

GLOBAL DEVELOPER

2021
SUSTAINABILITY
REPORT

IDL

2021 DL Sustainability Report

Overview

This is our seventh publication of the sustainability report since 2008, and it covers the progress and commitment we made towards sustainable growth in 2020. This report will serve as a communication channel for us to share our performance and activities for the previous year and reflect stakeholders' feedback in our practice.

Reporting Period and Scope

This report covers our sustainability performance from January 1, 2020, to December 31, 2020, based on the data of our head office and domestic and overseas business sites. We report the performance of new companies incorporated on January 4, 2021 – DL E&C (spin-off) and DL Chemical (split-off), and certain performance includes the overseas business sites of each company. Depending on the timeliness and importance of the information, it includes data from the first half of 2021 as well as data from the past three years (2018 - 2020) for comparison in regard to quantitative performance.

Reporting Principles

This report has been prepared in accordance with the Core Option of the GRI (Global Reporting Initiative) Standards and AA1000AP (2018). Other indicators including the SASB (Sustainability Accounting Standards Board), UNGC (United Nations Global Compact) Ten Principles, and the UN SDGs (Sustainable Development Goals) were also considered.

Assurance

This report has been assured by the BSI Group Korea, a third-party assurance agency, to ensure its objectivity and accuracy. The assurance statements can be found on pages 166 – 167.

Contact Information

Please use the contact information below for any questions about this report.

Publication Frequency

DL Sustainability Report is published every year, and the latest edition was released in August 2020.

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CEO Message



Dear Valued Stakeholders,

I would like to extend my sincere gratitude to all our shareholders, customers, business partners, and employees for their encouragement and support, without which our sustainable growth would not have been possible.

Last year, we achieved remarkable results, exceeding KRW 1 trillion in operating profit for the second consecutive year despite the challenging business environment we faced including COVID-19.

We have been searching for the best time for us to independently pursue our strategies in the construction and petrochemical sectors. As a newly incorporated holding company as of January of this year, we will implement individual growth strategies tailored to each industry, and through a re-evaluation of corporate value, we will continue to enhance value and our shareholders' profits, and develop transparent corporate governance.

Our goal is to step up as a leading global developer and pave the way towards a sustainable future by optimizing our competitive advantages and market positions. As a holding company, we will continue to support and coordinate our strategies for each affiliate while DL E&C will innovate its business operation by applying digital technology and grow into a developer-centered total solution provider as it breaks away from conventional business operation focusing on project orders. Meanwhile, DL Chemical will expand production facilities for existing products and diversify production bases, while focusing on high value-added areas such as eco-friendly materials and new medical materials as a global petrochemical company. In the private power generation sector, DL Energy is operating LNG, wind power, and solar power plants in the U.S., Pakistan, and Jordan as well as South Korea, and will continue to grow as a global energy developer.

In order to pioneer new markets, drive changes, and promote a sustainable future, we are committed to the following sustainable management practices:

We protect the environment.

Recognizing the importance of environmental issues, we take a proactive approach to climate change.

We put quality and safety first.

We are committed to delivering the highest quality and raising safety awareness based on digital technology.

We support our local community.

As a corporate citizen, we maintain a close partnership with our local community and fulfill our social responsibilities.

We grow together.

We are operating a partnership program to support shared growth with our business partners because we believe their success is linked to ours as well.

Dear Stakeholders,

Celebrating our 82nd anniversary, we will continue to dedicate ourselves to innovation and creative challenges to create values for our customers and society, and lead the future with the mindset of a startup. We look forward to your continued support and interest and promise to become a company that is ready for the future.

Thank you.

July 2021

CEO Bae Weon Bog

BAE WEONBOG

Company Overview

Founded in 1939, Daelim Industrial was spun and split off into DL E&C from the construction division, consisting of housing & building, civil infrastructure, and plant sectors, and DL Chemical from the petrochemical division to focus its resources on specialized areas on January 4, 2021. Leveraging our strong technical expertise and extensive experience in the fields, we are delivering a range of products and services in 33 countries around the world. Going beyond a traditional business operation that is limited to design and construction, we are gaining competitive advantages as a developer and operator by encompassing the entire process from project development and planning to investment, financing, construction, and operation management.

