressure hydrogen tank

Hyosung's Eco-friendly Product Portfolio

Hyosung's eco-friendly products are found everywhere in our daily lives. **'Daily Life in Hyosung Style'** is closely related to essential human needs including food, clothing and shelter, and both the outcome and the process take place in an **eco-friendly way**.

Hyosung TNC / regen

For the first time in Korea, regen[®] has applied recycling technology to extract reusable substance from waste PET bottles. Our product, regen[®], is used in bags made by PLEATSMAMA.



regen

Hyosung Advanced Materials / High-strength Recycled Polyester Yarn

In response to environmental demands in carpet, clothing and shoe markets, Hyosung Advanced Materials has developed high-strength recycled polyester yarns using raw materials extracted from waste plastic.



Recycled yarn



Hyosung Chemical / POKETONE

Hyosung Chemical's eco friendly material, POKETONE, is attracting customers' attention as an alternative to the existing food tray products for kids.



POKETONE food tray

Hyosung TNC / MIPAN regen

MIPAN regen is a nylon yarn recycled from discarded petrochemical products and is mainly used in clothing.



MIPAN[®] regen

Focus Issues & Business Cases

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CUSTOMER SATISFACTION AND PRODUCT RESPONSIBILITY

Background

Practicing customer-centered management involves not only simply collecting and responding customer voices, but also proactively identifying and resolving customers' problems and further continuing to reflect the feedback in the business. To this end, it is necessary to internalize a series of processes to derive improvements by collecting and analyzing customer voices throughout the entire business, not only domestically in Korea but also abroad.

Our approach

Hyosung introduced 4A+1A process and is carrying out C-Cube activities not only in Korea but also in overseas business sites. Based on 4A+1A process, real VOC is identified and three major strategies have been established, including securing VIU, achieving zero C&C, and discovering new business projects.

Our Achievement



Internalization of C-Cube Activities: awareness enhancement and promotion in each PU



Establishing a performance-inducing environment through C-Cube activities



Spreading C-Cube activities to overseas business sites

Our Next



Internalization of C-Cube Activities : +1A (As-a-result management) activities, promotion of activities in manufacturing plants / research centers / purchasing departments



Performance maximization through C-Cube activities



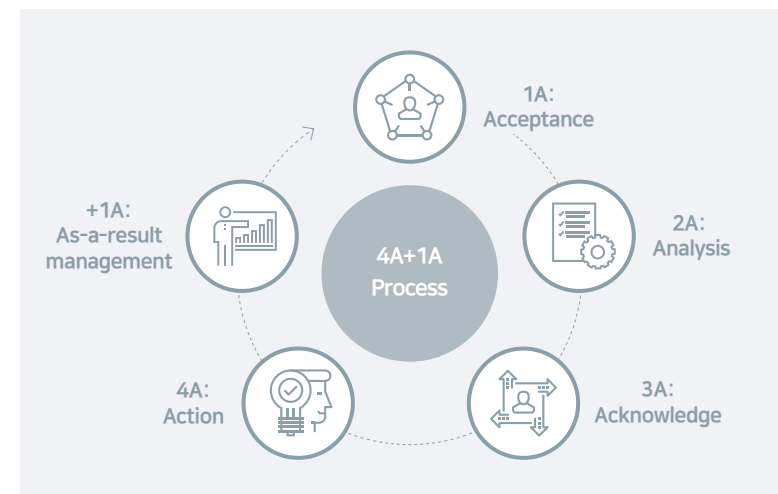
Promotion of C-Cube activities in overseas business sites

Strengthening Customer-centered Management

Establishing the Customer-centered Management System

In 2019, for the purpose of strengthening customer-centered management, Hyosung has introduced C-Cube activities to all employees, in which customer voices were collected and consequent findings are reflected to business activities. This activity aims to provide different perspectives and aspects to information in the form of voice of customer voice of customer's customer, and voice of competitor, and to achieve performance based on 4A+1A process.

C-Cube Execution System: 4A+1A Process



Internalization of C-Cube Activities

With the goal of incorporating C-Cube activities in the DNA of Hyosung Group, in 2020, we have focused on implementing settling activities to internalize C-Cube activities for all employees and actual outcomes using major VOCs. Each PU operates regular meetings to make decisions based on the C-Cube process. We have worked on promoting C-Cube activities to all employees and emphasized their importance by sharing C-Cube information through company intranet system and implementing training programs and a reward system for best practices. In particular, we are conducting voluntary cooperation activities such as knowledge sharing meetings where all PU representatives attend and exchange their own C-Cube performance and ideas with each other. In 2021, we will further enhance +1A (As-a-result management) stage to advance the 4A+1A process, based on reflections and improvements derived from success/failure case analyses. In addition, we have established an execution plan to incorporate C-Cube activities into our DNA also in plants, research centers and purchasing departments.

C-Cube Focus Activities & Performance

In 2020, we have carried out C-Cube activities based on three strategies including securing VIU, achieving zero C&C and discovering new business projects. Following up with the strategies established, from the fourth quarter of 2020, 'Main VOC Tasks' have been selected by each PU and the status of progress and performance has been regularly monitored and managed for each task. In addition, each PU continues to share improvement cases through technology exchange meetings and carry out cooperation to tackle problems.

Securing VIU (Value in Use)

Activities involved with securing VIU can turn customer-provided value into premium price. We are establishing and implementing suitable strategies to identify real VOC in an aim to secure VIU.

Achieving Zero C&C (Claim and Complaint)

To achieve zero C&C, we are working on preventing occurrence of C&C through appropriate and timely response to C&C issues and preemptive product quality management. C&C can be prevented by constant communication with customers that can analyze causes, solve the problem and propose quality-improved products.

Discovering New Business Projects

The C-Cube activities for discovering new business projects are aimed at thoroughly understanding market trends based on obtained VOP (Voice of Partners) and VOM (Voice of Market) as well as VOC, VOCC, VOCO, and acquiring a growth engine for the future.

Strengthening C-Cube Activities in Overseas Business Sites

Hyosung is conducting business activities at a number of production plants and sales departments abroad, and the size of profits generated such way is increasing every year. In order to expand our C-Cube activities to overseas business sites, we provided video clips for training translated in Korean, English, and Chinese to expat and local employees. Moreover, re-training and coaching programs were conducted via video meetings upon request from overseas business sites. As a result, several business sites abroad have committed voluntary changes, such as publication of internal newsletter on C-Cube activities and request for system access permission for the purpose of operating regular meetings with the headquarter office and collecting information.

CUSTOMER SATISFACTION AND PRODUCT RESPONSIBILITY

Background

In sectors of fashion and industrial textile, customers' interest in environment and value-oriented consumption is ever more increasing nowadays. As customers begin to reflect their values in their consumption behavior, eco-friendly or recycled products are considered to be the next challenge in the market.

Our approach

Hyosung TNC is striving to collect customer voices in various ways. We have sought ways to communicate with customers in a non-face-to-face manner to overcome the difficulties of COVID-19 pandemic. In this way, we are proactively responding to customers' requests and needs by developing new products and technologies.

Our Achievement



Developing products targeted to customers' needs



Launching G3H10 brand

Our Next



Continuing eco-friendly yarn development and expanding regen projects



Promotion of G3H10 brand

Customer-centered Management Practices

VOC Management and Customer-tailored Solutions

Hyosung TNC operates an integrated VOC management system, and provides customized solutions through constant update and utilization of its customer DB. Internally, we operate quality assurance meetings to discuss quality issues arising from customers and regular meetings to discuss VOC in more specialized manner. In this way, we focus on developing differentiated products and creating new demands.

Communication with Customers

ISPO Munich

Hyosung TNC participated in ISPO Munich which took place for five days from February 1, 2020. ISPO Munich is the world's largest sports and outdoor trade fair. Hyosung TNC ran a promotion booth to disclose its technological competence and listen to VOC through communication with clients and showcased high-performance yarns suitable for outdoor products.



ISPO Munich

New Year's Celebration Event in Daegu

Since 2000, Hyosung TNC has been hosting new year's celebration event every year in Daegu for major clients. We are exchanging market information related to new material development and product launch as well as building close relationship with client companies. In 2020, Textile Marketing Team and Fashion Design Team of Hyosung TNC held a trend seminar to introduce new fabrics and latest market trends and received inquiries from participating clients.

Activities for Customer Satisfaction

Brand Launch by Reflecting VOC

Hyosung TNC launched an eco-friendly fashion brand, 'G3H10', to identify VOC more immediately and accurately at the forefront of communication with customers. The brand aims for sustainable fashion that reflects VOC by utilizing chemical fiber materials, which is a specialty product of Hyosung TNC. The name, G3H10, represents environment and sustainability values including three Gs (Generation, Good and Globe) and ten Hs (Hyosung, Hope, Healthy, Human, How-to, High, Healing, Help and Happy).



G3H10 clothing brand

Product Development for Customer Satisfaction

In line with the increasing customers' interests in environment and green products, we have launched products made of recycled materials and products using environmental packaging materials. In cooperation with the North Face, Hyosung TNC introduced 16 products, including clothes, bags and hats made of recycled materials, in various styles. We also collaborated with Andar and used recycled polybag as a packaging material for face mask products.

Product Quality Improvement & Product Safety Certification

Hyosung TNC is in control under OEKO-TEX® STANDARD 100, an eco-friendly certification issued by International Association for Research and Testing in the Field of Textile and Leather Ecology. We maintain safety of products through annual certification renewal. In addition, in order to ensure production stability, production conditions are standardized and managed regularly under quality assurance certification, ISO9001.

CUSTOMER SATISFACTION AND PRODUCT RESPONSIBILITY

Background

Social interests in environment is increasing, with the International Maritime Organization (IMO) tightening emissions regulations and requiring environmental soundness in key functions required for future power grid systems. Additionally, COVID-19 has led into the spread of a non-face-to-face culture, and it is necessary to seek for changes in the way of communication with customers to improve product quality in industrial fields.

Our approach

Hyosung Heavy Industries aims not only to meet customers' needs but also to provide them with a better life. As such, we communicate with customers in a variety of ways and proceed research to proactively develop technologies. Moreover, we are making efforts to practice product responsibility through a systematic follow-up process and improve customer satisfaction.

Our Achievement

160

Supplying ester oil transformers

79

Conducting RFAT (Remote Factory Acceptance Test)

Our Next



Development and supply expansion of green products



Providing the new paradigm of remote test / installation support



Customer-centered Management Practices

Building CS Network Bases

We are operating a hotline task force to set up timely and accurate recovery measures and put things back to normal in the event of an emergency issue. We are expecting to minimize recovery time and costs, and further achieve customers' satisfaction by establishing regional bases (in Sejong and Anyang) equipped with repair materials at all times.

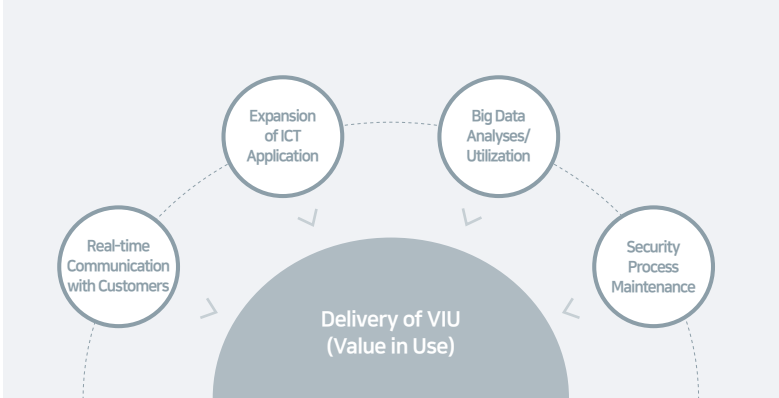
Establishing Global Management System (GMS)

Along with GMS (Global Management System) established, we have achieved 'one company, one operating system' and effectively improved level of quality management at our manufacturing plants abroad. We also tried to unify quality indices and standards to reconcile different working methods. Moreover, a knowledge sharing system has been established among overseas manufacturing plants to provide basic technical support and share defect/improvement cases. In the future, we will conduct mutual benchmarking and improvement activities by unifying ISO9001 certification authority and cross-internal audit among plants.

Conducting Remote Factory Acceptance Test (RFAT)

Heavy electric products produced by Hyosung Heavy Industries go through a process in which actual clients check product soundness by themselves. This process takes place in remote platform through which we communicate with customers from the moment of establishing production plans and arrange RFAT schedules. We conducted 79 remote tests in 2020 when physical visits were restricted due to COVID-19. The remote test system of Hyosung Heavy Industries connects customers with factory sites based on tele-work technologies, expands ICT application and provides services such as big data analysis and security process maintenance. As such, customers' VIU (Value in Use) is increased, and we are planning to expand it further on.

▶ Providing VIU through Remote Test System



Activities for Customer Satisfaction

VOC-based Product Development

We listen carefully to voice of customers and try to develop new products by utilizing VOC.

Developing Shaft Generator Motor (SGM) in Response to VOC

In response to shipbuilding companies' needs in increased fuel efficiency and reduced dependency on power generator operation, following IMO's environmental regulations over sailing and newly built vessels, Hyosung Heavy Industries managed to successfully develop shaft generator motor in cooperation with a domestic shipbuilding company. Hyosung Heavy Industries' SGM exhibits superior technology and more reasonable costs compared to the existing foreign products.

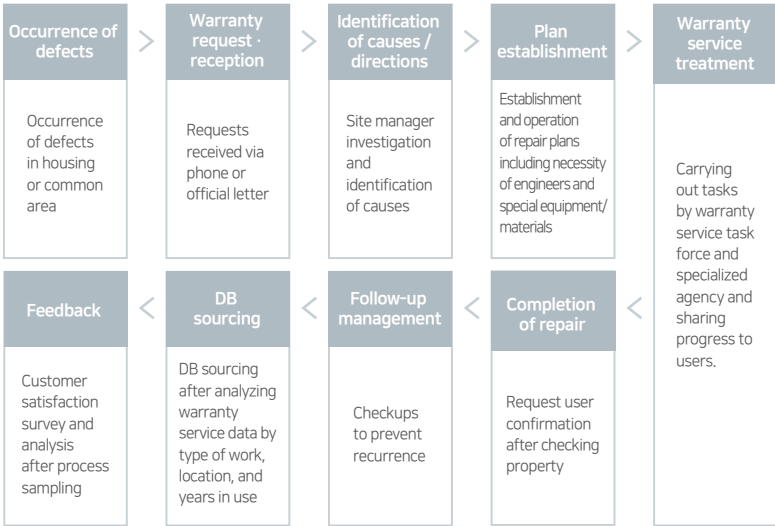
Ester-filled Transformer for Green Era in the Future

In line with the growing market demand for eco-friendly biodegradable devices capable of reducing harmful substances emissions, Hyosung Heavy Industries is expanding its line-up of eco-friendly biodegradable ester-filled transformers in power grid systems. We have supplied more than 160 ester-filled transformers worldwide in 2020 and are carrying out research activities to stabilize and improve product performance.

Follow-up Process

The Construction PU of Hyosung Heavy Industries shares progress information with residents of subject property once A/S request is received. After the repair job is completed, the defects are preemptively treated and managed by checking the possibility of recurrence. The process of treating A/S requests is analyzed and used as feedback materials for improvement of A/S resolution system.

▶ Process of Construction Warranty Service



CUSTOMER SATISFACTION AND PRODUCT RESPONSIBILITY

Background

It is essential for industrial materials to realize physical properties required for each purpose in various industries. This can vary depending on customer needs, even for a single product. In order to deliver optimal materials, it is important to understand market trends and needs through active communication with customers at various contact points.

Our approach

Hyosung Advanced Materials provides optimized solutions based on customer needs and issues identified through its customer-tailored VOC management system. Using the 4A+1A process, we identify real VOC and establish the best strategies to incorporate into the business. These strategies are thoroughly analyzed with their execution results and improvements are derived afterwards. We are focusing on increasing customer value particularly by launching new products suitable for new mobility and green vehicles.

Our Achievement

7

The number of new products launched by reflecting customer needs

3,000+

VOC reception count

Our Next



Launching a product that takes into account LCA (Life Cycle Assessment)

3,300+

VOC reception count



Customer-centered Management Practices

Stabilizing VOC Management System

Hyosung Advanced Materials established a customer-tailored VOC management system to provide optimized products and services to customers. In addition to visiting clients once or twice a year, we collect VOC through various methods including exhibitions such as Tire Technology Expo 2020, technology exchanges and academic conferences, and strive to provide optimal solutions to customers accordingly. In 2020, a regular communication channel has been established based on web-based meetings and seminars due to COVID-19, through which we continued to listen to more than 3,000 VOCs.

Advanced C-Cube Activities

We have established a VOC feedback system to practice customer-centered management and have been delivering the training curriculum for building awareness of employees.

VOC Response Activities

In order to quickly respond to customers' requests, we writes and distributes VOC letters to all departments in the company and analyze VIU (Value in Use) in various perspectives. Afterwards, proper countermeasures are prepared and applied, and related information is shared within the company. We are also conducting quality improvement proposal activities to capture the values demanded by end consumers and propose such values to our clients.

Customer Use Quality Improvement

We are improving and resolving inconveniences of customers encountered when using our products and checking their feedback after the resolution. With an aim to achieve 'Zero C&C', we set up a meeting between the headquarter office and factories to continuously derive improvements through strengthened product delivery standards, quality control, continuous revision of factory management plans, and problem analysis in the aspect of 4M (Man, Machine, Material, Method).

Training Programs

In order to properly understand customer needs, all new employees in Hyosung Advanced Materials are mandated to complete 2-week training about products and production process. At Ulsan plant, especially, the parent plant of Hyosung Advanced Materials, provides 4-month Skill-Up training every year for all junior employees including new employees so that they can acquire the latest information and knowledge about production process and facilities.



High Pressure Oxygen Cylinder

Activities for Customer Satisfaction

VOC-based Product Development

Hyosung Advanced Materials pays attention to customers' voices for new product development and market expansion.

New Market Entry through C-Cube Activities

Based on a client's need identified from real VOC, we managed to supply products in a timely manner, in sync with plant expansion of the client which manufactures tires of trucks and buses in the North American region. We also resolved the issue of supply and demand imbalance in factories in India, based on our global supply capability, which allowed us to pioneer a new market.

Development of Steel Cords Used in EV Tires

Compared to a conventional vehicle equipped with internal combustion engines, an electric vehicle (EV) weighs 30% heavier. As such, we are jointly developing new standards for a steel cord used in EV tires with tire companies, in response to clients' needs in increased driving distance on a single charge.

Development of Recycled PET Threads

To keep up with customers' demands for recycled products, we have developed a thread product made of recycled PET. We have found a new raw material company suitable for required physical properties, and our product obtained a relevant certification (Global Recycled Standard) after a series of tests validating its production process and condition.

Premium Side Mats to Differentiate New SUV Type

To meet a client's needs in differentiated product positioning, we have newly developed a premium side mat with high-density nylon yarn (NY 1050d High Multi BCF) applied using a special weaving machine.

Sales Expansion through Certification of High-pressure Container for Breathing Apparatus

Following the request for cooperation to develop a lightweight SCBA (Self-contained Breathing Apparatus) which is made only of carbon fiber, we completed the development and certification of carbon fiber compressed container that uses H2550 yarn. We are proceeding regular customization to products amounting to 30 tons of products (roughly 15,000-20,000 SCBA units) per year.



Tire Technology Expo 2020

MANAGEMENT APPROACH

CUSTOMER SATISFACTION
AND PRODUCT RESPONSIBILITY

Background

As interest in environment and sustainability increases in chemical products, the demands for eco-friendly materials and products with low environmental impact is also increasing. The process of identifying customer interests and listening to their opinions has become an essential process, and it is becoming more important to present differentiated products suitable for business based on the collected voices of customers.

Our approach

Hyosung Chemical collects customer voices through a variety of communication channels to provide them with products that meet their needs. While responding to client's requests received such ways, we are researching to supply safe and eco-friendly products and carrying out certification for quality improvement and sustainability.

Our Achievement

11,400

VOC reception count

FSSC
22000

Obtaining FSSC 22000
certification

Our Next



Expanding online marketing
including social media



Promoting C-Cube
activities in overseas
business sites



UN SDGS LINKAGE

HYOSUNG CHEMICAL

Customer-centered Management Practices

Responding to VOC Based on C-Cube System

Hyosung Chemical listens to customers' voice (VOC) through the C-Cube system to quickly provide optimal products and services to satisfy customer needs, and collects VOC data to solve problems and prevent recurrence. In 2020, we received about 11,400 VOC cases, and are responding to feedback on various improvements in product quality, technology, delivery, environment, and social contribution activities.

Technical Guidebook that Reflects Customer Needs

The clients of Hyosung Chemical request an inspection prior to actual evaluation as to whether the product will achieve desired performance when processed. Accordingly, Hyosung Chemical produces a technical guidebook that includes data and explanations requested by clients and it is uploaded on our website to be distributed to clients.

Activities for Customer Satisfaction

VOC-based Product Development

Hyosung Chemical is working on developing products tailored to requirements from customers and promoting improvement activities to meet customer needs.

Developing Sterilized and Eco-Friendly Films

Following the rising demands for highly transparent medical PP materials widely applicable to various sterilization methods due to COVID-19, we have developed products that are applicable to gamma-ray sterilization as well as products that have obtained medical certification for conventional sterilization methods such as high-temperature steam. Also, keeping up with the global market trend with high demands for eco-friendliness, we have developed random PP product group, certified of UL energy-saving, jointly with a sub-material supplier, and the product is sold for the use in food containers, drawers, and shampoo bottles.

Improving drinking water sanitation

To improve the sanitation of drinking water, we acquire global drinking water certifications, including KTW and NSF, and are supplying certified products domestically and abroad to replace brass material attached to outdoor water meter devices which often caused issues of heavy metal leaching (lead and zinc).

Providing Optimized Design

In order to maximize customers' production efficiency, we plan and design products optimized for facility condition of the customers. In this way, defect rate is decreased and changes of production condition are minimized, contributing to the customer value.

Obtaining Certification to Win Customer Satisfaction

In order to effectively respond to customer needs, Hyosung Chemical is working on obtaining various certifications, considering the characteristics of each industry that chemical products are used for.

EU REACH, FDA, RoHS Certifications

We have acquired chemical safety certifications from the US FDA (2009), EU RoHS (2007), and REACH (2010), by which it was confirmed that hazardous chemical substances are kept in control below the limit under a hazardous chemical management system in operation.

Food Safety Management Certification

Responding to the needs of a global food company, the end customers of our food packaging materials, we have obtained the Food Safety Management System certification (FSSC 22000) in February 2020. In accordance with the food safety system, the standards of relevant operation and management have been set up to prevent quality degrade and contamination, ensuring safe and hygienic products.

Automotive Quality Management System Certification

POKETONE™ is used in automotive fuel line and automotive exterior/interior parts and has acquired IATF 16949, an ISO-approved automotive quality management system certification. Through this, we have met the global standards of quality management system and enhanced customer satisfaction by providing products and services which fulfill customers' requirements as well as regulations.

'Silver Medal' Acquired from Sustainability Evaluation

In the film business, we are responding to a trend of emphasizing suppliers' social responsibility management, mainly driven by customer companies in developed countries. In 2020, we were given 'silver medal' grade after sustainability management evaluation by EcoVadis, an ESG evaluation agency. With an evaluation grade for corporate sustainability management acquired from a global evaluation agency, we have laid the foundation for the market expansion for our film products in North America and Europe.



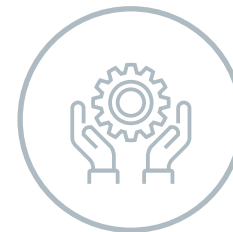
Hyosung Smart Factory

Production and management innovation had been emphasized in the era of the 4th industrial revolution. Hyosung Smart Factory program will enable us to achieve world top-level quality and improve production efficiency at the same time. This will allow us to grow into a global leader.

Global Monitoring System

Hyosung TNC Facility Monitoring and Big Data Analysis

Hyosung TNC is upgrading its existing spandex manufacturing factories in China and Vietnam under smart factories program. This upgrade will establish the next-generation production environment and allow us to monitor not only “the real time oversea facility status” but also production quality to ensure the highest consistency. In addition, data collection, analysis, and control management can be performed in entire production flow, from raw material import to production and to shipment discharge.



Quality



Resource Management System

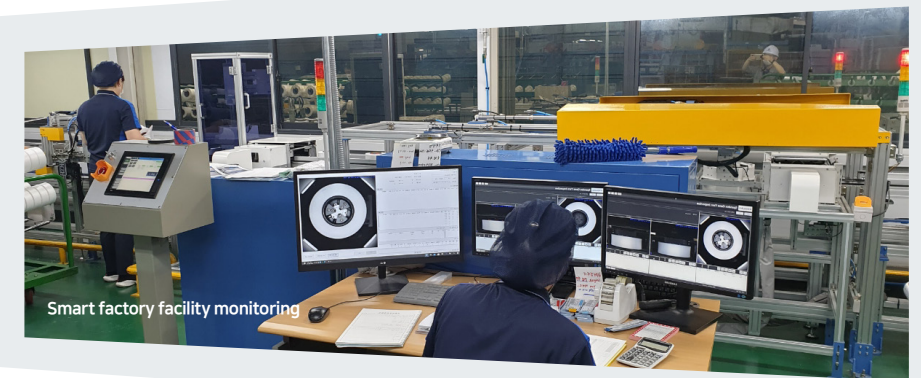
Hyosung Chemical PMS, QMS, VAS



Hyosung Chemical had established Process Monitoring System (PMS), Quality Management System (QMS) and Visual Analytics System (VAS) that connect all available production related data. This real time data collection can assist data-driven decision making for key operation managers. To fully utilize this smart factory program, dedicated staffs are assigned at each factory and selected “Critical tasks.” Based on this process, collaboration project with Hyosung ITX is under progress.



Hyosung Smart Factory



Manufacturing Execution System

Hyosung Heavy Industries Manufacturing Execution System (MES)

Hyosung Heavy Industries has established DX operation via new smart factory program based on MES (Manufacturing Execution System) and IoT (Internet of Things) in Changwon Plant. This program will identify, in real time, changes in work plans from operation conditions and by operators. Collected data will be analyzed to achieve highest efficiency in quality control, process management and facility management.



Production Efficiency



Operation Rate Management System



Hyosung Advanced Materials Capacity Utilization Rate Management System

Hyosung Advanced Materials had established dedicated department with digital experts for smart factory program since year 2017. This measure is to keep up with the rapidly changing market environments and technological developments. The department cooperates with all plant locations to establish smart factories program that ensure the best productivity and quality through automation and intelligent system in production. In year 2020, Hyosung Advanced Materials Vietnam applied IoT (Internet of Things) technology to automatically collect facility data and calculate the working hours by each production interruption factors. In addition, this program will analyze floor workers’ activities to contribute higher operation rate and output.

OCCUPATIONAL SAFETY AND HEALTH

Background

We need to pay high attention to safety and health at industrial work sites where diverse workers conduct complex jobs. In particular, it is important to identify threats to workers and create a safe and healthy workplace based on them. This is because the sustainability of the company will increase only from the work environment that could ensure workers’ health and safety.

Our approach

Hyosung is encouraging all employees to comply with its safety and health management policies. Additionally, detailed action plans are established and regularly monitored to better execute the policies. By reflecting the monitoring results, we are making a safe workplace for everyone.

Our Achievement



Establishing safety and health management policies



Introducing safety-first work right system

Our Next



Disclosing safety and health progress as per each work site



Thorough performance management for safety and health progress



Strengthening Safety and Health System

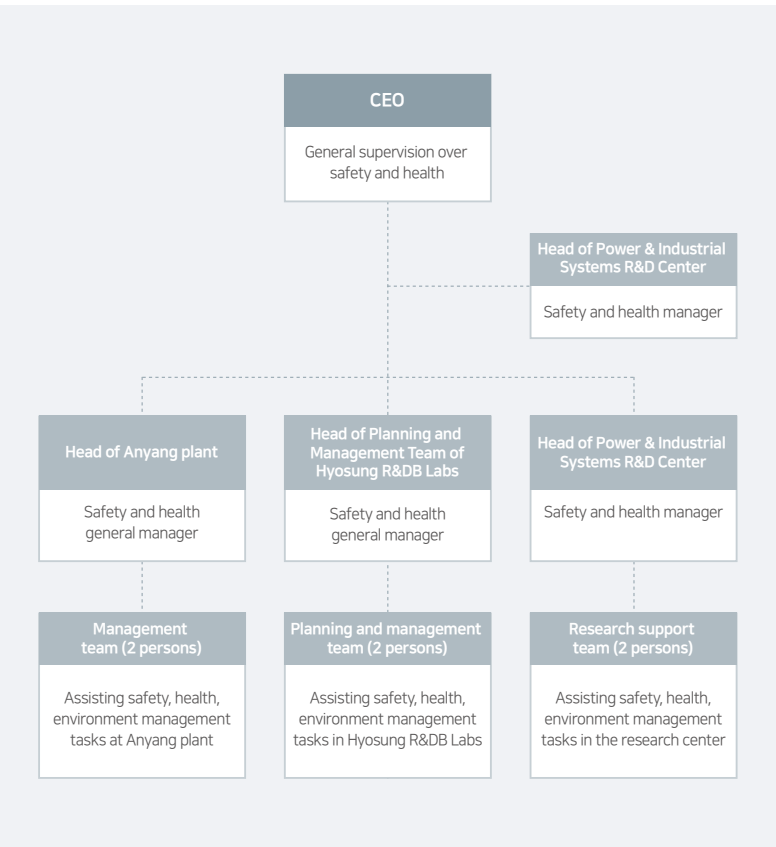
Safety and Health Management Policies

Hyosung puts workplace safety and health first in all business activities. To realize a pleasant and safe disaster-free workplace, We have established safety and health management policies that all employees are complying with, and informed them to internal and external stakeholders.

Safety and Health Management Organization

Hyosung has set up a safety and health management organization under the general supervision of CEO. It holds a meeting once a half-year through the EHS Committee to discuss and review safety inspection results and status of safety management in manufacturing plants. In addition, two managers are designated to safety/fire and health sectors, respectively in each plant, and the head of plant is in charge of monitoring relevant progress for quarterly action plans as the general supervisor.

Organizational Chart of Safety and Health Management



Monitoring on Safety and Health Progress

Hyosung aims to create a disaster-free workplace based on its safety and health management policy. Each business site established its own action plans to improve awareness, regulations and worksite conditions, and the action plans are monitored every quarter of year to keep track of the implementation progress.

Category	Action plans
Awareness improvement	· Building safety and health awareness (through training, distribution of information brochures, etc.)
	· Operating a reward system · Employees of supplier companies (in each team/department)
Regulation improvement	· Improvement through ISO45001 certification and maintenance work · Safety and health inspection through various committees (supplier companies meeting, industrial safety and health council) · Maintaining and improving health promotion activities
Worksite condition improvement	· Checking non-conformities through daily safety inspection · Checking non-conformities through patrols by management members · Maintenance of automated fire detection facilities and fire extinguishing facilities through fire-fighting facility inspection · Creating a pleasant working environment · Investigation on harmful factors for musculoskeletal disorders

Facilitating Safety Culture in Business Sites

Hyosung is conducting risk assessment every year with the participation of supervisors and workers to identify shortcomings in safety management and include them in safety management plans. We are also establishing prevention plans against high-risk tasks by sharing safety incidents of our company and external companies to entire plant sites. In order to enhance EHS awareness, newsletters are published and distributed to employees, and safety and health managers announce related updates and recommendations in the monthly meeting. In addition, we regularly cover safety and health issues at executive meetings and provide brochures about safety and health guidelines and emergency evacuation plans. We also operate safety-first work right system, in which workers are supposed to stop working immediately and evacuate in case of danger at work and then the work is resumed after safety measures are checked.

OCCUPATIONAL SAFETY AND HEALTH

Background

The textile industry is often exposed to the risk of various safety accidents including burns during the use of high-temperature dyeing machines, contact with chemicals at manufacturing and input process of dye solution, and physical injuries during the use of various manufacturing equipment. As such safety accidents occur frequently, employers and workers should be all aware of main risk factors and safe work plans in advance to avoid the accidents.


Our approach

Hyosung TNC has established four main tasks as well as safety and health management system in order to create accident- and disaster-free workplace. In addition, we distribute information about workplace safety principles and 8 safety rules. We also carry out safety inspection activities on a regular basis while collecting feedback of workers through anonymous report channel on social media.

Our Achievement

8

Establishing safety principles and 8 safety rules




Promoting health of onsite workers

Our Next

Point Out Confidently

Promoting the safety report channel on social media, 'Point Out Confidently'



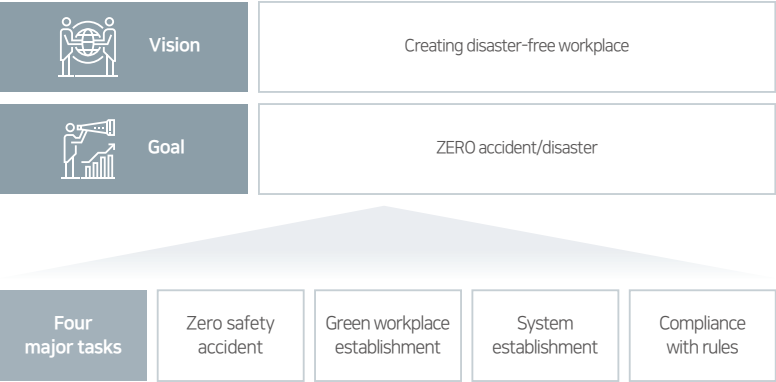
Promoting the EHS Committee



Strengthening Safety and Health System

Our Safety and Health Strategies

Hyosung TNC has established an environment and safety vision to settle down safety culture against safety incidents and serious disasters and set up 'ZERO accident' as one of its business goals. To achieve the vision and goal, we have stabilized our sustainability management system by deriving four major tasks for environment and safety, including system establishment, compliance with rules, green workplace establishment and zero disaster.



Safety and Health Management System

We would like to ensure safe and pleasant working environment for supplier company employees as well as our own employees by establishing safe and health-related work system in order to achieve the safety and health vision. Additionally, worksite safety principles and 8 safety rules have been established and followed.



8 Safety Rules

- ① Wear personal protective gear.

② Unsafe behaviors are prohibited.

③ Do not use smartphones.

④ Do not disassemble safety devices.

⑤ Handle chemical substances safely.

⑥ Forward information about danger.

⑦ Shut down power sources.

⑧ Check your front/back thoroughly.

Activities for Safety and Health

Safety Inspection

Hyosung TNC maintains safety of its workplace through regular onsite inspections. We are promoting safety inspection activities such as semi-annual EHS committee chaired by CEO, quarterly onsite inspections and daily facility inspections, also involving partner companies.

Category	Attendants	Cycle	Description
EHS committee	CEO, plant heads, team heads, etc.	Half year	Occasional meetings
TOP Patrol	Plant heads, team heads, etc.	Quarter	Onsite review for each theme
Safety patrol	Environment and safety team	Day	Inspection per patrol zone
Supplier companies	Plant heads, supplier companies, environment and safety team	Quarter	Onsite and document review
Environmental facilities	Production team	Day	Onsite review
Facilities treating hazardous chemical substances	Production team	Day	Onsite review
Unit of team	Onsite workers and operators	Day	Safety of operation facilities and equipment

Safety Inspection Training

Hyosung TNC is conducting emergency drills along with safety inspection activities. Through large-scale public-private joint training such as self-fire brigade capacity cultivation education, fire drills, and chemical training, we focus on preventing large-scale accidents such as emergencies, fires, and chemical leaks and improving our initial response capabilities.

Safety Report Channel, 'Point Out Confidently'

In order to actively collect the opinions of field workers who can directly encounter various risk factors in the field, 'Point Out Confidently', a safety reporting program that guarantees anonymity is operated. The 'Point Out Confidently' is operated on a social media channel, easily accessible by anyone, and reporters are given incentives.

Health Promotion Activities

In an aim to improve onsite workers' health, we are operating non-smoking and obesity programs in connection with the health centers in local districts. We also help workers improve their health by devising measures to increase physical activities in 2020.

OCCUPATIONAL SAFETY AND HEALTH

Background

Construction industry is prone to safety accidents in the stage of project execution at construction sites. There is a high chance of safety accident since a number of complex tasks that require high-level expertise such as assemble and disassemble of scaffolding, handling and transport of heavy items, and use of large-scale construction equipment, take place at the same site. Moreover, increasing age of laborers, increasing number of non-experts and foreign workers can be the factors to increase the likelihood of accidents.

Our approach

Hyosung Heavy Industries has established four focus tasks along with top 10 safety practices to create a safe environment in work sites. We conduct weekly meeting to discuss safety and health issues and resolve related grievances together with employees from supplier companies, thereby protecting safety of supplier employees as well as building trust between management and employees.

Our Achievement

710

Improvement on risk factors

10

Selecting top 10 safety practices

Our Next



Reinforcing safety inspection activities in each department



Collecting feedback from safety inspection and strengthening support activities



Strengthening Safety and Health System

Four Focus Tasks & Top 10 Safety Practices

In order to fulfill corporate social responsibilities and grow into a customer-centered company, Hyosung Heavy Industries has established and complied with environment and safety policies. Particularly, we have established four focus tasks along with top 10 safety practices to create a safe working environment in the construction sites.



Four Focus Tasks

Responsible safety practices based on self-safety culture
Facilitating prevention-oriented safety management process
Creating a safe workplace with labor and management
Strict safety management of high-risk work to maintain 'zero' severe accident/disaster

Top 10 Safety Practices

- 1 Make sure to wear basic protective gear such as a safety helmet and shoes.
- 2 Conduct thorough safety inspection with the belief that safety accidents can be 100% prevented.
- 3 Carry out risk assessment for all tasks and eliminate the risk factors.
- 4 Take safety measures (workbench, railing) and make sure to wear seat belts during work at height.
- 5 Be sure to check safety of dangerous machinery before operating.
- 6 Forklift trucks and cranes are operated by a qualified driver and stick to the safety plan.
- 7 Hot work requires permit and must be treated after taking preventive measures.
- 8 For work in closed space, make sure to measure oxygen concentration before and during work.
- 9 Be aware of importance of safety and health in our daily lives outside of work.
- 10 Carry out all work according to standards and supervisors' instructions and make safety a daily life.

Activities for Safety and Health

Safety and Health Self-inspection by Department

Each department in a plant selects department-specific safety and health inspection subjects twice every month in cooperation with the Safety and Environment Team and conducts safety and health self-inspection. Through this system, we have discovered risk factors and made improvements on 710 issues in 2020. The best practices are shared across all department and head of plant on a monthly basis. To maximize the impact of the inspection, we encourage departments with low performance.

Labor-Management Safety and Health Consultative Body

In addition to the regular meeting of the Industrial Safety and Health Committee stipulated in the Occupational Safety and Health Act, the manufacturing plant establishes and operates a regular consultative body for safety and health between labor and management. The consultative body consists of three members representing labor and management, respectively, and the meeting takes place once a week to discuss safety and health issues and resolve related complaints. In 2020, we have contributed to building trust between labor and management in the safety and health sector by solving a total of 136 complaints.

Special Safety Management for In-company Supplier with High Risk of Accidents

To prevent severe accidents of a contractee company at the same level as the contractor, the plant supports job analysis and improvements for a total of 18 high-risk tasks for each sector (coating, painting, packaging, molding, etc.). We are also actively supporting lifted safety standards across all suppliers through quarterly safety and health evaluation. Safety information regarding season/weather/surrounding issues is provided via social media channel of supplier company representatives, and safety consultation with the safety and health manager is provided if necessary, to listen to related feedback and suggestions and proceed suitable improvements.

Discovering Near Miss

Hyosung Heavy Industries is working on discovering near miss that could lead into serious accidents. By preemptively discover various factors behind a near miss, recommending suitable work methods and making improvements on working environment and safety facilities, we prevent occurrence of similar accidents in the future. These near miss cases discovered are summarized and distributed to each construction site for prevention of accidents.



Near miss discovery activities

OCCUPATIONAL SAFETY AND HEALTH

Background

Safety and health is one of the most important deciding factors for sustainability of a company. A large-scale safety accident often leads both financial loss and non-financial loss related to reputation of the company. Therefore, a company should comply with industrial safety and health standards and expand investment to prevent safety and health accidents. When it comes to worksites where chemical substances are treated, in particular, a sturdy system and activities need to be established to prevent large-scale safety accidents, such as fire, explosion and leakage.

Our approach

Hyosung Advanced Materials has set up a TFT to revise safety and health system directly under CEO so that the same safety and health disaster system is maintained across all business sites in the company. In order to facilitate the safety-first work right system, we are supplementing deficiencies and making efforts to prevent safety accidents not only for full-time regular employees but also for all internal stakeholders within entire business sites by operating win-win cooperation group.

Our Achievement



Zero case of serious accident/disaster

6

Cases of utilizing safety-first work right

Our Next



Zero case of serious accident/disaster



Facilitate safety and health disaster system to overseas business sites



Strengthening Safety and Health System

Revision of Company-wide SHE Policies and Safety and Health Guidelines

In 2020, to pursue safety, facilitate health and minimize its environmental impact, Hyosung Advanced Materials has integrated separate safety and health policies from different business sites into one and revised them to keep up with global requirements. The SHE (Safety, Health and Environment) policies and safety and health guidelines, that have been newly established company-wide in accordance with green management policy process, have been distributed to all business sites abroad in their local languages under the direction of the CEO, and all employees are required to apply and comply with them at their work.

Company-wide Revision of Safety and Health Disaster System

In order to internalize the safety management system and build a workplace free from serious accidents, we operate a TFT under the direct control of the CEO and are working on establishing the same level of safety and health disaster system across the company. The TFT has made clear the roles and responsibilities of the safety, health and environment (SHE) organization in each business site and established voluntary safety system, led by the business department. In addition, the level of safety management has been improved by reinforcing onsite safety inspection, safety management of supplier companies and improving emergency response system. In particular, we would like to thoroughly prepare or safety-related risks by reorganizing the process of preventing serious industrial accidents and disasters. In 2021, we plan to facilitate and expand the reorganized safety management system in domestic business sites to all overseas business sites. Meanwhile, we will continue to capture safety blind spots and carry out different improvement activities to create safe work environment.

Main Activities of Safety and Health Disaster System TFT

Goals	<ul style="list-style-type: none">Internalization of a global level safety management systemEstablishment of a workplace with zero serious accidents
Main activities	<ul style="list-style-type: none">Establishment of SHE organization with defined roles by business sitesEstablishment of a preemptive safety management systemReinforcement of on-site safety inspection and in-house subcontractor/supplier safetyEstablishment and training of emergency response system including disasters

Introduction of Safety-First Working Rights System

In August of 2020, we introduced the "Safety-First Working Right" to all domestic workplaces for the purpose of preventing serious accidents and industrial disasters at high-risk workplace, and 6 cases were used. All employees (including those from supplier companies) working in high-risk workplaces can use their work right in accordance with the criteria of safety-first work right system, and the results of usage are reviewed to improve the system and facilitate safety-first culture in work sites.

Activities for Safety and Health

Planning of Safety Targets and Follow-up Reporting

In line with five strategies, detailed achievement plans are established every year and are managed systematically through PDCA. The progress of activities is reported to the CEO every month, and company-wide safety and health plans and related performance are reported to the Board of Directors once a year.

Major Safety and Health Activities in 2020

Organization SHE department and determining its roles	<ul style="list-style-type: none">Emphasis on the company's safety-first commitment; practicing safety goalsEstablishment of safety management system per each division of business sitesDesignation of SHE personnel in each department; safety capacity-building training
Establishing preemptive safety management system	<ul style="list-style-type: none">Promoting prevention activities for serious industrial accidents/disasters and reporting them to the BODPromotion of safety culture by each business divisionRaising PSM rating and proceeding application for ISO 45001 certification
Reinforcing onsite safety inspection	<ul style="list-style-type: none">Checking compliance with safety guidelines by assigning patrol agentsRegular onsite safety inspection (rewards given to excellent enterprises)Risk identification and improvement through regular labor-management joint inspection including suppliers
Establishing emergency response system	<ul style="list-style-type: none">Maintenance and update of emergency contact systemRegular emergency training (fire drill, first aid, emergency evacuation)
Strengthening safety management of suppliers	<ul style="list-style-type: none">Strengthening suppliers' roles and responsibilities regarding safety managementSafety management support for high-risk work (work at height, hot work, work in confined spaces)Conducting safety and health representatives meeting to share safety and health issues, regulation changes and internal/external safety accident casesTechnology support through half-yearly safety and health evaluation

Safety Inspection Committee

In order to prevent safety accidents and improve safety management capabilities, HAMC has established a company-wide Safety Inspection Committee(SIC) which consists of the heads of the Environment & Safety Teams at each business site. Each site conducts safety inspections led by the plant manager twice a year whose results are closely examined and checked by the SIC. The SIC identifies major safety & health issues of all global sites based on significance and urgency. They also identify the points for improvements and share best practices of different global sites to improve safety management. The inspection results of the SIC are reported directly to the CEO and the Green Management Committee twice a year.

MANAGEMENT APPROACH

OCCUPATIONAL SAFETY AND HEALTH

Background

Safety accidents involved with the chemical industry, such as fires, explosions, and leaks, can pose a huge risk to the local community. As the Industrial Safety Act is strengthened, companies are obliged to ensure workplace safety more effectively. As such, we are working on strict prevention as well as damage minimization of safety accidents.

Our approach

Hyosung Chemical conducts the EHS Committee that is hosted by the CEO every month to prevent workplace safety accidents and quickly responds to safety and health issues and proceeds onsite safe workplace campaigns for the purpose of preventing accidents and facilitating safety culture at work sites.

Our Achievement



Conducting the first season of safe workplace campaign



Establishing safety and health plans and performance management

Our Next



Conducting the second season of safe workplace campaign



Raising safety and health awareness and promoting practices



UN SDGS LINKAGE

HYOSUNG CHEMICAL

Strengthening Safety and Health System

The EHS Committee

Since May 2020, Hyosung Chemical has been operating monthly EHS committee, which is a decision-making body of persons in charge of environment, health and safety at all business sites under the supervision of the CEO. Through the committee, EHS-related corporate agenda are reviewed and discussed for resolutions, and related follow-up tasks are executed and monitored along with risk management. In the year of 2020, the committee performed six cases of decision-making, four cases of standard establishment and four cases of other safety activities. In recognition of importance of workplace safety and health, Hyosung Chemical would like to establish and execute safety and health plans that cover organization and budget details.

Outcome of the EHS Committee

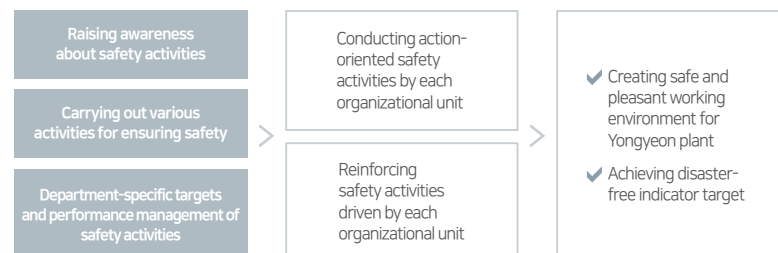
Category	Description	Follow-up actions
Decision-making	<ul style="list-style-type: none"> Total pollution load management system for air pollutants Installing TMS for measuring NOx and PM 	6 cases (4 completed/ 2 in progress)
Standard establishment	<ul style="list-style-type: none"> Establishing and executing safety certification system before facility operating Establishing accident report system 	4 cases (completed)
Other safety activities	<ul style="list-style-type: none"> Installing disaster-free record dashboard Drawing evacuation guide lines in the building of film-forming process 	4 cases (completed)

Activities for Onsite Safety and Health

Conducting Safe Workplace Campaign

In order to minimize workplace accidents, since May 2020, Hyosung Chemical has been promoting the season I activities of 'Creating Safe Workplace', a safety campaign aimed at preventing safety accidents and building safety awareness. To further promote the activities, safety campaigns are carried out with the participation of corresponding plant head, executives, team heads and labor union. The participants distributed promotion leaflets and souvenirs to commuting employees, which led into zero case of accident occurred after October 2020. Furthermore, we plan to create safe workplace more proactively through the second season of activities in 2021, by strengthening action-oriented safety activities, discovering effective activities for each PU, and connecting them with reward system.

Strategies of 'Creating Safe Workplace' Campaign



Strengthening Safety and Health of Supplier Companies

Hyosung Chemical communicates regularly with supplier companies and conducts work site monitoring to alleviate their level of workplace safety and health close to its own. In addition, we are participating in win-win cooperation program by the Occupational Safety and Health Agency to strengthen safety and health responsibilities of our suppliers.

Communication	<ul style="list-style-type: none"> Suppliers committee (monthly) Suppliers meeting (monthly) 	<ul style="list-style-type: none"> Knowledge sharing of necessary matters including risk factors in factories
Monitoring	<ul style="list-style-type: none"> Joint monitoring (quarterly) at work sites of in-company suppliers 	<ul style="list-style-type: none"> Improving workplace safety
Win-win cooperation program	<ul style="list-style-type: none"> Material support: Risk assessment and training/document/facilities/protective gear Financial support: Working environment measurement cost, safety materials cost, etc. 	<ul style="list-style-type: none"> Reinforcing suppliers' responsibilities in taking safety and health measures.

Safety and Health Training

Hyosung Chemical conducts group safety training every quarter of year, following the work schedule. The training program delivers onsite visit training by external instructors and fire drills and provides two different types of training, specialization and experience. In Oksan plant, newbies are supposed to proceed to work only after completing the company safety training. After the initial training, follow-up safety training is provided every three months to improve workers' safety awareness and ensure their safety at work. Emergency drill usually takes place at night or on public holidays (vulnerable to accidents) every quarter of year so that any damage during emergency situation can be minimized.