Name of Company
DL Co., Ltd.

Founded
Oct. 10, 1939

Address (Head Office)
Doneumun, D-Tower, 134,
Tongil-ro, Jongno-gu, Seoul

No. of Employees
6,053

Areas of Business
Housing & Building, Civil,
Plant, Petrochemical

DL Co., Ltd.

Holding Company	Subsidiaries	Location (Head Office)
Domestic	DL Chemical	Seoul
	DL Motors Co., Ltd.	Changwon, Gyeongnam
	DL F&C Co., Ltd.	Wanju, Jeonbuk
	Eco One Energy Co., Ltd.	Yeosu, Jeonnam
	GLAD Hotels & Resorts Co., Ltd.	Jeju
	Songdo Power Co., Ltd.	Seoul
	A Plus D Co., Ltd.	Seoul
	DL Energy Co., Ltd.	Seoul
	Chungjin Project Co., Ltd.	Seoul
	Chungjin Asset Management Company	Seoul
	Daelim No. 5 Cheonan Wonseong Newstay REIT Co., Ltd.	Seoul
	Poseung Green Power Co., Ltd.	Pyeongtaek, Gyeonggi
	Cochrane SPC Co., Ltd.	Pocheon, Gyeonggi
Overseas	Yeongju Eco Power Co., Ltd.	Yeongju, Gyeongbuk
	Cariflex PTE.LTD.	Singapore
	Cariflex Netherlands B.V.	Netherland
	Cariflex Brazil Industria e Comercio de Produtos Petroquimico Ltda	Brazil
	Daelim Chemical USA, INC.	USA
	Daelim Chemical USA LLC	USA
	DE Cochrane SpA	Chile
DE NILES, LLC	USA	

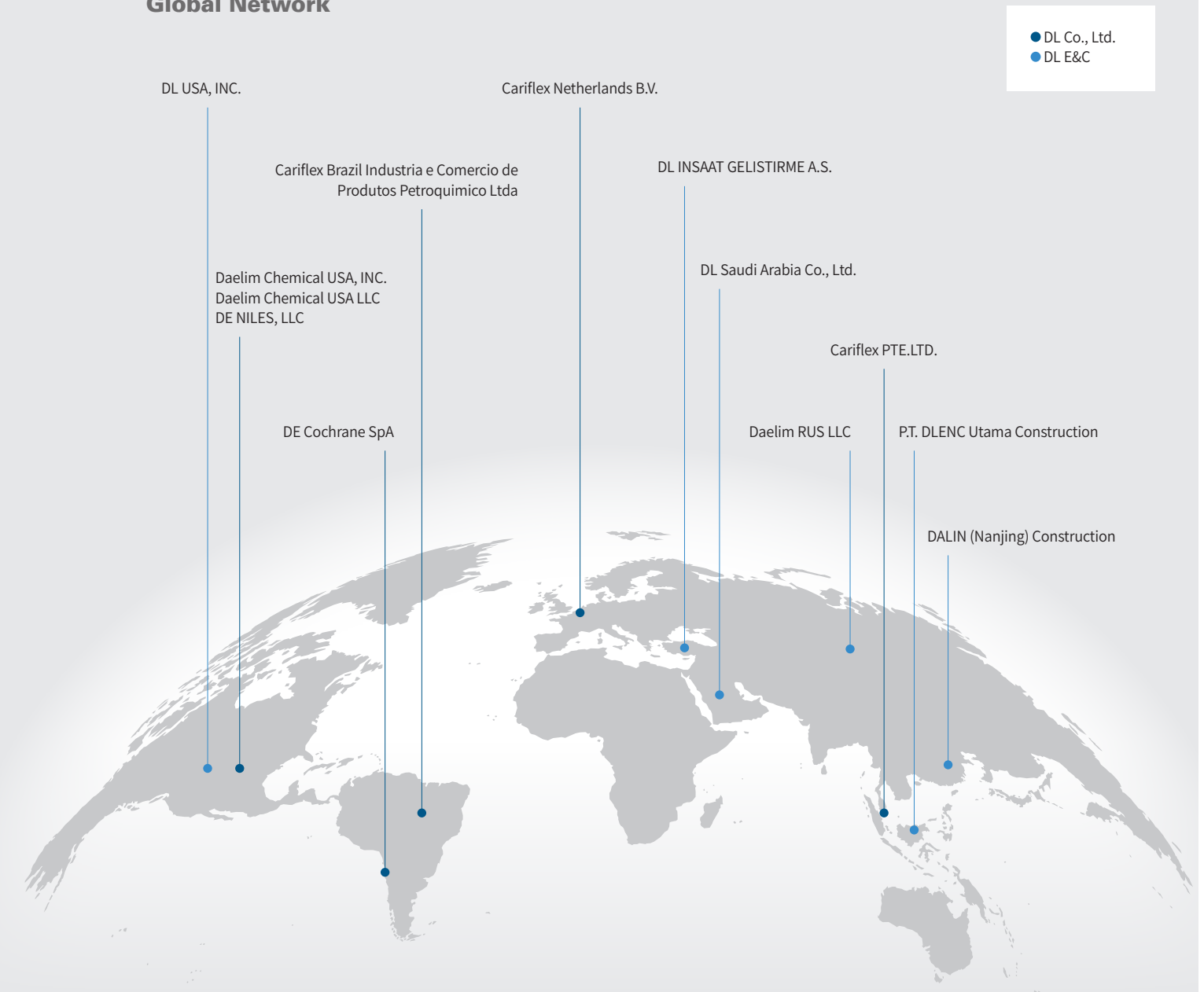
DL E&C

Holding Company	Subsidiaries	Location (Head Office)
Domestic	DL Construction Co., Ltd.	Incheon
	Osan Landmark Project Co., Ltd.	Seoul
Overseas	DL Saudi Arabia Co., Ltd.	Saudi Arabia
	P.T. DLENC Utama Construction	Indonesia
	DALIN (Nanjing) Construction	China
	DL USA, INC.	USA
	DL INSAAT GELISTIRME A.S.	Turkey
Daelim RUS LLC	Russia	

Business Philosophy

DL is pioneering its way in various sectors. We are creating a new path through technological innovation and paving the way towards a sustainable future as a global leader. By taking ourselves to the limit, we are striving to reach new heights while developing new markets and realizing positive changes. Our goal is to create new values and enrich our society, which is why we promote collaboration and shared growth to drive sustainable development. These are the essence of our business philosophy, leading the industry to a better future.