Safety workplace creation campaign

SUSTAINABLE SUPPLY CHAIN MANAGEMENT

Background

If large corporations and SMEs pursue to maximize profits on a short-term basis, the economic foundation of SMEs may be undermined, causing crisis in corporate ecosystem, which is why it is necessary to establish mutual cooperative system between companies from a mid to long-term aspects. More emphasis is given to supply chain issues for the sake of securing global competitive edge of a company, creating continuous growth momentum and jobs, as well as laying a fair economic foundation.

Our approach

To grow together with its partner companies, Hyosung has established and effectively managed the shared growth system. In addition, supplier-related risks are managed by conducting fair and transparent evaluation when selecting suppliers, and fair business practices have been established for operation.

Our Achievement



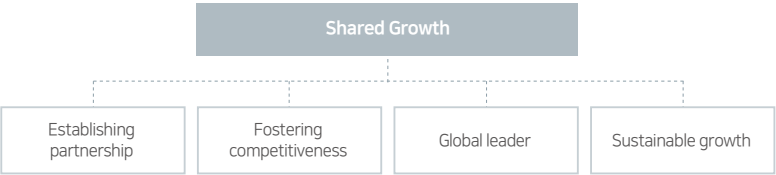
Our Next



Strengthening Shared Growth

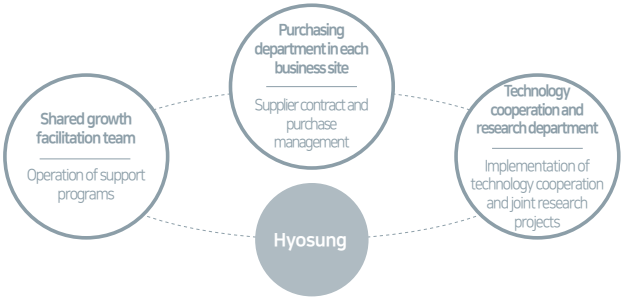
Shared Growth Implementation System

Hyosung is striving to create the future together with suppliers by sharing the common goal based on the recognition that we are in the same boat. Hyosung has established a shared growth system based on the belief that the competitiveness of suppliers directly contributes to its own growth.



Organizational System of Supplier Management

In Hyosung, supplier companies are managed by the purchasing department of each business site, taking into account the characteristics of supply chain for each affiliated operating company. The share growth team was set up in business companies with many suppliers due to the nature of their industries. Furthermore, suppliers are encouraged and supported to participate in joint research with Hyosung R&DB Labs and Power & Industrial Systems R&D Center so that they can build technical capacity and competitiveness.



Status of Shared Growth Agreement Contracts

Category	Hyosung	Hyosung TNC	Hyosung Heavy Industries	Hyosung Advanced Materials	Hyosung Chemical	Total (contracts)
2018		832 companies (prior to spinoff)				832
2019	113	56	639	53	34	895
2020	103	56	579	53	38	829

Energy Partnership MOU

For the purpose of helping suppliers to save energy and reduce emissions, Hyosung has signed Energy Partnership MOU with Korea Energy Agency. In 2020, we have provided consulting service for energy diagnosis to five suppliers and facility support to four suppliers.

Compliance Program

Promoting Fair Business Practices

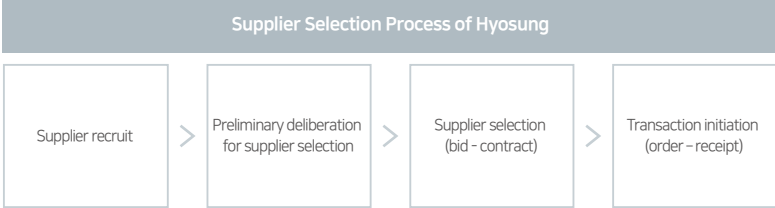
In order to establish a fair business trade culture together with suppliers, we have established fair trade guidelines, which are recommended by the Korea Fair Trade Commission, in our corporate regulations. Four basic practices are included in our corporate regulations, including making contracts, selection and operation of partners, setup and operation of internal deliberation committee and written proof of subcontracting. We also announced the guidelines for prohibiting retaliatory acts such as unilateral restriction or suspension of transactions to suppliers in order to establish a healthy and transparent business relationship with suppliers which enables fair partnership.



Supplier Risk Management

Supplier Selection and Evaluation

Hyosung and its operating companies are working to establish fair and transparent criteria for selecting suppliers. We clearly announce the application criteria and recommendation requirements in our shared growth website, and any interested company can freely apply for registration as a supplier through e-procurement system. In addition, in order to manage supply chain risks, we conduct registration screening for all new suppliers before they get approval to participate in bidding process.



SUSTAINABLE SUPPLY CHAIN MANAGEMENT

Background

Due to the trend of convergence and integration in textile industry and the increasing complexity of technologies, it is getting more difficult for a single company to take charge of everything. In addition, the global market is shifting from competition of companies to competition of corporate networks. As such, it is necessary to build trust between big firms and SMEs as well as to build SMEs' capabilities. In line with the strengthened international requirements regarding corporate social responsibility and fair business management, supply chain management has emerged as one of the most significant management strategies for global companies.

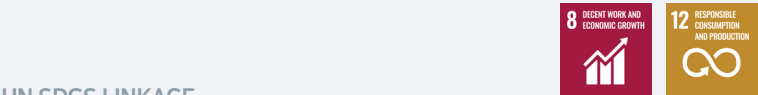
Our approach

Hyosung TNC is providing training, chemical management and evaluation, as well as fair trade compliance and social responsibility compliance support to strengthen the competitiveness of supplier companies. We also conduct registration evaluation when selecting suppliers and carry out supply chain risk management activities.

Our Achievement



Our Next



Building Supplier Competitiveness

Training Support for Suppliers

Hyosung TNC is providing training support to its partners to improve competitiveness in their business. The manufacturing plants regularly conduct environment safety training for its suppliers, and if necessary, a customized job training is delivered by an external training organization such as KMAC. In this way, suppliers can be trained in a variety of competences and skills such as productivity improvement, quality innovation, resource saving, manufacturing cost reduction, process improvement, work standard, environment, health and safety, human error, problem solving ability and so on.

Management and Evaluation of Chemical Substances

Hyosung TNC is conducting a preliminary investigation on chemicals and reviewing hazardous substances to prevent accidents when handling the chemicals. In addition, MSDS is distributed to the person in charge of handling business sites to build their awareness in hazard and danger of chemicals. Supplier companies are supposed to conduct inspection before shipping, and the vehicle transporting the chemicals can enter the company only when they pass the pre-shipment inspections and no problem is found in products. After that, related personnel from each team start inspection upon receipt of chemicals, and the entire process including parking of the carrier vehicles, connection of loading pipes and injection of chemicals, is conducted under the presence of the Environment Safety Team, Production Team, and Quality Team.

Compliance Program and Corporate Social Responsibility

Hyosung TNC is trying to comply with the standard subcontracting contract issued by the Fair Trade Commission. The standard subcontracting contract protects the material and intellectual property rights of business partners by stipulating clauses such as prohibition of forcing suppliers to provide technical data, technology escrow, guarantee of intellectual property rights and transfer of ownership.

Supplier Registration Evaluation & Supply Chain Risk Management

Hyosung TNC uses traditional standards such as quality, delivery, price, and management performance as criteria for evaluating suppliers at registration, as well as ethical management performance associated with environment, safety, legal requirements, human rights, and labor issues. The same criteria are also applied to regular evaluations of suppliers and the results are reflected in review process for contract renewal. In 2020, 8 companies were newly registered by meeting all these requirements.

Suppliers Evaluation and Management



Shared Growth Activities

Cash Payment for Outstanding Suppliers

Hyosung TNC conducts an annual evaluation of its suppliers in accordance with ISO9001 and its own standards, and selects 56 companies every year based on evaluation results to give them payment in cash within ten days after the tax invoice is closed. Gumi Plant pays cash three times a month, which contributes to improving cash flow, and in 2020, it paid about KRW 30.3 billion in cash in total.

Support for Sales Bond Insurance

Hyosung TNC operates sales bond insurance for the client companies. It insures financial loss incurred due to a buyer's cause after domestic transaction, thus reducing the financial burden on our clients and business partners while ensuring the stability of credit operations. In 2020, we have paid the insurance premium for 29 cases, which amount to KRW 533 million, on behalf of our clients, so that they can secure credits more stably. We plan to expand our support to various domestic customers in the future.

Supplier Communication

In pursuit of shared growth with suppliers, Hyosung TNC arranges onsite visits to supplier companies and holds purchase meetings to listen to their difficulties and opinions. Suppliers can report any violations or unfair requests and transaction activities through on/offline channels such as Hot-line and Shinmungo system. We continue to communicate with our partners, revise and operate various support programs so that all partners can get fair opportunities and thus build firm trust with us.

Supplier Awards

Hyosung TNC is rewarding outstanding supplier companies in an aim to share our will in shared growth to suppliers and motivate them. In 2020, a winder supplier, Injin A Tec, was awarded as the outstanding supplier company in 2020.



Supplier engagement through onsite visit

SUSTAINABLE SUPPLY CHAIN MANAGEMENT

Background

Sustainability of supply chain is recognized as a deciding factor for our growth into a global leading company capable of coping with uncertain business conditions. Unfair business practices against partner companies can go beyond social criticism and undermine the competitiveness of corporate businesses in the long run. In this sense, we provide suppliers with technical support for patent application as well as financial support for raising shared growth fund in the construction industry.

Our approach

Hyosung Heavy Industries has established win-win partnership for the sake of the suppliers' sustainability and supports a variety of shared growth programs. In addition, we manage our supply chain risks by considering sustainability factors of supplier companies, including human right and environment, as well as their product quality and financial performance during the evaluation.

Our Achievement



Reducing fine dust and toxic gas at work sites (working environment improvement)



Continuing supplier evaluation

Our Next



Quality management equipment support in connection with ICT



Strengthening supplier evaluation

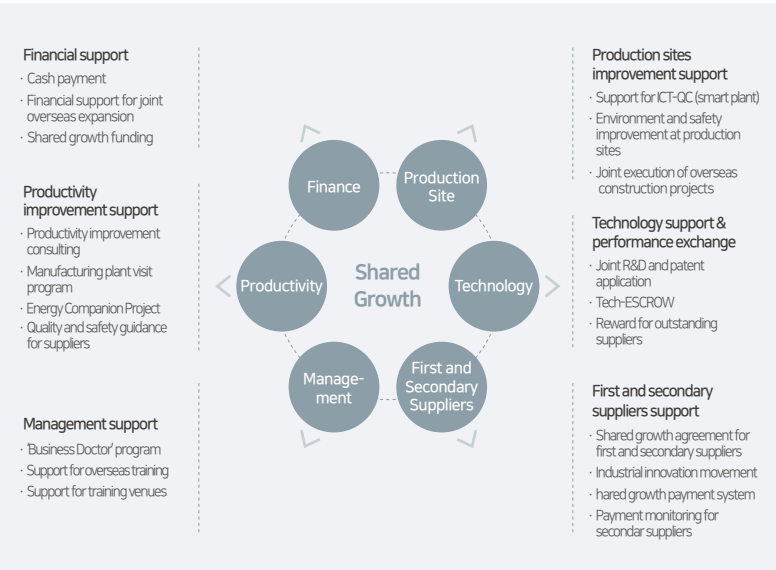


Shared Growth Implementation

Shared Growth Program

We believe that competitiveness of our supplier companies is an important driving force for continuous growth of our business. As such, we are running shared growth programs to build suppliers competitiveness and thus achieve win-win in close partnership with them. We are working on establishing a healthy and robust partnership with suppliers through new product development and market development supports to expand their sales, as well as training supports for their supply stability, technology, quality improvement and productivity innovation.

Shared Growth Programs



Working Environment Improvement for Onsite Workers

For purpose of improving working environment for onsite workers of supplier companies, Hyosung Heavy Industries has established workers-only rest areas at work sites. In 2020, we also installed dust collection system at work sites to prevent workers from respiratory diseases that could be caused by toxic gas or fine dust at the construction site. In addition, to control COVID-19 infection and create a safer working environment for employees of in-company suppliers, we provided masks or expenses of purchasing masks to 171 companies three times a year.

Providing Training Venues for Suppliers

Hyosung Heavy Industries opens its training center in Changnyeong to partnering SMEs and assists them to hold their own training and workshop programs to employees.

Compliance Program

Pre-contract & Post-contract Deliberation System

For the purpose of deliberation on fairness and legality of trading contract between suppliers and subcontractors, Hyosung and its operating companies operate the Deliberation Committee. We strive to facilitate fair trading practices by monitoring unfair practices in the past transactions so that we can immediately correct them and reflect them in the later transactions.

Category (Unit: Cases)	2018	2019	2020
Pre-contract deliberation	127	63	89
Post-contract deliberation	96	104	55

Suppliers Risk Management

Supplier Evaluation

Aiming for the stable supply chain management, Hyosung Heavy Industries is conducting evaluation in three major subjects including management, production and quality when registering a supplier in our supply chain. We are thoroughly managing supply chain risks by excluding those that fail to meet required standards from our list of suppliers.

Supplier Registration Evaluation

Category	Evaluation items
Business management	Employees' average years of service, turnover rate and CSR fulfillment
Human rights	Cases of unfair treatment such as gender discrimination and child labor
Environment	Pollution prevention facilities, waste management and treatment methods
Safety & health	Occurrence safety accidents and safety training status
Training & organization	Regular employees training, operation of research institute and design organization
Working environment	Tidiness in plants, notification of safety rules, working garments and safety gears

In addition, Construction PU in Hyosung Heavy Industries is carrying out annual evaluation for suppliers that have participated in the construction for more than a month. Main evaluation items include CSR risks, such as environment, safety and health, as well as product quality and delivery. Depending on the evaluation, we provide various benefits to high-rated suppliers.

SUSTAINABLE SUPPLY CHAIN MANAGEMENT

Background

Following the changing trends of global business strategies, we need to aim for sustainable supply chain management that encompasses suppliers’ human rights, safety and environment issues. As such, it is necessary to expand the shared growth system that could minimize ESG issues and maximize suppliers’ competitiveness through joint R&D projects for new products and technologies and regular supply chain risk management.

Our approach

Hyosung Advanced Materials is managing suppliers’ social and environmental risks to mutually grow together with them based on fair trading principles. We participate in joint R&D projects for technology localization with suppliers, and more than 95% of suppliers have submitted the pledge to suppliers’ code of conduct so far. We are continuously working on refining the system to reinforce suppliers’ competitiveness throughout a variety of supports.

Our Achievement

95%

Submission of suppliers’ code of conduct in domestic business sites

105

Number of completed audits on domestic and overseas major suppliers

Our Next

100%

Submission of suppliers’ code of conduct in overseas business sites



Reinforcing audit of overseas supplier companies



Supplier Risk Management

Supplier Management Organization

The Purchasing Team, which oversees HAMC’s supplier management, establishes standards such as the supplier selection process and evaluation checklist, and cooperates with the Technology, Quality Assurance, and Environment Safety Teams at each business site to provide periodic management and support.

Team Name	Supplier Management R&R
Purchasing	Overall supplier management including management of process and regulations
Quality Assurance, Production	Audit suppliers' production quality and provide regular guidance for improvements
Technology Innovation	Support technology development and improvement activities of suppliers
Environment Safety	Support for safety checks and safety-related activities and trainings of suppliers

Strengthening Supplier Management

We are reinforcing our supplier management system every year to prevent expected risks throughout all stages, including selection, audit, re-evaluation and support, and to establish a sustainable supply chain. In accordance with the global requirements, we underwent the seventh revision of supplier re-evaluation criteria in 2020.

Quality management	<ul style="list-style-type: none">Quality control of suppliers’ products based on regular inspectionsPrompt response to issues through the raw materials tracking system
Safe production environment	<ul style="list-style-type: none">Daily/weekly inspection on working environment of suppliersMonthly meeting and safety trainingWin-win cooperation program with suppliers
Environmental /social capacity-building	<ul style="list-style-type: none">Extending the scope of evaluation for environment and society during supplier selection and re-evaluation processDelivering SHE policies and green purchase policies (conflict minerals)
Supply risk management	<ul style="list-style-type: none">Establishing the emergency response system that entails emergency organization and detailed actions in response to accidents or issues in supplier companies
Supply chain risk management incl. delivery delay	<ul style="list-style-type: none">Establishing the emergency response system that entails emergency organization and detailed actions in response to accidents or issues in supplier companiesDefining various risks (e.g. strike, suspension of raw material supply, safety accidents and disasters, delayed delivery, etc.); preparing detailed response manuals as per each scenario; conducting regular training
Fair trading	<ul style="list-style-type: none">Proposing fair business trade guidelines with suppliers based on the Fair Business Trade Compliance Program (revised in Jun. 2020); conducting compliance program monitoringCarrying out anti-corruption activities by utilizing checklist of preliminary business consultation system
Communication	<ul style="list-style-type: none">Operating various communication channels including regular meetings and onsite visit evaluations, supplier meetings, and reporting channel

Regular Supplier Audit

We have completed the 7th revision on the supplier reevaluation table to strengthen ESG-related items and audited 105 domestic and overseas key suppliers. For suppliers’ enhanced capabilities in sustainable management, the code of conduct for suppliers, which is related to society and environment, was prepared and shared. As of 2020, about 95% of domestic and overseas key suppliers has voluntarily submitted a pledge to comply with these guidelines, and the scope of application is being expanded to overseas suppliers in 2021.

Frequency	Evaluation subject	Evaluated suppliers
Regular audit (one a year)	Product quality in accordance with system certifications for automotive components suppliers (ATF 16949) and environment management system (ISO 14001), price, delivery, management, and environment	Key raw/subsidiary material suppliers
Reevaluation (once a year)	In addition to product quality and delivery, strike actions, non-payment of wages, environment and safety are evaluated	Key processing suppliers

Shared Growth Activities

Selection of Outstanding Suppliers

The purchasing team of Hyosung Advanced Materials selects outstanding suppliers through the supplier evaluation and reward them with monetary prize and payment of their product price in cash within 10 days after completion. In 2020, we contributed to improving the cash flow of our suppliers by providing about KRW 20.7 billion in cash payments to 53 outstanding suppliers.

SMEs Support Projects

In 2020, two of our suppliers (Ijin A-Tech and ICEI Woobang) we recommended were selected as a promising small medium-sized enterprise for material, parts, and equipment by the Korean Ministry of SMEs and Startups. For the next five years, the two suppliers are granted support from the government with SMEs Business Support Package. And HAMC will be a member of the Win-Win Council, which was launched to promote a technology localization model between large companies and outstanding SMEs, and is entitled to funds to support SMEs from the government for the next five years.

Support for Safety Reinforcement

Hyosung Advanced Materials is providing various activities and supports for the suppliers’ health and safety management.

- ③ Safety and health mentoring for new suppliers
- ③ Daily safety review and guidance for repair and maintenance suppliers (safety first activities)
- ③ Musculoskeletal injuries prevention activities for suppliers
- ③ Rewards of outstanding companies twice a year through on-site inspection by environment and safety team in each business site.
- ③ Win-win cooperation programs to support risk assessment and technology activities for suppliers (every year)

SUSTAINABLE SUPPLY CHAIN MANAGEMENT

Background

Unfair business practices between large firms and SMEs are undermining the base of trust and social integration. Accordingly, shared growth of large companies and SMEs is aimed at laying an economic foundation for a fair society in which equal opportunity, fair competition and effort-based fair performance sharing are fulfilled.

Our approach

To improve the sustainability of our supply chain, we provide financial, educational and technological support for supplier companies. By selecting suppliers according to transparent standards and procedures and complying with fair trading practices, we have established a robust relationship based on virtuous circle with our suppliers in which optimal product quality is achieved and suppliers can grow mutually with Hyosung Chemical.

Our Achievement

KRW
18
billion

Cash payment to outstanding suppliers



Energy Companion Project

Our Next



Increasing cash payment amount to outstanding companies



Strengthening safety and health circuit inspection of suppliers



Suppliers Risk Management

Supply Registration Evaluation & Supply Chain Risk Management

Throughout the registration and evaluation process of supplier companies, their ethical management performance regarding environment, safety, legality, human rights and labor is evaluated as well as traditional standards including product quality, delivery, price and management performance. The same criteria are applied to regular evaluation of suppliers and the results are reflected in the deliberation on contract renewal.

Supplier Registration and Management Process



Shared Growth Activities

Cash Payment for Outstanding Suppliers

Hyosung Chemical conducts an annual evaluation of its suppliers in accordance with ISO9001 and its own standards. Based on this evaluation, we selected 38 companies in 2020 to give them payment in cash within ten days after the tax invoice is closed. We have contributed to improving cash flow of our supplier companies by operating incentive systems for outstanding partners and have paid about KRW 18 billion in cash in 2020. (increased by 31.4% compared to 2019) In case of in-house partners, payments are made in cash within 5 days after the tax invoice is closed to support their business operation. We will continue to find helpful measures and systems to contribute to mutual growth and co-existence with our partners.

Win-win Cooperation Program

As part of support program for supplier companies, Hyosung Chemical is participating in Win-win Cooperation Program, organized by the Korea Occupational Safety and Health Agency, since 2016 to strengthen our suppliers' capacity and responsibility of health and safety management. A total of 9 supplier companies participated in this program in 2020. Our main activities include: sharing safety and health issues through supplier meetings (monthly); providing safety and health manual information; material and financial support including safety equipment, safety supervisor training costs, working environment assessment for in-company suppliers; resting facilities and training venue support; safety and health inspection and improvements (25 cases in total); and discovering improvements (30 cases in total) based on risk assessment.

Supplier Rewards

Hyosung Chemical selects the most-contributing suppliers each year and rewards the with the Special Prize in Hyosung Awards. In recognition of its safe and high-quality execution of construction project through professional personnel with high technical skills while staying at Yongyeon plant, Yoosung ENG Co. won the award in 2020. We will continue to reward suppliers with outstanding technologies and high contribution to our business.

Supplier Supports

Hyosung Chemical is operating programs to support outstanding suppliers selected through regular supplier evaluation. For instance, we have participated in the Energy Companion Project, hosted by Korea Energy Corporation, with the outstanding suppliers, Wonlim Co, and Sinil P&S Co., supporting their capacity-building in energy efficiency improvement and joint GHGs emission reduction. Furthermore, we also participated in Business Doctor Program, which was hosted by the Federation of Korean Industries, with SLP Co., providing them with opportunities to make up for their weakness in business management and work system.

Compliance Program

Disclosure of Supplier Fair Trade Principles

Hyosung Chemical is pursuing sustainable growth together with suppliers based on the trust from the citizens. Recognizing that suppliers are a source of our competitiveness, we have established the 'The Code of Conduct for Hyosung Chemical Suppliers,' through which we form a transparent and fair business relationship with our partner companies and recommend practicing CSR to all partner companies dealing with Hyosung Chemical. In addition, by disclosing the principles on our website, we announce our commitment to fulfill them as a social promise, not only a promise between the two companies.

Supplier Fair Trade Principles

1 ETHICS AND FAIR TRADE

We promise to facilitate transparent and fair trade culture and to proactively participate in ethical management.

2 HUMAN RIGHTS AND LABOR

We respect the human rights of our employees and stand against any inhumane treatment.

3 SAFETY AND HEALTH

We prevent accidents and occupational diseases of employees by identifying risk factors at workplaces in advance.

4 ENVIRONMENT

We strive to meet environmental standards of all products and services we deliver and to minimize their environmental impact.

CLIMATE CHANGE RESPONSE

Background

Recently, Korean government has finalized and announced the 2050 Carbon Neutral Strategy. The 2050 Carbon Neutral Strategy has been prepared, in line with the growing awareness of seriousness of climate change due to COVID-19 as well as accelerating carbon neutrality declarations by major countries in response to the approaching deadline for submitting the ‘Long-term Low-carbon Development Strategy’ to the UN.

Our approach

As a global corporation focusing on business areas, including textile, chemical, industrial materials and heavy industries, that have a major impact on climate change, Hyosung is making a variety of efforts to minimize its impact to climate change throughout the entire business process. In this regard, Hyosung and Hyosung Advanced Materials have participated in the CDP, and from 2021, all business companies will incorporate carbon management system required by TCFD recommendation and participate in CDP carbon information disclosure projects.

Our Achievement



Reflecting TCFD recommendation



Joining CDP Leadership Group and receiving Carbon Management Sector Honors.

Our Next



Execution of the TCFD support declaration



Upgrading CDP rating



Strengthening the Climate Change Response Capacity

Climate Change Response System

Hyosung is implementing 2030 Green Management Strategy for the purpose of becoming ‘an eco-friendly company enhancing and enriching the quality of life for humanity’. Especially, our efforts for the response to climate change, are based on recommendations of TCFD that requires disclosure of information related to governance, strategy, risk management and emission reduction target. Hyosung will continue to fulfill its responsibility in climate change response.

Climate Change Response Organization

Climate Change Governance

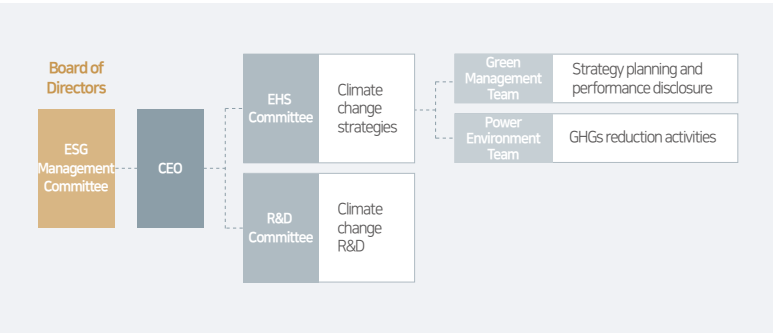
In April 2021, Hyosung has expanded and rearranged the existing Transparent Management Committee, which is in charge of governance in the BOD, into the ESG Management Committee after including environment and social sectors. We plan to review ESG-related policy, targets, risk management, investment and action plans, also covering climate change issues. Each operating company operates ESG-related organization under direct supervision of the CEO, and the organization will be rearranged and expanded in first half of 2021.

With the presence of the CEO, head of plant, and head of research center, the Environment, Health, Safety (EHS) Committee establishes strategies on climate change, environment, safety and health and raises agenda on the board. In addition, the R&D Committee consists of CEO, COO, OC representatives, and PG/PU representatives and establishes R&D strategies based on the opinions of related departments such as sales, marketing, product development, and research.

Roles and Responsibilities of the Department in Charge

Green Management Team is the department in charge of overall response to climate change. The department operates internal carbon asset management system in the company and monitors greenhouse gas emissions and reduction performance. It also seeks for measures to reduce carbon emissions by sharing best practices among business sites. Based on the transparent disclosure of performance and outcome of the response activities, climate change response goals are monitored.

Organizational Structure for Climate Change Response



Climate Change Response Strategy

Hyosung Group has established reduction targets tailor-made depending on each operating company in order to meet reduction target determined by the government in accordance with 2030 Emissions Reduction Roadmap. Hyosung aims to achieve 20.5% of reduction against BAU-level in 2017 and realize green management in all domestic business sites. Accordingly, we establish and operate facility investment plans for saving energy every year, by which approximately 4.3% of energy was saved compared to the previous year along with emissions reduction achieved. We also expect to reduce wastes by developing low-carbon products as well as recycled products. Moreover, we have invested a total of KRW 1.3 trillion in carbon fiber and hydrogen projects for R&D and commercialization.

VISION 2030	Becoming an eco-friendly company enhancing and enriching the quality of life for humanity			
Strategy	Emissions reduction by 20.5%	Market discovery and business expansion through green technology development	Creating a green corporate culture by establishing eco-friendly infrastructure in Hyosung	Building stakeholders' trust based on transparent information disclosure

Climate Change Risk Management

Hyosung analyzes climate change risks and opportunity factors in various aspects, such as the division between transition risk and physical risk. The assessment frequency and period of risks vary depending on respective stage value chain.

Climate Change Risk Management Methods

Category	Description
Risk management strategies	<ul style="list-style-type: none">Integrating the strategies into the company-wide risk management processShort-term: 1 to 3 yearsMid-term: 3-5 yearsLong-term: 5 years or longer
Scope of strategies	<ul style="list-style-type: none">Including both upstream and downstream within the supply chain
Performance evaluation of strategies	<ul style="list-style-type: none">Self-inspection at least once per year

CLIMATE
CHANGE RESPONSE

Background

Being highly resource-intensive, the textile industry has a great impact on climate change. As such, it is important for corporations in this industry to respond to climate change with much greater responsibilities and commitment to carbon neutrality. Corporate responsibilities of global companies regarding climate change response are increasing, which will lead into sustainable business. It is necessary to prepare climate change response strategies across entire product life cycle, including use of recycled materials at the stage of purchasing raw materials and assessment of reducible emissions at the production stage, for example.

Our approach

Hyosung TNC focuses on developing low-carbon products in pursuit of sustainable growth of textile industry and emissions reduction. We have established the process of assessing carbon footprint for two products since 2020. We would like to achieve emissions reduction throughout the entire value chain by supplying high energy-efficiency products in the market.

Our Achievement



2050 Carbon Neutrality Joint Declaration



Establishing carbon footprint assessment process

Our Next



Declaration of support for TCFD



Participation in CDP



Strengthening the Climate Change Response Capacity

Climate Change Response System

Hyosung TNC is accelerating its green technology development so that its environmental impact is minimized throughout the entire product lifecycle, from production to disposal. We also participate in 'Carbon Neutrality Committee for Textile/ Paper Industry', which is a private/public communication channel in the industry, and presented the joint declaration statement for carbon neutrality representing the industry.

Assessment of Product Carbon Footprint

Carbon footprint measures CO₂ emissions across entire process of a product (raw materials extraction, component production, raw materials transport, production, distribution, use and disposal) in accordance with the LCA regulation. In 2020, in order to verify its efforts to reduce emissions at the production processes, Hyosung TNC has assessed carbon footprint of two products, including creora regen, which recycles waste threads, and bio-based spandex made of corns. The carbon footprint assesses not only Scope1& emissions, managed directly by the company, but also Scope3* indirect emissions. In addition, Hyosung TNC conducted verification of 'Higg Index', environmental impact assessment metrics developed by the Sustainable Apparel Coalition (SAC), which more than 250 global corporations (including Amazon, Nike, Adidas, Colombia, Levis, etc.) from 35 countries join, and measured carbon footprint with Carbon Trust from the UK. According to the verification, Hyosung TNC's creora regen was estimated to reduce more than 60% of CO₂, while bio-based spandex was found to be 15% more eco-friendly than normal yarn produced by other companies. Hyosung TNC will continue to extend the carbon footprint measurement to its main products in an effort to fulfill its responsibilities in climate change responses.



Product carbon footprint assessment

Expansion of Renewable Energy

Hyosung TNC receives waste heat from incineration facilities near its business sites, and reuses biogas generated from wastewater treatment facility in the plant to operate boilers.

Emissions Reduction through Low-carbon Energy Transition

Hyosung TNC reduces emissions through low-carbon energy transition at its business sites. Ulsan plant and Ulsan plant has been reducing their GHG emissions by replacing emissions-intensive B-C oil with LNG and LPG, followed by gradual reduction of emissions and increase of replacement ratio, which allowed us to stop using B-C oil since November 2019. In this way, Hyosung TNC reduces GHG emissions and further contributes to conservation of environment.

High-efficiency Facility Replacement

Hyosung TNC's Ulsan plant conducted facility replacement and adopted high-efficiency motors, while Gumi plant replaced coolers and air compressors with high-efficiency ones and Daegu plant replaced normal lighting devices with LED ones, which leads into 2,950MWh of electricity saved and 1,375 tons of emissions reduction per year.

Providing High-efficiency Energy Products and Solutions

Apart from the textile business, Hyosung TNC is carrying out customized energy solution business as an energy service company (ESCO). In addition to LED lighting products, which are eco-friendly and high-efficiency products featuring differentiated design and high quality, we design, deliver, and install the energy-saving products (transformer, electric motor, refrigerator, air compressor, heat pump, etc.) as well as renewable energy products (PV, ESS, etc.) in accordance with the use condition and requirements from clients, thereby making achievement of downstream emissions reduction and energy saving.

LED Lighting

Hyosung TNC provides various LED (Lighting Emitting Diode) products. LED (Lighting Emitting Diode) lighting utilizes a compound semiconductor and is considered to be next-generation product that can replace conventional incandescent and fluorescent lightings. LED lighting is effective in saving energy, generating less power consumption compared to conventional lighting.

Heat Pumps

A heat pump is a cooling and heating device that transfers a low-temperature heat source to a high temperature and vice versa, using heat from refrigerant or condensed heat. Hyosung TNC produces air source heat pumps which are powered by electricity. They boast high energy efficiency of about 1.8 to 3 times or more depending on the outside temperature.

CLIMATE CHANGE RESPONSE

Background

In 2019, 'Hydrogen Economy Promotion Roadmap' was announced by Korean government, and the US government is rapidly entering a low-carbon society, along with the declaration of achieving net-zero by 2050. In the construction industry, low-carbon construction market is constantly expanding, which involves purchasing low-carbon materials and emissions reduction in the process of construction. Additionally, the demand for energy-efficient power facilities and buildings is expected to increase.

Our approach

Hyosung Heavy Industries is striving to minimize its climate change impact by preparing for new energy era in the future throughout expansion of ESS and hydrogen charging stations, technology development and establishment of smart grid system. We will continue to take the lead in climate change response as a company committed to sustainable environment and future.

Our Achievement



Operating the EHS Committee



Signing a contract to supply MVDC

Our Next



Technology development for SF6 alternatives



Participation in CDP



Strengthening the Climate Change Response Capacity

Climate Change Response System

Hyosung Heavy Industries is decreasing its climate change impact by developing emission reduction technologies and expanding projects related to renewable energy in accordance with Hyosung group strategies. We are fulfilling our role in creating green energy for the future through continuous technology development.

Climate Change Response Strategy

Hyosung Heavy Industries has established its own climate change response strategies by inheriting the climate change strategy of Hyosung Group, Vision 2030 (20.5% of reduction against BAU by 2030). We have set the goal of reducing emissions by 10% compared to 2017 by 2025 as a mid-term plan and 15% by 2030 as a long-term plan. Furthermore, we continue to reduce energy consumption and increase energy efficiency by reflecting GHG emissions in the process of decision-making for facility investment in our business sites.

Climate Change Response Organization

Hyosung Heavy Industries is operating the EHS Committee, which is the highest decision-making body for the matters related to climate change. The CEO of Hyosung Heavy Industries sits as the chair of the EHS Committee, and thus, possesses decision-making authority for agenda related to climate change. The EHS Committee is held twice a year to establish plans and goals for corporate response to climate change and manage related performance.

Development of GHG Replacement Technology

We are currently developing a 170kV eco-friendly gas insulation system (GIS) that could replace SF6, the greenhouse gas used in production process of breakers, with eco-friendly gas (CO2, fluoronitrile mixed gas). It is expected to reduce 98% of emissions (23,900kgCO2/kgSF6 → 380kgCO2/kg · Novec Mixture) if the technology development is completed.



Eco-friendly 170kV GIS

Expansion of Renewable Energy Projects

Hyosung Heavy Industries is expanding a variety of projects related to renewable energy as climate change response to keep up with the new paradigm of the power industry.

Photovoltaic Power Inverters

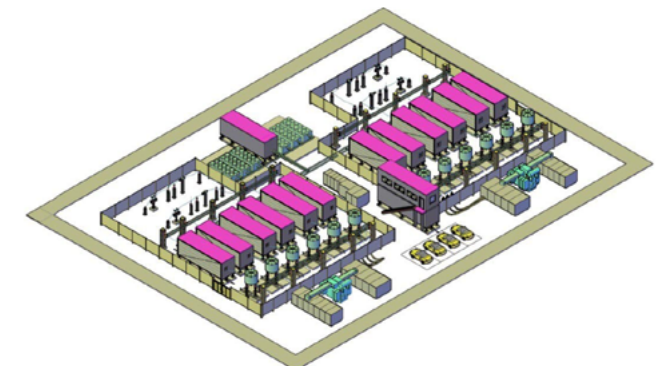
Based on the accumulated technical expertise in power industry, Hyosung Heavy Industries is providing high-efficiency photovoltaic (PV) power inverters to clients to support their stable operation of PV power plants. These PV inverters, that are applied to plants with small to mid-level capacity as well as large capacity amounting to several decades MW, allow stable operation of PV plants based on high efficiency and reliability.

Photovoltaic Power EPC

We have implemented various projects, including PV plant design, engineering and construction, over the last 10 years since the construction of PV plant in Samnangjin in 2007. Based on the rich experience and knowledge accumulated, we are building various PV plants, including not only conventional ones but also customized ones in accordance with the clients' requests, such as PV plants installable at parking lot and water treatment facility. Hyosung Heavy Industries is also providing a finance-combined business model utilizing project financing, not confined to simply supplying PV plants after planning, purchasing and construction. Furthermore, we are contributing to facilitation of renewable energy projects by providing services of business analysis, consulting and permission supports.

Korea's First Transmission and Distribution System for Renewable Energy

Hyosung Heavy Industries has signed a supply contract of 30MW MVDC, which is medium-voltage direct current (MVDC) transmission and distribution system, along with Green Energy Institute, for the first time as a Korean company. A unit of 30MW-scale MVDC can provide electricity to almost 67,000 households, and the MVDC placed in order this time will be installed in Naju Innovation Industrial Complex by the end of 2021. MVDC is a power system capable of transmitting medium-voltage electricity (1.5 – 100kV) to DC, boasting less power loss for long-distance transmission and 40% higher transmission capacity utilizing the existing transmission facilities.



30MW MVDC bird's-eye view

CLIMATE CHANGE RESPONSE

Background

Climate change significantly affects not only companies but also various stakeholders. Emissions reduction across the entire lifecycle of a product, covering production, consumption and disposal, due to GHGs reduction policies by the government and the changing consumers' awareness regarding climate change. As such, it is required for an organization to facilitate low-carbon culture to improve trust of stakeholders regarding performance of climate change response.

Our approach

Hyosung Advanced Materials is striving to continuously reduce GHGs emission and minimize its impact to climate change by including 'Zero Emission' in its three green management strategies. In 2020, our safety, health and environment (SHE) policy, which used to be operated as per each business site, was revised and distributed under the order of CEO, so that all business sites in Korea and abroad maintain the unified consensus related to climate change response.

Our Achievement



Chosen to join CDP Leadership Group & Carbon Management Honors Club



The number of products with carbon footprints obtained

Our Next



Emissions assessment



The number of products with carbon footprints obtained



Strengthening the Climate Change Response Capacity

Climate Change Response Strategy

Hyosung Advanced Materials established 'GHGs Vision 2030' in 2018 and has revised its GHGs target in July 2019 in accordance with 'The Second Climate Change Response Basic Plans' of the government. The target has been newly set to reduce 19.7% of GHGs compared to the BAU of 2017 by the year of 2030. In 2020, we have established our green management goal as 'an eco-friendly company enhancing and enriching the quality of life for humanity'. Accordingly, three strategies, 'Zero Emission, Zero Waste, and Zero Impact' have been established as detailed actions. Detailed action plans under 'Zero Emission' include reduction of direct emissions and use-phase emissions.

Climate Change Response Organization

The Green Management Committee is in charge of climate change response and fulfilling environmental responsibilities of the company, and is supervised by C-level executive of production sector (Chief Production Officer) under the Sustainability Management Committee. The committee held two meetings in 2020 to discuss the 2030 Green Management Vision, CDP response plan and results, emissions assessment, expansion of the scope of emission assessment to overseas subsidiaries, and environmental investment goals and performance details. Important matters reported at the Green Management Committee are regularly reported to the Sustainability Management Committee and the BOD.

Increasing business sites subject to emissions assessment

Until 2019, we have assessed our emissions based on energy consumption from a business site in Vietnam and two business sites in China. In 2020, we have extended the scope to cover two sites in Vietnam, three sites in China and two sites in Europe and established the foundation to assess and manage process-specific emission amount. Based on the foundation for emission assessment process, more than 80% of our business sites (based on the number of employees) underwent emission assessment and third verification.

Energy Saving & Emissions Reduction

In 2020, Jeonju plant managed to reduce 516,840kWh of electricity thanks to introduction of inverters for power utility facilities (compressors, cooling water pumps, etc.) and 2,600 tons of steam from process improvement. Ulsan plant also proceeds energy saving investment every year to replace high-efficiency motors and cooling equipment and to introduce high-efficiency heaters. Additionally, we consume the power generated by PV power facilities installed at our overseas corporations in Jiaxing and Qingdao in China, reducing Scope 2 emissions.

Climate Change Performance Indicators and Incentives

We are operating an incentive rewarding system in which indicators related to performance evaluation are added and incentives are provided to employees accordingly, to motivate them for climate change response and build their awareness. For instance, CPO and heads of plants in domestic business sites are evaluated based on energy consumption reduction target, while employees in charge of green management are evaluated based on emissions reduction target as the performance indicator.

Climate Change Risk Management & Awareness Building

Hyosung Advanced Materials is regularly monitoring climate change risks in connection with its business and the result is reported to the CEO and representatives of business divisions. Climate change risks are managed across entire supply chain including upstream and downstream, suppliers' principles and maturity of climate change response regarding physical risks such as storms and heavy rain are monitored. Additionally, in line with expanded needs in eco-friendly and low-carbon products, we are working on introducing green raw materials and developing emission reduction technologies applicable in use phase of a product to hedge the risk of reduced sales of existing products. To reflect climate change risks to each employee's work, we deliver a 2-hour training program related to climate change and energy saving to our employees. In the Risk Management Committee in 2020, particularly, up-to-date climate change response trends including SBTi and RE100, as well as subsequent business impacts were reported.

Carbon Footprint Certification & Customer Response

Since the first verification of tire cord products manufactured in Ulsan plant in 2013, our products have been verified by international carbon footprint, including PET and NY tire cords in corporations based in Vietnam and Jiaxing. Hyosung Advanced Materials is providing customers with requested carbon emission information of each product based on life cycle assessment (LCA). We plan to expand the certification to more products including OPW (Changshu), steel cords (Vietnam, Qingdao), bead wires (Vietnam), and seatbelt yarn (Vietnam).

Climate Change Supports for Suppliers

Hyosung Advanced Materials is elevating the level of climate change response jointly with suppliers, by co-participating in climate change response projects run by the government. In 2020, we have signed the Energy Partnership MOU with Korea Energy Agency and provided two suppliers with consulting services for energy diagnosis. After the diagnoses on their energy use, consulting advice was provided, including heat loss improvement during facility operation, high-efficiency lighting equipment replacement, and power peak management, followed by six improvement tasks, which are estimated to save about 160MWh per year. Out of six tasks, Hyosung Advanced Materials has provided facility support for two tasks to one supplier company.

Acquiring CDP A Grade & Joining the Carbon Management Honors Club

We have earned the highest grade in '2020 Carbon Disclosure Project (CDP)' at the sector of climate change. CDP A grade is given to outstanding corporations (ranked in top 3%) which show excellent climate change response performance, risk management and disclosure of related information. Hyosung Advanced Materials has achieved A grade, especially, in recognition of the establishment of climate change response governance and company-wide preemptive response activities. Moreover, we have been chosen as a member of Carbon Management Honors Club, which is given to the top five companies at the 2020 CDP Korea Award, and awarded with 'Honors (raw materials)' in carbon management sector.



CLIMATE CHANGE RESPONSE

Background

The corporate responsibility related to climate change is gradually expanding to the extent of post-production phases from production process. It is, therefore, necessary to consider climate change impacts throughout the entire stages, from product development to production, use and post-processing. Accordingly, low carbon products and R&D activities for emissions reduction are emphasized as important elements of corporate management.

Our approach

Hyosung Chemical has established a business model for developing products capable of minimizing the negative impact on climate change. We are lessening the climate change impact induced by business activities of the company by developing new technologies for the next generation of energy, ranging from production raw materials to use phase.

Our Achievement



KCGC evaluation
(Environmental sector)



Expanded investment in climate
change response facilities

Our Next



Participation in CDP
evaluation



Acquiring additional
emissions reduction



Strengthening the Climate Change Response Capacity

Climate Change Response System

Hyosung Chemical shares its 2030 emission reduction target with other Hyosung group companies and striving to minimize impact to climate change through continuous investment and GHGs emission management in consideration of characteristics of chemical products.

Establishment of Climate Change Response System

Hyosung Chemical has established the smart factory, in which all production-related resources in all business sites are connected on a real time basis, and the collected data is analyzed for optimization of production environment. Through smart factory, we can collect and monitor the data from production process in real time and maximize production quality and efficiency, further contributing to energy saving, by preemptively recognizing defects from quality or process.

Facility Investment for Climate Change Response

Hyosung Chemical establishes annual investment plans for the effective climate change response. It aims to improve the energy efficiency mainly through investment in process facilities. In 2020, aging steam boilers have been shut down and replaced with new ones. When designing boilers, an economizer was adopted to enhance efficiency, and a low NOx burner was installed to decrease concentration of hazardous air pollutants. Furthermore, we invest in facilities, such as high-efficiency fuel pumps, replacement of aging heat exchangers, and small-sized blowers, to further reduce emissions by decreasing power consumption.



New boiler facility expansion

Energy Saving & Emissions Reduction

In order to practice eco-friendly management by reducing electricity consumption, Hyosung Chemical has been operating and expanding PV dust collecting facilities since the first PV dust collecting facility installed on the roof of the DH electricity building in 2015. The facilities are used for supplying hot water and heating internally. In 2020, a total of 191,626kWh was produced and consumed internally, thereby contributing to environment conservation by reducing power consumption. In addition, Yongyeon plant 1 replaced the existing low-efficiency cooling water pumps with high-efficiency ones, saving 1,501,171kWh of electricity per year on average. Such performance was approved as a GHGs reduction project, which allowed us to secure additional reduction of 2,799 tCO2 from 2021 to 2025.

Promoting the Use of Renewable Energy

Hyosung Chemical uses waste incineration steam, a renewable energy, supplied by domestic waste incineration plant near its business site, and utilizes power which is generated by PV power facilities installed in the plants. Yongyeon plant, in particular, has established steam network system in which internally or externally generated steam from neighboring plants (other internal plants and external plants) is exchanged, contributing to energy efficiency in the company by enabling each plant to use steam in optimized condition.

Self-Audit on GHGs Emission

Hyosung Chemical conducts self-audit on its performance of GHGs emission once every year. Environment and safety team distributes self-audit evaluation table to each business division and proceeds monitoring, and improvements and recommendations are derived and announced to each business site immediately for follow-up actions. The follow-up actions after the audit must be reflected in next year's emission target and checked for actual correction at the year-end audit.

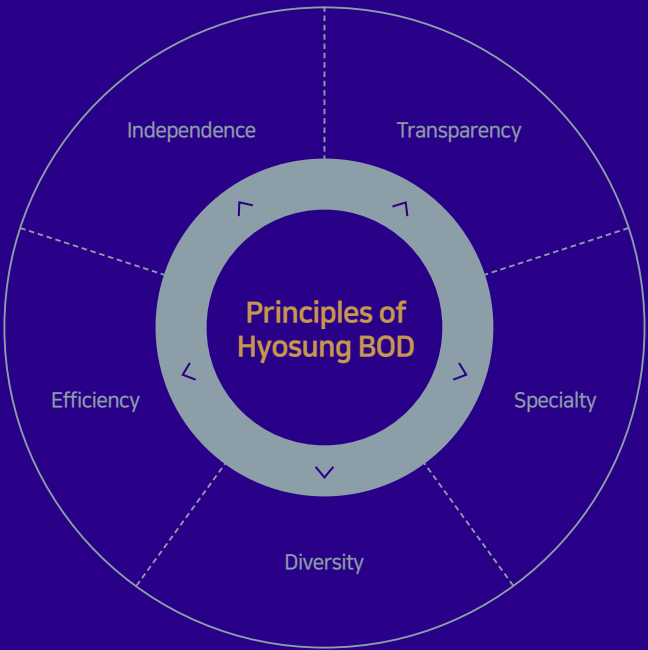
Training for Energy Saving Practices

Hyosung Chemical conducts regular training for energy saving practices. The training takes place every year for two hours and reminds the employees of importance of climate change response.

Sustainability Management

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Hyosung is striving to be the first to present valuable changes under the mission of ‘enhancing and enriching the quality of life for humanity with its leading technology and management capability’. As the highest decision-making body in Hyosung, the Board of Directors (BOD) appoints directors with diverse background and expertise based on five main principles, guaranteeing transparent and independent decision-making as well as checks and balances for efficient management activities. In pursuit of sustainable growth and protection of shareholder rights, the BOD reviews and decides on matters prescribed by law or corporate articles of association, delegated matters by the general meeting of shareholders, or high-priority matters related to basic company policy and business operation. It is also aimed to improve interests of the stakeholders including shareholders.



Board Members and Operation

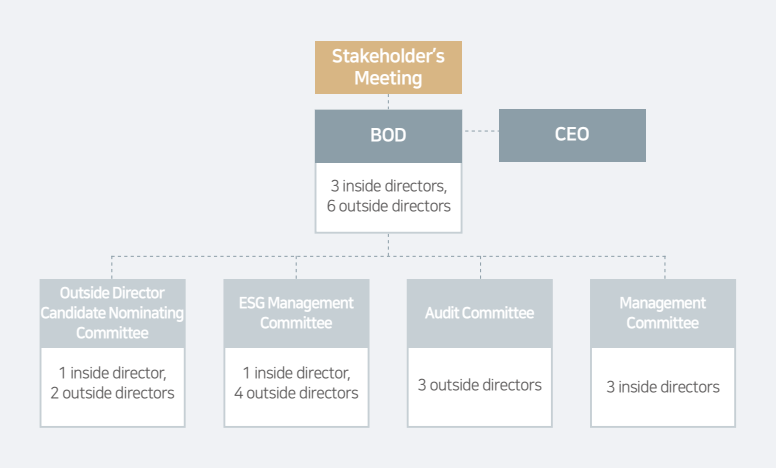
Reinforcing Independence and Transparency from External Board Members

Hyosung keeps majority of board members from outside directors and appoints an outside director as the chair of the Board of Directors (BOD) in order to strengthen independence and transparency of the board. The candidates are verified and appointed from the Outside Director Candidate Nominating Committee, which ensures the BOD to have checks and balances toward the management. All members within the Audit Committee are comprised of outside directors. In the ESG Management Committee (Transparent Management Committee, previously) and the Outside Director Candidate Nominating Committee, it is mandated to maintain outside director ratio to be over 2/3, and to appoint an outside director to chair each committee to ensure independence and transparency.