Global Network

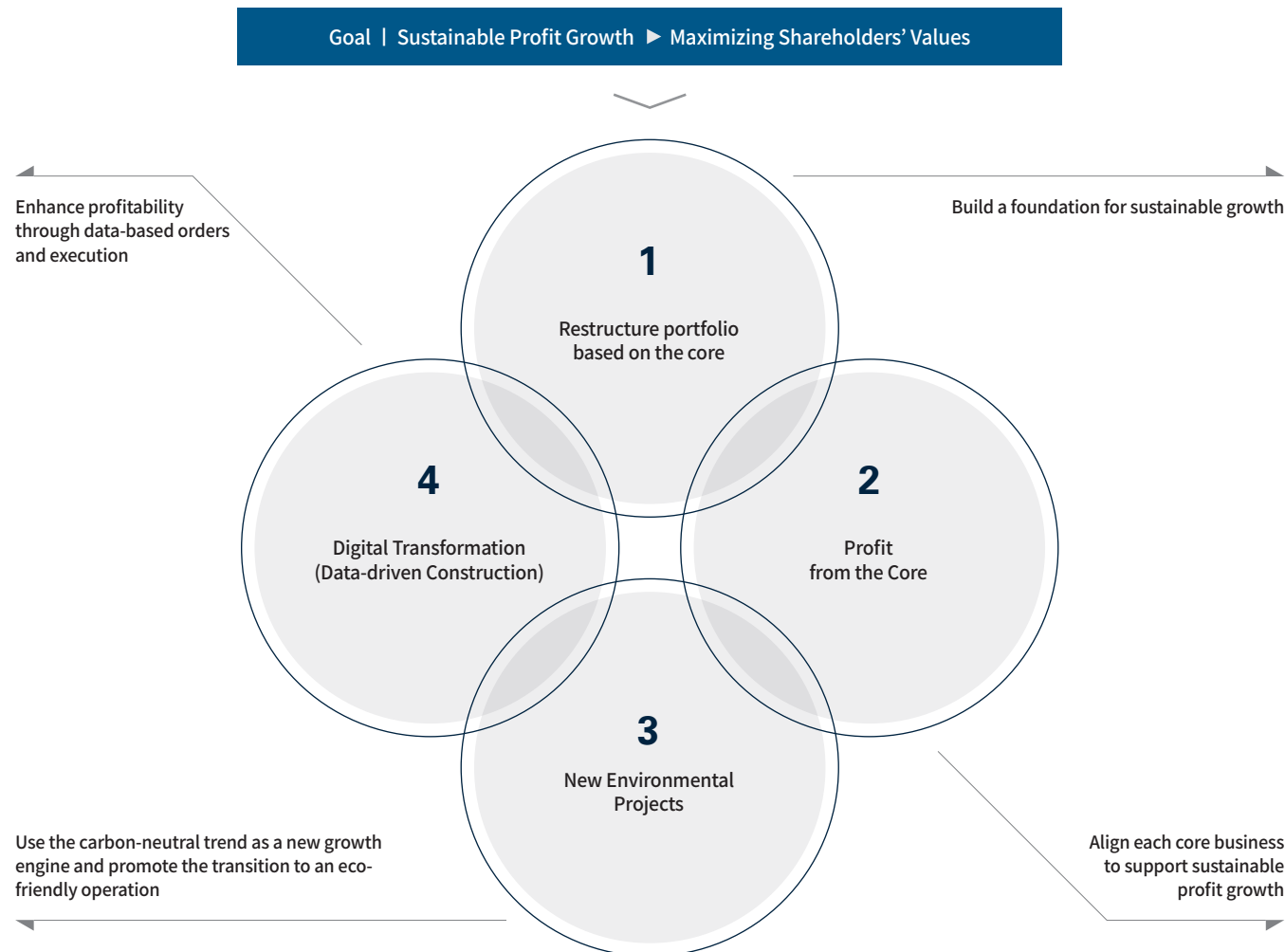


Mid/Long-term Business Strategy

In order to alleviate the ongoing uncertainty in the global market, it is important for companies to develop the competitiveness of their existing businesses, secure new growth engines and gain unique competitive edges by exploring opportunities by focusing their resources in specific areas. DL E&C has built a strong foundation for sustainable growth by reorganizing its structure based on its core business sectors and developing new growth drivers by utilizing digital technology.

Mid/Long-term Directions

DL E&C is committed to maximizing profit generation based on its core business by focusing on its strengths and realizing sustainable growth to enhance its corporate and shareholders' value. Furthermore, we are striving to improve our profitability by introducing data-driven management.



Profit from the Core Business

Core Businesses		
Housing & Building	Civil Infrastructure	Plant
In the housing & building sector, we focus on profit generation and sustainable growth by selecting key areas and exploring new business opportunities based on market forecasts. We will continue to maximize our corporate value for shareholders by selecting projects through their scale and feasibility analysis and gaining competitive advantages with unmatched product development and business models tailored to customers' needs.	In the civil infrastructure sector, we analyze feasibility and develop projects based on their potential for sustainable growth and profit generation. We will develop competitive edges in both domestic and overseas markets with a focus on bridges and ports, which are the core of technological innovation while expanding our presence in eco-friendly business areas such as overseas hydroelectric power generation and environmental (water treatment) private funded projects.	It is expected that the power generation market will confront rapid change, and the demand for petrochemical products will continue to grow as the needs for renewable energy increase. In response to this trend, we will anticipate structural changes in the global plant market over the next 10 years, take a proactive approach, and show initiative to support sustainable growth based on our experience and expertise.
Promote profit generation and sustainable growth by developing unique products tailored to customers' needs and strengthening our position as a developer	Develop competitive advantages and expand presence in the eco-friendly market through technological innovation and risk management	In response to changes in the plant market, develop new eco-friendly businesses based on extensive experience and strong expertise and CCU

New Eco-friendly Business - CCU (Carbon Capture Utilization)

Strengthened international policies in response to climate change

- Paris Agreement on Climate Change (2016), 121 countries declared carbon neutrality in 1950 (South Korea joined in October 2020)
- Monetary penalties, e.g., ETS (emission trading system) and carbon tax
- South Korea targets to capture 10 million tons of CO₂/year by 2030 (reduce emissions by 25% compared to 2017)
- * South Korea : 9th largest GHG emission in the world (1st China, 2nd USA)
- * CCU is required for domestic power generation, petrochemical, and cement sectors : 630 million tons of emissions in 2019 (200 million tons for power generation companies, 60 million tons for petrochemical companies, 30 million tons for oil refineries) → CCU market : expected to grow to KRW 8.7 trillion by 2030

Estimated Carbon Tax of Top GHG Emitters (Unit : KRW, %)