Strengthening the Board Expertise by Appointing Outside Directors from Diverse Backgrounds

Hyosung has appointed a field-specific expert to oversee the business management and participate in the BOD as the representative director to make strategic decisions and practice responsible management in accordance with the changing environment. The BOD of Hyosung consists of outside directors including a female director, and they are experts in their own fields such as society, economy, finance, law, technology and environment. The Audit Committee, in particular, includes one or more experts in finance and accounting. In addition, we conduct regular training continuously to improve the expertise of the board members. For newly appointed directors, we are delivering training that covers overview of the company, including visions, strategies, financial status, and major policies. The existing directors are also trained to improve their understanding of the industry.

Organizational Chart of Hyosung Board of Directors (BOD)



* As of April 2021

Efficient BOD Operation through Committees

Hyosung has established committees within the BOD following the related laws and regulations for prompt and efficient decision-making. Some of the board’s authority is delegated to such committees so that experienced professional directors review the issues and treat them accordingly. Roles of the Committees in operation are as follows.

Committees	Roles
Management Committee	Review and make resolutions on agenda delegated by the BOD, including business principles and investment, in accordance with the articles of association and the Board regulations.
Audit Committee	Audit-related matters, including audit plans, review on suitability of important accounting standards and feasibility of accounting changes, evaluation of internal control system, selection and evaluation of external auditors, etc.
Outside Director Candidate Nominating Committee	Validate independence from the company, qualifications, and competencies of outside director candidates and recommend the suitable candidates to the BOD.
ESG Management Committee	Proceed preliminary deliberation on major business matters including division, merger, business transfer, as well as shareholder rights and shareholder return policy. Review and make decisions on large-scale internal transactions under the Fair Trade Act, ESG-related policies, target and risk management, and investment plans.

* In April 2021, the Transparent Management Committee, which used to take in charge of governance in the BOD, was expanded and reorganized as the ESG Management Committee after including environment and society sectors.

Fair and Transparent Evaluation and Compensation

Each year, directors are evaluated based on their specialty in corporate business and technology as well as performance of the Board activities, and the following result is discussed in the BOD. The compensation of the Board is approved in the general meeting of shareholders based on such evaluation, and is provided within the compensation limit of director. The retirement allowance of the BOD shall be paid in accordance with the provisions on retirement allowance for executives which was determined by resolution of the general shareholders’ meeting.

Compensation Amount for Directors and Auditors in 2020

Unit: KRW 1 million

Category	Persons	Total compensation	Avg. compensation per person
Standing directors	3	7,800	2,600
Outside directors	4	219	55
Directors from the Audit Committee	3	163	54

* Outside directors in the table above do not include directors from the Audit Committee.

Board Members and Operation

Board Members

The Board of Directors (BOD) consists of directors who are appointed in the Shareholder's meeting, and is comprised of 3 standing directors and 6 outside directors. Standing directors are nominated by recommendation of the BOD. The candidates are nominated through a separate resolution process from the Outside Director Candidate Nominating Committee. Relevant information is provided to shareholders through reference materials disclosed prior to the shareholders' meeting and announcement of convening the shareholders' meeting. The resolution is approved by shareholders on the day of the shareholders' meeting.

Details about governance and board members of four business companies are found in the business report of the operating company

				HYOSUNG TNC	HYOSUNG HEAVY INDUSTRY	HYOSUNG ADVANCED MATERIALS	HYOSUNG CHEMICAL
Category	Name	Gender	Roles	Appointed date	Expiry date	Specialty	
Standing Director	Hyun-Joon Cho	Male	CEO, Member of the Outside Director Candidate Nominating Committee, Member of the Management Committee	1998.3.17	2022.3.22	Corporate management	
	Kyoo-Young Kim	Male	CEO, Member of the Transparent Management Committee, Member of the Management Committee	2017.3.17	2023.3.18	Corporate management	
	H.S.(Hyun-Sang) Cho	Male	Member of the Management Committee	2014.3.21	2022.3.22	Corporate management	
Outside Director	Myung-Ja Kim	Female	Chairman of the BOD	2017.9.22	2023.3.18	Environment, technology	
	Young-Lae Son	Male	Chairman of the Audit Committee, Member of the Outside Director Candidate Nominating Committee	2017.9.22	2023.3.18	Accounting, finance	
	Sang-Myeung Chung	Male	Chairman of the Transparent Management Committee, Member of the Audit Committee	2017.9.22	2023.3.18	Law (lawyer)	
	O-Gon Kwon	Male	Chairman of the Outside Director Candidate Nominating Committee, Member of the Transparent Management Committee	2017.9.22	2023.3.18	Law (lawyer)	
	Dong-Chae Jeong	Male	Member of the Transparent Management Committee	2020.3.20	2022.3.20	Economy, culture	
	Ki-Ung Kim	Male	Member of the Audit Committee	2021.3.19	2023.3.19	Economy, society	

* The information above is as of the end of 2020. From April 2021, the Transparent Management Committee has been expanded to the EGS Management Committee and there have been some changes in position accordingly.

* At the general meeting of shareholders held on March 19, 2021, Myung-Ja Kim, Young-Lae Son, Sang-Myeung Chung, and O-Gon Kwon have been consecutively appointed, while two outside directors, Byung-Doo Sohn and Tae-Ho Park, resigned due to the term expiry, and Ki-Ung Kim was newly appointed as outside director.

Board Operation

In accordance with the Article 6 of the Regulations on the BOD Operation, regular board meetings shall be held once in each quarter by principle, while temporary meetings shall be convened whenever necessary.

Board Meeting Status in 2020

Number of Board Meetings Held



7

Average attendance rate per director



96%

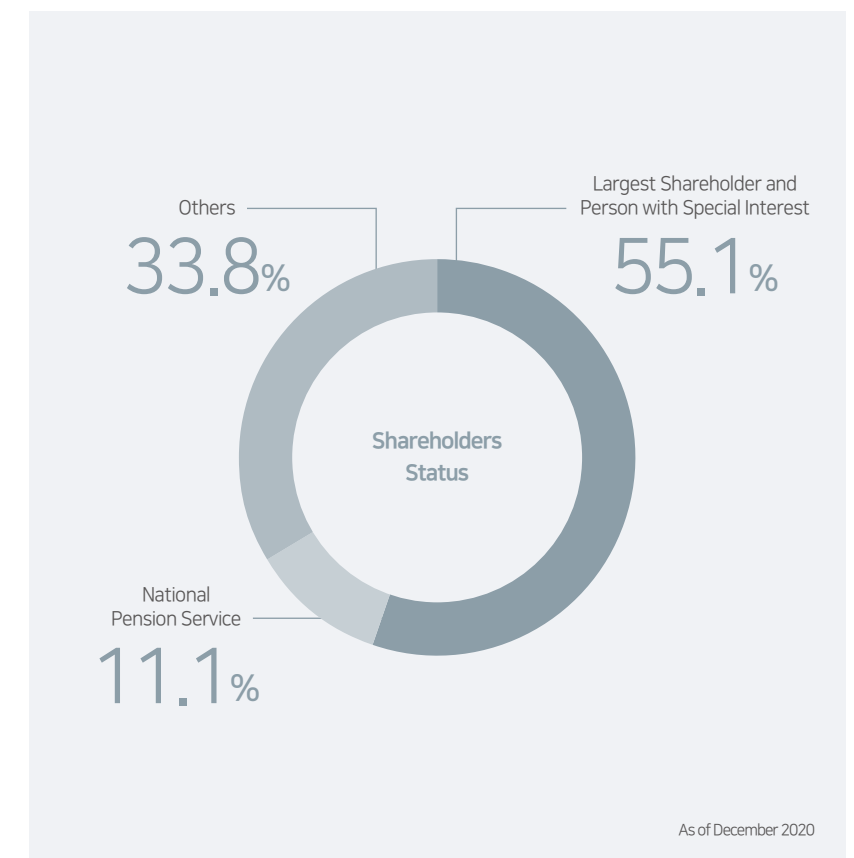
Board Subcommittees Status

Subcommittee name	Members	Number of meeting hosted in 2020
Management Committee	Standing Director, Hyun-Joon Cho (Chairman), Standing Director, Kyoo-Young Kim, Standing Director, H.S.(Hyun-Sang) Cho	46
ESG Management Committee (Transparent Management Committee, previously)	Outside Director, Sang-Myeung Chung (Chairman), Outside Director, O-Gon Kwon, Outside Director, Dong-Chae Jeong, Standing Director, Kyoo-Young Kim	4
Outside Director Candidate Nominating Committee	Outside Director, O-Gon Kwon (Chairman), Outside Director, Young-Lae Son, Standing Director, Hyun-Joon Cho	1
Audit Committee	Outside Director, Young-Lae Son (Chairman), Outside Director, Sang-Myeung Chung, Outside Director, Ki-Ung Kim	6

* The information is based on the board members and operation status as of the end of 2020. From April 2021, the Transparent Management Committee has been expanded and reorganized into the EGS Management Committee, after a Director, Myung-Ja Kim, was additionally appointed.

Shareholder-friendly Management and Protection of Shareholders' Rights and Interests

Hyosung has paid year-end dividends for 15 consecutive years from 2006 to 2020 to return its business performance to shareholders. In 2020, despite the unstable stock market due to the impact of COVID-19, we continued our efforts to promote shareholder rights and interests through treasury stock repurchases to stabilize the stock price and enhance shareholder value. In addition, we are implementing shareholder-friendly management by announcing general meeting of shareholders 17 to 22 days before the meeting date to ensure enough time to deliberate on meeting agenda. Also, shareholders may exercise their rights by proposing schedules in writing or electronically up to six weeks before the general meeting of shareholders. In addition to regular performance announcements every year, the NDR (Non-Deal Roadshow) is held regularly for investors in Korea and Asia. We also provide IR (Investor Relations) materials to meet shareholders' request for information. Moreover, we have established an internal control policy to prevent internal transactions or self-transactions by management or dominant shareholders for their personal interest.



RISK MANAGEMENT

Hyosung overcomes crises through the group risk management system. In recognition of risk management as one of the most important management activities, we identify potential risks in each sector in advance and establish measures to effectively respond to them. Taking lessons from COVID-19, which caused a major crisis in corporate management, we are trying to establish a more robust risk management system based on the awareness that such crisis can recur at any time.



Strengthening Risk Management

Risk Management System

Hyosung defines market uncertainties or internal/external risks and opportunities that have a significant impact on business activities as risks to manage them properly. In particular, risks are categorized into three sectors: finance, business continuity, and management, and major risks are defined in consideration of their impact and likelihood. We also try to establish a prevention system to enable preemptive responses to major risks by identifying their causes in advance.

Risk Management Organization

Hyosung has the ESG Management Committee under the BOD to prepare for actual risk situation, company-wide, and improve response capacity. Its affiliated business companies have the ESG Management Committee directly under the CEO to deal with risk issues. To effectively respond to risks, considering financial as well as non-financial factors, we are operating a company-wide risk management organization led by the head of the Corporate Strategy Office, the head of the Finance Office, and the head of the Support Office, as well as a working group, that deals with risks related to workplace environment, safety and supply stability, led by the head of plant.

Risk Management Sectors

In Hyosung, risks are managed in three categories, financial risks, business continuity risks and management risks.

Financial Risks

Risk factors such as finance-related market /credit risks including liquidity, stock price and exchange rate change.
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Business Continuity Risks

Category	Definition
Supply chain risks	Risk of delayed product delivery due to failure to maintain raw material supply and product continuity
Disaster and safety risks	Risks that may arise from natural disasters such as earthquakes and fires and workplace safety accidents
Environment risks	Risk of legal punishment and fines due to inappropriate response to environmental regulations related to emission of GHGs and hazardous substance

Management Risks

Category	Definition
Security risks	Risk of data loss due to external cyber terrors or internal data leak
Legal and ethical risks	Risks such as unfair contract condition, lawsuits, unfair business trade, and corruption
Reputation risks	Risk of deteriorating reputation due to misinformation or negative communication
General management risks	Operational risks due to errors from personnel or system

Risk Management Process

Based on five stages of risk management process, ‘identification-analysis-prevention-solution-monitoring’, we are effectively responding to the risk by prioritizing them upon likelihood and impact.

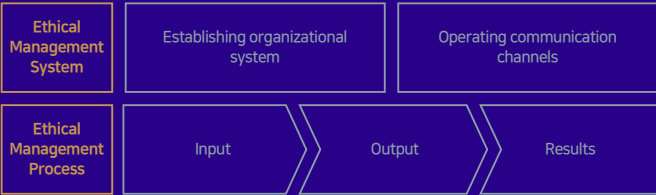
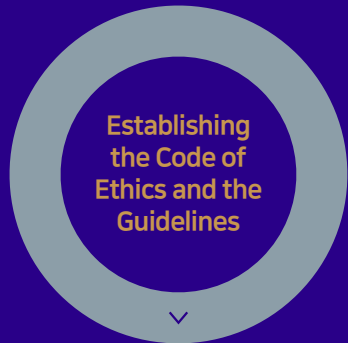


COVID-19 Risk Management

Hyosung has been carrying out a wide range of response and prevention activities to effectively manage COVID-19 risks based on close cooperation among the business companies by the lead of the Corporate Strategy/Support/ Finance Offices. We focused on minimizing face-to-face contacts by refraining team building activities and domestic/international business trips. In plant sites, guidelines are in operation to refrain from meetings with external visitors, club activities, and group training in the business sites. To maintain social distancing in the workplace, we have maintained 50% of home office rate, and rearranged the internal process and system accordingly. Furthermore, we measure body temperature of all commuting employees to check fever, and have established a response process (test, home-office shift, self-quarantine, etc.) in the incident of infection, close contact, and suspected symptoms occurring.

ETHICAL MANAGEMENT

Hyosung strives to internalize ethical management to facilitate appropriate corporate culture. Based on 'Honesty and Trust', our core values of ethical management, we have prepared the Code of Ethics and the guidelines to practice it. The Code of Ethics and the guidelines are regularly reviewed, and we are trying to empower related organizations and process to facilitate them.



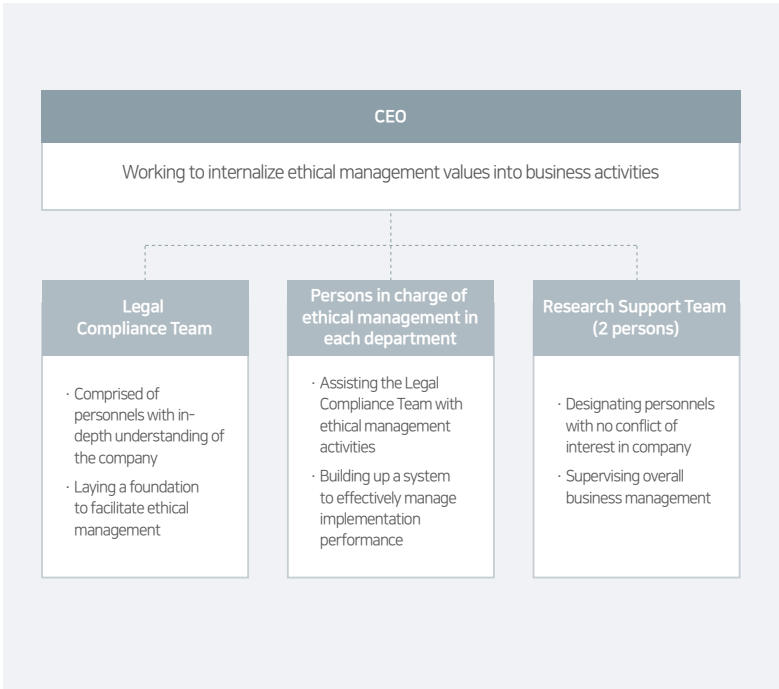
^ Ethical Management Reinforcement Process



Ethical Management System

Establishing Organizational System for Ethical Management

Hyosung has set up a legal compliance team, directly under the CEO, to better proceed with ethical management activities. In addition, ethical management personnels are designated in each department to support the legal compliance team, and internal auditors are appointed to monitor overall business management.



Ethical Management Communication Channel

Hyosung is operating 'HR Counseling Centre' and 'Grievances Procedure' to provide employees a counseling service on unethical behaviors and grievance. Such counseling can be both face-to-face or online to provide confidentiality of the employees. We also operate a mailbox in Mapo Post Office, and an online reporting channel in our website to receive anonymous reports on unethical behaviors such as bribery, solicitations and unfair business trades.

➤ Ethical Management Communication Channels



Awareness Building and Training for Ethical Management

Awareness Building and Training for Ethical Management

All new Hyosung employees sign 'Pledge of Practicing Ethical Management' and 'Pledge of Prohibiting Solicitation and Bribery,' proving their commitments to the Code of Ethics and Guidelines. When we sign a contract with a new supplier, we also encourage the supplier to make a pledge to practice ethical management and establish a code of conduct to facilitate awareness of ethical management. We also make and distribute promotional videos and magazine-type publications in an on-line corporate platform. For purpose of facilitating the awareness and practice of ethical management, ethical management training is provided to employees every year. All onboarding employees and newly promoted employees are required to take ethical management training, and the departments, which are likely to have high supply chain risks, undertake regular training on subtracting laws and contract violation cases. For sales departments, we provide information about compliance process and standards applicable to sales field such as trade secrets protection, cases of embezzlement, bribery and forgery, and the regulations related to fair trade and franchise and agency transactions.

Internal Monitoring and Follow-up Management

Hyosung conducts audits on overall business management, carries out on-site field work, investigates reported cases, and checks technology and product quality. The anonymity of auditees and reporters is guaranteed to prevent any unfair treatment or disadvantage toward them. We conduct regular audits in accordance with internal audit regulations and special audits when specific issues arise. Any suspicious incident discovered through audit is dealt with countermeasures such as caution, disciplinary action and compensations, depending on the severity of the incident; and the responsible person to such audit result is mandated to take immediate improvements. The audit results are also reported to the CEO, and the audit team regulatory reinspects the found issues to prevent re-occurrences.

➤ Reported Cases of Noncompliance with Anti-corruption & Investigation Status

2020	Hyosung		Hyosung TNC		Hyosung Advanced Materials		Hyosung Heavy Industry		Hyosung Chemical	
	Domestic	Overseas	Domestic	Overseas	Domestic	Overseas	Domestic	Overseas	Domestic	Overseas
Investigation cases	17	-	1	1	-	-	1	1	-	-
Disciplinary actions	-	-	5	1	-	-	-	-	-	-

HUMAN RIGHTS MANAGEMENT

One of the most popular subjects when it comes to corporate management these days would be human rights management. The government is stressing the importance of human rights management by including it as an evaluation criterium for management evaluation of public organizations. Human right management has become a ‘must’, not a ‘choice’ anymore. Hyosung is working on raising stakeholders’ awareness in human rights management by establishing human rights policies and principles. Through a reporting center on the website, abuse cases are discovered and treated in timely manner. We also manage human risks effectively through human rights impact assessment system.



Establishing Human Rights Standards

Human Rights Policies

All stakeholders of Hyosung, including employees, customers and local communities, have human right to dignity and happiness as human beings. By means of ‘Hyosung Way’, the value system aimed for ‘enhancing and enriching the quality of life for humanity with its leading technology and management capability’, we promise mutual growth with all stakeholders. Hyosung supports the 10 Principles of the UNGC, the OECD Guidelines for Multinational Enterprises, and the labor standards suggested by ILO. We promise to comply with labor rights and working condition standards not only in Korea but also in all other countries where our business is based.

Human Rights Impact Assessment

Hyosung have been conducting its own human rights impact assessment in the aspect of company operation by each holding company and affiliated operating company. For the assessment, we have used the indicators of human rights management guidelines and checklist distributed by the National Human Rights Commission of Korea. We conduct an evaluation at least once a year, starting with the human rights impact assessment through self-inspection, and further improvements are continuously discovered through the review of external experts. Hyosung plans proceed group-wide human rights-friendly management activities by identifying actual and potential human rights risks through the impact assessment.

Reporting Channel on Website

Hyosung runs a reporting channel on the website so that it can proactively collects feedback and grievances from all internal and external stakeholders, including employees. We make improvements based on the feedback from the reporting channel, contributing to human rights, working environment improvement, prevention of legal/ethics-related violations, and increasing stakeholders’ satisfaction. Cases received via the reporting channel are directly treated by the personnel in charge of the Compliance Support Team and the Audit Team, who initiate investigation according to internal process. The investigation takes place under strict confidentiality so that any details of reported subject or informant are not disclosed, and the progress is shared with the informant.

Human Rights Risk Management

Based on the human rights impact assessment, Hyosung identifies potential risks related to human rights per each stakeholder group to proceed preliminary response activities. In addition, we carry out prevention and mitigation activities by comprehensively investigating human rights violations even in supplier companies and local communities, as well as within our own company regarding employees, and customer contact departments.

Major Potential Human Rights Risks

Category	Potential risks	Response plans
Employees	· Establishing human rights goals · Disclosing human rights performance · Establishing human rights evaluation system · Measures for vulnerable groups	· Deriving indicators and targets · Regular performance disclosure · Regular evaluation at least once per year · Human rights protection measures for the pregnant and the disabled
Customers	· Personal data protection	· Disclosure of relevant policy and guidelines
Supplier companies	· Human rights violations monitoring · Human rights of security staffs	· Considering human rights risks during supplier evaluation · Supplier monitoring · Mandatory human rights training for security staffs
Local communities	· Measures for residents of local communities	· Establishing local community communication process

Human Rights Training & Creating the Environment to Protect Human Rights

Hyosung is carrying out various online and offline human rights training programs, such as eradication of sexual harassment and assaults, and prevention of power abuse damage and workplace bullying, to facilitate the culture of respecting human rights in the company. To improve the effectiveness, we plan to invite external instructors to proceed the training, and work on creating the working environment that could prevent human rights through various campaigns. The power abuse (Gapjil in Korean term) and workplace bullying refer to unfair demands or treatment by a person in a superior social/ economic position against a person in a weaker position. Hyosung has established its own comprehensive countermeasures against Gapjil, which still occurs throughout society. We are also trying to spread a culture of mutual respect by continuing to carry out prevention activities against Gapjil.

HUMAN RESOURCE RECRUITING AND TRAINING

Hyosung recruits talented human resource and support their growth into 'Global Leaders'. Each affiliated operating company has established the human resource development system as well as various training programs tailored to their own business area to secure a competitive edge for sustainable growth. By providing well-organized company adaptation programs to onboarding employees, we help them quickly adapt to the company and fully exert their capabilities. We have also established the strategies and training programs to nurture differentiated talents. In particular, we are striving to support company-wide sustainability management activities with the focus on spreading our management philosophy, nurturing leaders, enhancing job expertise, and building global capabilities. Recently, we have introduced a non-face-to-face method to provide the employees with continuous growth opportunities even in the midst of the COVID-19 pandemic, ensuring the foundation for effective training without obstacles.



Global Excellence	<ul style="list-style-type: none">· Maximize the competitiveness with ceaseless self-improvement efforts to win in any situation.· Blaze new trails in markets around the world with a global outlook.
Innovation	<ul style="list-style-type: none">· Eliminate all inefficiencies that do not add value.· Challenge new possibilities with a positive mindset.
Accountability	<ul style="list-style-type: none">· Act like owners and take charge in actions.· Never give up until achieving the goal.
Integrity	<ul style="list-style-type: none">· Uphold transparency and fairness based on facts and principles.· Respect and cooperate with each other to make a great workplace.

UN SDGS LINKAGE



Human Resource Recruiting and Onboarding Support

Hyosung would like to secure outstanding human resource qualified with the values of global excellence, innovation, accountability, and integrity, to realize our mission, 'Enhance and enrich the quality of life for humanity with leading technology and management capability.' We aim to become a global leader in the market along with all our employees.



Open Recruitment

To attract 'global leaders' who can fulfill Hyosung's mission, we are running various channels in both regular and occasional recruitment. In addition, we are transparently sharing the information related to the employment contract and recruiting process through our individual recruitment website in the company. All applicants are given an equal opportunity in the recruitment process and are not subject to discrimination based upon their academic background, gender, or religion. In consideration of the socially disadvantaged, we are also implementing preferential policies for national merit and the disabled. In pursuit of fair and open recruitment, we deliver preliminary training to interviewers.



Hyosung recruitment website

Onboarding Program

We are operating onboarding programs for new employees so that they can easily adapt to the company and demonstrate their capacity at early times in their fields. New hires include junior-level employees selected through regular recruitment, experienced employees from occasional recruitment, and executives recruited from outside. New employees participate in the introductory training about Hyosung, which consists of lectures on Hyosung's core values, history, business skills and special lectures, immediately after joining the company. After the Hyosung introductory training, job training for the operating company and department takes place to help them understand the workflow of their position. The new employees undertake OJT programs at the same time to easily adapt to the corporate environment.

On the Job Training (OJT)

Hyosung is operating OJT program to support the new employees' onboarding and career development in the department. The program takes place for four months by the lead of selected senior employees after completing placement of new employees followed by Hyosung and operating company introductory training. The senior employees are selected by the recommendation of each team leader to which new employees are assigned. The senior employees shall have more than three years of work experience with outstanding performance and understand the company in depth. They play a significant role in transferring required work skills to newcomer, so that they can be promptly ready for their new positions. In 2020, the title of the program was changed to 'OJT' from 'mentoring'. To increase applicability to actual work, the training focuses on hands-on subjects related to the corresponding position, for the first three months, and for the next one month, basic knowledge and competencies for the position are delivered through the work manual and assignments.

HUMAN RESOURCE RECRUITING AND TRAINING

Enhancing Employees Competency

Human Resource Development Strategy

Hyosung is endeavoring to establish a differentiated human resource development system and to provide various training supports to secure business competitiveness suitable for the nature and characteristics of each operating company. After the transition to the holding company system, training managers in the Human Resources Development Center were relocated to different business companies, which enabled division of education roles between Hyosung and affiliated business companies, and thus allowed us to have a foundation to respond to more specific training needs.



In 2020, we have mainly focused on transition to non-face-to-face education system in response to COVID-19 pandemic crisis, in addition to our existing human resource development strategies, including spreading management philosophy, developing leaders, strengthening job specialty, and enhancing global competency. In the future, non-face-to-face training is expected to become even more popular, and this will lead into increased demands for knowledge/technical support in such various forms and methods that it would be difficult for the human resource development center or the department in charge to handle them. In this sense, we have acquired an online training platform which serves as an effective communication in the company to ensure more active communication and training. The Human resource Development Center has set up a non-face-to-face system to produce our own online training contents to provide training resources within the company in a timely manner. The Human Resource Development Center and training personnel in each operating company will continue to cooperate with each other to discover and execute effective training practices, further contributing to sustainable growth of employees.

Spreading Management Philosophy

By reflecting our core values, 'Hyosung Way', and 'accountability management practices' in the overall process of training, all employees of Hyosung can incorporate them in their behavior, pursue them in the same direction, and further practice them in their workplaces. We also define roles and responsibilities of each position (executive / head of team / team member) and provide specific behavior model cases according to the position, and encourage employees to practice them in the organization.

Hyosung Way	>	Our Work Attitudes for Practicing Accountability Management	>	Directions
Mission + Core Values (Global Excellence, Innovation, Accountability, Integrity)		<div>① Be aware of the essence (purpose) of business (work).</div> <div>② Pursue global top-level goals.</div> <div>③ Align the business strategies with the goals.</div> <div>④ Thoroughly implement planned tasks and achieve goals by exposing problems in advance when the arise.</div> <div>⑤ Secure competitiveness for sustainable growth.</div> <div>⑥ Check the results and find improvements.</div>		<div>① Keep commitment to the company</div> <div>② Achieve profit maximization</div>

We focus on introducing core corporate values to new employees, so that they can pursue the same direction as the company, grow together with the company and promptly adapt to the organization.

Category	Description of Training	Trainee
Work attitude training for accountability management practices	Learning work attitudes for the practice of accountability management with best practices by each job position and deriving specific actions in their own tasks	All employees
Video course of humanities	Providing all employees with time for self-reflection by sharing 5-minute video course that introduces humanities books related to our core value	All employees
New employees training	Corporate history, business, core values, and work attitude for quick onboarding of new employees	Newly recruited (new/experienced)

Spreading Main Business Issues

Hyosung spreads main business issues to all employees through various communication channels, so that all employees and executives pursue one direction to achieve a common goal. In order to expand customer-centered management and C-Cube (VOC, VOCC, VOCO) activities, which have been emphasized as a corporate management policy since 2019, to abroad, we provide related training videos and materials to expats and local employees in overseas business sites. Hyosung will continue to prepare necessary resources and expand support so that all employees in domestic and overseas business sites can look in the same direction and follow the strategy.

Social Responsibility Activities

In parallel with ever more increasing importance on ESG (Environment, Social, Governance), related training programs have been arranged to be provided to all sectors in the company. Sustainability training, including statutory and mandatory training, consists of six areas: environment, ethics, safety and health, fair business trade, human rights, and information security. We are preparing additional training for employees leaving the company. In 2020, the training platform has been expanded with the scope so that employees abroad can take the training courses.

Every year, all employees and executives in Hyosung are required to take training programs including workplace sexual harassment prevention, workplace bullying prevention, and disability awareness building. They also receive training on personal data protection, safety and health additionally. In 2020, all employees have completed training on environment (global climate change, environmental protection, green policies), anti-corruption, and fair business trade (Subcontracting Act, Franchise Act, etc.). In this way, Hyosung aims to meet social expectations and requirements in a more proactive way.

Sustainability Training for Employees

Environment	Ethical Management	Safety and Health
<div>· Greenhouse gas and global climate change</div> <div>· Hazardous chemical substances</div>	<div>· Anti-corruption guidelines</div> <div>· Anti-corruption cases</div>	<div>· Working environment management</div> <div>· Safety management guidelines</div> <div>· Healthcare</div>
Fair Business Practices	Human Rights	Information Security
<div>· Fair Trade Act</div> <div>· Subcontracting Act</div> <div>· Franchise Act</div>	<div>· Prevention of discrimination and harassment</div> <div>· Prevention of sexual harassment</div>	<div>· Security awareness improvement</div> <div>· Personal data protection</div>

HUMAN RESOURCE RECRUITING AND TRAINING

Enhancing Employees Competency

Strengthening Job Competencies

With its business areas based on different fields of industry, Hyosung provides a variety of training and education for all employees so that they can learn the knowledge and skills required for their respective fields and grow into specialists. After the transition to holding company system, each affiliated operating company has reinforced HRD function and established dual-track job training system. Human Resource Development Center focuses on training by job group to ensure core knowledge and skills required as well as basic work competencies for each job group, while each operating company conducts vocational training corresponding to its business areas and industry sectors, delivered by each PU/business site/team. In this way, we aim to build a virtuous cycle of working and training in the business site.

Job Training by Human Resource Development Center (mandatory for new employees with 1-4 years of employment): Core Know-ledge/Skills by Job Group

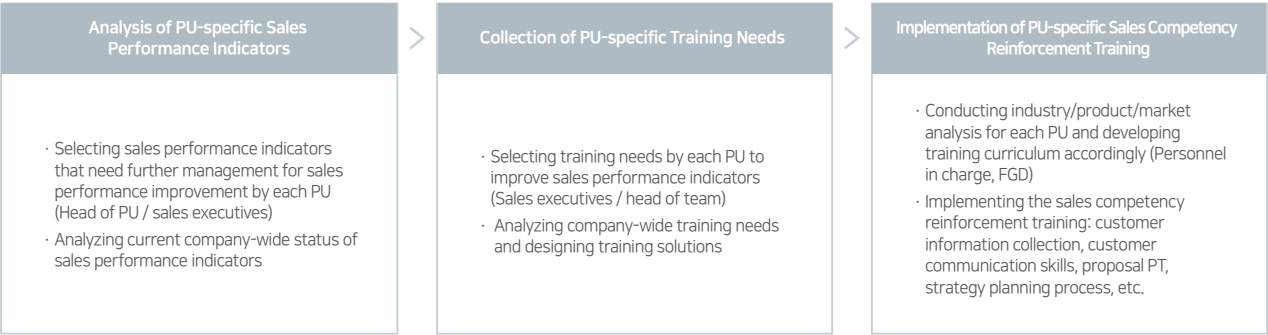
Category	Description of Training
Sales	Understanding B2B marketing, market research, price negotiation, customer communication, sales strategy, key clients, etc.
Production	In-company standardization, ISO quality management, QC tools, statistics management · analysis, DMAIC, project management, etc.
Research	Ideation, FMEA, QFD, utilization of patent information, DFSS methodology, technology commercialization and valuation, etc.
Management	Documentation, reports, internal data analysis, financial statements, management analysis tools, planning, etc.

Occasional Training by PU/Business Site: Focus on Business Areas

Category	Description of Training
Sales	Understanding of overall sales activities: customers, market, competition, credit, stock, and logistics
Production	Understanding of overall production activities: process, facilities, quality, innovation, environment and safety
Research	Understanding of overall R&D activities: R&D, research methodology, feasibility studies, etc.
Management	Understanding of overall management and operational activities: costs, accounting, regulations, HR, labor relations, etc.
Common competencies	General job competencies required in each division: product knowledge, work attitude, organization strategies, etc.

Due to the restrictions of conducting group job training, arising from COVID-19 pandemic situation in 2020, we have rather focused on rearranging the existing training process in accordance with training needs to better achieve Key Success Factors (KSF), which are aimed to reinforce sales competencies of each PU. In response to various niche needs rising from each business sector, Hyosung is working on developing differentiated training curriculum with two full-time professors. We have established tailored training system for each operating company, PU and business site, developed training curriculum and provided lectures and consulting services in order to improve employees' performance with real-world tasks.

Process of PU-specific Sales Competency Reinforcement Training



In response to unpredictable changes in the business environment, such as COVID-19 pandemic, we are enhancing online training method and supporting self-learning of employees. A total of 250 online courses are provided every month, which include vocational training for each job group/industry, basic work skills, and foreign languages. We continue to improve the training by conducting regular demand surveys and feedback analysis.

Developing Leaders

To secure competitiveness of the organization and nurture leaders capable of growing the business in a sustainable way, Hyosung provides training to existing and newly appointed executives, team leaders and scouted executives. The short-term MBA program is delivered to executives so that they have better understanding of roles and responsibilities as an executive member and practice business management in the direction as desired by the company. We aim to develop leaders who take responsibility, proactively attempt change and innovation, and have the ability to actively respond to changes in the business environment. In 2020, the program was not delivered due to COVID-19 pandemic, unfortunately. Therefore, we have focused on supplementing the program for the next year instead. The 'Insight Forum' directed to executives and team leaders is a special lecture program that invites external celebrities to share the latest management trends and diverse insights. Based on major real-world subjects such as the 4th industrial revolution, economic crisis, and digital transformation, the participants better understand external business environment, which helps them make more well-thought business decisions. In 2020, in response to the COVID-19 pandemic, we switched to non-face-to-face training so that all employees and executives can easily participate and gain insights. The training program for new team leaders has been designed to help the newly appointed to fulfill performance management, people management, and organizational management in a balanced way. We provide 8 weeks of feedback sessions after training so that they can put the learning into practice in the real-world situation. Hyosung will continue to pay attention to all employees so that they can grow into successful leaders in the future.

Category	Description of Training
Newly appointed executives	Support the training so that the newly appointed are well aware of their roles and responsibilities in the perspective of an entrepreneur and grow into a successful leader achieving management philosophy and goals
Short-term MBA program	Support for improvement of management capabilities and resilience to environmental changes so that they can act responsibly as an entrepreneur and contribute to the sustainable growth of the company through change and innovation
Scouted executives	Assisting onboarding of scouted executives by educating company core values, business status and policies
New team leaders	Supporting the newly appointed to fulfill the roles and responsibilities in performance/personnel/organization management as a team leader
Insight forum	Providing latest business trends and humanities-based insights to help leaders make decisions

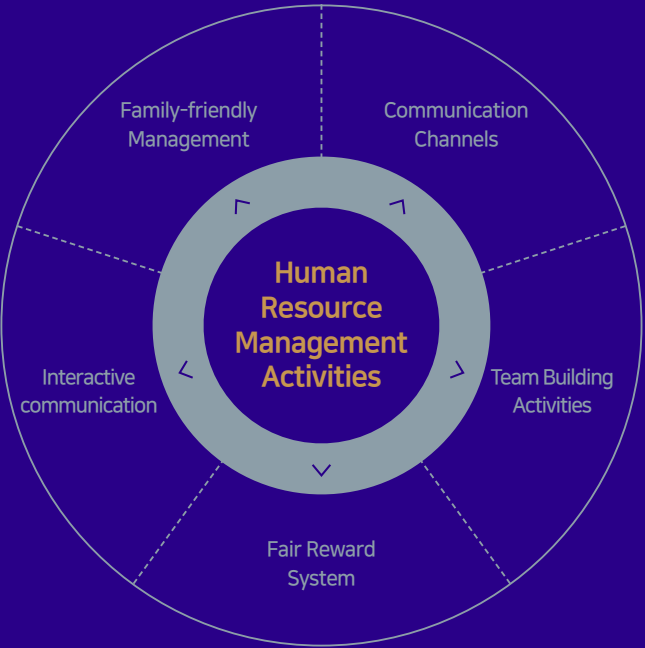
Enhancing Global Competency

Hyosung is expanding its business around the world and making efforts to enhance capacity of its human resources so that they can flexibly respond to different needs in each region and culture. We listen to the training needs of overseas subsidiaries, based on which we provide training courses for leaders, expatriates, and local recruits, such as vocational training and language courses, so that overseas subsidiaries can grow sustainably. In 2020, education and mentoring programs were provided to nurture executive candidates from local recruits in Vietnam. Through such programs, we have made achievement of training and appointing local recruits to vice plant head position. In addition, training contents and teaching methods were passed on via regular video training to training managers in Quang Nam branch in Vietnam, to support effective local training. Based on the training plans in 2021, we plan to focus on strengthening local employees' sense of belonging and competency and keep up with improvements after inspection and analysis of training status of overseas manufacturing corporations. In case of trading corporations and business branches, as well, we plan to provide standard training materials for new employees and support sales capacity training in response to requests for training delivered from expatriates to local employees. Hyosung will continue to reinforce global competitiveness by constantly paying attention to employees capacity-building not only in domestic but also in overseas business sites.

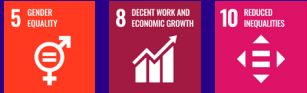
Business sites	Description of Training
All manufacturing corporations	Conducting training status investigation in each manufacturing corporation and deriving improvement tasks · Investigation on training status in each corporation and analysis of issues and needs · Investigation on operating status including training system, operation process and training infrastructure
All trading entities/branches	Investigation on training status in each trading entity/branch and discussion on support method · Identifying the status of local employees training by expatriates and needs for support
Vietnam corporation	Nurturing executive candidates out of local employees · Capacity diagnosis, management training, customized vocational training, challenge tasks and job circulation, and regular mentoring programs
Quang Nam corporation in Vietnam	Capacity-building for local training managers · Regular video training, sharing training contents and methods, guidance on curriculum development

HUMAN RESOURCE MANAGEMENT

Hyosung has established measures to support employee's work-life balance and create a desirable organizational culture to enhance their concentration to work and job satisfaction. Additionally, our family-friendly management plays an important role in making employees and their families happy together with Hyosung. We also receive employees' feedback to create a pleasant working environment and corporate culture, further contributing to organizational innovation of the company. To enhance both internal and external communication, diverse communication channels are in operation, including 'Conversation with the Top Management', two-way communication through the internal bulletin board, as well as customer outreach channels.



UN SDGS LINKAGE



Work and Life Balance

Family-friendly Management

Hyosung endeavors to build a family-friendly culture within the company that encourages employees and their families to participate and communicate with us, in our goal of becoming a happiness-oriented company. To that end, we have implemented various programs for employees and their families as well as maternity protection policy. In recognition of these activities, Hyosung earned Family-friendly Management Certification in 2015, and Hyosung TNC, Hyosung Heavy Industries, Hyosung Advanced Materials and Hyosung Chemical obtained this certification after the group division in 2018.

Maternity Protection Policy

Hyosung boasts a variety of maternity protection policies for pregnant employees. In addition to the 90 to 120 days of maternity leave that can be used before and after childbirth, the company also offers reduced working hours by 2 hours per day within 12 weeks after pregnancy or after 36 weeks of pregnancy. In addition, the company guarantees maternity leave and supports medical expenses in case of miscarriage or complication. After giving birth, childcare leave can be used within one year, or a reduced working hour system of 15 to 30 hours per week can be arranged. In addition, employees can use nursing room in the company and breastfeeding time is guaranteed for 30 minutes or more, twice a day in the office. In addition, a special ID card is provided to pregnant employees so that colleagues can be more aware and considerate. We also provide leave for spouses and family care leave in case of sickness of their children or family members, and enforce a policy to prevent overwork of pregnant women at night or during holidays.

Workplace Daycare Centers

In order to relieve the childcare burden of working parents and to further support a work-life balance, we are running in-house daycare centers in the Mapo, Changwon and Ulsan offices. We ensure the best childcare environment in the centers by regularly conducting inspections for toxic substances ensuring reliable childcare and high-quality education by teachers from professional childcare service agencies.



Breastfeeding room

Flexible Working Arrangements

Hyosung complies with legal working hours (52 hours per week) and supports flexible working arrangements to increase employees' productivity. There are optional working hours system and flexible working hours system, and overtime pay is given for extra working hours. In this way, employees can manage their time flexibly and efficiently depending on their workloads.

Refresh Day and Designated Holiday System

Through the 'Refresh Day Policy', Hyosung encourages employees who may find it difficult to use up their paid holidays due to the factory operation schedule to use a maximum of five annual paid holidays in a row. In addition, we operate the designated holiday system, in which employees are given days off, usually in connection to one-day national holiday or traditional holiday. In 2020, six days have been designated as holiday under this system. This allows employees to fully recharge and return to work with fresh energy.



Hyosung workplace daycare center

HUMAN RESOURCE MANAGEMENT

Expanding Organization Culture Activities

Conversation with Top Management

The CEO of Hyosung holds a meeting to directly explain and share the company's major achievements, issues and policies to executives and team leaders. During the meeting, a Q&A session is prepared where top management members and employees can communicate candidly, thereby strengthening company-wide communication and management transparency.

Team Building Activities (HOT, Hyosung One Team)

Hyosung is operating a team building program, called Hyosung One Team (HOT), so that all teams can exert the best capabilities based on communication and cooperation. The HOT program took place with voluntary participation of teams in the company until 2018, and since 2019, it has been connected with training program for new team leaders so that they are provided with opportunities to restructure their team quickly and communicate smoothly within the team. Through this program, participants can reflect on their team culture, discover underlying problems and derive countermeasures together, using it as an opportunity to make progress forward. In 2020, we have temporarily stopped the HOT training program due to COVID-19 pandemic. However, we are currently revising and supplementing the program in an aim to resume it in 2021.

Proud Hyosung-er Award

The Proud Hyosung-er Award is awarded every quarter or year to the executives or employees who have achieved outstanding performance contributing to company's growth and development. Winners are selected in the sectors of marketing, technology, research and management support, and monetary incentives and promotion-related advantages are given as a reward.



2020 Hyosung-er Award

Reinforcing Communication

Internal Bulletin Boards, Blogs and Other External Communication Channels

Hyosung is operating communication boards such as 'Tong Tong Bulletin Board' and 'Wa-gle Wa-gle' in its company intranet so that all employees widely share business information and news and exchange their opinions. Tong Tong Bulletin Board serves as a communication platform across entire business units, with communicators from each unit putting posts along with photos to promote business activities. It also facilitates interactive communication by actively responding to the suggestions posted by employees (118 posts in 2020). In addition, by operating Hyosung blog, 'MY FRIEND HYOSUNG', company magazine, and HBS, we deliver various news within and outside the company, including major corporate news, social responsibility activities and stories of employees. Furthermore, we also created YouTube and NAVER TV channels for internal and external communication.

Internal Bulletin Boards Operation status in 2020



External Communication Channels

Hyosung Official Facebook Page
<https://www.facebook.com/myfriendhyosung>

Hyosung Official NAVER Post Page
<https://post.naver.com/hyosungpr>

YouTube Channel - Hyosung TV
<https://www.youtube.com/channel/UCpR8UwUbF20GCWJy4hxCOdQ>

Hyosung Group NAVER Blog - MY FRIEND HYOSUNG
<https://blog.hyosung.com>

Selection and Operation of Communicators

In order to facilitate cross-departmental communication in PGs and PUs, we are appointing 'Communicators' within each business site. At least one employee should be selected as a communicator in each site. Once appointed as a communicator, he or she is responsible for communicating and informing issues of their business site to others after getting proper training related to organizational communication.

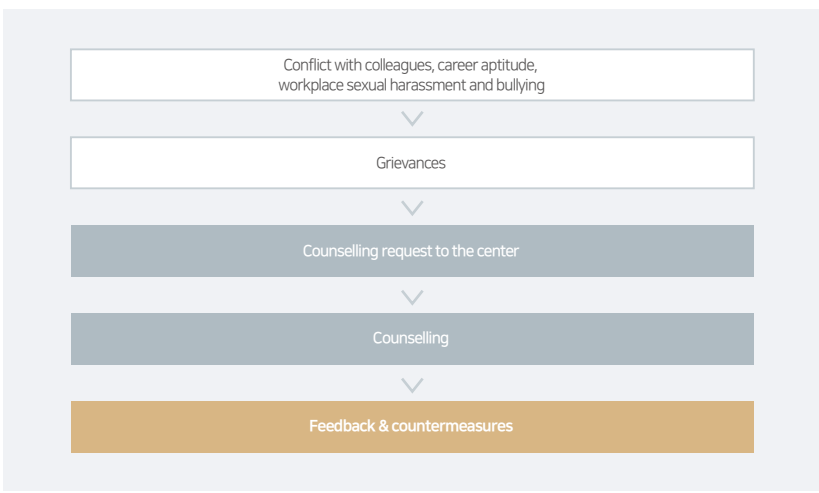
Enhanced Communication Regarding Employee Relations

There are labor unions organized in the company. Each business unit transparently discloses management status of the company to its employees through regular briefing sessions or round-table meetings for each management-level. Meanwhile, we operate the Labor-Management Committee at the headquarter as well as at each business site and hold a quarterly meeting to discuss welfare, grievances, health and safety of employees. The received complaints are handled throughout the entire company, and improvement status is constantly monitored.

HR Counselling Center

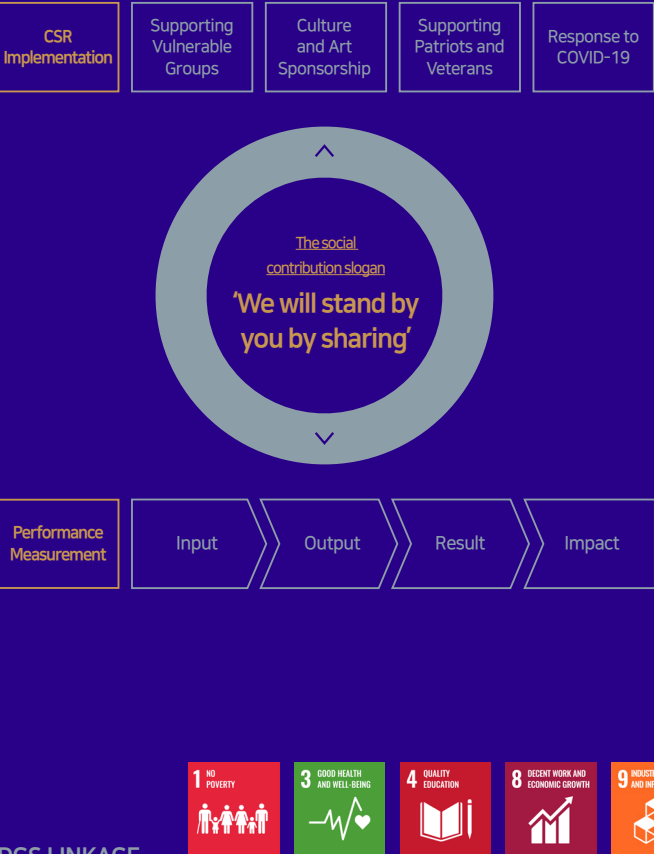
The HR counseling center is a communication channel to collect and directly deliver employees' work-related grievances to the executives including various issues such as sexual harassment, embezzlement, and personnel corruption. HR executives directly interview with employees and give them feedback under strict confidentiality. As a result, we manage to lower the turnover rate of our employees by providing them with job change options or consulting solutions.

HR Counselling Process



CORPORATE SOCIAL RESPONSIBILITY

Hyosung is carrying out social contribution activities based on the vision of ‘a company that empowers beneficiaries to pioneer their own future by education and sharing’. We listen to beneficiaries through a panel of experts to find what the community is really in need of. After that, we establish mid to long-term strategies based on the feedback collected, jointly with NGOs and specialized agencies. Our aim is to create a society where the beneficiaries are able to become self-reliant, which is why we are trying to sustain our support in the long run instead of providing one-off support. We also continue to work on mutual benefits for the company and local communities by reinforcing the social contribution activities that are relatable with our business.