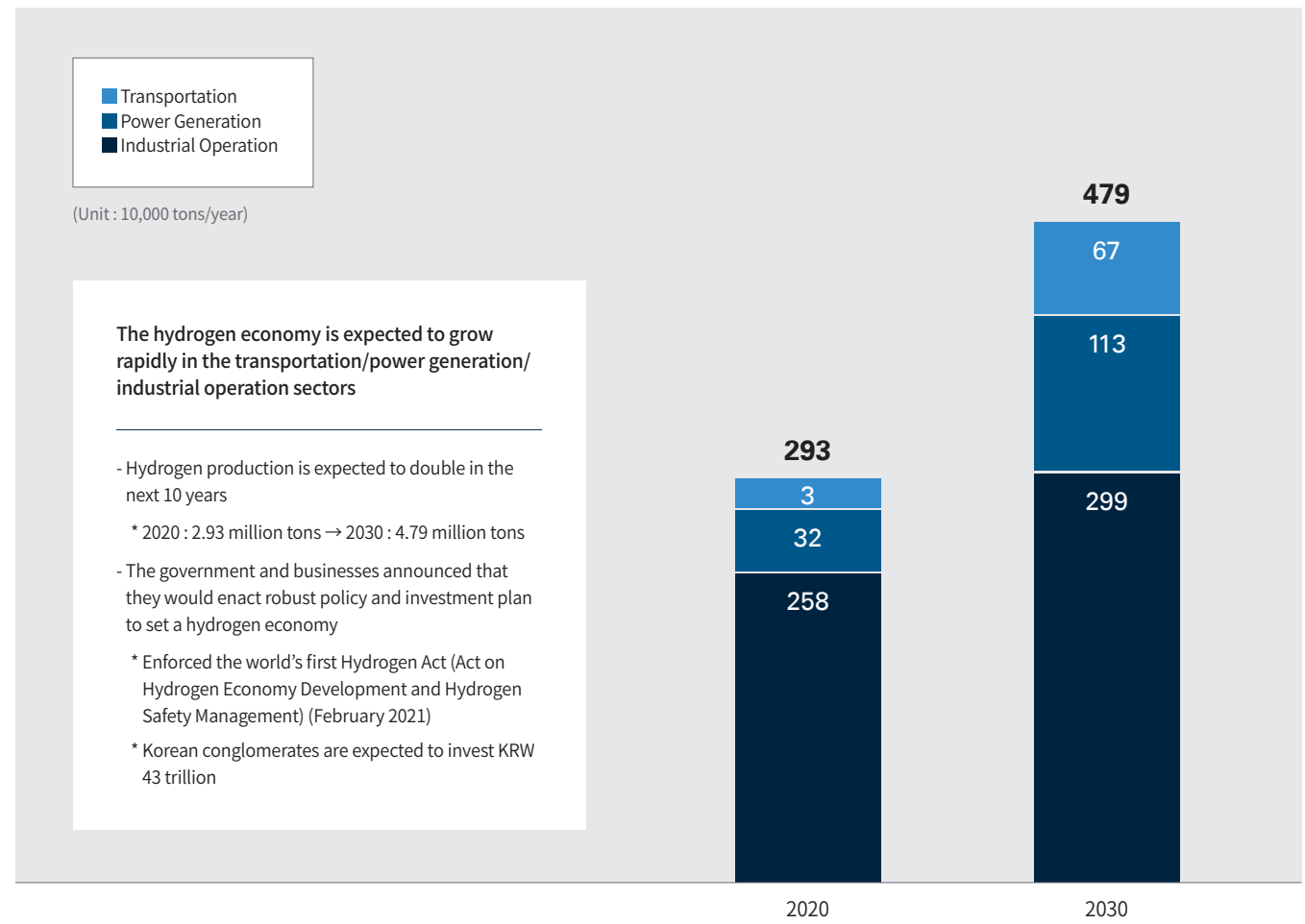
Emitters	Operating Profit	Carbon Tax
1 POSCO	3,868.9B	4,888.9B (126.4%)
2 Korea South-East Power	125B	3,204B (2,564%)
3 Korea East-West Power	122.9B	2,340.1B (1,903%)
4 Korea South Power	151.9B	2,200.2B (1,448%)
5 Korea West Power	74.7B	2,080.4B (2,785%)
6 Korea Midland Power	90.5B	2,056.2B (2,271%)
7 Hyundai Steel	331.3B	1,334.7B (402%)
8 Samsung Electronics	27,768.5B	667.9B (2.4%)
9 Hyundai Green Power	58.1B	650.1B (1,119%)
10 Ssangyong C&E	228.4B	647.7B (283%)

* The operating profit was estimated based on \$50 per ton of carbon tax in 2019

Source : National Federation of Entrepreneurs

Develop CCU EPC and Carbon Reduction Service for top carbon emitters

New Eco-friendly Business - Hydrogen



The hydrogen economy is expected to grow rapidly in the transportation/power generation/industrial operation sectors

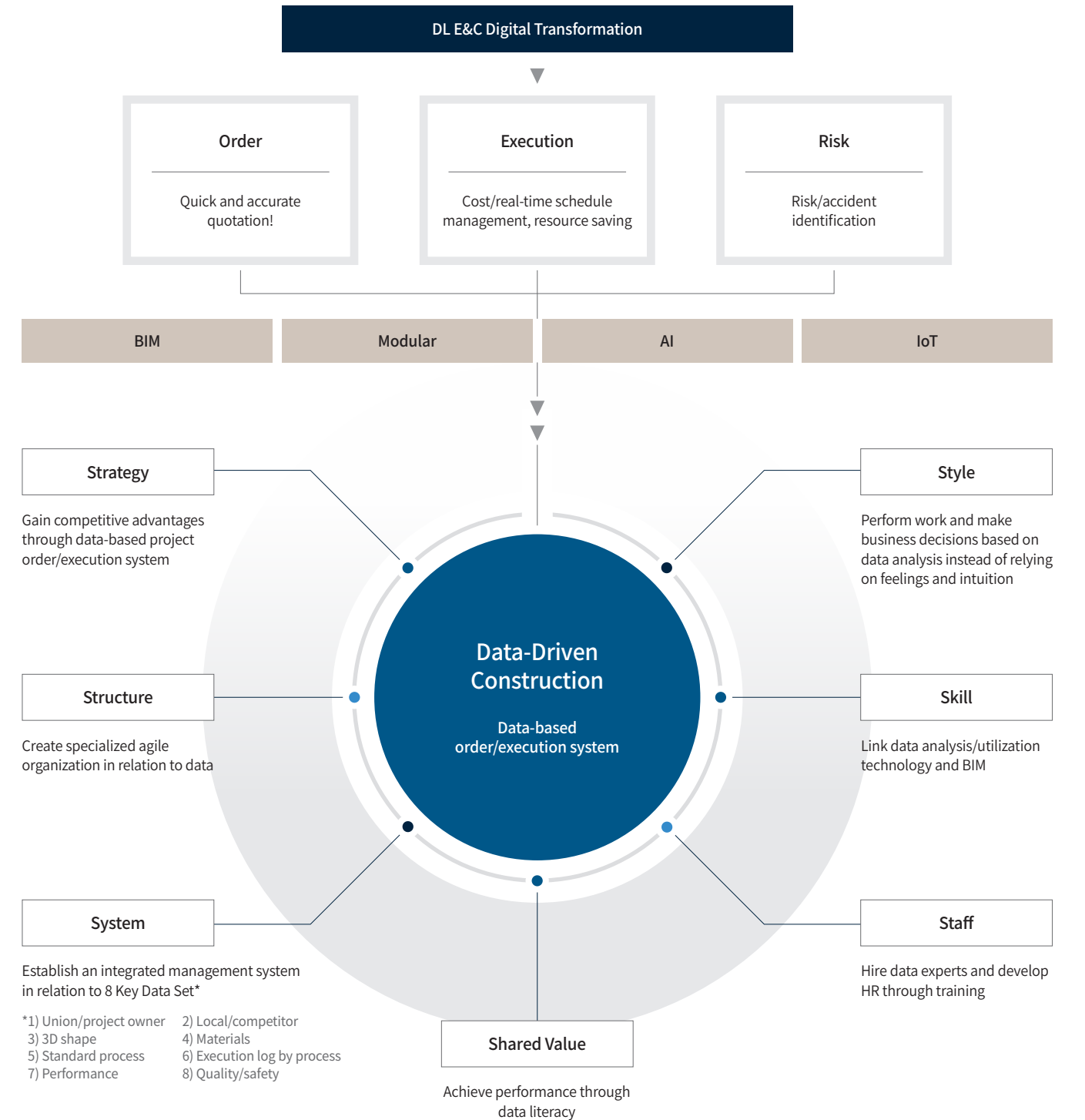
- Hydrogen production is expected to double in the next 10 years
* 2020 : 2.93 million tons → 2030 : 4.79 million tons
- The government and businesses announced that they would enact robust policy and investment plan to set a hydrogen economy
* Enforced the world's first Hydrogen Act (Act on Hydrogen Economy Development and Hydrogen Safety Management) (February 2021)
- * Korean conglomerates are expected to invest KRW 43 trillion

Source : Government Policy Coordination Office (March 2021)

Entry into EPC and operation business in the hydrogen production and liquefaction/storage sectors

Digital Transformation

DL E&C is committed to the digital transformation of the construction industry to gain competitive edges in the era of the Fourth Industrial Revolution. We are utilizing data analysis technology based on AI and IoT for the acquisition of orders, execution, and risk management, and driving innovation of productivity by incorporating BIM and modular technology into our operation. Going forward, we will continue to lead the digital transformation by creating a unique data-based order execution system.