Corporate Social Responsibility System

CSR Implementation and Performance Measurement

Under the social contribution slogan, ‘We will stand by you by sharing’, Hyosung is carrying out CSR activities in three focus areas: vulnerable group support, culture and art sponsorship, and patriots and veterans support. In 2020, the existing project plans have changed in some extent, and new support activities have been added due to COVID-19. Hyosung aims to increase the effectiveness of the activities and promote activities necessary for sustainability, such as UN SDGs. Our social contribution activities are evaluated through the CSR performance measurement process designed by experts. We are enhancing the effectiveness of our CSR activities by conducting performance measurement internally, sharing the result with stakeholders, and deriving proper improvements.

Recognition by ‘CSR in the Community’

Hyosung has been recognized for its activities in 2020 consecutively after 2019 by ‘CSR in the Community’ which is jointly hosted by the Ministry of Health and Welfare and the Korea Social Welfare Council. The CSR in the Community recognizes and rewards companies with outstanding CSR activities in local communities.

Company name	Activities
Hyosung	Employees’ volunteer work and sponsorship for Janggunbong Daycare Center
Hyosung TNC	Sponsoring rehabilitation treatment for the disabled children and their siblings
Hyosung Heavy Industries	Sponsoring interior restoration project for Huijeongdang at Changdeokgung Palace
Hyosung Advanced Materials	Employees’ volunteer work and sponsorship for Youngnak Aenea’s Home
Hyosung Chemical	Sponsoring artists with disability at Seoul Art Space Jamsil
Ulsan Plant, Hyosung TNC	One Company, One School (school learning support for Jangsaengpo Elementary School), One Company, One Village (Joong-go-san village)
Ulsan Plant, Hyosung Advanced Materials	One Company, One School (school learning support for Jangsaengpo Elementary School), One Company, One Village (Joong-go-san village)



CSR in the Community awarded to Hyosung

Supporting Vulnerable Groups

Smile Expedition in Vietnam

Hyosung has dispatched the medical voluntary group, ‘Smile Expedition’, to Dongnai province near Ho Chi Minh City, Vietnam since 2011. In 2020, we were not able to send medical team due to COVID-19. However, first aid kits, textbooks and sick beds were provided as well as first aid training to 10 local elementary schools that cover approximately 16,000 of teachers and students.

Overseas Child Sponsorship

We raise sponsorship for vulnerable Vietnamese children through voluntary donation from employees, and it is used for education, clean water, environmental improvement and living expenses of the children. The Matching Grant fund from the company is used for classroom expansion, drinking water quality, awareness-building, and building libraries, in order to develop regions where the children reside.

Creating Job Opportunities for Vulnerable Groups

Employment Promotion Program for Women from Vulnerable Group

In lined with the government’s job creation goal, we are promoting employment of women with experience and middle-aged women. In 2020, a total of 40 women received the support, and 23 of them managed to find jobs. From 2013 to the present, out of a total of 327 participants, 243 have found jobs.

Sponsorship for Goodwill Store

Hyosung is sponsoring ‘Goodwill Store’, a social enterprise contributing to economic independence of vulnerable group by hiring them and using profits from donated goods for job creation and vocational training for the disabled. Hyosung has installed a donation box for Goodwill Store at the headquarter office and each business site to deliver items donated by the employees to ‘Goodwill Store - Hyosung Branch 1’ located in Eunpyeong-gu.

Sponsorship for Eden Welfare Foundation

Since 2014, we have been sponsoring Eden Welfare Foundation, a social enterprise dedicated to job creation for the disabled. We have donated unused or malfunctioning computers and financed the cost of replacing lights in production facility and factory, helping the participants to work in a safe environment. We have provided a total of 8,226 units of computer equipment until 2020.

Sponsorship of Green Technology Products

We have donated eco-friendly food trays which are made of POKETONE™ produced by Hyosung Chemical to Janggunbong Childcare Center and Seongmin Social Welfare Center in Seoul. Approved by the Ministry of Environment and the US Food and Drug Administration (FDA), the eco-friendly POKETONE food tray is harmless to human body, has excellent strength and abrasion resistance, thus boasting long product lifetime.

CORPORATE SOCIAL RESPONSIBILITY

Culture and Art Sponsorship

Certification of Exemplary Institution Supporting Culture and Arts

Since 2015, Hyosung has been certified as an excellent institution supporting culture and arts by the Ministry of Culture, Sports and Tourism of Korea. The certification recognizes and approves model organizations and companies that proactively implement sponsorship activities in the sector of culture and arts. Hyosung has been recognized for continued support for culture and arts, including sponsoring Yeonwoo theater, cultural heritage activities for Changdeokgung Palace, and funding a musical show which is produced to prevent youth violence.

Sponsoring Art Activities for the Disabled

Support for Barrier-free Film Production

Since 2018, we have sponsored the production of two barrier-free films each year and donated the voices of our employees. Barrier-free films provide on-screen audio commentary for the visually impaired and sound, music, and subtitles for the hard of hearing. In 2020, we have sponsored movies called 'Shining (빛나는)', and 'Aimless Bullet (오발탄)'.

Sponsorship for the Orchestra of Youth with Disabilities

We continue to support 'Onnuri Love Chamber', a youth orchestra group with physical and intellectual impairment. The sponsorship fund has been used for expenses for education, musical instruments, and scholarship for the orchestra members since 2014. Furthermore, we invited Onnuri Love Chamber members to special music class by 'Yoyoma Silk Road Ensemble' to support their growth.

Sponsorship for Seoul Art Space Jamsil

In order to set up a firm foundation of creative visual arts by the disabled, since 2018, we have been sponsoring expenses of creating art works as well as exhibition costs for the resident artists in Seoul Art Space Jamsil. In 2020, Hyosung has awarded an artist with 'Artist of the Year' along with the prize of KRW 5 million, after voting by employees and stakeholders. Through this program, we also received the commendation from the Seoul Metropolitan Government for outstanding company in public-private cooperation in 2020.



Seung-Min Han, the winner of the Artist of the Year by Hyosung X Seoul Art Space Jamsil

Supporting Patriots and Veterans

Support for National Veterans

Housing Support for Veterans

Since the first donation in 2012, we have been working with many companies to improve the residential environment for people of national merit for 9 years. In 2020, new construction and renovations were carried out for 30 households of national meritorious people, and a total of 50 households were supported to move into permanent rental apartments.

History Field Trips for Senior Veterans

In cooperation with the Southern Seoul Office of Patriots and Veterans Affairs, we are supporting historical field trips for senior veterans who are struggling to do outdoor activities. Since the trip program launched in 2017, we have invited a total of 674 senior participants in Hoengseong, Jecheon, Ansan and so on.

Welfare Support for Korean Military Army

Since 2017, Hyosung has sponsored establishing book cafes in I Corps in the Korean army, as part of 'Facilitating Reading Books in the Army'. A book cafe can store 1,000 books and provide a space to accommodate 14 users, and we have installed a total of 7 book cafes in the army by 2018. Since 2019, we have been providing physical training materials for health and strength of the soldiers.



Ceremony of housing support project for veterans

CSR Activities to Overcome COVID-19 Pandemic

We have conducted various CSR activities to overcome difficulties of COVID-19 pandemic, contributing to local communities.

Monetary Donation and Emergency Medical Supplies Against Covid-19

For purpose of preventing the spread of COVID-19 pandemic, Hyosung Group companies, including Hyosung, Hyosung TNC, Hyosung Heavy Industries, Hyosung Advanced Materials, and Hyosung Chemical, have donated KRW 500 million as well as medical supplies including 50,000 pairs of gloves, and 3,000 hand sanitizers to Korean Red Cross.

Donation of Mask Fabrics

We have donated 1,000 yards of mask fabric to Anyang Prison to overcome COVID-19 pandemic. The donated fabric was made into fashion masks through sewing job by inmates of the prison, which have been sold to local residents at a low price.

Sponsoring COVID-19 Prevention Kits

We have prepared COVID-19 prevention kits that consist of KF94 face masks, health food, rice and hygiene products and donated them to Purme Foundation, the organization sponsored by Hyosung, for children with disabilities and their families.

Sponsoring Untact Fundraising Event

Hyosung donated KRW 40 million at '2021 Warm Winter Untact Fundraising' event which was held at Mapo Art Center in 2020. The donations will be used for emergency living expenses, medical, housing and education expenses for the underprivileged of Mapo-gu district in Seoul.

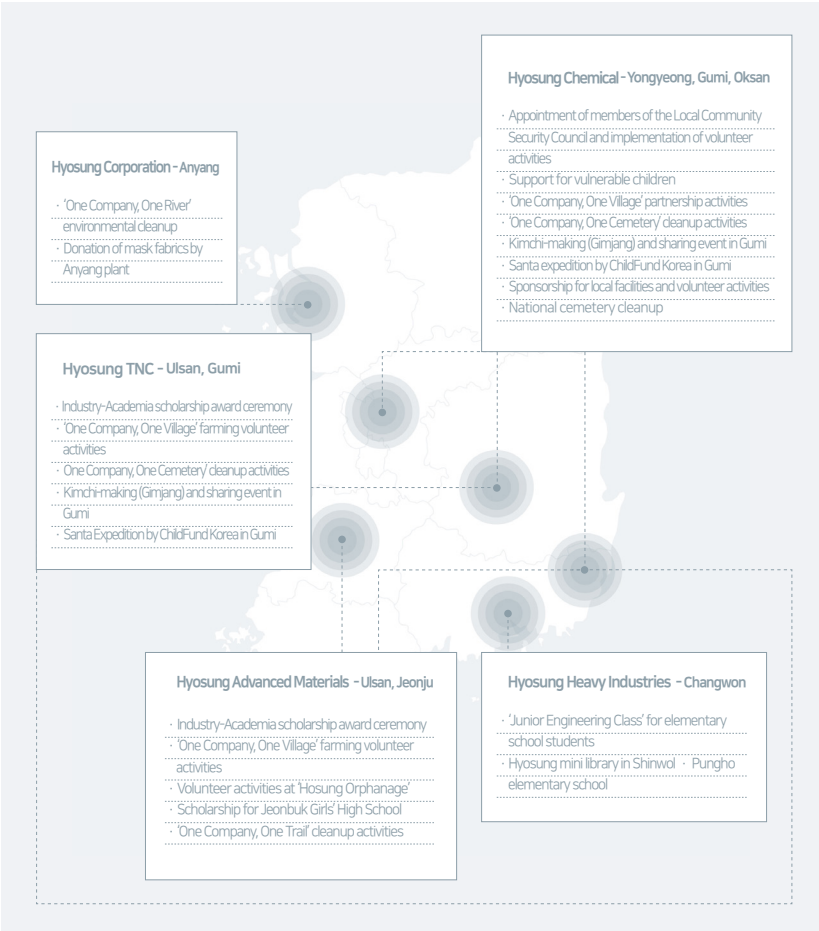


Donation of mask fabrics by Anyang Plant

CORPORATE SOCIAL RESPONSIBILITY

CSR Activities in Our Business Sites

Hyosung is implementing CSR activities specialized for the local communities where its business sites are located to contribute to development of the local communities and create social values.



Hyosung Corporation – Anyang

'One Company, One River' environmental cleanup activities	We regularly clean up neighboring rivers in the region by picking up trash and dirt around the river, contributing to clean environment of the local community.
Donation of mask fabrics by Anyang plant	To overcome difficulties due to COVID-19 pandemic, we have donated 1,000 yards of mask fabrics to Anyang prison. Our Anyang plant continues to support welfare and correctional activities for the inmates.

Hyosung TNC – Ulsan, Gumi

Industry-Academia scholarship award ceremony	We are providing scholarship to the selected students from Ulsan University who have excellent academic performance even under economic difficulties.
'One Company, One Village' farming volunteer activities	Ulsan plant consults with the one company one village council to provide necessary support for Joong-go-san village, a sister village of Ulsan plant since 2005, and supports necessary events and activities such as rice planting, harvesting, as well as throwing a party for the elderly residents in the village.
'One Company, One Cemetery' cleanup activities	The employees in Gumi plant visited Yeongcheon National Cemetery to honor the veterans at Memorial Tower and clean and repair 800 graves of veterans.
Kimchi-making (Gimjang) and sharing event in Gumi	We have conducted the Kimchi-making (Gimjang) and sharing event, in which employees of Gumi plant participate together, for last 11 years since 2010. In 2020, we donated 2,000 heads of kimchi to local neighbors in need and social welfare centers.
Santa Expedition by ChildFund Korea in Gumi	Gumi plant has been continuously supporting local child centers in cooperation with ChildFund Korea. We have delivered gifts and operation fund for the children in 2020.

Hyosung Heavy Industries – Changwon

'Junior Engineering Class' for elementary school students	We are delivering science class to elementary school students by specialized research staff in Changwon plant as a lecturer, so that the students learn the principles of Hyosung's flagship products and explore hands-on modelling exercises, developing their interest in science. Since 2004, more than 3,000 students from Yanggok Elementary School, Changwon Elementary School and Yumok Elementary School have participated and experienced making transformers, circuit breakers, and hydrogen electric vehicles.
Hyosung Mini Library in Shinwol · Pungho Elementary School	Since 2010, we have donated books to small-sized elementary schools in Changwon region which lack books and bookshelves. Since 2014, we have selected two schools in collaboration with the Changwon Office of Education and donated books and bookshelves worth of KRW 20 million.

Hyosung Advanced Materials – Ulsan, Jeonju

Industry-Academia scholarship award ceremony	We are providing scholarship to the selected students from Ulsan University who have excellent academic performance and under economic difficulties.
'One Company, One Village' farming volunteer activities	Ulsan plant consults with the one company one village council to provide necessary support for Joong-go-san village, a sister village of Ulsan plant since 2005, and supports necessary events and activities such as rice planting, harvesting, as well as throwing a party for the elderly residents in the village.

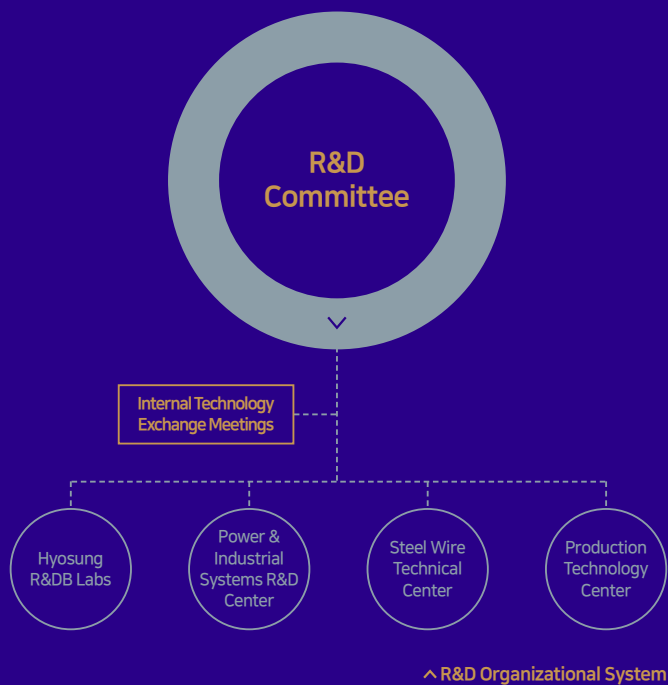
Volunteer activities at 'Hosung Orphanage'	Jeonju plant organizes regular visits to Hosung orphanage in the region to proceed 'Sharing Volunteer Activities'. In 2020, we have supported replacement of old electric appliances as well as facility repair.
Scholarship for Jeonbuk Girls' High School	Since 2017, Jeonju plant has been supporting scholarship to students in difficult economic condition or excellent academic performance in Jeonbuk Girls' High School, contributing to fostering local talents in the region.
'One Company, One Trail' cleanup activities	Jeonju plant regularly cleans up walking trails near the plant for local residents as well as for our employees.

Hyosung Chemical – Yongyeon, Gumi, Oksan

Appointment of members of the Local Community Security Council and implementation of volunteer activities	We have joined the Local Community Security Council of Seonam-dong in Ulsan and hold quarterly meetings to identify needs for support. We deliver side dishes to the underprivileged every month as a volunteer activity.
Support for vulnerable children	In cooperation with ChildFund Korea and Nammok Youth Culture House, we select and sponsor children in vulnerable situations in Ulsan.
'One Company, One Village' partnership activities	In the sisterhood partnership with Cheongsong village in Cheongnyang-myeon, Ulju-gun, Yongyeon plant discusses and plans necessary support for the sister village every year, including donation of local agricultural products, volunteer activities, and welfare events.
'One Company, One Cemetery' cleanup activities	The employees in Gumi plant visited Yeongcheon National Cemetery to honor the veterans at Memorial Tower and clean and repair 800 graves of veterans.
Kimchi-making (Gimjang) and sharing event in Gumi	We have conducted the Kimchi-making (Gimjang) and sharing event, in which employees of Gumi plant participate together, for last 11 years since 2010. In 2020, we donated 2,000 heads of kimchi to local neighbors in need and social welfare centers.
Santa Expedition by ChildFund Korea in Gumi	Gumi plant has been continuously supporting local child centers in cooperation with Santa Expedition by ChildFund Korea. We have delivered gifts and operation fund for the children in 2020.
Sponsorship and volunteer activities for local welfare centers	Oksan plant provides volunteer work and supplies to two nearby child centers, and has signed a relay CSR agreement with Cheongju Industrial Complex Corporation to sponsor facilities for the disabled.
National Cemetery cleanup	Employees in Chungcheong region visit National Cemetery in Daejeon every year, on National Memorial Day, and carry out cemetery cleanup volunteer work.

RESEARCH AND DEVELOPMENT

Hyosung is improving its brand value through customer value management and ceaseless quality improvement, and implementing R&D projects based on the field-specific professional research system. By the lead of the R&D Committee consisting of the CEO and the related personnel in charge, R&D organizations are in operation, spreading the culture of technology convergence and introducing up-to-date products and technologies. Hyosung plans to further enhance the product capacity by continuing with R&D and technology investment.



Establishing the R&D System

R&D System

R&D Committee

The R&D Committee is fulfilling its role to discuss R&D status of main business items of the operating company and to reflect customers' requirements to R&D strategies. The committee is held twice every year to define the direction of R&D activities and to comprehensively review opinions of related departments.

Internal Technology Exchange Meetings

We hold internal technology exchange meetings to exchange technologies among related departments in the company to enhance R&D efficiency. We regularly operate base technology task force teams to acquire core base technology and internalize research capacity while working on facilitating technology convergence corporate culture and effectively tackling research challenges.

Planning and Performance of R&D Expenses

(Unit: KRW 1 million)

Company	R&D expenses planning	R&D expenses performance
Hyosung TNC	15,538	14,882
Hyosung Heavy Industries	37,218	33,503
Hyosung Advanced Materials	23,705	27,926
Hyosung Chemical	22,210	20,203

Patent Registration and Application

(Unit: Case)

Company	Registration	Application
Hyosung TNC	741	1,493
Hyosung Heavy Industries	422	579
Hyosung Advanced Materials	856	1,631
Hyosung Chemical	1,061	2,017

*Cases of patent registration and application for Hyosung Heavy Industries include data from both domestic and overseas business sites.

R&D Organization

The R&D organization in Hyosung is developing its capabilities through its experience, passion, and constant challenges in differentiated global technologies. It mainly consists of Hyosung R&DB Labs, Power & Industrial Systems R&D Center, and Steel Wire Technical Center. In 2019, Production Technology Center was established to strengthen technology competitiveness throughout the company by connecting Hyosung R&DB Labs with each production organization and to nurture human resource specialized in core technologies.

Hyosung R&DB Labs

As Korea's first R&D center affiliated by a private corporation, Hyosung R&DB Labs has extended its research areas to include chemical products, raw materials and new materials, based on its research capabilities in synthetic textile. Besides securing research technology for promising new businesses that will become the company's growth engine in the future, we are striving to develop new products and processes for existing business areas and apply them at an early stage.

Power & Industrial Systems R&D Center

The Power & Industrial Systems R&D Center has been leading technology development of heavy electric machine in Korea since its foundation, and is currently focusing on developing new technologies such as ESS, STATCOM, and voltage-source HVDC, to better cope with the power industry paradigm shift to DC grid in the future.

Steel Wire Technical Center

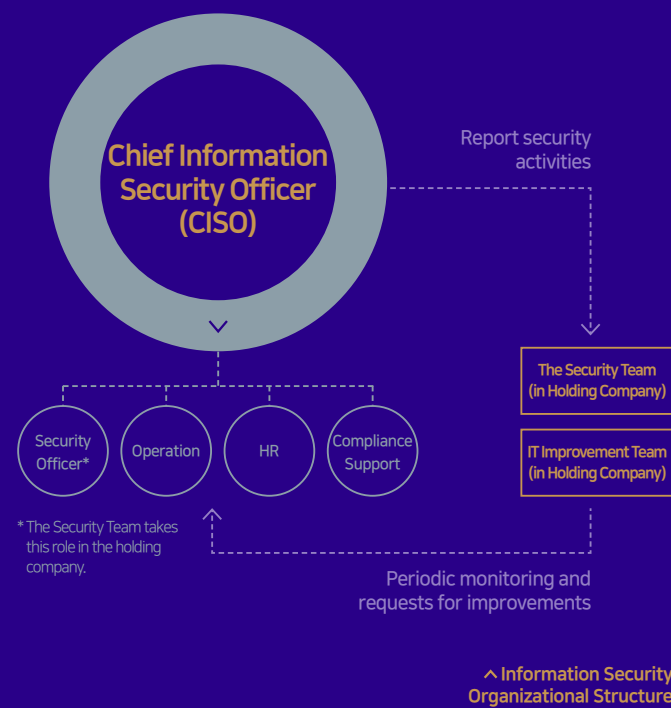
The Steel Wire Technical Center has been established for the purpose of developing Steel Cord and Bead Wire as well as their production processes, and is currently leading research on performance improvement of tires and making them lightweight, as well as developing new eco-friendly products that could reduce hazardous substances. We have expanded advanced analysis equipment, pilot research facility and research organization to reinforce our base technology and research capabilities. In addition, research centers were established also in China and Vietnam to apply new technologies to production sites and promptly meet global customers' needs.

Production Technology Center

In order to efficiently apply newly developed recipe to the production line, the Production Technology Center is in charge of reflecting the results to the production organizations by reviewing new technology application plans according to possible changes of process design and operating conditions using computer simulation technology, in addition to reviewing the latest production equipment required for the process. Hyosung R&DB Labs and researchers from textile/industrial materials/chemistry sectors are making a great effort to improve production technology through internal and external job training and collaboration with factory technicians in their respective fields.

INFORMATION SECURITY

Hyosung has ensured a robust information security system that could derive countermeasures to constantly changing security issues. Hyosung's confidential information is controlled separately by each sector in accordance with information security regulations and standards. The organizations in charge of information security carry out various activities efficiently through clear assignment of roles and responsibilities as well as cross-communication. We also conduct diverse awareness building activities for the employees. We particularly focused on extending the central document system to all business sites, ensuring much safer and more effective management of documents, and further improving productivity of work in home-office working environment due to COVID-19.



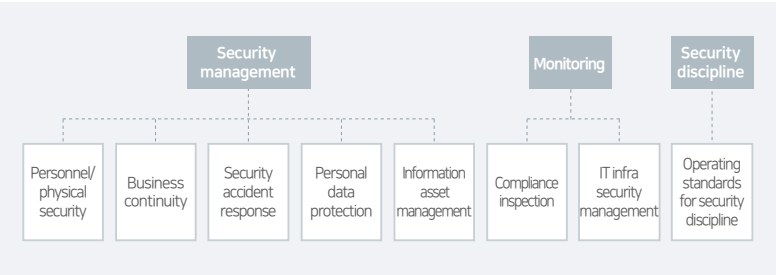
Strengthening Information Security System

Information Security Organizational Structure

In order to achieve the objectives of information security, each organization of Hyosung is managed under the guidance and supervision of the Chief Information Security Officer (CISO). In addition, the IT Improvement Team, the HR team, the Operation Team, and the Compliance Support Team are conducting support activities for information security by disseminating security policies to the entire company and checking regulatory compliance. The Security Team of the holding company is responsible for regular monitoring, risk management, and ad hoc requests at the group level. The information protection manager and the security manager of the operating company perform the management and monitoring of the company's information security activities, report the results to the Security Team which evaluate them and deliver proper countermeasures.

Regulations and Operating Standards for Information Security

In order to protect important information and data assets held by the company and create an environment in which data is used more safely, Hyosung subdivided its information security regulations and operating standards for employees, visitors, trainees, temporary employees, and contract-related personnel.



Extended Application of Enterprise Content Management System

Hyosung started to establish Enterprise Content Management (ECM) system from 2019 and completed application of the system in all business sites at the end of 2020, by which document security policy is maintained consistently within the entire company and we could have better visibility over process of document distribution. We aim to improve productivity of remote-based working by creating a convenient environment to access to ECM and utilize the document. The system has been recently updated so that a VPN (Virtual Private Network) request for access to the work system can be proceeded at the same time when registering attendance records for home-office days, for example.

Main Activities for Information Security

Personal Data Protection

In order to comply with the Personal Information Protection Act, we are constantly keeping track of the amendments to the Act, while ensuring safe protection of personal information held by the company. We regularly check termination of personal information after expiry of retention period and monitor our personal data processing system to meet technical requirements. In addition, Hyosung TNC and Hyosung Heavy Industries are subscribing to a damage liability insurance stipulated by the Information and Communications Network Act to fulfill their obligations to compensate for damages caused in the incident of personal data leak.

Security Logs Monitoring

In order to prevent the leakage of confidential business information by internal stakeholders such as employees or prospective retirees, we monitor PC logs and email histories of employees to keep track of abnormal user behavior. The head of team in each department reviews the security logs (external emails, external download histories, USB use logs) of team members and registers the feedback.

Prevention of Cyber Security Accidents

In order to prevent cyber security accidents such as hacking, we have been collecting domestic and international cyber security incidents through an external security management company to update our security equipment and protect the company from similar accidents. In addition, we monitor security logs on a real-time basis to immediately respond to abnormal activities detected. The security team of Hyosung restricts and regularly monitors the use of software or PC equipment that is considered to be misused as a source of data leakage.

External Cooperation System

Hyosung is cooperating closely with The Korean Association for Industrial Technology Security that provides association members with services such as conferences, newsletter of latest security issues, training and consulting. Through continuous exchange and cooperation with the association and its member companies, we are making various efforts to improve resilience to security accidents and to implement security policy that complies with global standards as well as governmental policy.

Information Security Awareness Building for Employees

We have been continuously improving the awareness of employees regarding security issues by delivering online/offline information security training to the employees, covering data breach awareness programs, personal data protection, and real-world data breach examples.

Category	Trainees	Training cycle
Announcement via email/ internal bulletin	All employees	Occasional
Pop-ups in Groupware platform	All employees	Daily
Offline training for security personnel	Persons in charge of information security in each department	Yearly
Online training for all employees	All employees	Yearly

Sustainability Performance

Hyosung Corporation	56
Hyosung TNC	63
Hyosung Heavy Industries	72
Hyosung Advanced Materials	81
Hyosung Chemical	91

Economic Performance

In 2020, the spread of COVID-19 has affected negatively to our production and sale in Hyosung, leading into decrease in sales, operating profit, and net profit compared to the previous year. However, we have minimized the recession of our business performance based on stable management capacity despite continuous COVID-19 pandemic situation over the past year. Once the COVID-19 pandemic is over, we expect to be able to quickly recover to the business performance of previous years.

Financial Statements (Consolidated)

Unit: KRW 1 million

Category	2018	2019	2020
i .Current assets	1,379,400	1,312,040	1,626,795
Cash and cash equivalents	341,208	189,328	222,015
Trade and other current receivables	464,296	403,089	493,060
Inventories	498,426	573,742	463,206
Other current assets	75,471	145,881	448,515
ii .Non-current assets	5,028,505	5,215,015	2,802,955
Long-term trade and other non-current receivables	54,216	48,054	41,676
Tangible assets	947,976	918,325	930,909
Investments in properties	145,644	300,262	278,154
Intangible assets	162,328	160,511	73,081
Other non-current financial assets	1,242,027	1,280,661	1,257,906
Other non-current assets	2,476,315	2,507,202	221,229
Total assets	6,407,905	6,527,055	4,429,750
i .Current liabilities	2,247,871	2,238,402	1,090,338
Trade and other current payables	471,129	431,206	404,628
Borrowings	1,571,441	1,513,215	392,008
Other current liabilities	205,301	293,981	293,701
ii .Non-current liabilities	1,457,887	1,578,411	825,089
Long-term trade and other non-current payables	220,786	206,091	20,751
Long-term borrowings	942,926	988,378	448,281
Other non-current liabilities	294,174	383,942	356,058
Total liabilities	3,705,758	3,816,813	1,915,427
[Capital stock]	105,355	105,355	105,355
[Retained earnings]	6,353,427	6,336,611	6,180,531
[Other components of equity]	(4,016,139)	(4,001,579)	(4,052,618)
[Non-controlling interest]	259,504	269,855	281,055
Total capital	2,702,147	2,710,242	2,514,323

Consolidated Statements of Comprehensive Income

Unit: KRW 1 million

Category	2018	2019	2020
Sales	2,799,473	3,175,624	2,782,555
Cost of sales	2,418,005	2,699,399	2,366,561
Gross profit	381,469	476,226	415,994
SG&A	242,301	255,937	257,417
R&D expenses	17,654	18,203	19,783
Operating income	121,154	202,085	138,793
Other gains	470,674	12,553	57,869
Other loss	25,072	20,727	35,517
Finance income	50,250	40,505	47,411
Finance expenses	83,193	68,628	98,787
Profit before tax	534,172	165,788	109,770
Income tax expense	93,036	43,227	14,057
Net profit	3,425,977	150,009	1,220
Other comprehensive gain(loss)	(83,591)	(3,904)	(28,658)
Total comprehensive gain(loss)	3,342,385	146,105	(27,438)

Corporation Tax by Country

Hyosung is pursuing its business in different countries around the world. Complying with tax regulations of each country, Hyosung faithfully pays taxes on profits generated in the area. So far, we have never encountered any dispute related to tax in overseas business countries.

Category	Subcategory	Unit	Hyosung Corporation		
			2018	2019	2020
Republic of Korea	Sales	KRW 1 million	1,808,001	1,978,082	1,826,403
	Profit before tax	KRW 1 million	138,751	204,031	88,544
	Tax	KRW 1 million	29,457	43,455	31,794
	Tax rate	%	24.20	24.20	24.20
	Effective tax rate	%	21.23	21.30	35.91
United States	Sales	KRW 1 million	1,323,035	1,528,960	1,312,738
	Profit before tax	KRW 1 million	18,789	386,735	416,416
	Tax	KRW 1 million	895	2,282	(2,376)
	Tax rate	%	22.00~24.00	22.00~24.00	22.00~24.00
	Effective tax rate	%	4.76	0.59	(0.57)
Mexico	Sales	KRW 1 million	13,175	25,387	22,800
	Profit before tax	KRW 1 million	392	2,157	(1,341)
	Tax	KRW 1 million	326	0	624
	Tax rate	%	30.00	30.00	30.00
	Effective tax rate	%	83.15	0.00	(46.56)
Brazil	Sales	KRW 1 million	74	208	32
	Profit before tax	KRW 1 million	280	140	(2)
	Tax	KRW 1 million	0	11	0.06
	Tax rate	%	34.00	34.00	34.00
	Effective tax rate	%	0.00	7.87	(2.91)
China	Sales	KRW 1 million	161,601	244,422	230,572
	Profit before tax	KRW 1 million	800	5,609	6,524
	Tax	KRW 1 million	567	1,556	1,677
	Tax rate	%	20.00	20.00	20.00
	Effective tax rate	%	70.90	27.74	25.71
Russia	Sales	KRW 1 million	150,432	231,267	177,755
	Profit before tax	KRW 1 million	101	6,252	(152)
	Tax	KRW 1 million	25	1,223	718
	Tax rate	%	20.00	20.00	20.00
	Effective tax rate	%	24.52	19.56	(473.40)
Indonesia	Sales	KRW 1 million	32,475	32,345	25,481
	Profit before tax	KRW 1 million	658	475	(305)
	Tax	KRW 1 million	294	314	140
	Tax rate	%	25.00	25.00	25.00
	Effective tax rate	%	44.65	66.07	(45.90)

* The values may vary from consolidated financial statements due to inside trading among consolidated companies and unrealized gain or loss.

Financial Loss

Hyosung abides by fair business practices in its corporate management. Fines from non-compliance issues have not occurred for two consecutive years.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Total amount of monetary losses as a result of legal proceedings associated with fraud, insider trading, anti-trust, anti-competitive behavior, market manipulation, malpractice or other related financial industry laws or regulations	KRW 1 million	1,719	-	-
Total amount of monetary losses as a result of legal proceedings associated with marketing and communication of financial product related information to new and returning customers	KRW 1 million	-	-	-

* In relation to the penalty paid in 2018, we have filed an administrative lawsuit to cancel the disposition, which is pending in the court at the moment.

Suppliers Status

Hyosung is contributing to the facilitation of fair subcontracting practices and culture by enhancing transparency and fairness throughout the selection and management of suppliers.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Number of suppliers	Companies	204	262	247
Total purchase from suppliers	KRW 1 million	11,273	20,003	14,115

Social
Performance

In 2020, despite the deteriorating business performance with decrease in sales, operating profit, and net profit, Hyosung has strived to faithfully fulfill corporate social responsibility by increasing new hires by 25 persons and expanding CSR investment. Furthermore, we encouraged male employees to proactively use maternity leave, supporting employees' work-life balance. As a result, the number of male employees who took maternity leave increased significantly compared to the previous year.

Employees Status

As of the end of 2020, Hyosung has 627 employees in total. Hyosung stood front in actively hiring new employees even under the difficult business condition, and worked on creating a pleasant working environment, which led into decrease in employees' turnover rate by about 5% compared to the previous year.

Category	Subcategory	Unit	Hyosung Corporation		
			2018	2019	2020
Total employees		Persons	634	587	627
Gender	Male	Persons	525	478	514
	Female	Persons	109	109	113
Employment type	Permanent (male)	Persons	502	459	488
	Permanent (female)	Persons	103	93	102
	Subtotal	Persons	605	552	590
	Temporary (male)	Persons	23	19	26
	Temporary (female)	Persons	6	16	11
	Subtotal	Persons	29	35	37
Place of work	Domestic	Persons	586	587	627
	Overseas	Persons	48	27	23
Job category (based on permanent employment)	Office work	Persons	560	497	525
	Manufacturing	Persons	74	55	65
Fostering female human resource	Female employees ratio	%	17.2	18.6	18.0
	Number of female at manager-level or higher	Persons	50	45	45
	Female managers ratio	%	13.0	12.8	12.7
Diversity	Persons with disabilities	Persons	6	8	15
	Veterans	Persons	2	2	2
	Foreigners	Persons	6	5	4
	Subtotal	Persons	14	15	21
Creating job opportunities (newly employed)	Male	Persons	8	37	64
	Female	Persons	4	15	13
	Subtotal	Persons	12	52	77
Number of permanent employees who voluntarily quit	Male	Persons	187	29	10
	Female	Persons	44	12	5
	Subtotal	Persons	231	41	15
Turnover rate		%	38.18	7.43	2.54

Maternity Leave and Childcare Leave

The number of both male and female employees using maternity leave increased compared to the previous year, and in particular, the number of male employees using maternity leave increased significantly. In addition, the number of employees using childcare leave has also increased compared to the previous year, and returning rate after parental leave remains the same at 100%.

Category	Subcategory	Unit	Hyosung Corporation		
			2018	2019	2020
Male (maternity leave)	Employees under maternity leave	Persons	66	13	23
	Returning rate	%	100	100	100
Female (maternity leave)	Employees under maternity leave	Persons	23	4	10
	Returning rate	%	100	100	100
Male (childcare leave)	Employees under childcare leave	Persons	24	3	3
	Returning rate	%	100	100	100
	Rate of working more than 12 months after return	%	88	100	67
Female (childcare leave)	Employees under childcare leave	Persons	24	6	8
	Returning rate	%	100	100	100
	Rate of working more than 12 months after return	%	83	75	70

Regular Performance Evaluation

Hyosung operates a capability-based fair performance management system to emphasize performance and capacity elements across overall personnel management, such as evaluation, promotion, and transfer, and to prevent corruption and further create a sound organizational culture.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Number of employees subject to performance evaluation	Persons	600	552	590
Performance evaluation rate	%	93	94	94

Basic Wage and Remuneration

The basic wage and the average wage of new employees have increased by 7% and 11%, respectively, and the ratio of their wage against legal minimum wage has also increased by 7%p compared to last year.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Basic salary for entry-level	KRW 1,000	3,118	3,272	3,501
Rate of entry-level salary to local minimum wage by law (%)	Male	%	184.6	174.7
	Female	%	184.6	174.7
Average basic salary	KRW 1,000	4,645	4,921	5,449

Labor Union Membership Status

After the spinoff in 2018, Hyosung has encouraged employees to join labor union, leading into 10% increase in union workers rate. We established the Labor-Management Council in the headquarters and each business site and hold quarterly meetings to discuss various issues to improve welfare of employees. To satisfy employees' right to know, the company's management status is transparently disclosed to onsite employees through regular business briefing sessions and group meetings by each job position.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Employees covered by collective agreements	Persons	74	60	57
Number of union workers	Persons	48	47	44
Rate of union workers	%	64.9	78.3	77.2

Retirement Pension

Hyosung operates both DB-type and DC-type retirement pensions systems, allowing employees free choice between two, and complies with legal standards of retirement pension.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Total operating fund for retirement pension (DB+DC)	KRW 1 million	74,165	79,745	61,892
Operating fund of DB pension	KRW 1 million	73,746	79,322	61,450
Operating fund of DC pension	KRW 1 million	419	423	442
Total number of members	Persons	670	606	643
Number of DB pension members (Persons)	Persons	602	529	563
Number of DC pension members (Persons)	Persons	68	77	80

CSR Status

As a result of carrying out the CSR activities steadily, quantitative indicators related to CSR investment have improved compared to the previous year. In 2020, due to COVID-19, face-to-face volunteer activities were not available, and thus, we have mainly focused on providing monetary sponsorship to cover infection prevention supplies, facility improvement, and cultural activities.

As a result, with the recommendation by Kyunghyang Welfare Foundation, the parent organization of Janggunbong Daycare Center, Hyosung has been selected as a recognized company by 'CSR in the Community' program in 2020 consecutively after 2019.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
CSR investment	KRW 1 million	2,887	606	741
Number of CSR programs	Programs	46	17	17

* Hyosung Corporation carried out company-wide CSR activities until 2018, and since the spinoff in June 2018, they are conducted by each operating company.

Employee Training Status

Hyosung is promoting employee training so that all employees have equal opportunity of capacity-building and thereby grow into specialists in their own fields. Hyosung's main research organizations, including Hyosung R&DB Labs, Power & Industrial Systems R&D Center, and Production Technology Center, have arranged their own R&D training system tailored to each department in order to enhance expertise of researchers. Employing in-company experts as training instructors, we ensure cross-department knowledge-sharing and provide effective internal training for each job position. We are also working on facilitating professional capacity through technology exchange and joint research projects in cooperation with external research centers and renowned universities.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Number of training participants	Persons	78,079	9,792	10,860
Total training expenses	KRW 1,000	4,259,986	432,019	129,622
Total training hours	Hours	226,383	32,577	25,836
Average training hours per person (total training hours / number of employees)	Hours	28.52	55.50	41.21
Average training expenses per Person (total training expense / number of employees)	KRW	536,590	735,978	206,734

Category (Total number of participants)	Unit	Hyosung Corporation		
		2018	2019	2020
Environment training	Persons	-	118	902
Ethics and anti-corruption training	Persons	-	1	538
Fair business trade training	Persons	-	14	476
Safety and health training	Persons	-	1,652	3,654
Human rights training (sexual harassment & workplace harassment prevention)	Persons	-	1,006	1,561
Information security training	Persons	-	931	671
Sustainability management training	Persons	-	-	21
Retiree training	Persons	-	-	-

Environment
& Safety
Performance

Hyosung is contributing to environmental conservation by reducing greenhouse gas emissions and wastewater generated from manufacturing facilities.
In addition, we are actively developing technologies for resource recycling and energy saving and seeking for businesses opportunities to make use of new energy sources.

Energy Consumption

In 2020, Hyosung reduced consumption of both direct energy such as LNG, gasoline, and propane, as well as indirect energy such as electricity and steam, leading to about 4.3% reduction rate in total consumption compared to the previous year.

Category	Subcategory	Unit	Hyosung Corporation		
			2018	2019	2020
Direct energy consumption	Diesel	TJ	0.94	0.83	0.89
	Kerosene	TJ	0.12	0.06	0.10
	LNG	TJ	205.10	188.30	178.00
	Gasoline	TJ	6.10	5.76	4.45
	Propane	TJ	0.86	0.88	0.77
	B-C oil	TJ	-	-	-
	Off-gas	TJ	-	-	-
	LPG	TJ	-	-	-
	Biogas	TJ	-	-	-
	Subtotal	TJ	213.13	195.83	184.22
Indirect energy consumption	Electricity	TJ	488.72	476.01	459.66
	Steam	TJ	10.96	9.60	8.35
	Process waste heat	TJ	-	-	-
	Waste incinerated heat	TJ	-	-	-
	Subtotal	TJ	499.68	485.61	468.01
Total		TJ	712.81	681.44	652.22
Energy intensity		TJ/KRW 100 million	0.184	0.199	0.221

* Emissions intensity was calculated based on sales in general financial statements, not on a consolidated basis, since energy consumption and emissions are calculated only for domestic business sites.

Greenhouse Gas (GHG) Emissions

Through various efforts to reduce GHG emissions, Hyosung has achieved about 4% of emissions reduction compared to the previous year.

Category	Subcategory	Unit	Hyosung Corporation		
			2018	2019	2020
Direct GHGs emissions (Scope 1)	Fixed combustion	tCO ₂ eq	10,479	9,610	9,086
	Mobile combustion	tCO ₂ eq	463	446	360
	Process emissions	tCO ₂ eq	-	-	-
	Waste disposal	tCO ₂ eq	-	-	-
	Subtotal	tCO ₂ eq	10,942	10,056	9,446
Indirect GHGs emissions (Scope 2)	Electricity	tCO ₂ eq	23,736	23,119	22,325
	Steam	tCO ₂ eq	393	339	291
	Subtotal	tCO ₂ eq	24,129	23,458	22,616
GHGs emissions intensity		tCO ₂ eq/ KRW 1 million	0.090	0.098	0.108

* The data are based on the ETS report submitted to the government in the given years, in accordance with the conformity assessment by the Ministry of Environment.

Saving and Emissions Reduction Performance

For effective response to climate change, Hyosung has established and executed the investment plans to save energy and reduce GHGs, which involved high-efficiency facility replacement and inverter installation.

Business site	Project name	Execution date	Hyosung Corporation		
			Investment budget (KRW 1 million)	Energy saving (kWh/year)	Emissions reduction (tCO ₂ eq/year)
Anyang	Boiler #1 economizer replacement (Heat exchange efficiency of the boiler gas increased)	2018.05	45	67,368	149
Anyang	Installation of DC#1,2,3 main motor inverter	2018.12	42	189,216	88
Anyang	Replacement with High-efficiency cooler oil-free inverter turbo cooler 500RT	2019.01	180	1,095,000	511
Anyang	Small-scale inverter screw compressor	2019.06	95	324,120	151
Anyang	Installing roots BL for transporting PET chips at BCF packing room(Operation suspension of the existing high pressure turbo compressor by saving compressed air)	2020.03	30	225,570	105
Anyang	Installing roots blower inverters at wastewater treatment plant	2020.12	18	197,100	92

Water Resources Management Status

Hyosung is reducing water use by each source such as waterworks and industrial water. Total water usage in 2020 amounted to 500,000 tons, which decreased by 23% from 2019.

Category	Subcategory	Unit	Hyosung Corporation			
			2018	2019	2020 (plan)	2020 (actual)
Consumption by water source	Waterworks	Tons	99,009	83,997	80,000	76,595
	Groundwater	Tons	-	-	-	-
	Industrial water	Tons	650,720	566,910	500,000	422,415
	River water	Tons	-	-	-	-
Total water consumption		Tons	749,729	650,907	580,000	499,010
Water reuse amount		Tons	143,158	-	-	-
Water reuse rate		%	19.1	-	-	-

Wastewater and Water Treatment Status

At Hyosung's Anyang plant general water pollutants and priority toxic pollutants are inspected by an external specialized agency four times a month and once in a quarter, respectively. In addition, we strictly control the water quality by establishing our own standards of water pollutants release within 30% of the legal criteria.

Category	Unit	Hyosung Corporation			
		2018	2019	2020 (plan)	2020 (actual)
Wastewater discharge amount	Tons	160,113	126,609	100,000	93,586
Biological Oxygen Demand (BOD)	Tons	1.12	0.30	0.20	0.16
Chemical Oxygen Demand (COD)	Tons	2.80	1.15	1.00	0.64
Suspended Solids (SS)	Tons	2.29	3.27	2.00	1.98
Total Nitrogen (T-N)	Tons	2.72	0.63	1.00	0.54
Total Phosphorus (T-P)	Tons	0.02	0.01	0.03	0.03

Hazardous Chemicals Management Status

Hyosung manages all chemical substances used in manufacturing processes through internal chemicals management system. All materials purchased are checked whether they contain chemical substances, and the person in charge of chemicals at each business site grants purchase approval after confirming related regulatory implementation. Hyosung has not used any hazardous chemical substances for the last three years.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Hazardous substances usage amount	Tons	-	-	-
Basic unit of hazardous substances usage amount	Tons/sales	-	-	-

Waste Treatment Status

Hyosung's Anyang plant reduces wastes by processing defect chips and yarns generated in the production process in a form that can be sold as a recycled product to resell them to recycling enterprises.

Category	Subcategory	Unit	Hyosung Corporation			
			2018	2019	2020 (plan)	2020 (actual)
Industrial waste (general)	Recycling	Tons	742.6	992.0	1,500	1,524.0
	Incineration	Tons	-	-	-	-
	Landfill	Tons	52.5	25.1	15.0	14.5
	Others	Tons	-	-	-	-
	Subtotal	Tons	795.2	1,017.1	1,515.0	1,538.5
Industrial waste (designated)	Recycling	Tons	119.3	50.4	90.0	86.4
	Incineration	Tons	-	-	50.0	44.5
	Landfill	Tons	-	-	-	-
	Others	Tons	-	-	-	11.13
	Subtotal	Tons	119.3	50.4	140.0	142.0
Total waste		Tons	914.4	1,067.4	1,655.0	1,680.5
Waste recycling amount		Tons	861.9	1,042.3	1,590.0	1,610.4
Waste recycling rate		%	94.3	97.6	96.1	95.8

Air Pollutant Emissions

Hyosung's Anyang plant has established its own internal standard for discharging air pollutants, which is 20% of the legal standards for air pollutants such as NOx and SOx. If the amount is found to exceed the internal standards after constant monitoring, improvement measures, such as facility replacement, are immediately carried out, and air pollutant emissions are minimized by installing low-NOx burners.

Category	Subcategory	Unit	Hyosung Corporation			
			2018	2019	2020 (plan)	2020 (actual)
General air pollutants	Nitrogen oxides (NOx)	Tons	8.2	12.2	6.0	5.8
	Sulfur oxides (SOx)	Tons	-	-	-	-
	Particulate matter (PM)	Tons	-	-	-	-
Ozone depleting substances	CFC(R-11)	Tons	-	-	-	-
	HCFC(R-123)	Tons	-	-	-	-
	HCFC(R-22)	Tons	-	-	-	-

Purchase of Green Products and Services

Hyosung follows the green purchasing policy, and Anyang plant continues to practice it with different products including NY recycled chips, bio-PET, LED, and fire extinguishers.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Purchase	KRW 1,000	109,741	97,688	72,448

Environmental Investment

Hyosung practices green management through continuous environmental investment in waste treatment, environmental restoration, and pollution prevention.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Waste treatment and environment restoration expenses	KRW 1,000	181,479	164,380	268,677
Pollution prevention and environmental management expenses	KRW 1,000	105,100	107,063	125,915
Total	KRW 1,000	286,579	271,443	394,592

Main environmental investment plans and performances reported in the EHS Committee are as below. (Unit: KRW 1 million)

Category	Investment description	Hyosung Corporation	
		2020 (plan)	2020 (actual)
Waste treatment expenses and environment insurance	Waste treatment expenses such as sewage sludge treatment	114.1	126.8
	Environmental liability insurance	1.8	2.4
Environmental pollution prevention	Maintenance for storage of wastewater, air discharge, and wastes	78.0	78.0
	Replacement of water tank, screen tank and chemical reaction tank at the wastewater treatment plant / tarpaulin replacement at a waste storage (filling replacement wastes) of the non-point pollution prevention facility	39.0	28.0
Environment management system	Certifications on environment management and safety and health management system (Acquisition of ISO14001 and transition to ISO45001)	-	22.8
	Establishment of electronic system for chemical substance management	90.0	90.0
	Expenses of verification and consulting services for ETS response	10.9	12.1
	Expenses of participation, reporting and verification for carbon information disclosure	-	1.2

Environmental Cleanup Activities

Until 2019, executives and employees of Hyosung Anyang plant carried out environmental cleanup activities alternately at Anyangcheon Stream and Hogye Park every month, contributing to improving water quality and ecosystem in our local community. External environmental clean activities have been temporarily suspended due to COVID-19 pandemic.

Occupational Accident Rate

Hyosung has been maintaining 0 occupational fatality for the last three consecutive years. In 2020, we also achieved 0 occupational accident.

Category	Unit	Hyosung Corporation		
		2018	2019	2020
Total number of occupational accidents: Accidental disaster + Occupational disease	Persons	-	1	-
Occupational accident rate: Total number of occupational accidents / Total number of employees x 100	%	-	0.17	-
Number of work-related fatalities	Persons	-	-	-
Work-related fatality rate per ten thousand employees (Number of work-related fatalities / Total number of employees x 10,000)	‰	-	-	-

Emergency Scenario Response Training

Hyosung establishes emergency scenario contingency plans, based on which all employees are trained every year in order to effectively respond to emergency situations such as leakage of harmful chemicals. Simulating the actual disaster cases, the training is conducted with the goal of minimizing impact on environment and humans in case of disasters by strengthening emergency response abilities. We protect human lives and raise employees' awareness in safety accidents through the training and work on ensuring safety through prevention, preparedness, response and recovery of emergency situations, mitigating physical and human damage.

Environmental Management System Certification

Based on the Environmental Management System (EMS), Hyosung identifies, evaluates, manages, and improves environmental risks and issues. It also introduced ISO14001 to the plant in Anyang to manage environmental risks efficiently. Hyosung also established environmental goals and detailed action plans, and conducts internal and external audits (Korea Quality Foundation) once a year to check performance against goals and continues to develop improvements. In addition, we derive and manage environmental impact factors found in plant operation through ISO14001 system.

Safety and Health Management System Transition Certification

Anyang plant of Hyosung is operating the safety and health management system to prevent industrial disasters, comply with environment and safety regulations and maintain sustainable management system. Each department establishes the safety and health goals and plans in regards to risk factors discovered through risk assessment, environmental impact assessment, and safety inspection. In 2020, Anyang plant was certified with the transition of the existing OHSAS18001 to ISO45001 in order to improve the level of EHS compliance management.

Global Recycled Standard (GRS)

In response to expanding recycled textile market and growing customers' demands, Hyosung has obtained GRS certification on NY and PET-recycled yarn and fabrics produced at Anyang plant.

Business site	Certification code	Certification subject	Certification date	Expiry date
Anyang Plant	CU1059738GRS-2020-00033213	Dyed Yarns: Nylon pre, Polyester post	2020.08.03	2021.08.02
Anyang Plant	CU1059738GRS-2021-00030603	Conventional Yarn: Nylon pre Dyed yarns & Fabrics: Nylon pre, Polyester post	2020.08.03	2021.08.02

Economic
Performance

In 2020, Hyosung TNC has achieved increase in net profit despite the sales decrease, through robust corporate management.
We would like to secure the company's mid to long-term competitiveness by continuous R&D activities.

Financial Statements (Consolidated)

Unit: KRW 1 million

Category	2018	2019	2020
i .Current assets	1,428,058	1,470,103	1,245,072
Cash and cash equivalents	84,735	89,365	122,242
Trade and other current receivables	772,215	821,326	713,180
Inventories	517,314	524,232	354,691
Other current assets	53,795	35,180	54,959
ii .Non-current assets	1,710,786	1,754,204	1,553,283
Long-term trade and other non-current receivables	8,975	11,168	13,594
Tangible assets	1,439,547	1,455,283	1,248,720
Investments in properties	125,520	124,523	125,063
Intangible assets	75,915	91,950	30,621
Other non-current financial assets	60,829	71,280	135,285
iii . Other non-current assets	-	-	25,772
Total assets	3,138,844	3,224,307	2,824,128
i .Current liabilities	1,994,630	2,074,422	1,681,903
Trade and other current payables	643,245	626,878	551,994
Borrowings	1,324,975	1,381,779	1,053,683
Other current liabilities	26,410	65,765	76,226
ii .Non-current liabilities	657,313	566,931	426,869
Long-term trade and other non-current payables	26,439	31,161	28,818
Long-term borrowings	573,687	451,545	298,035
Other non-current liabilities	57,188	84,225	100,016
Total liabilities	2,651,943	2,641,353	2,108,772
[Capital stock]	21,638	21,638	21,638
[Retained earnings]	18,973	102,735	228,149
[Other components of equity]	363,056	364,584	351,187
[Non-controlling interest]	83,234	93,996	114,382
Total capital	486,901	582,954	715,356

Consolidated Statements of Comprehensive Income

Unit: KRW 1 million

Category	2018	2019	2020
Sales	3,359,086	5,983,145	5,161,617
Cost of sales	3,103,320	5,419,332	4,663,097
Gross profit	255,766	563,813	498,520
SG&A	123,368	227,192	217,078
R&D expenses	7,345	13,708	14,882
Operating income	125,052	322,913	266,560
Other gains	16,903	31,333	29,740
Other loss	14,947	27,983	23,321
Finance income	54,538	113,780	179,241
Finance expenses	133,078	209,965	228,665
Profit before tax	48,468	230,078	223,554
Income tax expense	16,969	108,056	55,282
Net profit	31,498	122,023	168,272
Other comprehensive gain(loss)	(18,851)	(1,366)	(18,680)
Total comprehensive gain(loss)	12,648	120,657	149,592

Corporation Tax by Country

As a company whose business is based on various countries around the world, Hyosung TNC is paying taxes in 12 countries including Korea. We do not commit tax evasion, such as claiming false deductions through unfair internal trading among affiliated business companies, and faithfully pay taxes for profits generated in each country of business.

Category	Subcategory	Unit	Hyosung TNC		
			2018.6~12	2019	2020
Republic of Korea	Sales	KRW 1 million	2,052,906	3,748,469	3,149,126
	Profit before tax	KRW 1 million	40,613	45,592	61,290
	Tax	KRW 1 million	9,055	48,985	17,200
	Tax rate	%	24.20	24.20	24.20
	Effective tax rate	%	22.30	107.44	28.06
China	Sales	KRW 1 million	818,513	1,515,088	1,551,718
	Profit before tax	KRW 1 million	(34,774)	22,633	85,265
	Tax	KRW 1 million	(4,358)	6,216	12,363
	Tax rate	%	25.00	25.00	25.00
	Effective tax rate	%	12.53	27.47	14.50
Hong Kong	Sales	KRW 1 million	47,439	92,808	43,472
	Profit before tax	KRW 1 million	(33)	(688)	(2,804)
	Tax	KRW 1 million	2	-	(559)
	Tax rate	%	16.50	16.50	12.00
	Effective tax rate	%	(4.49)	-	19.94
Japan	Sales	KRW 1 million	296,605	531,527	438,536
	Profit before tax	KRW 1 million	183	1,118	248
	Tax	KRW 1 million	353	395	224
	Tax rate	%	31.05	30.81	30.81
	Effective tax rate	%	192.82	35.29	90.34
Taiwan	Sales	KRW 1 million	2,119	2,819	2,264
	Profit before tax	KRW 1 million	378	146	173
	Tax	KRW 1 million	104	59	53
	Tax rate	%	20.00	20.00	20.00
	Effective tax rate	%	27.53	40.44	30.72
Singapore	Sales	KRW 1 million	168,485	63,213	-
	Profit before tax	KRW 1 million	38	384	(98)
	Tax	KRW 1 million	8	(2)	(5)
	Tax rate	%	17.00	17.00	17.00
	Effective tax rate	%	20.08	(0.60)	5.40

* The values may vary from consolidated financial statements due to inside trading among consolidated companies and unrealized gain or loss.

Category	Subcategory	Unit	Hyosung TNC		
			2018.6~12	2019	2020
Vietnam	Sales	KRW 1 million	506,496	886,351	743,140
	Profit before tax	KRW 1 million	15,456	59,539	31,456
	Tax	KRW 1 million	482	2,167	2,126
	Tax rate	%	-	-	5.00
	Effective tax rate	%	3.12	3.64	6.76
India	Sales	KRW 1 million	6,336	24,323	67,366
	Profit before tax	KRW 1 million	820	(3,908)	(11,682)
	Tax	KRW 1 million	287	568	420
	Tax rate	%	27.82	27.82	27.82
	Effective tax rate	%	34.97	(14.53)	(3.60)
Italy	Sales	KRW 1 million	26,264	55,987	50,186
	Profit before tax	KRW 1 million	884	1,713	(52)
	Tax	KRW 1 million	286	558	134
	Tax rate	%	31.40	27.90	27.90
	Effective tax rate	%	32.35	32.56	(256.90)
Turkey	Sales	KRW 1 million	91,140	176,622	159,966
	Profit before tax	KRW 1 million	10,300	26,912	55,405
	Tax	KRW 1 million	1,761	8,718	10,761
	Tax rate	%	20.00	22.00	22.00
	Effective tax rate	%	17.09	32.39	19.42
Mexico	Sales	KRW 1 million	135	3,279	11,827
	Profit before tax	KRW 1 million	7	261	5
	Tax	KRW 1 million	2	69	9
	Tax rate	%	30.00	30.00	30.00
	Effective tax rate	%	30.00	26.30	175.17
Brazil	Sales	KRW 1 million	64,593	123,681	99,169
	Profit before tax	KRW 1 million	13,126	23,115	34,081
	Tax	KRW 1 million	5,135	7,957	11,337
	Tax rate	%	34.00	34.00	34.00
	Effective tax rate	%	39.12	34.42	33.26

HYOSUNG TNC

Production Output by Business Sector

Hyosung TNC's business areas include textile and trade, and the production output has decreased in both sectors due to influences of COVID-19.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Textile	KRW 1 million	1,187,768	1,973,350	1,674,082
Trading and etc.	KRW 1 million	160,514	354,444	308,277

Sales of Specific Products

Hyosung TNC is manufacturing products by recycling waste PET bottles. Sales corresponding to these products have increased by KRW 8.4 billion compared to the previous year.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Sales of resource-efficient products (synthetic textile made of recycled waste PET bottles)	KRW 1 million	10,623	23,054	31,515

Financial Loss

Based on strict legal risk management system, Hyosung TNC minimizes the financial loss caused by non-compliance with laws and regulations in its business activities. Switching the focus of the management from shareholders to all stakeholders involved with the business, we are striving to comply with laws and regulations in various sectors, including fair business trade, data protection, environment and anti-corruption.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Financial loss incurred due to violation of environmental regulations such as pollutant emission	KRW	-	-	-

Suppliers Status

Hyosung TNC is maintaining a stable supply chain by supporting sustainable growth of the suppliers.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Number of suppliers	Companies	2,679	200	161
Total purchase from suppliers	KRW 1 million	1,244,608	656,666	414,215

Major R&D Activities

Green Bio-based Spandex Textile

The Spandex Research Team of Hyosung R&DB Labs has successfully developed and commercialized the bio-based spandex yarn which is made of bio-originated materials. It contains more than 30% of substances extracted from natural raw materials such as corn, and yet boasts similar physical properties as conventional spandex products made of 100% petrochemical raw materials. Our bio-based spandex contributes to promoting eco-friendly products with extended applications to high-performance products including outdoor wear and swimwear as well as jeans and underwear. As such, Hyosung TNC is stabilizing its position as No. 1 spandex producer in the world, with the top-notch technologies.

Eco-friendly Nylon High-strength Yarn Made of Process Wastes

NYPET yarn research team is developing eco-friendly yarn by recycling wastes generated from textile manufacturing processes. The research team produces high-strength NY threads by recovering wastes from nylon production processes in cooperation with manufacturing plants. By reusing process wastes as raw materials of new products, we prevent depletion of petroleum resources and reduce carbon emissions.

Cation Dyeable Yarn Made of Waste PET Bottles

NYPET yarn research team managed to develop cation dyeable (CD) PET yarn using waste PET bottles as raw materials. CD PET yarn is cation dyeable, thus showing clearer color tone and superior discoloration resistance compared to general PET yarn. The research team has introduced the cation dyeability to the recycled yarn by developing a technology for recycling and special treatment of waste PET bottles.

R&D Expenses

Hyosung TNC invests steadily in R&D every year to ensure sustainable technological competitiveness.

Category	Unit	Hyosung TNC		
		2018	2019	2020
R&D expenses	KRW 1 million	7,345	13,708	14,882

Patent Registration and Application

Hyosung TNC registers patents for its own technology every year to secure its intellectual property rights and use them as KPIs for performance management.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Patent registration (accumulated)	Cases	714	726	741
Patent application (accumulated)	Cases	1,438	1,463	1,493

Social Performance

Hyosung TNC is a large company with more than 1,500 employees and has a high sense of responsibility for the corporate social contribution. 108 new employees were hired in line with job creation initiative for the local community. Moreover, in order to promote women’s active social engagement, we are increasing the proportion of female employees and female managers. In addition, we are increasing training hours and training investment costs per employee to develop their capabilities.

Employees Status

As of the end of 2020, Hyosung TNC has 1,528 employees with about 12% of contract-based workers, employing the majority as regular employees. In addition, we are increasing the proportion of female employees and female managers in order to encourage them to stand out actively in the social activities.

Category	Subcategory	Unit	Hyosung TNC		
			2018	2019	2020
Total employees		Persons	1,657	1,537	1,528
Gender	Male	Persons	1,389	1,237	1,236
	Female	Persons	268	300	292
Employment type	Permanent (male)	Persons	1,281	1,129	1,113
	Permanent (female)	Persons	226	228	238
	Subtotal	Persons	1,507	1,357	1,351
	Temporary (male)	Persons	108	108	123
	Temporary (female)	Persons	42	72	54
	Subtotal	Persons	150	180	177
Place of work	Domestic	Persons	1,518	1,537	1,528
	Overseas	Persons	139	168	144
Job category (based on permanent employment)	Office work	Persons	877	760	766
	Manufacturing	Persons	630	597	585
Fostering female human resource	Female employees ratio	%	16.2	19.5	19.1
	Number of female at manager-level or higher	Persons	26	33	39
	Female managers ratio	%	6.3	10.4	11.7
Diversity	Persons with disabilities	Persons	16	18	40
	Veterans	Persons	18	7	7
	Foreigners	Persons	4	3	2
	Subtotal	Persons	38	28	49
Creating job opportunities (newly employed)	Male	Persons	85	72	73
	Female	Persons	27	55	35
	Subtotal	Persons	112	127	108
Number of permanent employees who voluntarily quit	Male	Persons	52	78	59
	Female	Persons	38	42	20
	Subtotal	Persons	90	120	79
Turnover rate		%	5.97	8.84	5.85

Maternity Leave and Childcare Leave

Hyosung TNC encourages maternity and childcare leave to balance work and life for female employees. As of 2020, the return rate after childcare leave for male employees and female employees was found to be 100% and 94%, respectively. In particular, female employees’ rate of working more than 12 months after return has increased significantly.

Category	Subcategory	Unit	Hyosung TNC		
			2018	2019	2020
Male (maternity leave)	Employees under maternity leave	Persons	-	23	19
	Returning rate	%	-	100	100
Female (maternity leave)	Employees under maternity leave	Persons	5	14	9
	Returning rate	%	100	100	100
Male (childcare leave)	Employees under childcare leave	Persons	-	1	2
	Returning rate	%	-	100	100
	Rate of working more than 12 months after return	%	-	100	-
Female (childcare leave)	Employees under childcare leave	Persons	6	14	14
	Returning rate	%	-	100	94
	Rate of working more than 12 months after return	%	-	63	82

Regular Performance Evaluation

As of the end of 2020, Hyosung TNC conducted a regular performance evaluation of 1,351 employees, or 88% of the total 1,528 employees. We have established a fair evaluation system, covering most of our employees in the evaluation system.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Number of employees subject to performance evaluation	Persons	1,505	1,357	1,351
Performance evaluation rate	%	91	88	88

Labor Union Membership Status

Besides the Hyosung Labor Union, the Hyosung TNC Democratic Labor Union, the Hyosung TNC Gumi Factory Labor Union, and the Hyosung Polyester Labor Union are operating currently. Each business site transparently discloses the corporate management status to the employees through regular management briefing sessions and multi-layer meetings. In addition, we have established the Labor-Management Council in the headquarter office and each business site and hold quarterly meetings to discuss welfare, grievances, health and safety issues. Complaints and grievances received are managed in the company-wide system and are continuously kept track of improvement status.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Employees covered by collective agreements	Persons	629	603	585
Number of union workers	Persons	269	507	523
Rate of union workers	%	42.8	84.1	89.4

Retirement Pension

Hyosung TNC operates both DB-type and DC-type retirement pension systems to ensure the employees' freedom of choice and complies with the related legal standards.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Total operating fund for retirement pension (DB+DC)	KRW 1 million	65,338	79,712	89,582
Operating fund of DB pension	KRW 1 million	64,415	78,148	88,002
Operating fund of DC pension	KRW 1 million	923	1,563	1,580
Total number of members	Persons	1,653	1,719	1,668
Number of DB pension members (Persons)	Persons	1,365	1,417	1,353
Number of DC pension members (Persons)	Persons	288	302	315

Basic Wage and Remuneration

Hyosung TNC pays new employees 1.8 times more than the legal minimum wage to guarantee their welfare and increase their motivation to work.

Category		Unit	Hyosung TNC		
			2018	2019	2020
Basic salary for entry-level		KRW 1,000	3,118	3,272	3,501
Rate of entry-level salary to local minimum wage by law (%)	Male	%	184.6	174.7	181.7
	Female	%	184.6	174.7	181.7
Average basic salary		KRW 1,000	4,777	4,513	4,424

CSR Status

Hyosung TNC has developed unique CSR programs that could provide practical support to local communities. Based on proactive investment in CSR activities, the company makes sure that people from vulnerable social groups can be widely benefited.

Category	Unit	Hyosung TNC		
		2018	2019	2020
CSR investment	KRW 1 million	-	668	585
Number of CSR programs	Programs	-	11	4

* Hyosung Corporation carried out company-wide CSR activities until 2018, and since the spinoff in June 2018, they are conducted by each operating company.

Major CSR Activities

Hyosung TNC is supporting rehabilitation treatment for disabled children in cooperation with the Purme Foundation. We focus on rehabilitation treatment for disabled children in underprivileged condition, and since 2014, we have extended the support further to non-disabled siblings of the disabled children in blind spots of welfare. Being recognized for its dedication, Hyosung TNC was selected again as the outstanding company for contribution to local society in 2020 after 2019.

Employee Training Status

In an attempt to establish a business-specialized vocational training system, Hyosung TNC has designed a training system for sales position after identifying their training needs, based on which we plan to conduct sales training by each PG (textile/trade) in 2021. In order to quickly build work capacity of new employees, we also deliver basic vocational training to them. We assist new employees to successfully adapt to the company by conducting O.J.T activities, 1:1 feedback and interview and sending newsletter emails for their onboarding.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Number of training participants	Persons	14,408	23,406	20,109
Total training expenses	KRW 1,000	346,577	1,127,321	582,597
Total training hours	Hours	50,180	55,847	41,535
Average training hours per person (total training hours / number of employees)	Hours	30.28	36.33	27.18
Average training expenses per Person (total training expense / number of employees)	KRW	209,159	733,456	381,281

Category (Total number of participants)	Unit	Hyosung TNC		
		2018	2019	2020
Environment training	Persons	-	1,592	1,981
Ethics and anti-corruption training	Persons	-	6	1,266
Fair business trade training	Persons	-	13	645
Safety and health training	Persons	-	5,576	4,337
Human rights training (sexual harassment & workplace harassment prevention)	Persons	-	3,270	4,408
Information security training	Persons	-	1,342	1,362
Sustainability management training	Persons	-	-	17
Retiree training	Persons	-	-	26

Non-face-to-face Training in Response to COVID-19

Hyosung TNC delivered the two courses of basic job training and pre- and post-dispatch expatriate trainings, which were planned to be held in the first half of the year according to 2020 training plans, through a non-face-to-face method, considering the spread of COVID-19. Various job training sessions will also be prepared and delivered remotely in the second half of the year.

Vocational Training for Employees

Hyosung TNC has delivered a series of tailor-made vocational trainings taught by in-house instructors and experts in the industry. For example, we have conducted Creora School for the Spandex PU, region-based market development and product program for the Chemical PU, and technology seminar for Gumi plant.

▶ Spandex PU Creora School

Advanced	>	All	<ul style="list-style-type: none"> Differentiated product training (Advanced: Mechanism) Introduction to the latest trend Benchmarking Global exhibitions
		Experienced new employees	<ul style="list-style-type: none"> Spandex production process and properties (Advanced) Differentiated product training (Intermediate - User Guide) Trouble shooting
Intermediate	>	Local employees	<ul style="list-style-type: none"> Understanding of spandex and textile properties (Advanced) Differentiated product training (Intermediate: User Guide) VIU (Value Use) Training
		New employees	<ul style="list-style-type: none"> Understanding of spandex and textile properties (Basic) Education of product application (e.g. tricot, knit, covering, D&F, diaper, etc.) Differentiated product training (Basic: Type-specific characteristics) Market characteristics (domestic, overseas, diaper, etc.)
Basic	>		

▶ Regional Market Development and Customer Product Training at Chemical PU

③ Regional seminar	Overseas corporation/branch managers conducts seminars for each region/culture
③ Customer product training by external specialists	Customer product training and market training by specialists affiliated with universities/research center/customer companies
③ Presentation on market research for main products	Monthly market research meeting for major product

Pre-dispatch and Post-dispatch Training Programs for Overseas Expatriates

Hyosung TNC is operating pre-dispatch and post-dispatch training programs for expatriates to promote their adaptation and performance at work. In 2020, in replacement of group training due to COVID-19, we have provide video training materials and booklets informing roles and responsibilities of expatriates and overall adaptation tips as well as foreign language courses through telephone and video call. We help expatriates who have returned to domestic business sites to quickly adapt to workplace by providing them with information materials on domestic status, corporate policies, culture and system. We also collected information of expat life to establish a database so that such know-hows are shared among prospective expatriates.

Outplacement Support Program

From 2020, Hyosung TNC provides online outplacement training so that prospective retirees are given opportunities of new start after retirement. The support program was delivered mainly to field workers in 2020, and it will be gradually expanded to office workers in 2021.

Environment
and Safety
Performance

Hyosung TNC receives and uses recycled water that is reprocessed from sewage flowing into the Nakdong River. In this way, we are preventing polluted water flowing into the rivers and resolving the shortage of industrial water in Gumi by minimizing water consumption. In addition, we put safety and health as our top priority throughout corporate activities and build employees awareness accordingly, in the belief that creating an accident-free workplace is an important factor for continuous profit maximization and the development of both company and individuals.

Energy Consumption

In 2020, Hyosung TNC has reduced consumption of direct energy including LNG, gasoline and B-C oil as well as indirect energy such as electricity and steam, leading into 14% of decrease in total energy consumption compared to the previous year.

Category	Subcategory	Unit	Hyosung TNC		
			2018	2019	2020
Direct energy consumption	Diesel	TJ	6.92	7.83	6.42
	Kerosene	TJ	0.37	0.42	0.35
	LNG	TJ	869.73	959.01	823.57
	Gasoline	TJ	1.87	1.75	1.64
	Propane	TJ	749.98	778.03	681.98
	B-C oil	TJ	147.49	26.79	19.67
	Off-gas	TJ	-	-	-
	LPG	TJ	2.92	1.11	2.24
	Biogas	TJ	24.13	32.54	48.93
	Subtotal	TJ	1,803.40	1,807.48	1,584.81
Indirect energy consumption	Electricity	TJ	6,084.17	5,666.91	4,859.88
	Steam	TJ	864.87	796.62	658.22
	Process waste heat	TJ	-	-	-
	Waste incinerated heat	TJ	454.08	409.58	397.41
	Subtotal	TJ	7,403.11	6,873.11	5,915.51
Total		TJ	9,206.52	8,680.59	7,500.32
Energy intensity		TJ/KRW 100 million	0.793	0.657	0.733

* Emissions intensity was calculated based on sales in general financial statements (excluding sales from trade), not on a consolidated basis, since energy consumption and emissions are calculated only for domestic business sites.

Greenhouse Gas (GHG) Emissions

Through a variety of activities to reduce GHGs emissions, Hyosung TNC has achieved a decrease in both direct and indirect emissions compared to 2019.

Category	Subcategory	Unit	Hyosung TNC		
			2018	2019	2020
Direct GHGs emissions (Scope 1)	Fixed combustion	tCO ₂ eq	98,471	95,793	82,822
	Mobile combustion	tCO ₂ eq	777	734	695
	Process emissions	tCO ₂ eq	-	-	-
	Waste disposal	tCO ₂ eq	2,254	4,102	5,663
	Subtotal	tCO ₂ eq	101,502	100,628	89,181
Indirect GHGs emissions (Scope 2)	Electricity	tCO ₂ eq	295,494	275,229	236,034
	Steam	tCO ₂ eq	9,630	9,477	3,548
	Subtotal	tCO ₂ eq	305,124	284,706	239,582
GHGs emissions intensity		tCO ₂ eq/KRW 1 million	0.350	0.292	0.321

* The data are based on the ETS report submitted to the government in the given years, in accordance with the conformity assessment by the Ministry of Environment.
* To calculate emission intensity, we used domestic sales, excluding sales from trade, since emissions are based on domestic business sites.

Energy Saving and Emissions Reduction Performance

Hyosung TNC has established and executed different investment plans, such as replacement with high-efficiency facilities and LED lights, to reduce emissions while saving energy at its business sites.

Business site	Project name	Execution date	Hyosung TNC		
			Investment budget (KRW 1 million)	Energy saving (kWh/year)	Emissions reduction (tCO ₂ eq/year)
Ulsan	Extruder motor replacement (BL motor → induction motor)	2017.06	330	551,880	257
Ulsan	Aging dehydrator replacement	2019.12	393	219,600	102
Daegu	Inspection detector lighting improvement	2017.03	6	9,712	5
Daegu	LED lighting replacement	2018.03	14.91	46,116	22
Gumi	High-efficiency cooler replacement	2019.01	240	1,152,000	537
Gumi	Air Compressor replacement (supply pressure optimization)	2019.01	330	1,190,000	555

Water Resources Management Status

Hyosung TNC's Ulsan plant minimizes unnecessary water use through close cooperation with the production processes. The water used in the production process is collected to the emergency reservoir in the plant for reuse as cooling water.

Category	Subcategory	Unit	Hyosung TNC			
			2018	2019	2020 (plan)	2020 (actual)
Consumption by water source	Waterworks	Tons	78,696	79,892	81,711	80,725
	Groundwater	Tons	-	-	-	-
	Industrial water	Tons	6,822,981	7,573,653	7,357,516	6,276,576
	River water	Tons	-	-	-	-
Total water consumption		Tons	6,901,677	7,653,545	7,439,227	6,357,301
Water reuse amount		Tons	3,941,960	2,920,091	-	3,502,690
Water reuse rate		%	57.1	38.2	-	55.1

Wastewater and Water Treatment Status

Hyosung TNC's Gumi plant conducts water quality inspection every half year by an external specialized agency, covering all items of priority toxic pollutants generated from manufacturing processes. In this way, we identify water pollutant emission status in advance and minimize damage to the ecosystem of the Nakdong River. Wastewater generated from production processes is released to the sewage treatment plant after minimizing the pollutants through wastewater treatment plant and the wastewater prevention facility.

Category	Unit	Hyosung TNC			
		2018	2019	2020 (plan)	2020 (actual)
Wastewater discharge amount	Tons	1,413,015.00	1,235,251.00	1,273,500.00	1,222,121.00
Biological Oxygen Demand (BOD)	Tons	3.89	3.06	4.91	3.65
Chemical Oxygen Demand (COD)	Tons	37.30	30.31	35.39	33.44
Suspended Solids (SS)	Tons	6.99	5.23	7.19	6.98
Total Nitrogen (T-N)	Tons	18.93	9.45	13.35	10.33
Total Phosphorus (T-P)	Tons	0.55	0.25	0.68	0.46

Waste Treatment Status

Hyosung TNC's Ulsan plant has recycled most of wastewater sludge and plans to reduce the amount of wastewater sludge continuously by installing a high-efficiency dehydrator.

Category	Subcategory	Unit	Hyosung TNC			
			2018	2019	2020 (plan)	2020 (actual)
Industrial waste (general)	Recycling	Tons	14,120.7	13,561.6	13,750.0	13,455.4
	Incineration	Tons	2,232.1	1,643.8	1,600.0	1,475.1
	Landfill	Tons	2,385.0	745.4	737.0	592.8
	Subtotal	Tons	18,737.8	15,950.8	16,087.0	15,523.3
Industrial waste (designated)	Recycling	Tons	8,584.5	7,619.1	2,400.0	1,040.7
	Incineration	Tons	956.1	1,028.2	1,050.0	1,557.7
	Landfill	Tons	8.2	2.0	2.0	1.3
	Subtotal	Tons	9,548.8	8,649.3	3,452.0	2,599.7
Total waste		Tons	28,286.6	24,600.1	19,539.0	18,123.0
Waste recycling amount		Tons	22,705.2	21,180.7	15,550.0	13,899.3
Waste recycling rate		%	80.3	86.1	79.6	76.7

Air Pollutant Emissions

The Gumi plant of Hyosung TNC is using clean fuels such as LNG and LPG for boilers and replacing existing burners with low-NOx ones, in response to emission-cap regulation in accordance with enforcement of the Air Control Zone Act. In addition, we are complying with the reinforced NOx emission standards in 2020 and conducting monitoring regularly. We are taking the lead in reducing fine dust in Gumi, and taking preemptive actions to improve local air environment by controlling air pollutants below the quota for the places of business.

Category	Subcategory	Unit	Hyosung TNC			
			2018	2019	2020 (plan)	2020 (actual)
General air pollutants	Nitrogen oxides (NOx)	Tons	71.2	62.3	60.0	47.8
	Sulfur oxides (SOx)	Tons	5.4	6.2	1.0	1.2
	Particulate matter (PM)	Tons	8.2	4.7	4.6	5.0
Ozone depleting substances	CFC(R-11)	Tons	-	0.77	0.60	0.79
	HCFC(R-123)	Tons	-	-	-	-
	HCFC(R-22)	Tons	-	2.5	-	-

* The data for 2019 has been changed in accordance with the change of assessment method for CFC(R-11) emissions.

Hazardous Chemicals Management Status

The Gumi plant of Hyosung TNC has conducted online safety training to 950 employees from the company, supplier companies, and construction corporation, to build awareness of safety and chemical accident prevention. In order to prevent any chemical leakage accidents from the existing facilities that treat hazardous chemical substances, we have improved the existing leakage detectors and alert facilities. In April 2016, a chemical safety community group has been set up between regional environmental agency in Daegu and chemical-handling business sites so that prompt actions can be taken in the incident of a chemical accident. As a participating company of the chemical safety community group, the Gumi plant directly attends emergency training to improve response capacity of the related personnel and establishes emergency response system based on the information exchange and cooperation with fellow companies in the community group. In addition, we have installed leakage detectors near storage tanks, pipes and pumps and established an alert system so that countermeasures are taken immediately in emergency situation.

Category	Unit	Hyosung TNC			
		2018	2019	2020 (plan)	2020 (actual)
Hazardous substances usage amount	Tons	6,983	8,375	8,300	7,510
Basic unit of hazardous substances usage amount	Tons/ KRW 1 million	0.00602	0.00634	0.00811	0.00734

* Basic unit was calculated based on sales in general financial statements, not on a consolidated basis, since hazardous substances consumption is calculated only for domestic business sites.
* Sales from trade was excluded when calculating the basic unit.

Hazardous Chemical Substances Management System

Hyosung TNC controls all chemical substances used in the production processes through ERP-based electronic system. The system checks all purchased materials to see whether they contain chemical substances under control, and the purchase is only available when the personnel in charge of chemicals in each business sites approves. We use the relevant substance information provided by the supplier and our own SAP EHS Regulatory Content Database (SERC DB) to check whether the material is subject to regulations, and only approve the purchase of the material when the regulatory implementation is completed.

Sales and Purchase of Green Products and Services

Hyosung TNC follows the green purchasing policy and practices green management by selling and purchasing green products and services. In 2020, we sold KRW 31.5 billion worth green products and services, and purchased KRW 11.3 billion.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Sale	KRW 1,000	10,622,738	23,053,885	31,514,910
Purchase	KRW 1,000	142,620	451,028	11,326,858

Environmental Investment

Hyosung TNC practices green management through continuous environmental investments such as waste treatment, environmental restoration, and pollution prevention.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Waste treatment and environment restoration expenses	KRW 1,000	1,980,377	1,321,367	1,516,892
Pollution prevention and environmental management expenses	KRW 1,000	706,694	792,574	1,055,731
Total	KRW 1,000	2,687,071	2,113,941	2,572,623

* Ommitted environmental investment expenses for 2018 and 2019 have been added.

Environmental Performance Management

At Hyosung TNC's Gumi plant major environmental items such as water quality management, waste management, air quality management, and chemical substances management, are managed as KPIs. Monthly reports are prepared to check performance achievement, and environmental performance is reported every quarter.

Renewable Energy Consumption

Hyosung TNC receives waste incineration heat, a renewable energy source, from the waste incineration plant near its business sites, and uses biogas generated from the water treatment process at its production plant to operate boilers.

Business site	Type	Unit	Hyosung TNC		
			2018	2019	2020
Gumi	Waste energy	GJ/년	351,908	338,793	314,476
Gumi	Bio energy	GJ/년	7,888	8,993	2,036
Ulsan	Bio energy	GJ/년	16,239	23,546	46,895
Daegu	Waste energy	GJ/년	102,172	70,786	82,933

Occupational Accident Rate

Hyosung TNC manages its occupational accident rate at a very low level by promoting safe working environment. Occupational fatality has not occurred for the last three consecutive years in Hyosung TNC.

Category	Unit	Hyosung TNC		
		2018	2019	2020
Total number of occupational accidents: Accidental disaster + Occupational disease	Persons	1	4	2
Occupational accident rate: Total number of occupational accidents / Total number of employees x 100	%	0.06	0.26	0.13
Number of work-related fatalities	Persons	-	-	-
Work-related fatality rate per ten thousand employees (Number of work-related fatalities / Total number of employees x 10,000)	‰	-	-	-

Hearing Preservation Program

Hyosung TNC is conducting a hearing preservation program for workers working in processes that exceed noise exposure standards (90 dB), and employees having symptoms of noise-induced deafness, also including employees of supplier companies. With technical guidance from external specialized agency, we conduct hearing adhesion tests individually and select appropriate hearing protection devices after the measurement of earplug size. We are trying to minimize noise-induced hearing loss by providing hearing protection wear and training how to wear them properly. In addition, we also try to reduce noise exposure by installing noise control booths at production sites.

Global Recycled Standard (GRS) Certification

Hyosung TNC has obtained Global Recycled Standard (GRS) certification for the products. We are continuing our efforts in saving energy and resource and conserving environment by producing recycled textile products. We plan to maintain the certification later on, contributing to sustainable corporate management.

Business site	Certification code	Certification subject	Certification date	Expiry date
Headquarters	CU811380GRS-2020-0086645	Dyed yarns: Polyester post	Dec. 16, 2020	Nov. 29, 2021
Gumi Plant		Greige yarns: Nylon pre, Polyester post, Spandex pre		
Ulsan Plant		Processes materials: Nylon pre, Polyester post		
Daegu Plant	CU1026916GRS-2020-0082302	Dyed Knitted Fabrics: Polyester post, Nylon pre Dyed Woven Fabrics: Polyester post, Nylon pre	Dec. 6, 2020	Dec. 5, 2021

Economic
Performance

Hyosung Heavy Industries is steadily creating economic value despite the long-term recession in the construction industry. In 2020, we achieved KRW 2.98 trillion of total sales, and as a result of our efforts to maintain a stable financial structure despite the decline in business performance, our debt ratio decreased compared to the end of the previous year.

Financial Statements (Consolidated)

Unit: KRW 1 million

Category	2018	2019	2020
i .Current assets	1,492,635	1,579,014	1,238,408
Cash and cash equivalents	40,977	38,216	52,294
Trade and other current receivables	772,662	811,512	542,936
Inventories	332,744	306,018	318,971
Other current assets	346,251	423,268	324,207
ii .Non-current assets	1,939,876	2,421,816	2,465,046
Long-term trade and other non-current receivables	484,725	513,376	514,552
Tangible assets	1,077,627	1,077,233	1,134,914
Investments in properties	143,815	568,109	547,335
Intangible assets	12,727	160,600	145,920
Other non-current financial assets	155,195	46,684	48
Other non-current assets	65,787	55,814	122,277
Total assets	3,432,511	4,000,830	3,703,454
i .Current liabilities	1,999,317	2,116,804	1,740,041
Trade and other current payables	814,935	684,688	633,275
Borrowings	746,739	965,109	598,704
Other current liabilities	437,644	467,007	508,062
ii .Non-current liabilities	528,483	893,529	995,163
Long-term trade and other non-current payables	125,457	238,988	237,838
Long-term borrowings	314,057	467,145	575,801
Other non-current liabilities	88,969	187,396	181,524
Total liabilities	2,527,800	3,010,333	2,735,204
[Capital stock]	46,623	46,623	46,623
[Retained earnings]	(3,639)	(1,611)	(19,648)
[Other components of equity]	861,533	863,231	856,607
[Non-controlling interest]	194	82,254	84,668
Total capital	904,711	990,497	968,250

Consolidated Statements of Comprehensive Income

Unit: KRW 1 million

Category	2018	2019	2020
Sales	2,180,485	3,781,445	2,983,971
Cost of sales	1,941,278	3,388,813	2,588,586
Gross profit	239,206	392,633	395,385
SG&A	160,102	227,407	317,808
R&D expenses	29,109	34,973	33,503
Operating income	49,996	130,252	44,075
Other gains	31,563	16,273	25,831
Other loss	35,430	22,077	37,070
Finance income	37,239	75,222	118,355
Finance expenses	79,654	143,750	169,167
Related companies profit	-	-	(4)
Profit before tax	3,714	55,920	(17,980)
Income tax expense	1,805	39,898	1,278
Net profit	1,909	16,023	(19,258)
Other comprehensive gain(loss)	(16,946)	(10,452)	(2,989)
Total comprehensive gain(loss)	(15,037)	5,571	(22,247)

Corporation Tax by Country

As a multinational corporation pursuing its business in different countries including the US, China, and India, Hyosung Heavy Industries is complying with tax regulations of each country. We pay corporation taxes to comply with moral obligations that go beyond legal obligations.

Category	Subcategory	Unit	Hyosung Heavy Industries		
			2018.6~12	2019	2020
Republic of Korea	Sales	KRW 1 million	2,135,068	3,658,757	2,905,631
	Profit before tax	KRW 1 million	(96,393)	54,333	1,045
	Tax	KRW 1 million	4,568	43,013	3,587
	Tax rate	%	22	22	22
	Effective tax rate	%	(5)	79	343
China	Sales	KRW 1 million	49,765	108,030	111,719
	Profit before tax	KRW 1 million	(14,636)	(4,039)	2,662
	Tax	KRW 1 million	-	-	-
	Tax rate	%	25	25	25
	Effective tax rate	%	-	-	-
India	Sales	KRW 1 million	46,981	73,342	32,548
	Profit before tax	KRW 1 million	(7,282)	2,065	(6,531)
	Tax	KRW 1 million	(2,351)	1,094	2,272
	Tax rate	%	33	33	33
	Effective tax rate	%	32	53	(35)
Vietnam	Sales	KRW 1 million	-	30,519	11,213
	Profit before tax	KRW 1 million	(88)	497	217
	Tax	KRW 1 million	-	93	43
	Tax rate	%	20	20	20
	Effective tax rate	%	-	19	20
United States	Sales	KRW 1 million	-	-	10,151
	Profit before tax	KRW 1 million	-	-	(16,885)
	Tax	KRW 1 million	-	-	-
	Tax rate	%	-	-	26
	Effective tax rate	%	-	-	-
South Africa	Sales	KRW 1 million	336	533	484
	Profit before tax	KRW 1 million	55	18	50
	Tax	KRW 1 million	35	66	4
	Tax rate	%	28	28	28
	Effective tax rate	%	64	366	8

* The values may vary from consolidated financial statements due to inside trading among consolidated companies and unrealized gain or loss.

Production Output by Business Sector

Hyosung Heavy Industries is composed of the heavy industry division that produces transformers, switch gears, and electric motors, and the construction division that carries out construction and civil engineering. The heavy industries division is highly competitive in technology, quality and delivery, while the construction division has gained robust trusts based on its project management ability and competitiveness.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Transformers	KRW 1 million	526,863	452,467	516,202
Switch gears	KRW 1 million	579,978	429,395	393,530
Electric motors	KRW 1 million	277,547	287,047	266,505
Others	KRW 1 million	102,488	152,778	200,290

Financial Loss

Hyosung Heavy Industries faithfully complies with all laws and regulations related to corporate management, including economy, society, and environment. The company's reputational risk is effectively managed by minimizing fines from non-compliance with laws and regulations.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Financial loss incurred as a result of legal proceedings associated with bribery or corruption	KRW 1 million	-	-	-
Financial loss as a result of legal proceedings associated with product safety	KRW 1 million	-	-	-
Financial loss as a result of legal proceedings associated with anticompetitive behaviors	KRW 1 million	99	-	-

Sales of Specific Products

In parallel with global green policies focused on low-carbon and renewable energy, Hyosung Heavy Inustires is supplying and selling a variety of eco-friendly products.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Sales from products including IEC 62474 declarable substances	KRW 1 million	-	-	-
Sales from products that meet ENERGY STAR® standards	KRW 1 million	-	-	-
Sales from products related to renewable energy and energy efficiency	KRW 1 million	492,596	303,470	277,707

Construction Projects

Hyosung Heavy Industries is pioneering a new construction market by stepping away from the existing paradigm of labor and capital-centered construction industry and attempting convergence of cutting-edge technology. And we are achieving continuous growth based on the company’s brand value and long-accumulated business expertise.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Number of projects in operation	Projects	49	45	31
Number of consignment projects	Projects	13	11	16
Total backlog*	KRW 1 million	4,010,923	3,575,266	3,814,690

* Backlog: Projects in the backlog

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Number of incidents of non-compliance with environmental permits, standards, and regulations	Cases	-	-	-
Number of projects operated in accordance with sustainability standards and certifications	Cases	1	4	6
Number of pending projects related to hydrocarbon and renewable energy	Cases	-	-	-

Suppliers Status

Hyosung Heavy Industries maintains a stable supply chain by supporting the sustainable growth of its suppliers.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Number of suppliers	Companies	4,062	3,329	3,962
Total purchase from suppliers	KRW 1 million	2,915,567	2,442,794	1,868,226

Major R&D Activities

Technology Certification by Korean Society of Steel Construction (KSSC CST No. 2021-01) – CFT (Concrete Filled Tube) Column Connection Top-down Method

It is a construction method that works on the ground floor and underground floor at the same time in confined construction sites such as downtown areas, drastically shortening the construction period. The CFT column is filled with high-strength concrete in a tube made of steel (steel pipe), which has the advantage of reducing the amount of steel by about 10% compared to conventional H-shaped steel. However, Hyosung Heavy Industries has developed a new type of CFT column technology since the existing CFT columns are prone to various problems such as lack of welding quality and difficulty in quality control and field safety management. The newly developed CFT column has been recently certified by Korean Society of Steel Construction with its high performance and is currently applied to actual construction sites in Korea.

New Construction Technology No. 833 – Removable Deck Plate Method

The removable deck plate construction method was recently introduced for reasonable frame construction as it has become difficult to find construction engineers. Recently, frame construction is being systemized through a pre-production in factories, and removable deck plate method can reduce labor costs by omitting processing work at the construction site. Combining the advantages of conventional molding technology and steel truss deck plates, this new method can increase convenience of installation, maintenance and reuse of plywood. It also boasts high usability from the upgraded joint parts, cost reduction effects as well as convenience of maintenance and repair work. Hyosung Heavy Industries acquired the certification of new construction technology in January 2018 with this construction method. It has been applied to actual construction sites, including multi-family housing construction in Yongin Seocheon II and Pyeongtaek Sosa II. It is expected to further contribute to cost reduction and quality improvement through application to the construction sites.

New Construction Technology No. 897 – Pre-fabricated Modular Elevator Pit Method

When installing an elevator, pre-fabricated modular pit can be applied at the bottom of hoistway. In this way, the impact of leakage can be minimized, and construction duration can be reduced by about 3 to days per installation, as well as construction costs by about 30% compared to the conventional method.

As an excavation depth increases at the construction of apartment buildings nowadays, soft and hard rock layers are often found, which requires extra rock-fracturing and deep excavation at the foundation construction, prolonging the entire construction period. And the new construction method using modular elevator pit could resolve such problem. With the pre-fabricated modular elevator pit method, we have acquired the New Construction Technology (No. 897) certification in September 2020. The method has been applied to some of actual construction site already, including Gongneung reconstruction site in Taereung and urban redevelopment sites in Hongje #3 district and Daegu Sinam #6 district.

R&D Expenses

The Power & Industrial Systems R&D Center invests steadily in R&D every year to ensure sustainable technological competitiveness.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
R&D Expenses	KRW 1 million	29,109	34,973	33,503

Patent Registration and Application

The Power & Industrial Systems R&D Center registers patents for its own technology every year to secure its intellectual property rights and use them as KPIs for performance management.

Category	Subcategory	Unit	Hyosung Heavy Industries		
			2018	2019	2020
Patent registration (accumulated)	Domestic	Programs	277	310	341
	Overseas	Programs	29	65	81
Patent application (accumulated)	Domestic	Programs	324	350	363
	Overseas	Programs	177	232	216

Social
Performance

As a large corporation having more than 3,000 employees in domestic business sites, Hyosung Heavy Industries affects the economy of local community. We have newly hired 224 employees in 2020, which revitalized the job market shrunk by COVID-19 pandemic, and increased the ratio of female employees to promote women’s active social engagement. In addition, we pursue fair performance evaluation and actively proceed labor-management communication to facilitate a healthy corporate culture.

Employees Status

As of the end of 2020, Hyosung Heavy Industries has 3,483 employees. The ratio of full-time regular employees is 95% of all employees. The number of female employees is 310, which is the sixth highest number among the major domestic electricity and gas companies. We are increasing the recruitment of disabled and veterans each year in consideration of the socially disadvantaged.

Category	Subcategory	Unit	Hyosung Heavy Industries		
			2018	2019	2020
Total employees		Persons	3,487	3,483	3,154
Gender	Male	Persons	3,241	3,143	2,844
	Female	Persons	246	340	310
Employment type	Permanent (male)	Persons	3,188	3,124	2,769
	Permanent (female)	Persons	242	250	222
	Subtotal	Persons	3,430	3,374	2,991
	Temporary (male)	Persons	53	19	75
	Temporary (female)	Persons	4	90	88
	Subtotal	Persons	57	109	163
Place of work	Domestic	Persons	3,461	3,483	3,154
	Overseas	Persons	26	27	40
Job category (based on permanent employment)	Office work	Persons	2,525	2494	2,424
	Manufacturing	Persons	905	819	730
Fostering female human resource	Female employees ratio	%	7.1	9.8	9.8
	Number of female at manager-level or higher	Persons	61	89	96
	Female managers ratio	%	4.3	10.3	6.5
Diversity	Persons with disabilities	Persons	59	75	92
	Veterans	Persons	77	82	68
	Foreigners	Persons	13	22	19
	Subtotal	Persons	149	179	179
Creating job opportunities (newly employed)	Male	Persons	30	154	154
	Female	Persons	13	89	70
	Subtotal	Persons	43	243	224
Number of permanent employees who voluntarily quit	Male	Persons	39	79	72
	Female	Persons	2	14	12
	Subtotal	Persons	41	93	84
Turnover rate		%	1.20	2.76	2.81

Maternity Leave and Childcare Leave

Hyosung Heavy Industries encourages employees to take maternity and childcare leave to contribute to resolving the country's low birthrate problem.

Category	Subcategory	Unit	Hyosung Heavy Industries		
			2018	2019	2020
Male (maternity leave)	Employees under maternity leave	Persons	24	97	71
	Returning rate	%	100	100	100
Female (maternity leave)	Employees under maternity leave	Persons	15	24	13
	Returning rate	%	93	96	92
Male (childcare leave)	Employees under childcare leave	Persons	54	132	69
	Returning rate	%	-	99	98
	Rate of working more than 12 months after return	%	-	96	92
Female (childcare leave)	Employees under childcare leave	Persons	31	14	19
	Returning rate	%	-	95	89
	Rate of working more than 12 months after return	%	-	73	81

Regular Performance Evaluation

As of the end of 2020, Hyosung Heavy Industries conducted a regular performance evaluation of 2,991 employees, or 95% of the total 3,154 employees. We have established a fair evaluation system, covering most of our employees in the evaluation system.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Number of employees subject to performance evaluation	Persons	3,430	3,374	2,991
Performance evaluation rate	%	98	97	95

Labor Union Membership Status

We notify the labor union as soon as any important business matters arise. Each business site transparently discloses the corporate management status to the employees through regular management briefing sessions and multi-layer meetings. In addition, we have established the Labor-Management Council in each business site and hold quarterly meetings to discuss welfare, grievances, health and safety issues. Complaints and grievances received are managed in the company-wide system and are continuously kept track of improvement status.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Employees covered by collective agreements	Persons	847	813	785
Number of union workers	Persons	787	731	682
Rate of union workers	%	92.9	89.9	86.9

Retirement Pension

Hyosung Heavy Industries operates both DB-type and DC-type retirement pension systems to ensure the employees' freedom of choice and complies with the related legal standards.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Total operating fund for retirement pension (DB+DC)	KRW 1 million	189,089	224,657	217,734
Operating fund of DB pension	KRW 1 million	171,785	204,525	182,154
Operating fund of DC pension	KRW 1 million	17,304	20,132	35,580
Total number of members	Persons	3,297	3,425	2,967
Number of DB pension members (Persons)	Persons	2,894	2,934	2,256
Number of DC pension members (Persons)	Persons	403	491	711

Basic Wage and Remuneration

Hyosung Heavy Industries pays new employees 1.8 times more than the legal minimum wage to guarantee their welfare and increase their motivation to work.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Basic salary for entry-level	KRW 1,000	3,118	3,272	3,501
Rate of entry-level salary to local minimum wage by law (%)	Male	184.6	174.7	181.7
	Female	184.6	174.7	181.7
Average basic salary	KRW 1,000	4,530	4,746	4,393

Employees Training Status

Hyosung Heavy Industries is carrying out a variety of training programs to develop the competency of employees. In 2020, due to COVID-19, safety training for business site managers and supervisors and training for construction site managers were converted to online and non-face-to-face (letters) method.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Number of training participants	Persons	76,907	167,343	125,299
Total training expenses	KRW 1,000	745,407	2,284,723	1,067,897
Total training hours	Hours	187,707	237,474	147,849
Average training hours per person (total training hours / number of employees)	Hours	52.40	68.18	46.88
Average training expenses per Person (total training expense / number of employees)	KRW	213,767	655,964	338,585

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Environment training	Persons	-	19,611	3,430
Ethics and anti-corruption training	Persons	-	116	1,494
Fair business trade training	Persons	-	117	1,477
Safety and health training	Persons	-	52,473	50,321
Human rights training (sexual harassment & workplace harassment prevention)	Persons	-	6,775	7,260
Information security training	Persons	-	3,673	1,917
Sustainability management training	Persons	-	-	11
Retiree training	Persons	-	-	-

Hands-on Technology Training to Enhance Competitiveness

Hyosung Heavy Industries is conducting various training to improve its employees' technical capabilities. In particular, various technology trainings are conducted using in-company instructors and external experts to enhance competitiveness in winning construction orders. At the same time, we are trying to improve our technological capabilities by recruiting talented people from advanced global companies as technical advisors and transferring related knowledge and expertise. We held a quality meeting hosted by the CEO in order to emphasize the importance of product quality to employees. We focused on improving employees' awareness of product quality while sharing internal and external use cases, to mitigate quality issues. We are also developing courses for system engineering professionals to propose tailor-made solutions to customers.

CSR Status

Hyosung Heavy Industries is creating social value by investing in local communities in various forms, including financial and non-financial support. All executives and employees are actively participating in CSR activities based on a sense of responsibility for vulnerable groups in the society.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
CSR investment	KRW 1 million	-	825	858
Number of CSR programs	Programs	-	8	12

* Hyosung Corporation carried out company-wide CSR activities until 2018, and since the spinoff in June 2018, they are conducted by each operating company.

Major CSR Activities

Along with Areumjigi Foundation, we carry out palace restoration project in Changdeokgung Palace. Through the first and second projects, the interior lighting and chandeliers were restored, allowing the visitors to see the palace inside, thus promoting the beauty of the country's historical and cultural heritage. In 2020 and 2021, we have sponsored the establishment of an exhibition room for viewing inside the restored Huijeongdang. In recognition of these achievements, we have been selected again as the outstanding company for contribution to local society in 2020. In addition, Hyosung Heavy Industries has been supporting students of Seoul Jeongmun School, a public school for the mentally challenged, for 14 years since June 2007 and has held monthly hiking competitions and field trips with employees. In addition, we visited 200 underprivileged people in Changwon to deliver household goods. We support their national holidays such as the New Year's day and Chuseok every year under the slogan "Holidays with the Disabled" and continue to provide volunteer work to six welfare facilities for the elderly and the disabled.

Donation Against COVID-19 and Partnership with Traditional Market

The Changwon Hospital, located near the Changwon plant, has been designated as a medical organization to deal with COVID-19 in March 2020. As such, Changwon plant has donated KRW 10 million to the hospital to sponsor medical staffs striving to fight against COVID-19. In June 2020, Changwon plant made the partnership with Changwon local government and traditional market to boost local economy and reactivate traditional markets. Through the partnership agreement with Changdong Market, the Changwon plant has purchased KRW 20 million worth of products in 2020.

Environment and
Safety Performance

Hyosung Heavy Industries listens to the voices of internal and external customers to save energy, minimize pollutants and prevent occupational accidents and diseases with all employees. We are effectively responding to potential risks and environmental impacts by combining cutting-edge technologies at every life stage of a product including product design, purchase, manufacture, use and disposal. Through continuous training and capacity-building, we innovate the HSE management system to global top level and regularly evaluate our performance.

Energy Consumption

Hyosung Heavy Industries' Changwon plant introduced high-efficiency inverter operation method to increase operation efficiency of facilities in the production processes and save electricity. It also introduced an integrated management system for the air conditioners and heaters installed in new buildings. The system centrally controls target facilities whenever necessary, for example in the situation of power peak, thus enabling energy saving. We also plan to introduce an integrated management system for power usage to keep promoting energy saving.

Category	Subcategory	Unit	Hyosung Heavy Industries		
			2018	2019	2020
Direct energy consumption	Diesel	TJ	13.09	11.74	10.21
	Kerosene	TJ	0.03	0.03	21.88
	LNG	TJ	132.99	113.82	109.71
	Gasoline	TJ	3.15	3.02	2.50
	Propane	TJ	7.42	7.37	8.00
	B-C oil	TJ	-	-	-
	Off-gas	TJ	-	-	-
	LPG	TJ	1.01	0.33	0.38
	Biogas	TJ	-	-	-
	Subtotal	TJ	157.70	136.32	152.68
Indirect energy consumption	Electricity	TJ	990.68	892.03	984.06
	Steam	TJ	-	-	3.34
	Process waste heat	TJ	-	-	-
	Waste incinerated heat	TJ	67.94	64.37	60.53
	Subtotal	TJ	1,058.62	956.40	1,047.93
Total		TJ	1,216.32	1,092.72	1,200.61
Energy intensity		TJ/KRW 100 million	0.063	0.064	0.048

* Energy consumption and emissions from construction sites are additionally reported from 2020.

Energy Saving and Emissions Reduction Performance

For the purpose of practicing green management, Hyosung Heavy Industries has established and executed investment plans for LED lights replacement and managed to reduce emissions and save energy at its business sites.

Business site	Project name	Execution date	Hyosung Heavy Industries		
			Investment budget (KRW 1 million)	Energy saving (kWh/year)	Emissions reduction (tCO ₂ eq/year)
Changwon	LED Light replacement	2017.07	97	111,142	56

Greenhouse Gas (GHG) Emissions

Through a variety of activities to reduce GHGs emissions, Hyosung Heavy Industries has achieved a decrease in GHG emissions intensity by 23% compared to the previous year.

Category	Subcategory	Unit	Hyosung Heavy Industries		
			2018	2019	2020
Direct GHGs emissions (Scope 1)	Fixed combustion	tCO ₂ eq	7,317	6,346	7,599
	Mobile combustion	tCO ₂ eq	1,059	910	815
	Process emissions	tCO ₂ eq	1,247	963	1,107
	Waste disposal	tCO ₂ eq	19	66	38
	Subtotal	tCO ₂ eq	9,641	8,285	9,558
Indirect GHGs emissions (Scope 2)	Electricity	tCO ₂ eq	48,115	43,324	47,794
	Steam	tCO ₂ eq	-	-	114
	Subtotal	tCO ₂ eq	48,115	43,324	47,908
GHGs emissions intensity		tCO ₂ eq/KRW 1 million	0.030	0.030	0.023

*Emissions intensity was calculated based on sales in general financial statements, not on a consolidated basis, since energy consumption and emissions are calculated only for domestic business sites.

*Energy consumption and emissions from construction sites are additionally reported from 2020.

Water Resources Management Status

Total water usage of Hyosung Heavy Industries in 2020 amounted to 420,000 tons, which decreased by 3% from 2019. The company is reducing water consumption by each water source such as ground water, industrial water. The Changwon plant periodically replaces aging water pipes and minimizes unnecessary water consumption by self-checking on leaks.

Category	Subcategory	Unit	Hyosung Heavy Industries		
			2018	2019	2020
Consumption by water source	Waterworks	Tons	-	704	3,715
	Groundwater	Tons	8,165	4,916	-
	Industrial water	Tons	503,038	424,634	347,318
Total water consumption		Tons	511,203	430,254	351,033
Water reuse amount		Tons	971	818	-
Water reuse rate		%	0.2	0.2	-

Wastewater and Water Treatment Status

At the Changwon plant in Hyosung Heavy Industries, water quality test takes place every month to constantly monitor water pollutant concentration level. Also, filter materials in the wastewater treatment plant, such as activated carbon and sand, are regularly replaced. We are releasing the wastewater with its concentration within 70% of the legal acceptance criteria.

Category	Unit	Hyosung Heavy Industries			
		2018	2019	2020 (plan)	2020 (actual)
Wastewater discharge amount	Tons	10,868.40	8,141.40	8,500.00	8,872.80
Biological Oxygen Demand (BOD)	Tons	1.05	0.48	0.02	0.02
Chemical Oxygen Demand (COD)	Tons	0.50	0.50	0.12	0.11
Suspended Solids (SS)	Tons	0.28	0.05	0.03	0.03
Total Nitrogen (T-N)	Tons	2.39	1.78	0.04	0.22
Total Phosphorus (T-P)	Tons	0.35	0.15	0.04	0.03

Waste Treatment Status

For systematic waste management, Hyosung Heavy Industries delivers regular waste sorting training to the employees. First, the department that produces wastes separately discharges wastes according to their characteristics, such as combustible waste, waste paper, and nonflammable wastes, and reclassifies some mixed wastes in the waste storage facility. In the process of reclassification of waste, we separately collect and recycle waste metal including containers, molds, and scrap iron. Regarding waste oil and waste paint, we have introduced real-name waste discharge system so that each department can monitor and manage waste discharge amount, leading to their waste discharge reduction. Wastes transported to waste storage are stored separately by each materiality. Waste is managed in consideration of the storage limit and storage period, and the contracted consignee takes out the wastes for disposal service. When waste disposal is completed, related information is collected, such as disposal amount and disposal companies, in the waste management system (Olbaro). We also continue to find new companies to improve the efficiency and effectiveness of waste disposal.

Category	Subcategory	Unit	Hyosung Heavy Industries			
			2018	2019	2020 (plan)	2020 (actual)
Industrial waste (general)	Recycling	Tons	6,419.2	4,115.3	4,595.0	4,177.5
	Incineration	Tons	1,662.5	1,027.5	1,293.0	1,229.0
	Landfill	Tons	372.0	124.5	367.0	370.0
	Subtotal	Tons	8,453.7	5,267.3	6,255.0	5,776.5
Industrial waste (designated)	Recycling	Tons	355.0	291.0	330.0	288.3
	Incineration	Tons	344.1	108.2	167.0	177.0
	Landfill	Tons	1.6	-	1.0	0.8
	Subtotal	Tons	700.7	399.2	498.0	466.1
Total waste		Tons	9,154.4	5,666.5	6,753.0	6,242.6
Waste recycling amount		Tons	6,774.2	4,406.3	4,925.0	4,465.8
Waste recycling rate		%	74.0	77.8	72.9	71.3

Air Pollutants Emissions

Hyosung Heavy Industries' Changwon plant has established a strict internal emission acceptance standard, which is 60% of the legal acceptance standard for air pollutant emission, and has preemptively replaced active carbon and back filter when the internal criteria are exceeded. Also, we set a reasonable replacement cycle of activated carbon and back filter by identifying their breakthrough pattern compared to production output. We are constantly monitoring production output to replace the filter materials in timely manner. The UHV Production Team has come up with various solutions for the existing problems. In addition, the Casting Team has managed to shorten the replacement cycle by introducing adsorption and catalytic oxidation facility (Veraria) which uses regenerative filter for the first time in Korea.

Category	Subcategory	Unit	Hyosung Heavy Industries			
			2018	2019	2020 (plan)	2020 (actual)
General air pollutants	Nitrogen oxides (NOx)	Tons	1.3	1.2	1.2	1.1
	Sulfur oxides (SOx)	Tons	-	-	-	-
	Particulate matter (PM)	Tons	11.6	10.0	9.3	8.9
Ozone depleting substances	CFC(R-11)	Tons	-	-	-	-
	HCFC(R-123)	Tons	-	-	-	-
	HCFC(R-22)	Tons	-	-	-	-

* At the time of reporting in 2019, nitrogen oxide emissions were omitted and not listed, so corresponding data for 2018 and 2019 have been additionally recorded along with 2020 data.

Hazardous Chemicals Management Status

Hyosung Heavy Industries controls all chemical substances used in the production processes through ERP-based electronic system. The system checks all purchased materials to see whether they contain chemical substances under control, and the purchase is only available when the personnel in charge of chemicals in each business sites approves after reviewing documents provided by suppliers and data related to regulations and permission status stored in the database of each business site.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Hazardous substances usage amount	Tons	154.3	151.1	127.2
Basic unit of hazardous substances usage amount	Tons /KRW 1 million	0.00008	0.00009	0.00005

* It was calculated based on sales in general financial statements, not on a consolidated basis, since the consumption of hazardous substances is calculated only for domestic business sites.

Renewable Energy Consumption

Hyosung Heavy Industries uses waste incineration heat system a renewable energy source, from the domestic waste incineration plant near its business site.

Business site	Type	Unit	Hyosung Heavy Industries		
			2018	2019	2020
Changwon	Waste energy	GJ/year	67,941	64,369	60,530

Sales and Purchase of Green Products and Services

Hyosung Heavy Industries follows the green purchasing policy and practices green management by selling and purchasing green products and services. In 2020, we sold KRW 1.3 trillion worth green products and services, and purchased KRW 61.4 billion.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Sale	KRW 1,000	137,962,758	490,230,514	1,300,192,419
Purchase	KRW 1,000	1,447,055	34,846,686	61,436,059

Environmental Investment

Hyosung Heavy Industries practices green management through continuous environmental investments such as waste treatment, environmental restoration, and pollution prevention.

Category	Unit	Hyosung Heavy Industries			
		2018	2019	2020 (plan)	2020 (actual)
Waste treatment and environment restoration expenses	KRW 1,000	477,326	404,342	416,000	408,070
Pollution prevention and environmental management expenses	KRW 1,000	2,320,847	334,103	334,800	265,087
Total	KRW 1,000	2,798,173	738,445	750,800	673,157

Environmental Management System Certification

For the effective operation of the environmental management system, Hyosung Heavy Industries conducts review in accordance with ISO14001 once a year. We implement internal audits and monitor HSE compliance twice a year. The internal environmental audit is carried out in the first half and the second half of the year by three groups of two internal auditors, and covers 42 departments.

Environmental Performance Management

Hyosung Heavy Industries' Changwon plant operates an environmental performance evaluation system every year by establishing HSE goals and detailed implementation tasks for each department. Major KPIs include zero case of environmental non-compliance, compliance with emission allowances, waste (flammable, waste paint) emission reduction eco-friendly design, and saving raw materials. The Safety Environment Team is divided into two sectors, respectively, and collects all departments' quarterly performance to monitor their achievement. When KPIs are unfulfilled as planned, improvement activities are derived after finding the cause and method.

Environmental Education

Hyosung Heavy Industries' Changwon plant mandates new employees (incl. in-house suppliers) to complete environmental education at their onboarding introductory training, and carries out regular environmental education for all employees twice a year. In addition, customized training is provided to environmental facility operators through on-site visits.

Participation in State-run Projects for Green Technology Development

Hyosung Heavy Industries is participating in state-run research projects for improving energy efficiency and facilitating renewable energy. We are strengthening our position as a market leader in eco-friendly technologies by participating in state-run projects including facilities' lifespan extension, energy efficiency improvement, and renewable energy.

Project Name	Project Period	Hyosung Heavy Industries			
		Project Budget (KRW 1 million)			Comment
		In cash	In kind	Total	
Voltage-type HVDC Power Equipment Diagnosis Technology Development	2017.11~2021.10	327	75	402	Facility lifetime extension (Environment)
Development of 5 types of semiconductor gas sensor (95% of price, 80% of size reduced) and diagnostic IED for the diagnosis of transformer oil gas, Development of gas sensor and diagnosis IED for 5 types of semiconductor of which size is reduced by more than 80%	2017.12~2020.05	59	28	87	Facility lifetime extension (Environment)
Development/operation/demonstration of DC ±200kV voltage-type MMC	2017.01~2021.10	65,817	7,500	73,317	Energy efficiency
Development and demonstration of ESS products for emergency power peaks in North America	2017.12~2020.11	812	202	1,014	Renewable energy
Development of an integrated lightweight semiconductor transformer and lightweight high-efficiency magnetic synchronous motor for urban railway vehicles	2018.04~2021.12	135	765	900	Energy efficiency
Development of 1MVA multi-channel charger for electric vehicles using SiC devices	2019.05~2022.12	756	504	1,260	Environment
Establishment of experience complex for demonstration of future power service models	2019.10~2023.09	897	220	1,117	Renewable energy
Technology development and demonstration of hydrogen fusion charging station using biogas	2019.05~2021.12	369	246	615	Environment
Establishment of small-scale hydrogen extraction facility	2020.11~2022.02	306	204	510	Environment

Green Building Certifications

Hyosung Heavy Industries acquired a total of six green building certifications. We will continue to use eco-friendly building materials and increase green building certifications.

Certified building	Certification organization	Hyosung Heavy Industries		
		Certification code	Certification date	Rating
Mapo Seogyo Youth Housing	Korea Appraisal Board	2020-078	2020.03.25	Excellent (Green 2)
Godeok Hyosung Harrington Tower the First	Korea Productivity Center	2020-2952	2020.10.19	Good (Green 3)
Donuimun District 3 Office	Korea Green Building Council	KGBC-C-b-427	2020.06.12	Excellent (Green 2)
Siheung Eungye LH Apartment	Korea Productivity Center	2020-2941	2020.10.13	General (Green 4)
Yongsan International Building District 4 Urban Maintenance Project	Korea Productivity Center	2020-2816	2020.08.05	Top excellence
Cheonan Dujeong Hyosung Apartment	Korea Productivity Center	2020-2627	2020.04.23	General (Green 4)

Occupational Accident Rate

Along with Hyosung Heavy Industries' efforts to create a safe workplace, occupational fatality has not occurred for the last three consecutive years.

Category	Unit	Hyosung Heavy Industries		
		2018	2019	2020
Total number of occupational accidents: Accidental disaster + Occupational disease	Persons	18	16	19
Occupational accident rate: Total number of occupational accidents / Total number of employees x 100	%	0.52	0.46	0.60
Number of work-related fatalities	Persons	-	-	-
Work-related fatality rate per ten thousand employees (Number of work-related fatalities / Total number of employees x 10,000)	‰	-	-	-

*One accident which occurred in 2019 was finally approved by the industrial accident compensatio insurane in 2020, and the data have been changed accordingly (Total number of occupational accidents: 15→16, Occupational accident rate: 0.43→0.46)

Department-level Safety Management through Safety and Health Management System

The Changwon plant operates safety and health management system to prevent occupational accidents, comply with related regulations and maintain sustainable management system. Each department has established its own safety and health goals and implantation plans in relation to risk factors identified through risk assessment, environmental impact assessment, and safety inspection. In addition to ISO45001 certification, we have acquired transition certification of KOSHA-MS for the first time among large corporations based in Changwon industrial complex by improving manuals of the system and onsite implementation ability. We also improve risk factors at workplace and prevent safety accidents in the process of responding to environment and safety review (PQ) required by clients in Korea.

Plant-level Regular Safety and Health Inspection

Changwon plant implements regular safety and health inspection that is hosted by the head of each plant, twice every year, in order to prevent safety accidents at work sites. Plant heads, department heads, and supervisors in charge participate in the inspection to check safety status and emergency responses at major facilities, while environment and safety managers and the occupational safety and health officer from the labor union also attend the inspection to enhance effectiveness. We also check employees' health status when the weather gets extremely warm with heat waves, and the results of the inspection are directly reported to the CEO by the plant manager.

Potential Risk Assessment Focusing on Workers' Behaviors

Hyosung Heavy Industries annually conducts an assessment for potential risks to prioritize risk factors after identifying and evaluating them. Recently, safety accidents have been often caused by unsafe behaviors of workers. Therefore, in the potential risk assessment, a group of experts (workplaces, safety managers, and members of the labor union's Occupational Safety and Health Committee) analyze workers' behavior and identify potential risks accordingly. In addition, a potential risk assessment is also carried out when the working environment changes, such as safety accidents or changes in working methods.

Preliminary Safety Review at the Product Design Stage

Recent safety accidents are mainly associated with injuries to the extremities of the body and musculoskeletal disorders due to the increased physical burden on workers caused by confined working space. At Hyosung Heavy Industries' Changwon plant, safety and health review items were included in the product planning work manuals, so that risk factors of safety accidents can be considered at the product planning stage. In addition, through internal/external audits of the safety and health management system, weak areas are identified and then improved. We are trying to lessen the physical burden on workers through improvement activities for hand tools used in confined spaces for product assembly.

Department-customized Safety Training

Each department in Changwon conducts regular safety training prior to work for onsite workers. Supervisors may inform workers about safety work procedures and safety and health regulations based on the work standards of daily workload, potential risk assessment results and accident cases. In addition, various safety experience programs are delivered, such as falls from height and confined space experience, to workers in the Safety Experience Training Center at the Occupational Safety and Health Agency. All employees are required to complete the experience training program, including new hires, group company employees and employees of supplier companies.

Improving the Risk of Heavy-weight Work

The Changwon plant of Hyosung Heavy Industries has been mitigating risks of serious disasters that could occur from handling heavy objects using cranes. We are discovering risk factors of safety accidents related to heavy objects through potential risk assessment and improvement proposal system. In addition, we establish fundamental safety measures and make improvements based on the discussion among relevant departments. We also thoroughly manage weight-lifting aids by monthly inspections. In particular, round-slings (weight handling equipment) that are difficult to visually inspect go through an inspection by specialized external agency to secure reliability.

Musculoskeletal Disorders Prevention Program

Hyosung Heavy Industries is carrying out activities to prevent musculoskeletal disorders of field workers by identifying both subject workers and tasks prone to the disorders after implementing investigation of musculoskeletal disorders risk factors. In cooperation with external organization, we provide physical therapies to the subject employees who are selected through survey results and in-depth counseling with an occupational health specialist.

Health Care Improvement

Hyosung Heavy Industries operates a health care room and physical therapy room in the workplace to enhance employees' health and their access to medical care. In order to provide a better working environment for employees, we continue to expand health care facilities, including the exercise therapy room and the body composition analyzer device (InBody). Hyosung Heavy Industries conducts medical checkups on its employees every year. Based on the result after medical checkup, those who are diagnosed as having a disease or symptoms are given special care. The visiting industrial health doctors keep track of those patients through consultation and education. We encourage employees' voluntary engagement in various health programs, including anti-smoking clinic and in-company exercise programs.

Construction Machinery and Equipment Inspection

The Construction PU establishes standards to prevent accidents caused by construction machinery and equipment, and conducts joint inspections with external safety agency before and during use. We inspect outdated or high-risk construction machinery and equipment in advance and stop the import or operation as soon as defects are found to ensure high-performance and safety of the equipment.

Joint Inspection with External Specialized Agency

The Construction PU of Hyosung Heavy Industries is regularly conducting a joint inspection by external agency specialized in construction safety and the safety and health team of the headquarters. We are striving to secure a competitive edge by discovering hidden risk factors and understanding proper directions of processes as well as best practices and benchmark cases through consulting provided by specialists.



Economic
Performance

Despite the global economic downturn due to COVID-19, Hyosung Advanced Materials has managed to generate more net profit compared to the previous year through ceaseless efforts. We are enhancing our competitiveness by developing and commercializing the world's best products such as tire cords, automotive seat belt fabric, and new materials that will drive sustainable growth in the future.

Financial Statements (Consolidated)

Unit: KRW 1 million

Category	2018	2019	2020
i .Current assets	1,030,998	982,899	842,036
Cash and cash equivalents	84,773	31,839	47,128
Trade and other current receivables	442,526	439,444	442,619
Inventories	466,559	472,116	324,696
Other current assets	37,140	39,500	27,594
ii .Non-current assets	1,503,700	1,548,200	1,534,557
Long-term trade and other non-current receivables	3,956	4,675	5,216
Tangible assets	1,196,736	1,276,038	1,204,360
Investments in properties	151,964	150,397	151,387
Intangible assets	107,704	71,743	36,615
Other non-current financial assets	716	4,183	4,215
Other non-current assets	42,624	41,165	132,764
Total assets	2,534,698	2,531,099	2,376,594
i .Current liabilities	1,474,716	1,540,234	1,574,912
Trade and other current payables	369,241	301,758	335,239
Borrowings	1,088,357	1,211,066	1,223,496
Other current liabilities	17,117	27,410	16,177
ii .Non-current liabilities	593,966	585,464	420,571
Long-term trade and other non-current payables	7,716	11,977	12,573
Long-term borrowings	553,076	540,076	376,233
Other non-current liabilities	33,174	33,411	31,765
Total liabilities	2,068,682	2,125,698	1,995,483
[Capital stock]	22,400	22,400	22,400
[Retained earnings]	(26,584)	(100,800)	(101,357)
[Other components of equity]	389,990	401,832	391,797
[Non-controlling interest]	80,210	81,968	68,272
Total capital	466,016	405,401	381,111

Consolidated Statements of Comprehensive Income

Unit: KRW 1 million

Category	2018	2019	2020
Sales	1,767,487	3,053,616	2,394,623
Cost of sales	1,584,713	2,696,624	2,185,965
Gross profit	182,774	356,992	208,658
SG&A	101,363	169,628	146,524
R&D expenses	17,269	29,037	27,926
Operating income	64,143	158,326	34,208
Other gains	13,902	23,255	11,371
Other loss	24,843	56,339	9,455
Finance income	21,419	37,988	47,731
Finance expenses	80,063	110,958	82,750
Profit before tax	(5,442)	52,273	1,105
Income tax expense	18,303	105,180	(5,705)
Net profit	(23,745)	(52,907)	6,810
Other comprehensive gain(loss)	2,478	9,984	(12,940)
Total comprehensive gain(loss)	(21,267)	(42,923)	(6,130)

Corporation Tax by Country

Hyosung Advanced Materials pays corporation taxes faithfully on profits generated in each business operating country.

Category	Subcategory	Unit	Hyosung Advanced Materials		
			2018.6~12	2019	2020
Republic of Korea	Sales	KRW 1 million	620,698	1,068,273	722,534
	Profit before tax	KRW 1 million	6,447	11,634	41,775
	Tax	KRW 1 million	(2,935)	87,930	(5,802)
	Tax rate	%	24.20	24.20	24.20
	Effective tax rate	%	(45.53)	755.80	(13.89)
Vietnam	Sales	KRW 1 million	752,435	1,403,669	1,091,823
	Profit before tax	KRW 1 million	19,882	66,460	15,309
	Tax	KRW 1 million	17,592	9,753	4,999
	Tax rate	%	7.50	15.00	15.00
	Effective tax rate	%	88.48	14.68	32.65
China	Sales	KRW 1 million	255,693	423,067	351,871
	Profit before tax	KRW 1 million	(33,068)	(10,974)	9,901
	Tax	KRW 1 million	(82)	477	2,608
	Tax rate	%	25.00	25.00	25.00
	Effective tax rate	%	0.25	(4.35)	26.34
Germany*	Sales	KRW 1 million	253,491	472,467	380,715
	Profit before tax	KRW 1 million	(16,229)	(57,463)	(19,041)
	Tax	KRW 1 million	(2,030)	9,795	(1,487)
	Tax rate	%	28.10	28.10	28.10
	Effective tax rate	%	12.51	(17.05)	7.81
Luxembourg	Sales	KRW 1 million	146,848	254,672	185,114
	Profit before tax	KRW 1 million	2,032	4,620	1,147
	Tax	KRW 1 million	595	1,016	501
	Tax rate	%	29.33	29.33	28.46
	Effective tax rate	%	29.28	21.99	43.67

* This refers to tax amount paid by GST Global GmbH (GST), which includes taxes in Romania, Mexico, South Africa, as well as Germany.

Production Output by Business Sector

Being equipped with production capacity and technology to comprehensively manufacture tire reinforcement materials, various industrial fabrics, commercial/automotive carpets, Hyosung Advanced Materials can provide price-competitive products to global customers in a stable manner through continuous expansion of overseas production bases and optimizing the production bases. As a global industry leader, Hyosung Advanced Materials not only focuses on making the products lighter, high-functional and diversified, but also leads the ever-changing industrial yarn market by active product development such as carbon fiber.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Tire cord, steel cord, industrial yarn, carpet, car mat, airbag fabric, cushion, etc.	KRW 1 million	1,487,022	2,565,649	1,989,815
Spandex, polyester yarn	KRW 1 million	280,465	487,967	404,808

Sales of Specific Products

Hyosung Advanced Materials is pushing to enter new markets to expand its business by developing products that could enhance resource efficiency. By reducing the amount of resources used in the production process, we minimize the environmental impact of our production activities and customers' product use phase. We are also trying to increase sales of high-strength products, that reduce required resources, as well as recycled fabric products, that reduce process wastes.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Sales of resource-efficient products	KRW 1 million	22,317	22,010	31,651

Financial Loss

In 2019, Jeonju plant paid a fine for non-compliance with the change of permission in the Water Environment. In 2020, Ulsan plant paid a fine for not reporting a new NOx emission.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Financial loss incurred due to violation of environmental regulations such as pollutant emission	KRW 1,000	-	800	600

Suppliers Status

Hyosung Advanced Materials maintain a stable supply chain by supporting sustainable growth of its supplier companies.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Number of major suppliers in Korea	Companies	95	53	53
Total purchase from suppliers	KRW 1 million	171,024	237,522	199,009

* Total purchase from suppliers was calculated based on the major suppliers in Korea in the 2019 Hyosung Sustainability Report, and it was updated to include all suppliers.

R&D Organization of Hyosung Advanced Materials

Based on the technology development service contract signed between Hyosung Advanced Materials and the holding company, Hyosung R&DB Labs under Hyosung Corporation takes charge of R&D on industrial textiles and compound materials. In case of steel wire materials, the Steel Wire Technical Center under Hyosung Advanced Materials directly conduct related R&D projects.



R&D Process

All our R&D activities, including green products and technologies, are carried out through a series of stages including: needs identification, development request, decision on commercialization, and investment approval. We are listening to customers' needs in technology and product development via various customer contact points such as sales team, technical marketing team, and QA team. The identified needs will be then delivered to the corresponding R&D organization (Hyosung R&DB Labs: textiles, compound products; Steel Wire Technical Center: steel wires) as a request for development. The R&D Committee will decide commercialization of the developed technology or product, and the investment is approved finally by the Investment Review Committee.

R&D Expenses

Hyosung Advanced Materials invest steadily in R&D every year to ensure sustainable technological competitiveness.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
R&D expenses	KRW 1 million	17,269	29,037	27,926

Patent Registration and Application

Hyosung Advanced Materials registers patents for its own technology every year to secure its intellectual property rights and use them as KPIs for performance management.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Patent registration(accumulated)	Cases	825	840	856
Patent application(accumulated)	Cases	1,597	1,610	1,632

Green R&D Goals and Performance

Hyosung Advanced Materials aims to faithfully carry out corporate social and environmental responsibilities to realize CSE (Creating Social Ecosystem), contributing to sustainability of mankind. To achieve this, we focus on developing products and technologies in lined with 'Zero Fatality', 'Zero Emission', 'Zero Waste' and 'Zero Impact'. With the majority of our products used as reinforcement materials in the automotive industry, we are faced with increasing demands and requirements for eco-friendly technologies from the automotive industry recently. As such, we continue to develop technologies based on the green R&D goal to reduce harmful environmental impact in the aspect of product lifecycle assessment, including use and disposal stages of products as well as treatment of raw materials and production process.

- ③ Use of green raw materials: eco-friendly tire cord adhesion technology, high-strength zinc-plated steel cord, Bio-PET, etc.
- ③ Development of green production process: developing eco-friendly dip recipe, etc.
- ③ Development of low-carbon and lightweight products to reduce environmental impacts in the use stage: developing carbon fiber applications, high-strength tire cords, etc.
- ③ Promoting recycling and reducing wastes: developing recyclable car mats and recycling process wastes, etc.

Developing Bio-PET Yarn Using Plant-based Raw Materials

To reduce the environmental impact, various business divisions in Hyosung Advanced Materials are working on developing Bio-PET yarn using plant-based ingredients, besides recycled yarn produced by discarded plastic. The products after successful development have been applied to eco-friendly cars such as Hyundai Motor’s electric vehicle, IONIQ, and hydrogen-powered SUV, NEXO.

Developing Eco-friendly Wet-type Lubricants

Steel cords are usually produced through 'wire drawing' process that passes wire, the raw material, through dies, making it into thin lines. In this process, lubricant is applied for better operate the process by reducing friction heat. The existing lubricant, however, contained nonyl phenol, a regulated chemical substance by REACH. To replace this, we have developed a wet-type lubricant that uses eco-friendly surfactants, and it is being applied to all business sites at the moment.

Developing New High-strength Steel Cord for Tire Lightening

There is the minimum strength required for a steel cord depending on the use, size, and performance of tires, which determines the amount of steel cord usage. It has recently become more popular to research on application of high-strength steel cord, since the higher the product strength is, the less the use of steel cord and rubber. The Steel Wire Technical Center succeeded in developing a high-strength steel cord that will contribute to fuel efficiency improvement. We have launched the product for sale in 2020. In an attempt to continuously expand clients for product application, we are currently processing approval by more than 10 clients.

Performance Improvement Research on Carbon Fiber for Hydrogen Containers

The Carbon Material Research Team continuously develops carbon fiber for high-pressure hydrogen containers used in hydrogen-powered EV, in the emergence of hydrogen economy. In 2020, it succeeded in developing a carbon fiber with updated physical properties, which led into quality certification of domestic hydrogen transport tank. In response to the rapid increase of production, facility expansion is in progress with the production capacity from 4,000 tons to 6,500 tons per year (KRW 75.8 billion of investment budget).

Developing Carbon Fiber in Various Physical Properties.

The Carbon Material Research Team of Hyosung R&DB Labs has developed ultra-high-strength carbon fiber that is applied to FESS (Flywheel Energy Storage System), a type of energy storage technology. Unlike conventional batteries that store energy through chemicals, FESS is a mechanical energy storage device that stores power in the form of rotational kinetic energy. When the rotor inside pertains the properties of high-strength and low-density, it has advantage of maximizing inertia and thus energy storage with higher rotation velocity. The intermediate modulus (IM) carbon fiber developed by Hyosung R&DB Labs is used as a core material for electric wires. With its lightweight property, it makes electric wires sag less, allowing larger distance between utility poles.

Social
Performance

Hyosung Advanced Materials is striving to fulfill corporate social responsibility, following the requirements and expectations of various stakeholders. We are actively recruiting new employees despite the global economic recession and encouraging employees to use paternity leave more actively to promote their welfare. In addition, we are investing generously in employee training to develop their capabilities and conducting social contribution activities to pursue harmonized coexistence with local community.

Employee Status

As of the end of 2020, Hyosung Advanced Materials has 1,000 employees in Korea. Contract-based workers account for about 2% of the total, with the majority of employees employed as regular employees. We are also increasing the proportion of female employees and female managers in order to promote women’s active social engagement.

Category	Subcategory	Unit	Hyosung Advanced Materials		
			2018	2019	2020
Total employees		Persons	1,142	1,038	1,000
Gender	Male	Persons	1044	932	903
	Female	Persons	98	106	97
Employment type	Permanent (male)	Persons	1,042	911	892
	Permanent (female)	Persons	91	97	88
	Subtotal	Persons	1,133	1,008	980
	Temporary (male)	Persons	2	21	11
	Temporary (female)	Persons	7	9	9
	Subtotal	Persons	9	30	20
Place of work	Domestic	Persons	1,012	1,038	1,000
	Overseas*	Persons	130	-	-
Job category (based on permanent employment)	Office work	Persons	560	456	429
	Manufacturing	Persons	573	552	551
Fostering female human resource	Female employees ratio	%	8.6	10.2	9.7
	Number of female at manager-level or higher	Persons	13	15	14
	Female managers ratio	%	4.3	7	6.5
Diversity	Persons with disabilities	Persons	22	26	26
	Veterans	Persons	22	16	23
	Foreigners	Persons	1	-	-
	Subtotal	Persons	45	42	49
Creating job opportunities (newly employed)	Male	Persons	42	107	62
	Female	Persons	4	24	6
	Subtotal	Persons	46	131	68
Number of permanent employees who voluntarily quit	Male	Persons	42	40	41
	Female	Persons	7	11	9
	Subtotal	Persons	49	51	50
Turnover rate		%	4.32	5.06	5.10

* Overseas employees under the category of 'Place of work' exclude local employees hired at our overseas corporations.

Maternity Leave and Childcare Leave

For the purpose of supporting career development of female employees, we actively encourage both male and female employees to use maternity and childcare leave, which has a high return rate.

Category	Subcategory	Unit	Hyosung Advanced Materials		
			2018	2019	2020
Male (maternity leave)	Employees under maternity leave	Persons	-	-	27
	Returning rate	%	-	-	100
Female (maternity leave)	Employees under maternity leave	Persons	2	7	3
	Returning rate	%	100	100	100
Male (childcare leave)	Employees under childcare leave	Persons	2	4	3
	Returning rate	%	-	100	75
	Rate of working more than 12 months after return	%	-	-	50
Female (childcare leave)	Employees under childcare leave	Persons	2	8	2
	Returning rate	%	-	100	86
	Rate of working more than 12 months after return	%	-	100	100

Regular Performance Evaluation

As of the end of 2020, Hyosung Advanced Materials conducted regular performance evaluations to 98% of the employees. Regular performance evaluation is conducted by the team leader's first evaluation after self-evaluation of the performance, and the second evaluation by the executive in charge. The evaluation considers feedbacks on work attitudes of the employee as well as performance. Feedback session is stipulated to be conducted in a face-to-face method, and during the session, employees can request task assignment considering individual CDP (Career Development Path). At the HR counseling center, employees can also consult position transfer with the HR team leader based on their job satisfaction. We improved flexibility of the evaluation system by making individual KPIs changeable according to employees’ work conditions. We also enhance communication between evaluators and employees through semi-annual feedback session on the work progress.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Number of employees subject to performance evaluation	Persons	1,129	1,004	979
Performance evaluation rate	%	98	97	98

Labor Union Membership Status

Besides the Hyosung Labor Union, the Hyosung Polyester Labor Union and the Hyosung Democratic Labor Union are operating, and the employees are guaranteed to pursue their labor union membership and activities. Employees can join local and industrial unions outside of the company's labor unions. Each business site transparently discloses the corporate management status to the employees through regular management briefing sessions and multi-layer meetings. In addition, we hold regular quarterly meetings to discuss welfare, grievances, and health and safety issues for each business site. Complaints received are managed throughout the company and are continuously monitored for improvement.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Employees covered by collective agreements	Persons	567	571	553
Number of union workers	Persons	494	435	419
Rate of union workers	%	87.1	76.2	75.8

Retirement Pension

Hyosung Advanced Materials operates both DB-type and DC-type retirement pensions systems, allowing employees free choice between two, and complies with legal standards of retirement pension.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Total operating fund for retirement pension (DB+DC)	KRW 1 million	50,631	61,505	67,355
Operating fund of DB pension	KRW 1 million	49,979	60,439	66,291
Operating fund of DC pension	KRW 1 million	652	1,066	1,064
Total number of members	Persons	1,155	1,172	1,126
Number of DB pension members	Persons	947	976	930
Number of DC pension members	Persons	208	196	196

Basic Salary and Remuneration

Hyosung Advanced Materials pays new employees 1.8 times more than the legal minimum wage to guarantee their welfare and increase their motivation to work.

Category		Unit	Hyosung Advanced Materials		
			2018	2019	2020
Basic salary for entry-level		KRW 1,000	3,118	3,272	3,501
Rate of entry-level salary to local minimum wage by law (%)	Male	%	184.6	174.7	181.7
	Female	%	184.6	174.7	181.7
Average basic salary		KRW 1,000	4,389	4,594	4,979

CSR Status

Hyosung Advanced Materials has established CSE (Creating Social Ecosystem) as a vision for social contribution, and is carrying out CSR activities according to three CSR strategies. The scope of our social contribution activities includes community stakeholders, vulnerable groups, and business-linked CSR activities. Hyosung Advanced Materials has employed a paid volunteer work system to achieve one volunteer activity per employee. It also operates matching grant system and rewards outstanding volunteers every year in recognition of their commitment in volunteer activities.

* Hyosung Advanced Materials CSR Strategy (http://www.hyosungadvancedmaterials.com/kr/csr/win_win_management.do)

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
CSR investment	KRW 1 million	-	572	771
Number of CSR programs	Programs	-	5	38

*CSR investment was proceeded under Hyosung Corporation in 2018, therefore, the table does not show the data in 2018. Additionally, the number of CSR programs in 2020 has increased significantly, due to the number of subject business sites expanding (only headquarters in 2019 → all business sites in 2020).

Activities for Local Community Stakeholders

The Ulsan business site of Hyosung Advanced Materials provides the local community with necessary support through the Company-Village Committee, and carries out various CSR activities, such as ‘One Company, One School’ initiative and food sharing event, based on close communication with the community. For example, we carried out environmental cleanup volunteer activities in Jangsaengpo Elementary School such as trimming trees, school walls maintenance work, and cleaning up the school gardens, through the partnership made in May 2007. We are also providing our commuting buses to support students’ outdoor learning and sponsoring after-school learning as well as necessary educational equipment and materials by raising a fund for school development.

Activities for the Vulnerable Group

The headquarter of Hyosung Advanced Materials has been volunteering to serve meals for children with severe disabilities since 2012 and holds a sports festival every year based on the relationship formed through a long volunteer period. Due to COVID-19, in 2020, we have focused more on improvement of living environment by providing donations and goods to the children center. In recognition of our efforts, we were selected as a recognized company by ‘CSR in the Community’ in 2020 following 2019.

Business-linked CSR Activities

From 2018 to 2020, Hyosung Advanced Materials sponsored artwork materials and exhibition preparation for the artist, IlHoon Noh, who uses carbon fiber for his artwork.

Social Contribution for Local Community Economy

In pursuit of contribution to economy of the local community, we have purchased local brand products, including Jangsaengpo Whale Bread, through small business owners in Ulsan, who are struggling due to COVID-19, as part of donation to Ulsan Orphanage. We also purchased rice from a social enterprise (Hope Narmi Social Cooperative) based in Seoul to deliver it as a donation to Young Nak Aenea’s Home.

Medical Checkup Rate of Employees

Hyosung Advanced Materials provides customized medical checkup programs for employees to help them improve their health effectively. We provide professional and health checkup programs continuously to assist employees to fully demonstrate their capabilities. Each year, 97% of the subject group receive health checkups.

Employee Training Status

As a producer of high-performance materials, Hyosung Advanced Materials provides systematic training by technical advisors and process engineers to improve technology / product / process awareness of all employees. We also extended the scope of the differentiated training program to include hourly workers (manufacturing) so that enhanced competencies of employees are directly reflected to the quality of products.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Number of training participants	Persons	10,429	14,896	17,895
Total training expenses	KRW 1,000	318,076	832,816	473,972
Total training hours	Hours	38708	41,372	32,463
Average training hours per person (total training hours / number of employees)	Hours	39	40	32
Average training expenses per Person (total training expense / number of employees)	KRW	278,525	802,327	473,972

Sustainability Management Training

In 2020, the company conducted sustainability management training involving various fields, such as human rights, ethics, safety, and environment, and raised employees’ awareness of corporate social responsibility.

Category (Total number of participants)	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Environment training	Persons	352	465	1,477
Ethics and anti-corruption training	Persons	65	95	805
Fair business trade training	Persons	65	23	912
Safety and health training	Persons	1,027	3,674	6,991
Human rights training (sexual harassment & workplace harassment prevention)	Persons	2,284	2,355	2,769
Information security training	Persons	223	556	996
Sustainability management training	Persons	-	-	16
Retiree training	Persons	-	-	-

Organization Issue Diagnosis for Desirable Corporate Culture

With the millennials becoming the main driving force of the company, recently, they are freely raising issues or problems related to the organization through internal social media channels, including Blind, Wa-gle Wa-gle, and Tong Tong Bulletin Board. Following this, we are conducting organization issue diagnosis so that related problems and issues are addressed in advance to create a desirable corporate culture. The diagnosis takes place every quarter within the teams facing difficulties in organizational management to check their attendance management, ways of working (R&R, inter-department cooperation, work process), and leadership (instruction and reporting system, communication method). In 2020, we conducted the organization issue diagnosis in two teams at Steel Wire Technical Center, three steel wire sales teams, DI Planning Team, and 7 teams at Jeonju plant.

Step	Step I	Step II	Step III	Step IV
	Preliminary diagnosis and status analysis	Issue identification interview	Key issue identification and result report	Follow-up
Detailed Activities	1) Preliminary organization diagnosis survey 2) Survey analysis (identifying strengths and weaknesses) 3) Hypotheses for organization issues 4) Attendance status analysis (annual leave, overtime work) 5) Retirement status analysis 6) HR status analysis (job, period, age)	1) Interview schedule arrangement 2) Completion of interview questionnaire - Attendance management (annual leave, overtime work, etc.) - Ways of working * Organization structure (R&R, inter-department cooperation) * Work process (process, support system) - Leadership (instruction, report system, communication method) - Other topics related to corporate culture 3) Interview	1) Interview result summary 2) Identifying organization core issues and problems 3) Sharing interview results with executives/ team heads; discussion on improvements 4) Preparing organization diagnosis report (core issues, countermeasures)	1) Monthly monitoring (until D+3 months) 2) Executives/team heads feedback regarding monitoring result
Term	5-7 days	3-5 days	3-5 days	3 days (Conducted on the last day of the month for 3 months)
Result	1) Preliminary diagnosis result analysis 2) Attendance/retirement status analysis 3) HR/Personnel status table	1) Interview schedule 2) Interview questionnaire	1) Summary of interview 2) Organization diagnosis report	1) Change monitoring report

Human Rights Impact Assessment

Hyosung Advanced Materials conducts its own human rights impact assessment to identify potential human rights risks that may arise from business activities, and to prevent and mitigate them. For the human rights impact assessment, we used human rights management guidelines and checklist distributed by the National Human Rights Commission of Korea. We conduct self-inspected human rights impact assessment at least once a year, and continuously discover improvements through review by an external expert. In particular, in 2020, we conducted human rights impact assessment on all business sites, including global business sites.

Environment & Safety Performance

Hyosung Advanced Materials is continuously making efforts to improve environment and safety based on awareness that the relevant competency is an essential requirement to secure business competitiveness. All employees are aware of environmental and safety strategies and strictly comply with related policies and guidelines to minimize environmental pollutions and disasters. Based on the SHE policy led by the Green Management Committee, we effectively manage environmental impacts and risks that may occur throughout business activities.

Green Management Committee

Hyosung Advanced Materials has expanded the scope of management of the CSR Committee, a consultative body directly under the CEO, and established the Sustainability Steering Committee, with the CEO as the chairman and C-Suite executives having authority for making decisions, and specialized subcommittees (Green Management Committee, Social Contribution Management Committee, Stakeholders Committee, Risk Management Committee). In the second half of 2020, the Green Management Committee passed resolutions on 2020 environment and safety investment performance against plans, 2021 plans, and 2030 emissions reduction target. In addition, results of workplace environment and safety inspection as well as importance of reinforced climate change response activities were discussed and reported in the committee.

Energy Consumption

Hyosung Advanced Materials has decreased both direct and indirect energy consumption in 2020, reducing total energy use by about 10% compared to the previous year.

Category	Subcategory	Unit	Hyosung Advanced Materials		
			2018	2019	2020
Direct energy consumption	Diesel	TJ	9.00	7.40	4.23
	Kerosene	TJ	0.03	-	-
	LNG	TJ	312.79	283.23	467.92
	Gasoline	TJ	0.92	0.77	0.72
	Propane	TJ	290.41	241.95	193.81
	B-C oil	TJ	-	-	-
	Off-gas	TJ	-	-	-
	LPG	TJ	0.20	0.07	0.08
	Biogas	TJ	-	-	-
	Subtotal	TJ	613.35	533.42	666.76
Indirect energy consumption	Electricity	TJ	3,828.66	3,554.81	3,006.15
	Steam	TJ	229.05	220.11	216.53
	Process waste heat	TJ	-	-	-
	Waste incinerated heat	TJ	-	-	-
	Subtotal	TJ	4,057.71	3,774.92	3,222.68
Total		TJ	4,671.06	4,308.33	3,889.45
Energy intensity		TJ/KRW 100 million	0.444	0.403	0.538

Greenhouse Gas (GHG) Emissions

Hyosung Advanced Materials is saving energy use in line with its green energy policy stance, and as a result, indirect greenhouse gas emissions have decreased by 16% year over year.

Category	Subcategory	Unit	Hyosung Advanced Materials		
			2018	2019	2020
Direct GHGs emissions (Scope 1)	Fixed combustion	tCO ₂ eq	32,723	28,409	34,988
	Mobile combustion	tCO ₂ eq	709	578	352
	Process emissions	tCO ₂ eq	-	-	-
	Waste disposal	tCO ₂ eq	4,809	4,835	8,617
	Subtotal	tCO ₂ eq	38,240	33,822	43,956
Indirect GHGs emissions (Scope 2)	Electricity	tCO ₂ eq	185,950	172,649	146,002
	Steam	tCO ₂ eq	2,574	2,636	1,144
	Subtotal	tCO ₂ eq	188,524	175,285	147,146
GHGs emissions intensity		tCO ₂ eq/KRW 1 million	0.216	0.196	0.264

* GHGs emissions intensity was calculated based on sales in general financial statements, not on a consolidated basis, since energy consumption and GHGs emissions only consider domestic consumption.

Carbon Footprint Certification

In order to provide carbon emission information based on product life cycle assessment (LCA), Hyosung Advanced Materials is proceeding international carbon footprint certification starting with tire reinforcement products from Ulsan plant.

Category	Korea	China	Vietnam
Tire cord	4 cases	1 case	2 cases
Steel cord, bead wire	-	1 in progress	2 in progress
Technical Yarn	-	-	4 in progress
Aramid	1 in progress	-	-
Carbon fiber	2 in progress	-	-

Energy Saving and Emissions Reduction Performance

Hyosung Advanced Materials has established and implemented investment plans such as replacement of high-efficiency facilities and installation of inverters to practice environmental management, resulting in energy savings and reduction of GHGs emissions in the business sites.

Business site	Project name	Execution date	Hyosung Advanced Materials		
			Investment budget (KRW 1 million)	Energy saving (kWh/year)	Emissions reduction (tCO ₂ eq/year)
Ulsan	Power cost reduction through application of high-efficiency interlacers	2016.03	44.8	216,372	101
Ulsan	Extruder motor replacement	2017.06	20.3	29,070	14
Ulsan	Cooler replacement	2017.08	295.0	1,017,151	474
Ulsan	Utility operation efficiency improvement (cooler replacement)	2018.02	339.0	1,173,409	547
Ulsan	Change of heat treatment method	2018.12	33.8	187,952	88
Ulsan	Utility operation efficiency improvement (cooler replacement)	2019.02	339.0	1,144,856	534
Ulsan	Heater replacement	2019.09	99.2	392,966	183
Ulsan	Scrubber inverter installation	2019.11	33.8	771,639	360
Ulsan	Change of heat treatment energy source	2019.11	15.6	187,952	88
Jeonju	Optimization of utility low-pressure compressor operation	2020.01	270.0	516,840	241

Renewable Energy Consumption

Hyosung Advanced Materials has installed photovoltaic power facilities at Songpa S Tower building to make use of electricity generated from renewable energy.

Business site	Energy type	Unit	Hyosung Advanced Materials		
			2018	2019	2020
Songpa S Tower	Solar energy	kWh/year	282	9,678	7,400

Water Resources Management Status

Hyosung Advanced Materials works closely with production process teams to minimize unnecessary water consumption. In addition, we collect the water used in the process and discharge it to an emergency reservoir in the plant to reuse it as cooling water.

Category	Subcategory	Unit	Hyosung Advanced Materials			
			2018	2019	2020 (plan)	2020 (actual)
Consumption by water source	Waterworks	Tons	14,294	19,719	8,793	11,006
	Groundwater	Tons	-	-	-	-
	Industrial water	Tons	3,707,272	4,512,253	3,935,136	3,727,465
	River water	Tons	-	-	-	-
Total water consumption		Tons	3,721,566	4,531,972	3,943,929	3,738,471
Water reuse amount		Tons	1,287,800	2,442,607	-	804,228
Water reuse rate		%	34.6	53.9	-	21.5

* In December 2019, we invested in pipelines so that solid-state polymerization cooling water can be recycled and reused within the process. As a result, the total amount of water used at the business site decreased and the recycling rate increased. However, the existing method of assessing water reuse amount, which is based on amount in water collection tank (water recycling facility), resulted in omission of water reuse from the solid-state polymerization process. We are considering changing the water reuse assessment method from 2021.

Wastewater and Water Treatment Status

In Hyosung Advanced Materials, domestic business sites conducts water quality analysis every half year by an external specialized agency for certain hazardous substances which have become a social issue recently. We minimize environmental damage to the local community by identifying the water pollutant emission status in advance through regular water quality analysis. The Ulsan plant has installed a chemical pretreatment plant (collection – neutralization – oxidization – chemical reaction – clarification) that is capable of treating 2,000 tons per day, to treat high-concentrated wastewater effectively before main water treatment.

Category	Unit	Hyosung Advanced Materials			
		2018	2019	2020 (plan)	2020 (actual)
Wastewater discharge amount	Tons	783,869.33	895,712.17	1,050,000.00	1,044,753.06
Biological Oxygen Demand (BOD)	Tons	7.89	1.14	1.80	1.73
Chemical Oxygen Demand (COD)	Tons	11.97	11.78	14.90	8.97
Suspended Solids (SS)	Tons	2.99	2.08	4.45	3.27
Total Nitrogen (T-N)	Tons	12.80	10.13	13.4	9.50
Total Phosphorus (T-P)	Tons	0.20	0.09	0.74	0.15

Waste Treatment Status

Jeonju plant of Hyosung Advanced Materials is working on improving its waste treatment method, switching the focus from incineration or landfill consignment to recycling. We used to entrust treatment of large-scale waste synthetic fibers and organic solvents in incineration method to an external company, but now waste synthetic fibers are reused as auxiliary fuel after intermediate processing, and waste organic solvents are recycled as fuel by a waste treatment company. Furthermore, we are researching and applying technologies to convert them to recycled PET chips to reuse waste and reduce consumption of raw materials. Following the expansion of production process of Aramid, Ulsan plant installed leakage detectors around storage tanks, pipes, and pumps involved with toxic substances and established an alert system to take immediate action in case of an emergency.

Category	Subcategory	Unit	Hyosung Advanced Materials			
			2018	2019	2020 (plan)	2020 (actual)
Industrial waste (general)	Recycling	Tons	2,890.5	4,500.2	4,428.0	4,226.7
	Incineration	Tons	457.8	849.4	793.0	727.6
	Landfill	Tons	27.1	67.4	124.0	154.2
	Subtotal	Tons	3,375.4	5,417.0	5,345.0	5,108.5
Industrial waste (designated)	Recycling	Tons	485.7	514.6	715.0	879.6
	Incineration	Tons	13.5	51.0	60.0	49.5
	Landfill	Tons	-	1.0	3.0	4.6
	Others	Tons	2.5	2.6	-	-
	Subtotal	Tons	501.7	569.2	778.0	933.7
Total waste		Tons	3,877.1	5,986.1	6,123.0	6,042.1
Waste recycling amount		Tons	3,376.3	5,014.8	5,143.0	5,106.2
Waste recycling rate		%	87.1	83.8	84.0	84.5

Air Pollutant Emissions

At Ulsan plant of Hyosung Advanced Materials, K-filter facilities have been established to comply with legal air pollutant emission standards in response to Aramid production process facility expansion. The chloroform generated from production process is captured and retrieved by a carbon fiber filter. We also install scrubbers and absorption carbon towers to comply with legal standards and reduce air pollutants discharged. Jeonju plant for instance, has installed mixing condenser, a new type of treatment facility, to reduce volatile organic compounds (VOC) emission.

Category	Subcategory	Unit	Hyosung Advanced Materials			
			2018	2019	2020 (plan)	2020 (actual)
General air pollutants	Nitrogen oxides (NOx)	Tons	44.0	41.4	112.7	100.2
	Sulfur oxides (SOx)	Tons	2.1	12.8	7.0	-
	Particulate matter (PM)	Tons	20.4	16.4	38.5	39.6
Ozone depleting substances	CFC(R-11)	Tons	-	1.2	1.2	0.9
	HCFC(R-123)	Tons	-	-	-	-
	HCFC(R-22)	Tons	-	-	-	-

* 2019 data (3.0 → 1.2) has been revised according to the change in the CFC (R-11) emission calculation method in 2020.

Hazardous Chemicals Management Status

Hyosung Advanced Materials manage all chemicals used in the production process through an ERP system in which purchase of process materials is approved only when their related regulations are complied with after checking they are subject to chemical regulations. Hyosung Advanced Materials is required to provide MSDS (Material Safety Data Sheet) at the purchase of chemicals in all domestic factories. In addition to regular legal inspection, we are conducting monthly inspection of hazardous chemicals storage and storage facilities, off-site impact assessment, and preparation of risk management, by which we are aware of the risks that can occur in the process of purchasing, storing, handling, and using hazardous chemicals, and proactively inspect problems and take countermeasures in advance. Ulsan plant for example, delivers training for handling hazardous chemicals to all employees every year, appoints managers in charge of hazardous chemicals and provides them with external training. Jeonju plant conducts two-hour safety training for treating chemical substances every year to ensure workplace safety and protect local residents and ecosystem. The training is also delivered to employees of supplier and subcontracting companies, so that no one is exposed to the risk.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Hazardous substances usage amount	Tons	12,202	12,353	16,688
Basic unit of hazardous substances usage amount	Tons/KRW 1 million	0.01160	0.01156	0.02310

* Basic unit was calculated based on sales in general financial statements, not on a consolidated basis, since hazardous chemicals are assessed based on domestic consumption. (Increase in usage due to Aramid production expansion in 2020, increase in basic unit due to decrease in sales)

Sales and Purchase of Green Products and Services

In accordance with the green purchasing policy, Hyosung Advanced Materials purchases pulps, PET-recycled chips, and air quality facilities using chloroform filter.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Sale	KRW 1,000	55,087,189	64,577,082	91,336,574
Purchase	KRW 1,000	537,315	1,127,331	735,343

Environmental Investment

Hyosung Advanced Materials establishes an investment plan for continuous green management activities such as waste treatment, environmental restoration, and prevention of environmental pollution, and ensures that investments can be executed reasonably through internal review procedures. After investment planning, we aggregate and manage implementation performance of additional investment that occurs in special circumstances so that the environmental investment takes place effectively.

Category	Unit	Hyosung Advanced Materials			
		2018	2019	2020 (plan)	2020 (actual)
Waste treatment and environment restoration expenses	KRW 1,000	623,975	1,131,932	962,481	1,121,053
Pollution prevention and environmental management expenses	KRW 1,000	765,180	776,070	936,371	850,020
Total	KRW 1,000	1,389,155	1,908,003	1,898,852	1,971,073

* Expenses for 2018 and 2019 have been corrected since environmental investment expenses of Ulsan plant have been omitted in the same period.

Environmental Performance Management

Jeonju plant establishes and manages environmental performance indicator goals every year. Typically, we have established our own standards for wastewater discharge, which is significantly lower than the legal standards, and since KPI is managed by the number of cases exceeding the self-standard rather than the emission concentration, we are tracking problems in the production process and wastewater treatment process every time they are exceeded to derive improvements. Ulsan plant also practices green management according to the plans derived from the established goals and environmental performance evaluation system based on ISO14001. From 2019, we have expanded the scope to overseas business affiliates.

Environmental Product Certifications

Hyosung Advanced Materials has obtained a total of 6 environmental product certifications so far. In the future, we will continue to develop green technologies and increase environmental certification products and green technology products.

Certification organization	Certification number	Hyosung Advanced Materials	
		Product name	Certification period
Korea Environmental Industry & Technology Institute (KEITI)	10793	MJ (7mm)	2019.05.27~2021.05.20
KEITI	10793	FS (6.5mm)	2019.05.27~2021.05.20
KEITI	10793	BS (6mm)	2019.05.27~2021.05.20
KEITI	17275	MAXIMA (8mm)	2019.11.11~2021.07.09
KEITI	20323	SWAN design tile	2019.06.17~2020.11.12
KEITI	23724	SPACE(7mm)	2021.02.19~2024.02.18

Environmental Emergency Response Manual

We have established an environmental emergency response manual so that we can notify an emergency situation quickly across the company and ensure all departments and sectors respond to it systematically in the event of an environmental emergency. We strive to raise awareness of environmental emergency accidents and familiarize ourselves with manuals through regular training, such as joint fire drills with the public and corporation, and education on hazardous chemicals. A separate emergency report system is operated for prompt communication, and the reporting formats are organized in advance to ensure accuracy of emergency-related information. The manual contains scenario-based guidelines for various environmental accidents and natural disasters such as earthquakes, typhoons, and heavy rains. Especially in response to fire accidents, we have established facilities and process necessary for prompt fire control as well as measures in the manual. We also prepared restoration measures for the aftermath of situation to ensure rapid recovery from damage.

Environmental Cleanup Activities

Employees of Hyosung Advanced Materials at Jeonju plant participate in environmental cleanup activities near the plant once a year. We are working on maintaining the clean and pleasant scenery by picking up trash at gardens, flower beds, footpath and streets around the plant.

Occupational Accident Rate

Hyosung Advanced Materials maintains the occupational accident rate at a very low level through efforts to create a safe workplace, and occupational fatality has not occurred for three consecutive years.

Category	Unit	Hyosung Advanced Materials		
		2018	2019	2020
Total number of occupational accidents: Accidental disaster + Occupational disease	Persons	18	27	8
Occupational accident rate: Total number of occupational accidents / Total number of employees x 100	%	1.58	2.50	1.15
Number of work-related fatalities	Persons	-	-	-
Work-related fatality rate per ten thousand employees (Number of work-related fatalities / Total number of employees x 10,000)	‰	-	-	-

Safety and Health Activities

Hyosung Advanced Materials conducts various activities to promote the health of employees and suppliers’ employees. For example, we are operating programs for musculoskeletal disease prevention, hearing preservation, brain cardiovascular disease prevention, and raising three health funds, including obesity, non-smoking, and musculoskeletal. In recognition of its safety management activities not only in Korea but also in overseas affiliates, Jiaxing Corporation has been selected as the best company in safety management by the Jiaxing Economic Development Zone.

Environment and Safety Diagnosis

Hyosung Advanced Materials runs an environment and safety diagnosis day for each department every week, including supplier companies, to check the overall environment and safety in business sites including chemical-handling facilities. In addition, we provide MSDS (Material Safety Data Sheet) training to chemical-handling personnel to raise their awareness. Staff members of the Environment Safety Team, Production Team, and Quality Assurance Team are present to inspect the entire process of loading the chemicals from vehicle to input.

Health Care Center

Hyosung Advanced Materials conducts health checkups every year for its employees. It operates a health care room managed by an industrial nurse and provides an environment to improve the health of employees by providing low-frequency therapy instrument, paraffin heaters, and medicines to ease musculoskeletal pain.

Safety Gear Management

In accordance with safety gears (earplugs, safety shoes, etc.) management regulations, designated safety gears are provided to all employees including supplier company, to require the employees to wear them. In addition, we also conduct earplug test for workers so that they can choose the best-fitting earplugs and learn how to properly wear them.

COVID-19 Infection Prevention Activities

Hyosung Advanced Materials is carrying out various activities to prevent COVID-19 infection in 2020. Ulsan Plant has prepared related guidelines, informed employees of the details, and shared real-time information on infection cases in the region through social media. In addition, we check body temperature of all employees and external visitors entering the office building, and contactless thermometers have been installed in three restaurants to block/manage people with body temperature above 37.5℃ in advance. In addition, we regularly conduct special measures against COVID-19 throughout the plant, and we are making efforts to prevent the disease by promoting home-office work, refraining from face-to-face meetings, recommending video conferences, and restricting group training.

Enclosed Workspace Program

Hyosung Advanced Materials is running a program to identify and evaluate enclosed workspaces. Working in a confined space is considered as a high-risk job, and in order to conduct it, an approval of onsite safety measures by a health manager is required.

Win-Win Cooperation Program for Safety

Hyosung Advanced Materials is promoting workers' safety by operating Win-Win Cooperation Program not only for its own employees but also for suppliers. HAMC evaluates risk improvement performance rate and program participation rate of suppliers with potential risk through a Win-Win Cooperation Program once a year, and is making improvements in the future through a program satisfaction survey.

Activity title	Description	Cycle
Regular safety meeting	Sharing technical guidance by external specialists, safety technology, regulations and review results	1 time / Month
Joint safety and health inspection	Discovering risk factors through joint onsite patrols; checking improvement performance	1 time / Week
Safety training	Safety training for representatives and safety personals of suppliers & performance evaluation of supplier safety training	1 time / Month
Monitoring of health promotion businesses	Operation of injury(i.e musculoskeletal disorders, hearing preservation) prevention programs. Support for health fund that covers obesity, non-smoking, and musculature	1 time / Month
Safety inspection evaluation	Analyzing non-compliances after safety inspection; reflecting them to supplier safety evaluation	1 time / Month
Monitoring of risk management implementation	Monitoring of risk management, follow-up on improvements to high risk factors as well as final evaluation of the implementations	1 time / 6 months
Regular supplier inspection	Checking suppliers' legal compliance regarding safety and health; monitoring on safety and health management status	1 time / 6 months
Supplier interview	Interview with the CEO and supervisors of the suppliers regarding safety & health issues	If necessary

Economic
Performance

Hyosung Chemical achieved an increase in sales compared to the previous year by discovering new growth engines, such as overseas investment, despite the global downturn in industrial activities along with decreasing demands in petrochemicals in the aftermath of COVID-19.
We will not settle for the current status and will seek new growth engines to maximize economic value and fairly distribute it to our stakeholders.

Financial Statements (Consolidated)

KRW 1 million

Category	2018	2019	2020
i .Current assets	438,323	446,058	435,749
Cash and cash equivalents	79,258	46,059	10,181
Trade and other current receivables	184,669	150,973	222,339
Inventories	125,295	127,510	143,162
Other current assets	49,101	121,516	60,067
ii .Non-current assets	1,214,926	1,617,458	1,981,616
Long-term trade and other non-current receivables	4,710	4,947	3,467
Tangible assets	1,117,555	1,448,333	1,923,348
Investments in properties	74,145	73,072	23,126
Intangible assets	6,692	10,738	15,716
Other non-current financial assets	2,649	73,869	917
Other non-current assets	9,175	6,499	15,042
Total assets	1,653,249	2,063,516	2,417,365
i .Current liabilities	685,979	431,320	627,538
Trade and other current payables	275,675	219,882	295,090
Borrowings	399,746	185,916	303,764
Other current liabilities	10,558	25,522	28,684
ii .Non-current liabilities	600,022	1,177,488	1,387,474
Long-term trade and other non-current payables	12,055	12,519	13,186
Long-term borrowings	582,940	1,155,850	1,356,429
Other non-current liabilities	5,027	9,119	17,859
Total liabilities	1,286,001	1,608,808	2,015,012
[Capital stock]	15,951	15,951	15,951
[Retained earnings]	18,284	98,175	67,607
[Other components of equity]	333,013	340,582	318,795
[Non-controlling interest]	-	-	-
Total capital	367,248	454,708	402,353

Consolidated Statements of Comprehensive Income

KRW 1 million

Category	2018	2019	2020
Sales	1,116,772	1,812,470	1,817,190
Cost of sales	1,002,169	1,568,884	1,664,137
Gross profit	114,603	243,586	153,053
SG&A	36,042	68,706	71,922
R&D expenses	13,566	20,993	20,203
Operating income	64,995	153,887	60,928
Other gains	2,963	3,973	7,007
Other loss	4,469	6,312	17,879
Finance income	20,904	43,762	47,307
Finance expenses	50,024	89,349	95,611
Related companies profit	(6,951)	4,053	1,669
Profit before tax	27,418	110,014	3,421
Income tax expense	7,023	22,191	15,037
Net profit	20,395	87,823	(11,616)
Other comprehensive gain(loss)	2,891	2,815	(24,850)
Total comprehensive gain(loss)	23,286	90,638	(36,466)

Corporation Tax by Country

By paying corporate taxes stably in the countries where it operates business, Hyosung Chemical is helping each government to increase financial independence and to conduct smooth public services. In addition, we prevent tax disputes by faithful paying taxes, thereby consolidating the foundation for long-term business operations in the corresponding countries.

Category	Subcategory	Unit	Hyosung Chemical		
			2018.6~12	2019	2020
Republic of Korea	Sales	KRW 1 million	1,116,772	1,813,137	1,643,262
	Profit before tax	KRW 1 million	28,852	115,685	56,663
	Tax	KRW 1 million	6,575	23,519	13,881
	Tax rate	%	24.20	24.20	24.20
	Effective tax rate	%	22.79	20.33	24.50
Vietnam	Sales	KRW 1 million	-	-	176,680
	Profit before tax	KRW 1 million	329	(5,108)	(54,395)
	Tax	KRW 1 million	122	(122)	-
	Tax rate	%	-	-	-
	Effective tax rate	%	37.02	2.38	-

* Consolidated adjustments among subsidiaries subject to consolidated accounting are reflected in sales/profit before tax/corporate tax by each category

Production Output by Business Sector

Hyosung Chemical is focusing on producing specialized products based on its top-notch quality and technology competency in response to changes in the supply environment as China becomes more self-sufficient in production of general-purpose petrochemical products. Regarding electronic materials, on the other hand, we are expanding the supply through product localization and overseas market expansion as the demand for various IT products such as displays, semiconductors, and OLED is increasing and therefore, the related parts market is expected to grow.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Chemical	KRW 1 million	998,685	1,524,357	1,581,337

* The data includes Hyosung Chemical and Hyosung Vina Chemicals Co., Ltd (Hyosung Vina Chemicals., Ltd. started operation in April 2020)

Sales of Specific Products

Hyosung Chemical has its own brand value regarding products such as polypropylene, film, and polyketone based on long-accumulated business expertise and industry-leading technology. And based on the eco-friendliness and top-notch quality of our products, we are enhancing our corporate image and consolidating our position as a global company.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Sales of resource-efficient products	KRW 1 million	-	-	-

Financial Loss

Hyosung Chemical minimizes its financial loss incurred by non-compliance and violation of laws and regulations through a strict legal risk management system. Moving away from shareholder-oriented management, we consider all stakeholders and strive to comply with rules and regulations from various sectors such as fair business practices, data protection, environment and anti-corruption.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Financial loss incurred due to violation of environmental regulations such as pollutant emission	KRW	2,440,000	-	480,000

Suppliers Status

Hyosung Chemical maintains a stable supply chain by supporting sustainable growth of its supplier companies.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Number of suppliers	Companies	862	900	843
Total purchase from suppliers	KRW 1 million	1,145,741	1,022,410	1,079,226

* The data have been updated in accordance with recalculated suppliers data in 2019.

Major R&D Activities

Hyosung Chemical is pioneering the world of technology for the future of mankind through differentiated competitive technology, expertise in R&D, constant challenges and passion.

Development of Multi-purpose Polypropylene (PP)

The Polymerization Research Group of Hyosung R&DB Labs has developed a PP-based new material that is applicable to packaging films for instant food products. We have improved impact resistance and heat sealability with the new material and plan to expand the market mainly in Asia. As a polypropylene plant in Vietnam started operation, we have been actively developing new materials including non woven polypropylene used in face masks and diapers and high liquidity polypropylene used in disposables, as well as high impact-resistance polypropylene used in industrial containers. We plan to expand applications later on by improving the physical properties of the propylene materials through ceaseless research on catalyst, products and manufacturing process.

Development of Multi-purpose PET and Nylon Films

The Film Research Team in Hyosung R&DB Labs is developing PET* and nylon-based high-function films using additives and surface primer coating. Boasting flawless transparency and excellent post-processing adhesion, this optical film is widely applied to display products. Silicon release coating products provide desired release properties, serving to protect various types of adhesive layers. Antistatic coating products are used as protective films during the advanced manufacturing processes along with their excellent antistatic performance, solvent resistance and environmental resistance. We are currently striving to develop high value-added films such as smart window films with rainbow free and oligomer blocking functions, and processing film for multi-layer ceramic capacitor (MLCC) with uniform surface quality.

* PET : Polyethylene Terephthalate

Development of Chemical-resistant and Adhesion-resistant Polyketone Materials Used in Glove Conveyor

The Polyketone Research Team in Hyosung R&DB Labs has developed an injection molding-purpose polyketone material used in glove conveyors. With the excellent resistance to chemicals and adhesion, they are suitable for components of glove conveyors. The subject component moves on the SUS rail, and therefore requires abrasion resistance to metal, and chemical resistance to endure latex solution and acid gas generated in the vulcanization process in the production of latex gloves. The production of the polyketone material is currently in operation after about two years of demonstration, and their applications are gradually expanding. Going forward, we plan to widen the market through continuous development of polyketone materials and their applications.

R&D Expenses

Hyosung Chemical constantly invests in R&D every year to ensure sustainable technological competitiveness.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
R&D Expenses	KRW 1 million	13,566	20,993	20,203

Patent Registration and Application

Hyosung Chemical registers patents for its own technology every year to secure its intellectual property rights and use them as KPIs for performance management.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Patent registration(accumulated)	Cases	970	1,021	1,061
Patent application(accumulated)	Cases	1,969	1,993	2,017

Social
Performance

Despite the downturn of global economy due to COVID-19, Hyosung Chemical has actively recruited new employees, most of whom are hired in regular working contract, increasing the employment stability. In order to bridge gender gap, we are continuously increasing the ratio of female employees and managers and encouraging them to use childcare leave to ensure them a stable working environment.

Employees Status

As of the end of 2020, Hyosung Chemical has 1,183 employees with about 3.8% of contract-based workers, employing the majority as regular employees. In addition, we are increasing the proportion of female employees and female managers in order to support their active social engagement, and bridge the gender gap.

Category	Subcategory	Unit	Hyosung Chemical		
			2018	2019	2020
Total employees		Persons	1,198	1,165	1,183
Gender	Male	Persons	1,090	1,038	1,050
	Female	Persons	108	127	133
Employment type	Permanent (male)	Persons	1,069	1,028	1,020
	Permanent (female)	Persons	107	108	118
	Subtotal	Persons	1,176	1,136	1,138
	Temporary (male)	Persons	21	10	30
	Temporary (female)	Persons	1	19	15
	Subtotal	Persons	22	29	45
Place of work	Domestic	Persons	1,158	1,165	1,183
	Overseas	Persons	40	44	48
Job category (based on permanent employment)	Office work	Persons	564	520	542
	Manufacturing	Persons	634	616	596
Fostering female human resource	Female employees ratio	%	9.0	10.9	11.2
	Number of female at manager-level or higher	Persons	13	18	22
	Female managers ratio	%	5.2	7.4	8.3
Diversity	Persons with disabilities	Persons	15	19	27
	Veterans	Persons	20	21	22
	Foreigners	Persons	1	1	1
	Subtotal	Persons	36	41	50
Creating job opportunities (newly employed)	Male	Persons	27	31	57
	Female	Persons	10	30	12
	Subtotal	Persons	37	61	69
Number of permanent employees who voluntarily quit	Male	Persons	35	28	48
	Female	Persons	10	10	4
	Subtotal	Persons	45	38	52
Turnover rate		%	3.83	3.35	4.57

Maternity Leave and Childcare Leave

Hyosung Chemical encourages maternity leave and childcare leave to balance work and life for female employees. As a result, the returning ratio of female employees was found to be 100%, which was increased by 11% compared to the previous year.

Category	Subcategory	Unit	Hyosung Chemical		
			2018	2019	2020
Male (maternity leave)	Employees under maternity leave	Persons	8	15	49
	Returning rate	%	100	100	100
Female (maternity leave)	Employees under maternity leave	Persons	10	7	4
	Returning rate	%	100	100	100
Male (childcare leave)	Employees under childcare leave	Persons	3	-	-
	Returning rate	%	-	100	-
	Rate of working more than 12 months after return	%	-	100	33
Female (childcare leave)	Employees under childcare leave	Persons	8	9	5
	Returning rate	%	-	89	100
	Rate of working more than 12 months after return	%	-	100	67

Regular Performance Evaluation

As of the end of 2020, Hyosung Chemical conducted a regular performance evaluation of 1,136 employees, or 96% of the total 1,138 employees. We have established a fair evaluation system, covering most of our employees in the evaluation system.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Number of employees subject to performance evaluation	Persons	1,114	1,136	1,138
Performance evaluation rate	%	96	97	96

Labor Union Membership Status

We operate the Hyosung Chemical Branch of the Food Workers' Union beside the Hyosung Chemical Labor Union. In principle, we notify the labor union as soon as possible in the event of an important management matter in accordance with the collective agreement. Each business site transparently discloses the corporate management status to the employees through regular management briefing sessions and multi-layer meetings. In addition, we hold regular quarterly meetings to discuss welfare, grievances, and health and safety issues for each business site. Complaints received are managed throughout the company and are continuously monitored for improvement.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Employees covered by collective agreements	Persons	341	615	596
Number of union workers	Persons	337	588	578
Rate of union workers	%	98.8	95.6	97.0

Retirement Pension

Hyosung Chemical operates both DB-type and DC-type retirement pension systems to ensure the employees' freedom of choice and complies with the related legal standards.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Total operating fund for retirement pension (DB+DC)	KRW 1 million	43,741	59,322	69,625
Operating fund of DB pension	KRW 1 million	43,200	58,337	68,528
Operating fund of DC pension	KRW 1 million	542	985	1,097
Total number of members	Persons	1,198	1,209	1,231
Number of DB pension members (Persons)	Persons	1,033	1,027	1,035
Number of DC pension members (Persons)	Persons	165	182	196

Basic Wage and Remuneration

Hyosung Chemical pays new employees 1.8 times more than the legal minimum wage to guarantee their welfare and increase their motivation to work.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Basic salary for entry-level	KRW 1,000	3,118	3,272	3,501
Rate of entry-level salary to local minimum wage by law (%)	Male	184.6	174.7	181.7
	Female	184.6	174.7	181.7
Average basic salary	KRW 1,000	4,323	4,608	4,987

Employee Training Status

In preparation for fast-changing business environment, Hyosung Chemical conducts training in sales, production, and technology at all times. Regarding sales, we provide intensive capacity training for sales employees in response to the changed sales environment due to COVID-19. In particular, we are promoting actual application of the training subject by focusing on action plans and practices. When it comes to production and technology, the training includes establishment and operation of smart factory aimed for the emerging fourth industrial revolution. In 2020, all plant employees received SPC (Statistical Process Control) training using mini-tab to improve their process analysis capabilities. In 2021, we plan to train subjects mainly on process management capabilities, including 6 Sigma and experiment design methodology.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Number of training participants	Persons	7,324	15,824	13,245
Total training expenses	KRW 1,000	421,497	976,805	541,605
Total training hours	Hours	44,271	37,346	27,606
Average training hours per person (total training hours / number of employees)	Hours	36.95	32.06	23.34
Average training expenses per Person (total training expense / number of employees)	KRW	351,834	838,459	457,823

Category (Total number of participants)	Unit	Hyosung Chemical		
		2018	2019	2020
Environment training	Persons	-	929	1,106
Ethics and anti-corruption training	Persons	-	36	1,139
Fair business trade training	Persons	-	2	502
Safety and health training	Persons	-	1,153	206
Human rights training (sexual harassment & workplace harassment prevention)	Persons	-	2,208	3,336
Information security training	Persons	-	704	740
Sustainability management training	Persons	-	-	14
Retiree training	Persons	-	-	15

CSR Status

In consideration of various stakeholders’ CSR-relate requests and expectations, Hyosung Chemical is currently diversifying its CSR programs. We approach social contribution of the company in a more strategic approach, focusing on enhancing corporate value and image, rather than in one-off approach.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
CSR investment	KRW 1 million	-	400	481
Number of CSR programs	Programs	-	5	5

* Hyosung Corporation carried out company-wide CSR activities until 2018, and since the spinoff in June 2018, they are conducted by each operating company.

Major CSR Activities

We have supported the visual artists of Seoul Art Space Jamsil, the only art residency studio for disabled artists in Korea which is run by Seoul Foundation for Arts and Culture, by funding their artwork and exhibition costs. In 2020, as part of support for the creative activities of disabled artists, we successfully held a special exhibition, ‘Becoming { }’, with 12 resident artists. In recognition of such contribution, we have been selected as a recognized company in the first implementation of ‘CSR in the Community’ in 2019, from the recommendation by the Seoul Foundation for Arts and Culture, which was re-accredited in 2020. Also, we received a commendation by the Seoul Metropolitan Government, as an excellent organization for public-private cooperation in 2020. Meanwhile, the POK Business Division has produced eco-friendly food trays using POKETONE™ and donated them to Janggunbong Childcare Center and Seongmin Social Welfare Center in Seoul. Free of heavy metals, POKETONE eco-friendly food tray is suitable for tableware, and has been approved by the Ministry of Environment as a green technology, followed by the U.S. Food and Drug Administration (FDA) for its harmlessness.

Reporting Channel Operation Process

To practice ethical management, Hyosung Chemical set up 'Reporting Channel' on its website which is in operation under following process.

- ① Report Receipt: Our independent audit team receives a report.
- ② Report Review: The Audit Team checks the significance of the issue and selects the responsible department for the matter and conducts monitoring and review on processing of the report item.
- ③ Responsible Department: The responsible team (Audit Team, HR Team, Compliance Support Team) notifies the details of the issues including investigation result and solutions to the Audit Team.
- ④ Result: The decision from the responsible department is re-examined, and the final result is informed to the reporter.

Fair Trade Compliance Program

Hyosung Chemical has established an internal process to practice fair trade. Since 2006, the company has established and operated the self-compliance management system and updated related regulations and manuals. We ensure that internal and external stakeholders comply with relevant laws and regulations.

Environment
and Safety
Performance

In Hyosung Chemical, all employees are fully aware of their responsibility in environment and safety. And we put environmental safety a top priority when making business decisions. Through continuous improvements and prevention activities throughout the entire process of corporate management, we are realizing a safe, pleasant and environmentally-friendly workplace.

Energy Consumption

In order to reduce electricity use and practice green management, Hyosung Chemical has installed solar panels at the rooftop of DH power room office building in 2015, and expanded the facilities for additional operation. The solar power generation facilities are used for internal power, thereby reducing power consumption.

Category	Subcategory	Unit	Hyosung Chemical		
			2018	2019	2020
Direct energy consumption	Diesel	TJ	8.10	13.08	8.47
	Kerosene	TJ	0.03	0.60	-
	LNG	TJ	406.62	360.46	455.83
	Gasoline	TJ	1.26	1.19	1.03
	Propane	TJ	38.74	52.51	54.28
	B-C oil	TJ	11.70	-	-
	Off-gas	TJ	5,136.44	5,300.41	5,541.80
	LPG	TJ	0.14	0.05	0.61
	Biogas	TJ	-	-	-
	Subtotal	TJ	5,603.02	5,728.30	6,062.02
Indirect energy consumption	Electricity	TJ	11,252.75	11,226.54	11,592.25
	Steam	TJ	-	-	-
	Process waste heat	TJ	-	-	-
	Waste incinerated heat	TJ	580.05	562.05	562.83
Subtotal			11,832.80	11,788.59	12,155.08
Total			17,435.83	17,516.89	18,217.10
Energy intensity		TJ/KRW 100 million	0.992	0.966	1.109

* Emissions intensity was calculated based on sales in general financial statements, not on a consolidated basis, since energy consumption and emissions are calculated only for domestic business sites.

Greenhouse Gas (GHG) Emissions

Hyosung Chemical is making various efforts to reduce GHG emissions. Its emission reduction is verified by annual emission statements and third-party validation.

Category	Subcategory	Unit	Hyosung Chemical		
			2018	2019	2020
Direct GHGs emissions (Scope 1)	Fixed combustion	tCO ₂ eq	251,645	256,674	272,684
	Mobile combustion	tCO ₂ eq	656	608	628
	Process emissions	tCO ₂ eq	25,770	26,851	24,526
	Waste disposal	tCO ₂ eq	355	249	674
	Subtotal	tCO ₂ eq	278,427	284,383	298,513
Indirect GHGs emissions (Scope 2)	Electricity	tCO ₂ eq	546,521	545,248	563,018
	Steam	tCO ₂ eq	-	-	-
	Subtotal	tCO ₂ eq	546,521	545,248	563,018
GHGs emissions intensity		tCO ₂ eq/KRW 1 million	0.469	0.458	0.524

* The data are based on the ETS report submitted to the government in the given years, in accordance with the conformity assessment by the Ministry of Environment.

Water Resources Management Status

Hyosung Chemical minimizes unnecessary water consumption by reusing part of the discharged water to clean belt press (dehydrator) and cooperating closely with production processes. Also, wastewater discharged from the production process is recovered to the emergency reservoir in the plant to be reused for cooling.

Category	Subcategory	Unit	Hyosung Chemical			
			2018	2019	2020 (plan)	2020 (actual)
Consumption by water source	Waterworks	Tons	105,864	108,337	82,101	106,932
	Groundwater	Tons	103,624	105,330	112,258	99,424
	Industrial water	Tons	7,515,306	7,802,511	7,015,457	7,631,100
	River water	Tons	-	-	-	-
Total water consumption		Tons	7,724,794	8,016,178	7,209,816	7,837,456
Water reuse amount		Tons	342,002	345,310	360,025	370,595
Water reuse rate		%	4.4	4.3	5.0	4.7

Wastewater and Water Treatment Status

Hyosung Chemical's Gumi plant collects wastewater from production process in wastewater treatment plant and then discharges it to the sewage treatment plant after minimizing water pollutants through the wastewater prevention facilities. Meanwhile, the Yongyeon plant treat wastewater using physical, chemical and biological methods, and in-company water quality standards for accepted water release are managed at about 30% of the legal standard. In addition, treatment of highly contaminated wastewater is entrusted to external agency so that it does not affect the wastewater treatment plant.

Category	Unit	Hyosung Chemical			
		2018	2019	2020 (plan)	2020 (actual)
Wastewater discharge amount	Tons	2,205,275.00	1,766,124.56	2,004,207.00	1,915,197.00
Biological Oxygen Demand (BOD)	Tons	11.19	7.01	5.38	11.06
Chemical Oxygen Demand (COD)	Tons	23.33	14.39	20.22	19.18
Suspended Solids (SS)	Tons	15.69	10.42	9.24	13.54
Total Nitrogen (T-N)	Tons	16.39	8.59	7.29	10.17
Total Phosphorus (T-P)	Tons	0.73	0.46	0.57	0.53

Waste Treatment Status

Hyosung Chemical is safely treating its wastes based on its own waste management policies. We reduce carbon emissions by using waste steam generated by an incineration plant nearby, and increase energy efficiency by improving facilities such as pumps and heat exchangers. In particular, Yongyeon plant has established a network system to trade external steam and process-generated steam among nearby plants (also including external companies), contributing to optimal condition for making use of steam energy with high-efficiency.

Category	Subcategory	Unit	Hyosung Chemical			
			2018	2019	2020 (plan)	2020 (actual)
Industrial waste (general)	Recycling	Tons	11,353.7	13,892.3	14,936.1	14,890.1
	Incineration	Tons	594.9	663.2	703.6	642.1
	Landfill	Tons	7,025.9	6,627.0	5,023.0	5,870.3
	Others	Tons	536.5	544.8	1,210.0	1,506.5
	Subtotal	Tons	19,511.0	21,727.3	21,872.7	22,909.0
Industrial waste (designated)	Recycling	Tons	662.6	681.8	484.9	618.2
	Incineration	Tons	458.1	431.4	456.6	331.5
	Landfill	Tons	14.6	10.5	13.9	19.2
	Others	Tons	9,272.0	7,944.7	5,691.3	5,635.5
	Subtotal	Tons	10,407.2	9,068.4	6,646.7	6,604.4
Total waste		Tons	29,918.2	30,795.7	28,519.4	29,513.4
Waste recycling amount		Tons	12,016.4	14,574.1	15,421.0	15,508.4
Waste recycling rate		%	40.2	47.3	54.1	52.5

Air Pollutants Emissions

Hyosung Chemical's Yongyeon plant and Gumi plant have installed low-NOx burners to reduce NOx, air pollutants generated from boilers, and a person in charge of the field conducts daily inspections to monitor pollution prevention facilities are operating properly. Also, we minimize air pollutant emissions by installing short-rage exhaust system (active carbon, adsorption carbon towers) and air prevention facilities in production process of PET films in Gumi plant.

Category	Subcategory	Unit	Hyosung Chemical			
			2018	2019	2020 (plan)	2020 (actual)
General air pollutants	Nitrogen oxides (NOx)	Tons	320.1	268.2	319.6	192.7
	Sulfur oxides (SOx)	Tons	44.1	20.5	32.6	17.4
	Particulate matter (PM)	Tons	9.5	8.6	9.9	6.3
Ozone depleting substances	CFC(R-11)	Tons	-	-	-	-
	HCFC(R-123)	Tons	-	-	-	-
	HCFC(R-22)	Tons	95.0	95.0	105.0	99.0

Hazardous Chemicals Management Status

Hyosung Chemical has installed a leak detector in a hazardous chemical storage facility to detect harmful chemicals in the event of an emergency, and to prevent damage from environmental accidents in advance.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Hazardous substances usage amount	Tons	296,915.2	292,408.3	292,714.2
Basic unit of hazardous substances usage amount	Tons/KRW 1 million	0.16898	0.16133	0.17813

Sales and Purchase of Green Products and Services

Hyosung Chemical has established a policy to encourage green product purchases. Through the green purchasing policy, we declared the principle of preferentially procuring eco-friendly products and expressed our commitment to use eco-friendly products. In addition, we are using eco-friendly LED lamps which have energy-saving effect, as well as green packaging materials such as ink and cleaners to prevent environmental pollution. We also encourage the purchase of eco-friendly products for various equipment used in manufacturing plants.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Sale	KRW 1,000	13,936,000	22,207,000	27,745,000
Purchase	KRW 1,000	89,260	138,870	206,050

Environmental Investment

Hyosung Chemical implements an annual environmental investment plan to practice green management and improve the quality of environment. We mainly focus on investment in waste treatment, environmental restoration, and environmental pollution prevention, and process facility investment. We have invested in facilities that convert methyl acetate, a byproduct of the oxidation reaction process, into super acid and re-put it into the process, which enables reduction of production costs as well as emission of harmful chemicals. In addition, we are reducing power consumption through constant environmental investment, including wastewater treatment system improvement, expansion of solvent recovery equipment, maintenance of gas detection facilities.

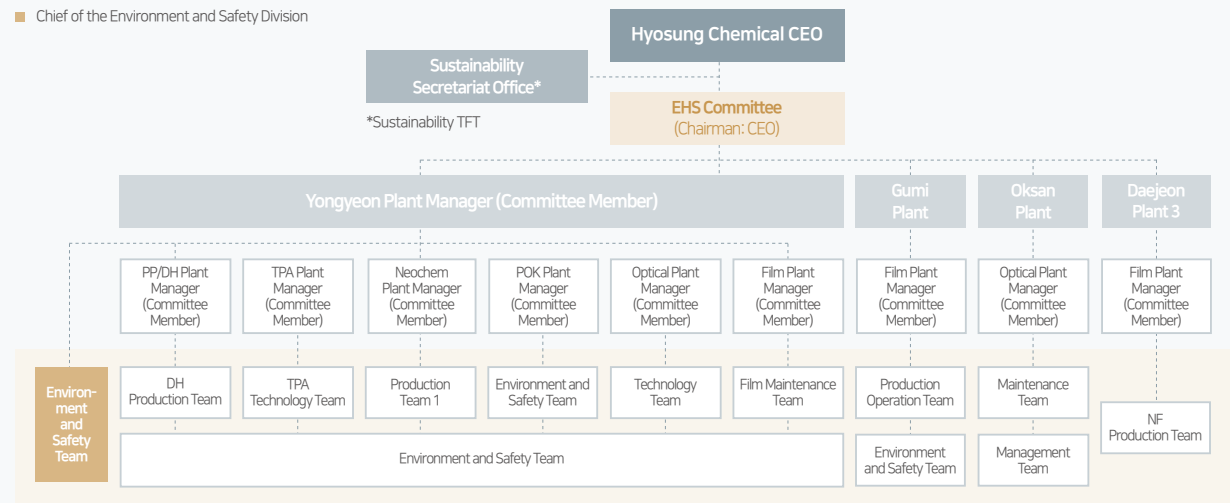
Category	Unit	Hyosung Chemical		
		2018	2019	2020
Waste treatment and environment restoration expenses	KRW 1,000	3,142,596	1,975,568	4,647,304
Pollution prevention and environmental management expenses	KRW 1,000	2,663,960	4,360,359	781,027
Facility improvement for environment improvement	KRW 1,000	-	2,534,406	2,001,334
Total	KRW 1,000	5,806,556	8,870,333	7,429,666

Major Environmental Investment in 2020

Category	Unit	Hyosung Chemical	
		2020 (plan)	2020 (actual)
Wastewater treatment plant system improvement	KRW 100 million	9.8	9.8
Expansion of solvent recovery equipment	KRW 100 million	3.0	2.9
Maintenance of gas detector equipment	KRW 100 million	2.0	1.9
Purchase and installation of optical gas camera	KRW 100 million	0.9	0.9
Total	KRW 100 million	15.7	15.5

EHS Committee

Hyosung Chemical changed the name of the Environment and Safety Management Meeting, which was held semi-annually for purpose of checking improvements after safety inspection and safety management status of each plant, into the EHS Committee in 2020, and the committee operates every month in each plant. The CEO of the company has been appointed as the chairman of the committee and the heads of production plants have been appointed as the committee members. The EHS Committee ensures that safety inspection is carried out at all sites, and makes decisions on creating safe workplace, establishing standards and measures against occupational accidents.



Environmental Management System Certification

Hyosung Chemical introduced ISO14001 to all its plants in order to effectively identify, evaluate, manage, and improve environmental risks and issues through the Environmental Management System (EMS). We have established environmental goals and detailed action plans for 2019, and conduct internal and external audits (Korea Quality Foundation) once a year to manage our performance against goals and continue to develop improvements. In addition, we derive and manage environmental impact factors found in plant operation through ISO14001 system. Since its enactment in 1996, we have revised the guidelines to emergency plan 11 times so far. For the matters with high risk of accident identified, we conduct scenario-based emergency training to minimize damage in the event of an accident.

Yongyeon Plant

Yongyeon plant operates ISO14001, and environmental impact assessment is conducted before introducing new production process or facilities. For the existing process, environmental impact assessment is conducted every three years to prevent risks. Also, the process is monitored and managed through the process monitoring system. The energy use status is managed on a unit basis, and the people in charge share and review the energy use status every week. In recognition of such efforts, we have obtained the Energy Champion certification from the Korea Energy Corporation.

Gumi Plant

After the introduction and operation of ISO 14001:2004 in 2007, Gumi plant has switched to ISO 14001:2015 in 2018. Through environment management system, we identify and manage environmental impact factors, prepare scenarios and conduct emergency training accordingly so that we can minimize damage in the event of an accident.

Oksan Plant

Top patrol is conducted under the supervision of the plant manager to find and improve potential risk factors on a quarterly basis, and safety inspections are also implemented quarterly during hot and cold seasons. In addition, safety inspection on facilities and hazardous substances is held every month for each team under the lead of the Management Team. The legal safety inspection is conducted twice a year. The deficiencies found are improved through annual self-audit in accordance with ISO14001 and PSM guidelines.

Green Technology and Green Enterprise Certifications

Hyosung Chemical has obtained a total of three green technology and green enterprise certifications so far. We will continue to expand green technology certification and the specialized green enterprise certification based on continuous R&D of green technologies.

Certification Organization	Certification Title	Hyosung Chemical	
		Certification Code and Product Name	Certification Period
KITC (Korea Industry Technology Certificate)	Green Technology	GT-16-00103	2016.08.11~2022.08.17
KITC	Green Technology Product	GTP-16-00185	2016.08.11~2022.08.17
KEITI (Korea Environmental Industry & Technology Institute)	Green Specialized Enterprise	Yongyeon Plant 2	2019.04.28~2022.04.27

Energy Saving and Emissions Reduction Performance

Hyosung Chemical has established and implemented investment plans for replacing with high-efficiency facilities and installing inverters, to reduce emissions while saving energy at its business sites.

Business site	Project name	Execution date	Hyosung Chemical		
			Investment budget (KRW 1 million)	Energy saving (kWh/year)	Emissions reduction (tCO ₂ eq/year)
Yongyeon 1	LED Light Replacement	2017.06	300	630,563	294
Yongyeon 1	Sand Filter Pump Replacement	2020.04	42	151,110	70
Yongyeon 2	Increasing Water Pump Efficiency	2017.11	11	182,305	85
Yongyeon 2	Heat Exchanger Replacement	2018.01	462	4,684,182	2,184
Yongyeon 2	Heat Exchanger Replacement	2019.02	485	1,638,605	764
Yongyeon 3	Installing Solar Power Facilities at Parking Lot	2017.09	140	27,125	13
Oksan	SR heat exchanger efficiency Improvement (cleaning & cleaning footplate improvement)	2019.12	20	2,703	209

Renewable Energy Consumption

Hyosung Chemical receives waste incineration heat steam, a renewable energy source, from a domestic waste incineration plant near its business site, and uses electricity generated by solar power facilities installed in the plant.

Business site	Type	Unit	Hyosung Chemical		
			2018	2019	2020
Gumi	Waste energy	GJ/year	52,584	56,064	55,134
Oksan	Waste energy	GJ/year	249,766	224,441	194,693
Yongyeon 1	Waste energy	GJ/year	173	172	2,894
Yongyeon 1	Solar energy	kWh/year	61,391	57,551	54,213
Yongyeon 2	Waste energy	GJ/year	56,349	88,421	81,718
Yongyeon 2	Solar energy	kWh/year	70,788	34,756	68,945
Yongyeon 3	Waste energy	GJ/year	217,664	192,952	228,386
Yongyeon 3	Solar energy	kWh/year	67,375	68,205	68,468

Raw and Subsidiary Materials Reduction Activities

Hyosung Chemical is also contributing to improving environment by reducing the use of raw and subsidiary materials which may cause negative environmental impact. Our Neochem PU produces NF₃ GAS which is widely used in semiconductors, displays, and solar cells, by using HF (hydrogen fluoride), a colorless toxic gas, as a raw material. HF should be treated with extra caution in accordance with related laws and regulations. Therefore, we have established a process for recovering HF, and are increasing the amount of HF recovery every year. In this way, we can reduce use of raw materials and further secure price competitiveness. We will continue to discover additional activities for reducing raw and subsidiary materials to enhance price competitiveness and protect environment.

Pre-receipt Safety Inspection for Chemicals

Hyosung Chemical is conducting safety inspection on suppliers at each receipt of chemicals to the company. In addition, MSDS is distributed to the person in charge of the chemical-handling business sites to build their awareness in hazard and danger of chemicals. Supplier companies are supposed to conduct inspection before shipping, and the vehicle transporting the chemicals can enter the company only when they pass the pre-shipment inspections and no problem is found in products. After that, related personnel from each team start inspection upon receipt of chemicals, and the entire process including parking of the carrier vehicles, connection of loading pipes and injection of chemicals, is conducted under the presence of the Environment Safety Team, Production Team, and Quality Team.

Environment Audit

Hyosung Chemical conducts our own environmental audit once a year. The Environment Safety Team distributes assessment sheet for the audit to each business unit to assist their self-inspection, which allows them to immediately correct any problem found through notification for improvement and recommendation. The corrective actions must be reflected in the next year's environment, safety and health goals and are checked for further improvements during the environment audit at the end of year.

Environmental Assessment

Hyosung Chemical has revised its environment, safety and health goals and the management guidelines for the detailed goals six times since its enactment in 2002. The detailed goals are established and monitored and evaluated for implementation and achievement. The main goals have been achieved about 90% so far, and they include zero environment and safety accident, production process stability, resource loss minimization, and thorough compliance with work standards. Hyosung Chemical will continue to conduct environmental assessments to identify and combat environmental and safety risks.

Environment and Safety Training

Hyosung Chemical is providing regular environment and safety training to prevent related accidents. Each team conducts two hours of collective training for employees every year for environmental education such as air quality, water quality, waste, and energy saving, strengthening the awareness of environment and safety management. In addition, we deliver annual training on waste sorting at disposal, which has become a recent issue. The company also provides quarterly trainings to employees including supplier companies on all hazardous chemicals treated in the company, and promotes environmental safety awareness by trainings on process safety management (PSM), compliance with safety rules, and accident cases of other companies.

Environmental Cleanup Activities

As a member of the Ulsan Environmental Engineers Association, the Yongyeon plant participated in the ceremony of World Water Day, which was held by Ulsan City, engaging in various of activities such as throwing EM earth balls and environmental cleanup for the Taehwa River. We also contribute to the protection and improvement of the local environment by promoting our own environmental campaigns.

Occupational Accident Rate

Hyosung Chemical manages its occupational accident rate at a very low level by promoting safe working environment. Occupational fatality has not occurred for the last three consecutive years in Hyosung Chemical.

Category	Unit	Hyosung Chemical		
		2018	2019	2020
Total number of occupational accidents: Accidental disaster + Occupational disease	Persons	6	4	6
Occupational accident rate: Total number of occupational accidents / Total number of employees x 100	%	0.50	0.34	0.51
Number of work-related fatalities	Persons	-	-	-
Work-related fatality rate per ten thousand employees (Number of work-related fatalities / Total number of employees x 10,000)	‰	-	-	-

Regular Safety Inspection Activities

Hyosung Chemical carries out various types of regular safety inspection activities. Each PU conducts a company-wide safety inspection every half year, and the Environmental Safety Team designates one PU every month for safety inspection. A designated person in charge of environment and safety in each team conducts monthly on-site PU safety inspection regarding the inspection subjects selected by the Environment and Safety Team.

Working Environment Assessment

In Hyosung Chemical, working environment assessment takes place every half year to identify health risks from processes exposed to toxic substances and noises. In accordance with the assessment result, the processes exceeding the exposure standards carry out countermeasures including facility and process improvement.

Enclosed Workspace Program

Hyosung Chemistry is running a program to identify and evaluate enclosed workspaces in the company. The evaluation program checks issuance of safety work permits, measurement of oxygen and harmful gas concentrations, availability of ventilation measures, and selection and application of protective gears in enclosed workspaces to address weaknesses for improvements.

Health Care Room

Hyosung Chemical operates a health care room managed by industrial nurses to effectively manage employees' health and keep track of occupational diseases and patients. The health care room is equipped with low-frequency therapy instrument, paraffin heaters, medicines, and AED to promote health management of employees.

Earplugs Fit Test

Hyosung Chemical provides earplugs to protect the hearing of workers exposed to noisy processes and conducts earplugs fit test so that they can select the best-fitting earplugs and learn how to wear them properly.

COVID-19 Pandemic Prevention Activities

Hyosung Chemical has been making a variety of efforts to prevent infection of COVID-19 which occurred in 2020. Yongyeon plant has shared guidelines for the infectious disease to the employees. Thermal check is conducted for all employees and outside visitors entering the company, and thermal imaging cameras are installed in the restaurant to detect people with fever higher than 37.5℃. In addition, we regularly conduct disinfection in offices, rest rooms, and commuter buses, and partitions are installed in conference rooms and restaurants to keep social distancing in the workplace. In addition, we are making efforts to prevent infectious diseases by implementing phase-specific measures such as partially conducting working from home policy, refraining from meetings, recommending video conferences, and banning group training, in parallel with the trend of confirmed cases in the region.

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Stakeholder Engagement

Main Interests and Engagement Channels by Stakeholder Group

Hyosung would like to provide the stakeholders with differentiated values based on clear understanding of their interests and subsequent strategy adaptation. Hyosung has selected material stakeholder groups and established a communication strategy suitable for each group based on analysis of risks and opportunities. Hyosung is pursuing the sincerity in communication with stakeholders throughout entire business management, while providing products and services that could bring both economic and social values, working on sustainable supply chain, creating a human rights and environment-conscious workplace, and carrying out CSR activities for local communities.

Stakeholder Group	Main Interests	Our Responses	Communication Channels
Customers	<ul style="list-style-type: none">· Producing innovative products through R&D· Providing customer-tailored products· Continued post-purchase communication	<ul style="list-style-type: none">· We would like to strengthen the sustainability of our products and services by listening to customers feedback throughout entire product lifecycle, from R&D to final delivery.	<ul style="list-style-type: none">· Company website· Global exhibitions· Technology exchange meetings· Customer satisfaction surveys
Employees	<ul style="list-style-type: none">· Providing fair evaluation and opportunities· Facilitating communication between employees and management· Creating pleasant working environment	<ul style="list-style-type: none">· We create an excellent working environment by ensuring various benefits and fair performance evaluation system, we encourage employees to actively participate in management.	<ul style="list-style-type: none">· Wa-gle Wa-gle, Tong Tong Bulletin Board· Communicator system· CEO-Leader meeting· Performance sharing meeting / business briefing meeting· Multi-layer meetings
Suppliers	<ul style="list-style-type: none">· Fair distribution of performance outcomes· Preventing unfair terms or unnecessary business interferences· Promoting fair business practices	<ul style="list-style-type: none">· We continue to monitor the status of sustainable management of our suppliers and promote their voluntary practices for sustainability by providing training and supporting shared growth activities.	<ul style="list-style-type: none">· Suppliers meeting· Quality and safety improvement support· Hot-line / whistleblowing· Win-win cooperation program
Shareholders / Investors	<ul style="list-style-type: none">· Acquiring sustainable growth engine for the future· Securing financial soundness and profitability· Ensuring governance soundness	<ul style="list-style-type: none">· In addition to the financial information, we disclose our sustainability performance and listen to opinions of shareholders and investors on the improvement of sustainable management through performance evaluation.	<ul style="list-style-type: none">· Corporate IR activities· BOD and shareholders' meeting· Business reports· Corporate disclosure on the Korea Exchange
Local Communities	<ul style="list-style-type: none">· Interactive communication· Sincere CSR activities· Sustainable long-term support for capacity growth instead of one-off support	<ul style="list-style-type: none">· Through various communication channels, we constantly communicate with the local community, and we would like to contribute to the its development by carrying out CSR activities customized to the nature of each operating company.	<ul style="list-style-type: none">· Environmental cleanup activities· Open-house events at plants· Business-related CSR activities· Local community committees

Materiality Assessment

Hyosung selects key issues by analyzing the interests of major domestic/international stakeholders and their impact on business. The materiality assessment will be conducted by comprehensively considering international standards for sustainable management, such as GRI Standards, UN SDGs, and ISO 26000, social issues exposed to the media, and related trends within the same industry. In 2021, we derive a total of 12 key issues, and this report reveals Hyosung's management approach and major achievements on these issues.

Materiality Assessment Process

1. Constituting the Pool of Sustainability Issues

We have created a pool containing 53 sustainability issues based on the analysis of major international standards (i.e. GRI Standards, EcoVadis, ISO26000, UNGC, UN SDGs, TCFD, SASB, etc.), internal corporate documents such as project plans and mid & long-term business strategies as well as market research.

2. Selecting Material Issues through Materiality Assessment

Material issues have been selected among 53 issues in the pool after evaluating materiality of each issue in the aspect of the business impact and the stakeholder interest. The stakeholder interest has been assessed by considering the level of interest in issues and information disclosure, and the business impact has been measured by level of management's interest and correlation with business strategy and financial performance.

Materiality Assessment

Peer Group Issues	Internal Data Review	Media Research	International Standards Analysis
Analyzing the issues of total 15 companies from the same or relevant industries	Internal stakeholders interview and main business strategy review and analysis	Review 3,789 articles to analyze economic, social and environmental issues	<div><div>· GRI Std.</div><div>· EcoVadis</div><div>· ISO26000</div><div>· UNGC</div><div>· SDGs</div><div>· TCFD</div><div>· SASB</div><div>· KCGS</div></div>

3. Planning Structure and Contents of the Report

Key report issues have been derived in alignment with the material issues selected from the materiality assessment, based on which overall structure and detailed contents of this report have been planned.

The diagram illustrates the relationship between internal corporate strategy, key report issues, and external international standards/media sources. It features three overlapping circles: a central circle labeled 'Key Report Issues', an inner circle to the left labeled 'Internal circle including key corporate strategy, status, and industry issues', and an outer circle to the right labeled 'External circle including international standards and media sources'.

Key Report Issues Derived from Materiality Assessment

The scatter plot displays 12 key issues derived from the materiality assessment. The vertical axis represents the 'Degree of Stakeholder Interest' and the horizontal axis represents 'Business Impact'. Issues are categorized by stakeholder interest: Economic (dark blue), Social (white), and Environmental (light blue). Issues 1 through 12 are plotted, with 1 through 10 being key issues (report subject) and 11 and 12 being potential issues (monitoring subject). A legend at the bottom indicates the categories: Economic (dark blue circle), Social (white circle), and Environmental (light blue circle).

Category	Key Issues	GRI Topic	Reporting Boundary		Reporting Contents
			Internal	External	
Social	① Occupational safety and health	Occupational Health and Safety	●	Suppliers	Workplace Safety and Health
Economic	② Product responsibility and safety	Customer Health and Safety	●	Customers	Customer Satisfaction and Product Responsibility
Economic	③ Customer relationship management (CRM) and maximizing customer satisfaction	Marketing and Labeling	●	Customers	Customer Satisfaction and Product Responsibility
Economic	④ Expansion to overseas markets for new growth engine	Non-GRI	●	-	Company Overview
Environmental	⑤ Green products and technology development	Energy	●	-	Company Overview
Social	⑥ Suppliers' CSR risk management	Supplier Assessment (environmental, social)	●	Suppliers	Sustainable Supply Chain Management
Environmental	⑦ Energy consumption management and use of renewable energy	Energy	●	-	Climate Change Response
Economic	⑧ Production efficiency and price competitiveness	Non-GRI	●	-	(Project Report)
Economic	⑨ R&D and infrastructure expansion	Non-GRI	●	-	Research and Development
Social	⑩ Support for shared growth	Procurement Practices	●	Suppliers	Sustainable Supply Chain Management
Environmental	⑪ Climate change response	Emissions	●	-	Climate Change Response
Economic	⑫ Financial soundness and profitability	Non-GRI	●	-	Company Overview

Overview

Focus Issues & Business Cases

Sustainability Management

Sustainability Performance

APPENDIX

Certifications Status and Association Membership Status by Business Site

Certifications Status by Business Site

Company	Business Site	PU/Business Division	Certification			
			Environmental Management	Quality	Safety&Health	Eco-friendliness
Hyosung Corporation	Anyang	Interior	ISO 14001	ISO 9001		GRS(NYpre PETpost)
				IATF 16949	ISO 45001	GRS (Conventional Yarn pre, Dyed yarns & Fabrics pre post)
Hyosung TNC	Headquarter	Headquarter				
	Gumi	Spandex	ISO 14001	ISO 9001	Navi	GRS
		NPY	ISO 14001	ISO 9001		
	Ulsan	NPY	ISO 14001	ISO 9001	KOSHA 18001	
	Daegu1	Dyeing				Oeko-Tex®
Hyosung Heavy Industries	Changwon	Power Systems & Industrial Machinery	ISO 14001	ISO 9001	KOSHA 18001	
			Self-Monitoring business (1)	ISO 3834-2	ISO 45001	
			Self-Monitoring business (2)	KEPIC		
			Self-Monitoring business (3)			
			Self-Monitoring business (4)			
	Sejong	Power Systems	ISO 14001	ISO 9001	ISO 45001	
	Bangbae	Construction	ISO 14001	ISO 9001		Green Building
Hyosung Advanced Materials	Ulsan	Tire Cord	ISO 14001	ISO 9001	ISO 45001	GRS
				IATF 16949		
		Technical Yarn	ISO 14001	ISO 9001		
				IATF 16949		
		Aramid	ISO 14001	ISO 9001		
				IATF 16949		
	Jeonju	Carbon Fiber	ISO 14001	ISO 9001		
	Daejeon	Interior	ISO 14001	ISO 9001		

Company	Business Site	PU/Business Division	Certification			
			Environmental Management	Quality	Safety&Health	Eco-friendliness
Hyosung Chemical	Headqaurter	Headqaurter		ISO 9001		New Excellent Technology (NET) for Environment
		Research center		ISO 9001		
	Yongyeon1	PP/DH	ISO 14001	ISO 9001	KOSHA 18001	
		Neochem	ISO 14001	ISO 9001	ISO 45001	
	Yongyeon2	TPA	ISO 14001		KOSHA 18001	Green Enterprise
		POK	ISO 14001	ISO 9001		Green Enterprise Green Technology Product
				IATF 16949		
	Yongyeon3	Film	ISO 14001	ISO 9001		
		Opt. Film	ISO 14001	ISO 9001		
		Neochem	ISO 14001	ISO 9001	ISO 45001	
	Gumi	Film	ISO 14001	ISO 9001	NAVI	
					FSSC22000	
	Daejeon	Film		ISO 9001	ISO 22000 (FSSC22000)	
	Oksan	Opt. Film	ISO 14001	ISO 9001		

New Excellent Technology (NET) for Environment	Company	Certification code	Product name	Certification date	Expiry date
	Hyosung Chemical	380	Submerged micro filtration membrane water treatment technology with mixing and coagulation capable of high flux operation	2012.10.22	2020.10.21
		534	Ultrafiltration membrane water treatment technology based on automatic coagulant control system and effluent flushing.	2017.10.17	2022.10.16
		538	Two-stage submerged membrane water filtration system with suction-type sludge collector applied in the sedimentation preprocessing and filtration tank.	2018.01.31	2023.01.30

Certifications Status and Association Membership Status by Business Site

Association Membership Status

Category	Association Name
Hyosung Group	Korea Management Association
	Korea Mecenat Association
	Korean-American Association
	Korea-Japan Economic Association
	Asia Society
	World Economic Forum (WEF)
	WEF YGL (Young Global Leader)
	KOREA - U.S. Economic Council
	YPO Korea Chapter
	American Chamber of Commerce in Korea
Hyosung Corporation	Korea Chamber of Commerce and Industry
	Korea International Trade Association
	Korea Listed Companies Association
	BLOOM COMPANY
	Federation of Korea Human Resource Development Representatives
	Korea Personnel Improvement Association
	Korean Standards Association
	HRD Forum
	Korea Association For Chief Financial Officers
	Korea Exchange
	Korea Investor Relations Service
	Institute of Internal Auditors Korea
Hyosung TNC	Korea Chamber of Commerce and Industry
	Korea International Trade Association
	Korea Listed Companies Association
	The Federation of Korean Industries
	The Korea Enterprises Federation
	Korea Economic Research Institute
	Korea Textile Trade Association
	Korea Outdoor & Sport Industry Association
	Korea Chemical Fibers Association
	ICMC Signatory
	Korea Association for Chief Financial Officers
	AMCHAM
	Korea Electrical Contractors Association
	Korea Exchange

Category	Association Name
Hyosung Heavy Industries	Korea Chamber of Commerce and Industry
	Korea International Trade Association
	Korea Listed Companies Association
	The Federation of Korean Industries
	The Korea Enterprises Federation
	Korea Economic Research Institute
	Construction Association of Korea
	Korea Electrical Contractors Association
	Korea Fire Facility Association
	Korea Specialty Construction Association
	Korea Information & Communication Contractors Association
	Korea Mech. Const. Contractors Association
	International Contractors Association of Korea
	Korea Housing Association
	Korea Federation of Construction Contractors
	Korea Remodeling Association
	Korea Natural Gas Hydrogen Association
	H2KOREA
	Korea Hydrogen Industry Association
	Korea Construction Engineers Association
	Korea Hydro Power Industry Association
	Korea Electrical Manufactures Association - Electric Motor Council
	Korea Association of Machinery Industry
	Korea Smart Grid Association
	Korea Electrical Manufactures Association
	Korea Exchange
	The Korean Society of Rotating Engineers
	Korea Electric Association
	The Korean National Committee of CIGRE
	Korea Plant Industries Association
	Korea Atomic Industrial Forum
	Korea Electric Engineers Association
	Korea Engineering & Consulting Association
	Korean Nuclear Society

Category	Association Name
Hyosung Advanced Materials	Korea Chamber of Commerce and Industry
	Korea International Trade Association
	Korea Listed Companies Association
	The Federation of Korean Industries
	The Korea Enterprises Federation
	Korea Economic Research Institute
	Korea Chemical Fibers Association
	Korea Exchange
	Membership Society of the National Museum of Contemporary Art,Korea
	Korea Carbon and Nano Industry Association
	Korea Carbon Society
	Korea Defense Industry Association
	Korea Bobsleigh Skeleton Federation
	UN Global Compact Network Korea
	Korea Fire Safety Association
	Chemical Factory Council
	Environmental Preservation Association
	Green Hydrogen Forum
Hyosung Chemical	Korea Chamber of Commerce and Industry
	Korea International Trade Association
	Korea Listed Companies Association
	The Federation of Korean Industries
	The Korea Enterprises Federation
	Korea Economic Research Institute
	Korea Semiconductor Industry Association
	Korea Industrial Special Gas Association
	Korea Petrochemical Industry Association
	Korea Packaging Engineers Association
	Korean Institute of Chemical Engineers - CEO Club
	Korea Display Industry Association
	Korean Packaging Association
	LG Twins Club
	Korea Responsible Care Council
	UN Global Compact Network Korea
	Korea Personnel Improvement Association
	Korea Exchange

INDEPENDENT ASSURANCE STATEMENT

Introduction

Hyosung ("Hyosung") commissioned DNV Business Assurance Korea Ltd. ("DNV"), part of DNV Group, to undertake independent assurance of the 2020 Sustainability Report- Sustainability with Stakeholders (the "Report"). The directors of Hyosung have the sole responsibility for the preparation of the Report. The responsibility of DNV in performing the assurance work is to the management of Hyosung in accordance with the terms of reference. DNV's assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith.

Scope and Basis of assurance

Based on non-financial data, sustainability activities and performance data of 2020 generated from Hyosung Corp., Hyosung TNC Corp., Hyosung Heavy Industries Corp., Hyosung Advanced Materials Corp. and Hyosung Chemical Corp. ("Hyosung Corp. and 4 business companies"), we have evaluated the adherence to AA1000 Accountability Principles 2018 and assessed the quality of sustainability performance information. We have reviewed that the Topic-specific disclosures of GRI Sustainability Reporting Standards 2020 which are identified in the materiality assessment process;

No.	Material Topics	GRI Topic Specific Disclosure
1	Occupational safety and health	403-8
2	Product responsibility and safety	416-2
3	Customer relationship management (CRM) and maximizing customer satisfaction	417-3
4	Expansion to overseas markets for new growth engine	-2)
5	Green products and technology development	-
6	Suppliers' CSR risk management	308-1, 414-1

No.	Material Topics	GRI Topic Specific Disclosure
7	Energy consumption management and use of renewable energy	302-1, 302-3
8	Production efficiency and price competitiveness	-
9	R&D and infrastructure expansion	-
10	Support for shared growth	204-1
11	Climate change response	305-1, 305-2
12	Financial soundness and profitability	-

We performed our work using AA1000AS v3 and DNV's assurance methodology VeriSustainTM1, which is based on our professional experience, international assurance best practice. DNV provides Type 1 and the moderate level of assurance. We applied the limited level and assurance on reporting principles in the assurance engagement. The verification was carried out from May to June 2021. The site visits were made to Hyosung's Head Office in Seoul of Korea. We undertook the following activities as part of the assurance process:

- challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls;
 - interviewed representatives from the various departments;
- conducted document reviews, data sampling and interrogation of supporting databases and associated reporting systems as they relate to selected content and performance data;
 - reviewed the materiality assessment report.

Limitations

The engagement excludes the sustainability management, performance, and reporting practices of Hyosung Corp. and 4 business companies' subsidiaries, associated companies, suppliers, contractors and any third parties mentioned in the Report. We did not interview external stakeholders as part of this Assurance Engagement. Economic performance based on the financial data is cross-checked with internal documents, the audited consolidated financial statements and the announcement disclosed at the website of Korea Financial Supervisory Service (<http://dart.fss.or.kr>) as well as Hyosung corp. and 4 business companies' websites. These documents, financial statements and the announcements are not included in this Assurance Engagement. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. The baseline data for environmental and social performance are not verified, while the aggregated data at the corporate level are used for the verification. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

1) The VeriSustain protocol is available upon request at DNV website. (www.dnv.com/assurance/reporting/verification.html)
2) '-는 GRI GRI 보고지표와 연결되는 지표가 없음을 의미
3) VeriSustain protocol은 DNV 홈페이지 (www.dnv.com) 에서 요청 시 확인 가능
4) AA1000 AS v3: AccountAbility사가 제정한 제정한 보고서 검증 표준

Conclusion

On the basis of the work undertaken, nothing comes to our attention to suggest that the reported data and information disclosed in the Report do not give a fair representation of Hyosung's related sustainability performance. Further opinions with regards to the adherence to the Principles are made below;

The Principle of Inclusivity

Hyosung has identified internal and external stakeholder groups such as Customers, Employees, Suppliers, Shareholders/Investors and Local community. Hyosung engages with the stakeholders at the company and business unit levels through various communication channels. The examples of approaches to engage with selected stakeholders and relevant main interests are described in the report. Hyosung expresses its commitment to the responsibilities of stakeholders through a CEO message and reflects the interests identified from stakeholder in the Materiality assessment.

The Principle of Materiality

Hyosung has conducted the materiality assessment to prepare the Report. The relevant 53 issue pool has been derived by analysing the Material topics from the global sustainability initiatives and standards, benchmarking in the same industry, Media research, the analysis of internal and external ESG-related issues. The issue pools are evaluated by the internal and external stakeholders' survey and internal review and subsequently 12 prioritized issues are reported as Material topics. The assurance team has reviewed the materiality assessment process and confirmed relevant Material topics prioritized from the process are addressed in the Report.

The Principle of Responsiveness

Hyosung has established 'Customer Value Management Based on VOC', 'Increasing brand value through best quality and service', 'Practicing responsibility management through transparent communication', 'Practicing data-driven management based on IT technologies' and 'ESG management for enhancing sustainability management' as a 2021 Group Management Policy. Also, Hyosung Corp. and 4 business companies operates an ESG-related organization and will be rearranged in 2021 to maximize the value of stakeholders and implement ESG management. Hyosung and 4 business companies discloses the approach, the result of achievement and future plans on material topics in terms of sustainability during the reporting period and also introduces their response regarding with sustainability activities in aligned with the UN Sustainable Development Goals (SDGs) connected to the business area. The assurance team recommends that Hyosung develop relevant governance and response system to respond more transparently to the impact of important sustainability topics.

The principle of Impact

The impact on stakeholders related to material topics should be identified, monitored, and assessed. The Report presents direct and indirect impacts of material topics identified materiality assessment. In particular, Hyosung is paying attention to their performance and impacts through the special page of 'Hyosung's Hydrogen Economy' and 'Hyosung's Eco-friendly Product Portfolio' in the report. In the future, Hyosung could conduct the impact assessment on each company's behavior, performance and outcome in accordance with AA1000AP (2018) and the sustainability context of each impact could be in line with its management performance.

Competence and Independence

DNV applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17021:2015 - Conformity Assessment Requirements for bodies providing audit and certification of management systems, and accordingly maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We have complied with the DNV Code of Conduct2 during the assurance engagement and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. DNV was not involved in the preparation of statements or data included in the Report except for this Assurance Statement. DNV maintains complete impartiality toward stakeholders interviewed during the assurance process. DNV did not provide any services to Hyosung in 2020 that could compromise the independence or impartiality of our work.

June 2021 Seoul, Korea



Jang Sup Lee
Country Representative
DNV Business Assurance Korea Ltd.



GRI Standards Index

General Standards

Topic	Index	Index Description	Page	Comments
Organizational Profile	102-1	Name of the organization	5, 7, 9, 11, 13	
	102-2	Activities, brands, products, and services	5, 7, 9, 11, 13	
	102-3	Location of headquarters	5, 7, 9, 11, 13	
	102-4	Location of operations	5, 6	
	102-5	Ownership and legal form	40~41	
	102-6	Markets served	6, 8, 10, 12, 14	
	102-7	Scale of the organization	56, 58, 63, 66, 72, 75, 81, 84, 91, 93	
	102-8	Information on employees and other workers	45~49, 58~59, 66~68, 75~76, 84~86, 93~94	
	102-9	Supply chain	29~33, 57, 65, 74, 82, 92	
	102-10	Significant changes to the organization and its supply chain	-	No significant changes during reporting period
Strategy	102-11	Precautionary Principle or approach	42	
	102-12	External initiatives	105~109	
Ethics and Integrity	102-13	Membership of associations	103	
	102-14	Statement from senior decision-maker	4	
Governance	102-16	Values, principles, standards, and norms of behavior	5,43	
	102-17	Mechanisms for advice and concerns about ethics	43	
Stakeholder Engagement	102-18	Governance structure	40~41	
	102-40	List of stakeholder groups	100	
	102-41	Collective bargaining agreements	59,67,75,85,94	
	102-42	Identifying and selecting stakeholders	100	
	102-43	Approach to stakeholder engagement	100	
Reporting Practice	102-44	Key topics and concerns raised	100	
	102-45	Entities included in the consolidated financial statements	-	Refer to the business report
	102-46	Defining report content and topic boundaries	101	
	102-47	List of material topics	101	
	102-48	Restatements of information	2	
	102-49	Changes in reporting	2	
	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	105~106	
	102-56	External assurance	104	
Management Approach	103-1	Explanation of the material topic and its boundary	Each Material Issue	
	103-2	The management approach and its components	Each Material Issue	
	103-3	Evaluation of the management approach	Each Material Issue	

Topic-Specific Standards

Topic	Index	Index Description	Page	Comments
Economic Standard Series(GRI 200)				
Procurement Practices	103-1,2,3	Management Approach	29~33	
	204-1	Proportion of spending on local suppliers	57, 65, 74, 82, 92	Based in Korea
Environmental Standards Series(GRI 300)				
Energy	103-1,2,3	Management Approach	34~38	
	302-1	Energy consumption within the organization	60, 69, 77, 87, 95	
	302-3	Energy intensity	60, 69, 77, 87, 95	
	302-4	Reduction of energy consumption	60, 69, 77, 88, 97	
Emissions	103-1,2,3	Management Approach	34~38	
	305-1	Direct (Scope 1) GHG emissions	60, 69, 77, 87, 95	
	305-2	Energy indirect (Scope 2) GHG emissions	60, 69, 77, 87, 95	
	305-4	GHG emissions intensity	60, 69, 77, 87, 95	
	305-5	Reduction of GHG emissions	60, 69, 77, 87, 95	
	305-6	Emissions of ozone-depleting substances (ODS)	61, 70, 78, 89, 96	
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	61, 70, 78, 89, 96	
Supplier Environmental Assessment	103-1,2,3	Management Approach	29~33	
	308-1	New suppliers that were screened using environmental criteria	-	Implemented 100% when registering new suppliers
Social Standards Series(GRI 400)				
Occupational Health and Safety	403-1	Occupational health and safety management system	24~28, 62, 80	
	403-2	Hazard identification, risk assessment, and incident investigation	24~28, 80, 90, 98	
	403-3	Occupational health services	24~28, 80, 90, 98	
	403-4	Worker participation, consultation, and communication on occupational health and safety	24~28, 80, 90, 98	
	403-5	Worker training on occupational health and safety	24~28, 80, 90, 98	
	403-6	Promotion of worker health	24~28, 71, 80, 90, 98	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	24~28, 80, 90, 98	
	403-8	Workers covered by an occupational health and safety management system	62, 71, 80, 90, 98	
	403-9	Work-related injuries	62, 71, 80, 90, 98	
	403-10	Work-related ill health	62, 71, 80, 90, 98	
Supplier Social Assessment	103-1,2,3	Management Approach	29~33	
	414-1	New suppliers that were screened using social criteria	-	Implemented 100% when registering new suppliers
	414-2	Negative social impacts in the supply chain and actions taken	29~33	
Customer Health and Safety	103-1,2,3	Management Approach	18~22	
	416-1	Assessment of the health and safety impacts of product and service categories	18~22	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-	No significant cases found
Marketing and Labeling	103-1,2,3	Management Approach	18~22	
	417-1	Requirements for product and service information and labeling	18~22	
	417-2	Incidents of non-compliance concerning product and service information and labeling	-	No significant cases found
	417-3	Incidents of non-compliance concerning marketing communications	-	No significant cases found

GRI Standards Index

Other Standards

Topic	Index	Index Description	Page	Comments
Strategy	102-15	Key impacts, risks, and opportunities	42, 101	
	102-22	Composition of the highest governance body and its committees	40~41	
Governance	102-23	Chair of the highest governance body	40~41	
	102-24	Nominating and selecting the highest governance body	40~41	
	102-25	Conflicts of interest	40~41	
	102-26	Role of highest governance body in setting purpose, values, and strategy	40~41	
	102-28	Evaluating the highest governance body's performance	40~41	
	102-29	Identifying and managing economic, environmental, and social impacts	40~41	
	102-30	Effectiveness of risk management processes	42	
	102-34	Nature and total number of critical concerns	-	Refer to business report
	102-35	Remuneration policies	40	
	102-36	Process for determining remuneration	40	
Economic Performance	201-1	Direct economic value generated and distributed	56, 63, 72, 81, 91	
	201-2	Financial implications and other risks and opportunities due to climate change	34	
	201-3	Defined benefit plan obligations and other retirement plans	59, 67, 76, 85, 94	
	201-4	Financial assistance received from government	79	
Market Presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	58, 67, 76, 85, 94	
Indirect Economic Impacts	203-1	Infrastructure investments and services supported	50~52	
	203-2	Significant indirect economic impacts	50~52	
Anti-Corruption	205-1	Operations assessed for risks related to corruption	43	
	205-2	Communication and training about anti-corruption policies and procedures	43, 94	
	205-3	Confirmed incidents of corruption and actions taken	43, 73	
Anti-Competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	43, 73, 94	
Tax	207-4	Country-by-country reporting	57, 64, 73, 82, 92	
Materials	301-2	Recycled input materials used	61, 70, 78, 88, 96	
	303-3	Water withdrawal	61, 70, 78, 88, 95	
Water	303-4	Water discharge	61, 70, 78, 88, 95	
	303-5	Water consumption	61, 70, 78, 88, 95	

Topic	Index	Index Description	Page	Comments
Biodiversity	304-3	Habitats protected or restored	62, 98	
	306-3	Waste generated	61, 70, 78, 88, 96	
Waste	306-4	Waste diverted from disposal	61, 70, 78, 88, 96	
	306-5	Waste directed to disposal	61, 70, 78, 88, 96	
Environmental Compliance	307-1	Non-compliance with environmental laws and regulations	65, 82, 92	
Employment	401-1	New employee hires and employee turnover	58, 66, 75, 84, 93	
	401-3	Parental leave	58, 66, 75, 84, 93	
Training and Education	404-1	Average hours of training per year per employee	59, 68, 76, 86, 94	
	404-2	Programs for upgrading employee skills and transition assistance programs	46~47, 68	
	404-3	Percentage of employees receiving regular performance and career development reviews	58, 66, 75, 84, 93	
	405-1	Diversity of governance bodies and employees	40~41, 58, 66, 75, 84, 93	
Diversity and Equal Opportunity	405-2	Ratio of basic salary and remuneration of women to men	58, 67, 76, 85, 94	
Non-Discrimination	406-1	Incidents of discrimination and corrective actions taken	43, 86	
Freedom of Association and Collective Bargaining	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	-	None
Child Labor	408-1	Operations and suppliers at significant risk for incidents of child labor	-	Not applicable to our business sites
Forced or Compulsory Labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	-	Not applicable to our business sites
Security Practices	410-1	Security personnel trained in human rights policies or procedures	-	Not applicable
Rights of Indigenous Peoples	411-1	Incidents of violations involving rights of indigenous peoples	-	Not applicable
Human Rights Assessment	412-1	Operations that have been subject to human rights reviews or impact assessments	44	
	412-2	Employee training on human rights policies or procedures	44, 59, 68, 76, 86, 94	
Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	50~52, 59, 67, 76, 85, 94	
	413-2	Operations with significant actual and potential negative impacts on local communities	-	Not applicable
Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	-	No significant cases found
Socioeconomic Compliance	419-1	Non-compliance with laws and regulations in the social and economic area	-	No significant cases found

TCFD

Since 2015, nearly every nation on earth have endorsed the Paris Agreement to set an emission reduction target and declare the commitment to implement the goal against global warming. Additionally, the Financial Stability Board (FSB) has established the Task Force on Climate-related Financial Disclosures (TCFD) in December 2015 and developed a global framework for information disclosure in recognition of importance in economic decision-making against climate change. Within the framework, the disclosure is structured around four thematic areas that represent core elements of how organizations operate: governance, strategy, risk management, and metrics and targets. Companies may disclose their climate change-related financial information following the recommendations by TCFD, and the information is actively used for decision-making of stakeholders and investors. As such, Hyosung and its four business companies are disclosing climate change-related information through sustainability reports in accordance with TCFD's recommendations in order to reorganize the overall climate change response system and take the lead in fulfilling the responsibilities.

TCFC Recommendation	
▼	
1. Governance	· Disclose the organization’s governance around climate-related risks and opportunities.
2. Strategy	· Disclose actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.
3. Risk Management	· Disclose how the organization identifies, assesses, and manages climate-related risks
4. Metrics and Targets	· Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

TCFD Index

Category	Disclosure	Page	Comments
Governance	Describe the board’s oversight of climate-related risks and opportunities	34, 36, 37	
	Describe management’s role in assessing and managing climate-related risks and opportunities	34, 36, 37	
Strategy	Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term	34, 35~38	
	Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning	8, 10, 12, 14, 15~16, 65, 83	
	Describe the resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	-	
Risk Management	Describe the organisation’s processes for identifying and assessing climate-related risks	34, 37	
	Describe the organisation’s processes for managing climate-related risks	34, 37	
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation’s overall risk management	34, 37	
Metrics & Targets	Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process	35~38	
	Disclose Scope 1, Scope 2, and if appropriate Scope 3 greenhouse gas (GHG) emissions, and the related risks	60, 69, 71, 77, 78, 87, 88, 95, 97	
	Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	35~38	

SASB

In 2011, SASB (Sustainability Accounting Standards Board) was established to set up industry-specific sustainability accounting standards. Since then, SASB has derived financially significant sustainability issues considering individual characteristics of each industry and announced sustainability issues for a total of 77 industries in 11 areas according to the Sustainable Industry Classification System (SICS). Accordingly, Hyosung and its four business companies disclose related information through the Sustainability Report in line with SASB standards and SICS industry classification, in an effort to communicate more actively with stakeholders.

Chemical

Sustainability Disclosure Topics & Accounting Metrics							
Topic	Code	Accounting Metric	Category	Page			Comments
				Hyosung TNC	Hyosung Advanced Materials	Hyosung Chemical	
Greenhouse Gas Emissions	RT-CH-110a.1	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	Quantitative	69	87	95	
	RT-CH-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis	69	87	95	
Air Quality	RT-CH-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) Sox, (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)	Quantitative	70	89	96	
Energy Management	RT-CH-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy	Quantitative	69	87	95	
Water Management	RT-CH-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Quantitative	70	88	95	
	RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	Quantitative	-	-	-	No case of violation
	RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	70	88	95	
Hazardous Waste Management	RT-CH-150a.1	Amount of hazardous waste generated, percentage recycled	Quantitative	70	88	96	
Community Relations	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	Discussion and Analysis	50~52			
Workforce Health & Safety	RT-CH-320a.1	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees	Quantitative	71	90	98	
	RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	Discussion and Analysis	25, 71	27, 90	28, 98	
Product Design for Use-phase Efficiency	RT-CH-410a.1	Revenue from products designed for use-phase resource efficiency	Quantitative	65	82	92	
Safety & Environmental Stewardship of Chemicals	RT-CH-410b.1	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment	Quantitative	-	-	-	Not applicable
	RT-CH-410b.2	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	Discussion and Analysis	71	89	96	
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)	Quantitative	-	-	-	Not applicable
Management of the Legal & Regulatory Environment	RT-CH-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	Discussion and Analysis	65	82	92	
Operational Safety, Emergency Preparedness & Response	RT-CH-540a.1	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)	Quantitative	25, 71	27, 90	28, 98	* Data to be added
	RT-CH-540a.2	Number of transport incidents	Quantitative	25, 71	27, 90	28, 98	

Activity Metric						
CODE	Activity Metric	Category	Page			Comments
			Hyosung TNC	Hyosung Advanced Materials	Hyosung Chemical	
RT-CH-000.A	Production by reportable segment	Quantitative	65	82	92	

*In relation to process safety and emergencies, occupational accident data are managed in accordance with domestic laws and regulations, and data will be added later on in accordance with SASB standards.

Electrical & Electronic Equipment

Sustainability Disclosure Topics & Accounting Metrics					
Topic	Code	Accounting Metric	Category	Page	Comments
				Hyosung Heavy Industries	
Energy Management	RT-EE-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	Quantitative	77	
Hazardous Waste Management	RT-EE-150a.1	Amount of hazardous waste generated, percentage recycled	Quantitative	78	
	RT-EE-150a.2	Number and aggregate quantity of reportable spills, quantity recovered	Quantitative	-	No significant spill case
Product Safety	RT-EE-250a.1	Number of recalls issued, total units recalled	Quantitative	-	Not applicable
	RT-EE-250a.2	Total amount of monetary losses as a result of legal proceedings associated with product safety	Quantitative	73	
Product Lifecycle Management	RT-EE-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	Quantitative	73	
	RT-EE-410a.2	Percentage of eligible products, by revenue, that meet ENERGY STAR® criteria	Quantitative	73	
	RT-EE-410a.3	Revenue from renewable energy-related and energy efficiency-related products	Quantitative	73	
Materials Sourcing	RT-EE-440a.1	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	31	
Business Ethics	RT-EE-510a.1	Description of policies and practices for prevention of: (1) corruption and bribery and (2) anti-competitive behavior	Discussion and Analysis	43	
	RT-EE-510a.2	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	Quantitative	73	
	RT-EE-510a.3	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	Quantitative	73	

Activity Metric				
Code	Activity Metric	Category	Page	Comments
			Hyosung Heavy Industries	
RT-EE-000.A	Number of units produced by product category	Quantitative	73	
RT-EE-000.B	Number of employees	Quantitative	75	

Engineering & Construction

Sustainability Disclosure Topics & Accounting Metrics					
Topic	Code	Accounting Metric	Category	Page	Comments
				Hyosung Heavy Industries	
Environmental Impacts of Project Development	IF-EN-160a.1	Number of incidents of non-compliance with environmental permits, standards, and regulations	Quantitative	74	
	IF-EN-160a.2	Discussion of processes to assess and manage environmental risks associated with project design, siting, and construction	Discussion and Analysis	80	
Structural Integrity & Safety	IF-EN-250a.1	Amount of defect- and safety-related rework costs	Quantitative	-	Not applicable
	IF-EN-250a.2	Total amount of monetary losses as a result of legal proceedings associated with defect- and safety-related incidents	Quantitative	73	
Workforce Health & Safety	IF-EN-320a.1	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees	Quantitative	80	
Lifecycle Impacts of Buildings & Infrastructure	IF-EN-410a.1	Number of (1) commissioned projects certified to a third-party multi-attribute sustainability standard and (2) active projects seeking such certification	Quantitative	74, 79	
	IF-EN-410a.2	Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design	Discussion and Analysis	37, 79	
Climate Impacts of Business Mix	IF-EN-410b.1	Amount of backlog for (1) hydrocarbon-related projects and (2) renewable energy projects	Quantitative	74	
	IF-EN-410b.2	Amount of backlog cancellations associated with hydrocarbon-related projects	Quantitative	74	
	IF-EN-410b.3	Amount of backlog for non-energy projects associated with climate change mitigation	Quantitative	74	
Business Ethics	IF-EN-510a.1	(1) Number of active projects and (2) backlog in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Quantitative	-	No related project available
	IF-EN-510a.2	Total amount of monetary losses as a result of legal proceedings associated with charges of (1) bribery or corruption and (2) anti-competitive practices	Quantitative	73	
	IF-EN-510a.3	Description of policies and practices for prevention of (1) bribery and corruption, and (2) anti-competitive behavior in the project bidding processes	Discussion and Analysis	43	

Activity Metric				
Code	Accounting Metric	Category	Page Hyosung Heavy Industries	Comments
IF-EN-000.A	Number of active projects	Quantitative	74	
IF-EN-000.B	Number of commissioned projects	Quantitative	74	
IF-EN-000.C	Total backlog	Quantitative	74	

Asset Management

Sustainability Disclosure Topics & Accounting Metrics					
Topic	Code	Accounting Metric	Category	Page	Comments
				Hyosung Corporation	
Transparent Information & Fair Advice for Customers	FN-AC-270a.1	(1) Number and (2) percentage of covered employees with a record of investment-related investigations, consumer-initiated complaints, private civil litigations, or other regulatory proceedings	Quantitative	-	*Not applicable
	FN-AC-270a.2	Total amount of monetary losses as a result of legal proceedings associated with marketing and communication of financial product-related information to new and returning customers	Quantitative	57	*Not applicable
	FN-AC-270a.3	Description of approach to informing customers about products and services	Discussion and Analysis	-	*Not applicable
Employee Diversity & Inclusion	FN-AC-330a.1	Percentage of gender and racial/ethnic group representation for (1) executive management, (2) non-executive management, (3) professionals, and (4) all other employees	Quantitative	58	
Incorporation of Environmental, Social, and Governance Factors in Investment Management & Advisory	FN-AC-410a.1	Amount of assets under management, by asset class, that employ (1) integration of environmental, social, and governance (ESG) issues, (2) sustainability themed investing, and (3) screening	Quantitative	-	*Not applicable
	FN-AC-410a.2	Description of approach to incorporation of environmental, social, and governance (ESG) factors in investment and/or wealth management processes and strategies	Discussion and Analysis	-	*Not applicable
	FN-AC-410a.3	Description of proxy voting and investee engagement policies and procedures	Discussion and Analysis	-	*Not applicable
Business Ethics	FN-AC-510a.1	Total amount of monetary losses as a result of legal proceedings associated with fraud, insider trading, anti-trust, anti-competitive behavior, market manipulation, malpractice, or other related financial industry laws or regulations	Quantitative	57	
	FN-AC-510a.2	Description of whistleblower policies and procedures	Discussion and Analysis	43	Website
Systemic Risk Management	FN-AC-550a.1	Percentage of open-end fund assets under management by category of liquidity classification	Quantitative	-	*Not applicable
	FN-AC-550a.2	Description of approach to incorporation of liquidity risk management programs into portfolio strategy and redemption risk management	Discussion and Analysis	-	*Not applicable
	FN-AC-550a.3	Total exposure to securities financing transactions	Quantitative	-	*Not applicable
	FN-AC-550a.4	Net exposure to written credit derivatives	Quantitative	-	*Not applicable

Activity Metric				
Code	Activity Metric	Category	Page Hyosung Corporation	Comments
FN-AC-000.A	(1) Total registered and (2) total unregistered assets under management (AUM)	Quantitative	-	*Not applicable
FN-AC-000.B	Total assets under custody and supervision	Quantitative	-	*Not applicable

*Hyosung Corporation is the holding company of Hyosung Group. Since it is not a general financial holding company, financial indicators are not applicable.

UN SDGs
 (UN Sustainable Development Goals)

UN SDGs (Sustainable Development Goals) are the follow-up goals after the MDGs (Millenium Development Goals) that the UN and the international society as a whole are committed to achieve between 2016 and 2030. The SDGs include 17 goals and 169 targets for sustainable development of all countries around the world, including solving climate change response, economic growth, and decent jobs. Hyosung Corporation and its four affiliated business companies disclose key sustainability issues and their connection with UN SDGs targets through their Sustainability Report.

Key Issues	UN SDGs	Our Responses				
		Hyosung Corporation	Hyosung TNC	Hyosung Heavy Industries	Hyosung Advanced Materials	Hyosung Chemical
① Occupational safety and health		<ul style="list-style-type: none"> Strengthening safety and health system 	<ul style="list-style-type: none"> Strengthening safety inspections Promoting safety training 	<ul style="list-style-type: none"> Establishing 4 focus tasks & top 10 safety practices 	<ul style="list-style-type: none"> Reorganizing safety and health disaster system Establishing 5 major strategies 	<ul style="list-style-type: none"> Establishing the EHS Committee Strengthening suppliers' safety and health
② Product responsibility and safety		<ul style="list-style-type: none"> Establishing C-Cube system 	<ul style="list-style-type: none"> Acquiring quality improvement and safety certifications 	<ul style="list-style-type: none"> Establishing Global Management System (GMS) 	<ul style="list-style-type: none"> Advancing C-Cube activities 	<ul style="list-style-type: none"> Acquiring quality and safety certifications
③ Customer relationship management (CRM) and maximizing customer satisfaction		<ul style="list-style-type: none"> Internalization of C-Cube activities 	<ul style="list-style-type: none"> VOC-based brand launching 	<ul style="list-style-type: none"> VOC-based product development 	<ul style="list-style-type: none"> VOC-based product development 	<ul style="list-style-type: none"> VOC-based product development
④ Expansion to overseas markets for new growth engine		<ul style="list-style-type: none"> Expansion of global production bases 	<ul style="list-style-type: none"> Facility expansion in Turkey and Brazil Investment expansion in China 	<ul style="list-style-type: none"> Expansion into overseas power equipment markets 	<ul style="list-style-type: none"> Cooperation with major global automakers 	<ul style="list-style-type: none"> Facility expansion of Vina Chemical
⑤ Green products and technology development		<ul style="list-style-type: none"> Building eco-friendly product portfolio 	<ul style="list-style-type: none"> Bio-based spandex development Promotion of regen recycling project 	<ul style="list-style-type: none"> Expansion of hydrogen charging station and development of supply technology Development of green power equipment 	<ul style="list-style-type: none"> Bio-based PET development Product development using recycled materials 	<ul style="list-style-type: none"> Producing eco-friendly new ENPLA material
⑥ Suppliers' CSR risk management		<ul style="list-style-type: none"> Strengthening supplier risk management system 	<ul style="list-style-type: none"> Reinforcement of supplier registration evaluation and supply chain risk management 	<ul style="list-style-type: none"> Strengthening supplier risk management system 	<ul style="list-style-type: none"> Expanding the scope of supplier risk management and conducting regular monitoring 	<ul style="list-style-type: none"> Reinforcement of supplier registration evaluation and supply chain risk management
⑦ Energy consumption management and use of renewable energy		<ul style="list-style-type: none"> Applying TCFD recommendations Establishment of climate change response strategies 	<ul style="list-style-type: none"> Increasing renewable energy use Energy saving efforts 	<ul style="list-style-type: none"> Developing Non-CO₂ technology Energy saving efforts 	<ul style="list-style-type: none"> Expansion of overseas subsidiaries subject to greenhouse gas calculation Energy saving and Increasing renewable energy 	<ul style="list-style-type: none"> Increasing renewable energy use Energy saving efforts
⑧ Production efficiency and price competitiveness				<ul style="list-style-type: none"> Securing differentiated competitiveness through global production system Expanding facility investment in global production bases 		
⑨ R&D and infrastructure expansion		<ul style="list-style-type: none"> Strengthening R&D organizational system 		<ul style="list-style-type: none"> Promoting the R&D Committee and in-company technology exchange meetings Continuous support for major research projects (green materials, new materials and other new technologies) 		
⑩ Support for shared growth		<ul style="list-style-type: none"> Establishing the shared growth system 	<ul style="list-style-type: none"> Strengthening suppliers' competitiveness 	<ul style="list-style-type: none"> Strengthening shared growth programs 	<ul style="list-style-type: none"> Strengthening shared growth programs 	<ul style="list-style-type: none"> Strengthening shared growth programs
⑪ Climate change response		<ul style="list-style-type: none"> Establishing climate change response system Participating in CDP (Carbon Disclosure Project) 	<ul style="list-style-type: none"> Calculating product carbon footprint Expanding facility investment for emissions reduction 	<ul style="list-style-type: none"> Projects for renewable energy transmission and distribution system Expanding renewable energy business 	<ul style="list-style-type: none"> Extending the product scope/region for carbon labelling certification Establishing climate change response system for overseas business sites 	<ul style="list-style-type: none"> Expanding facility investment for emissions reduction
⑫ Financial soundness and profitability				<ul style="list-style-type: none"> Continuous overseas market expansion Localization strategy targeting the global market and core product mass production strategy 		