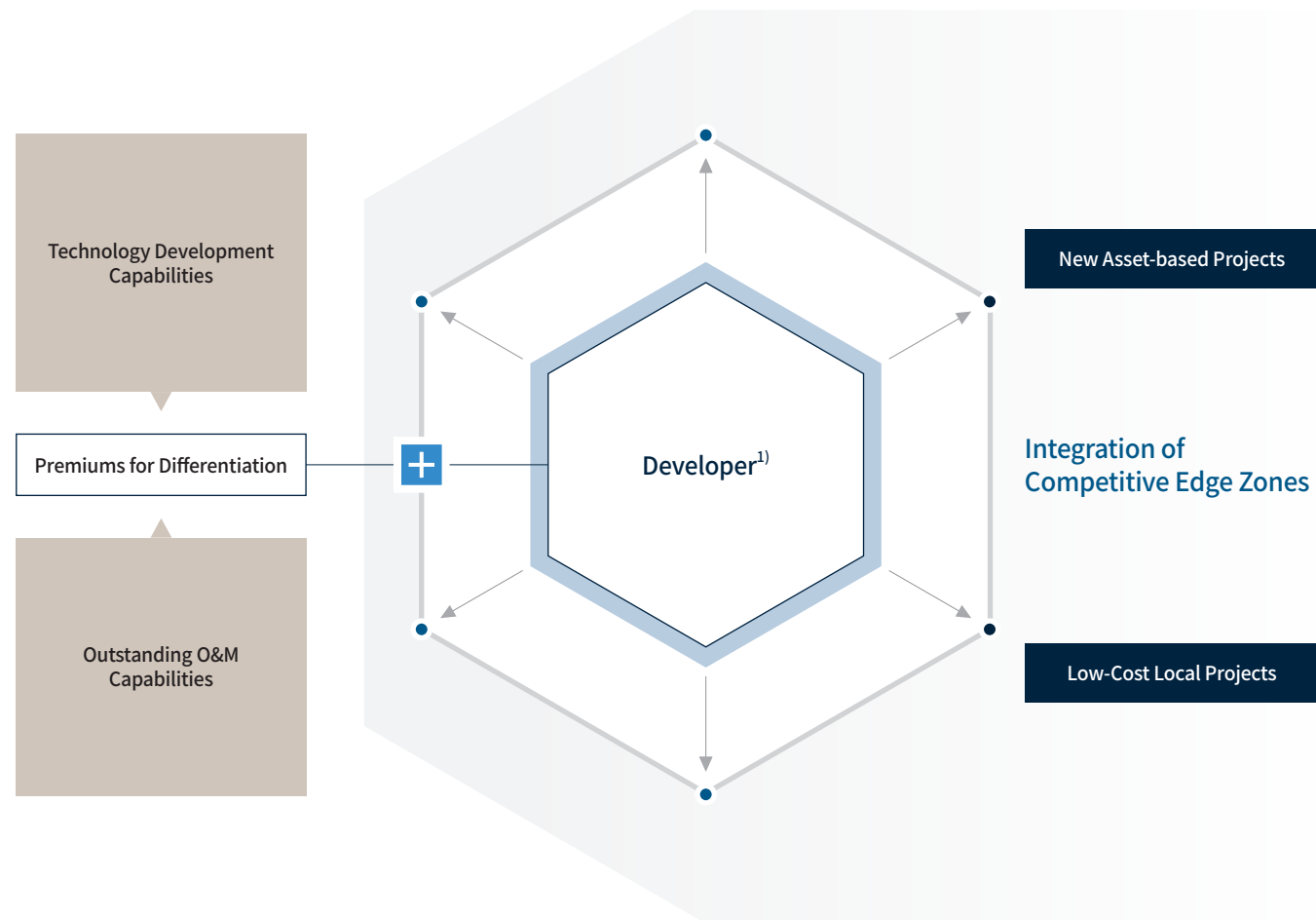


Mid/Long-term Business Strategy

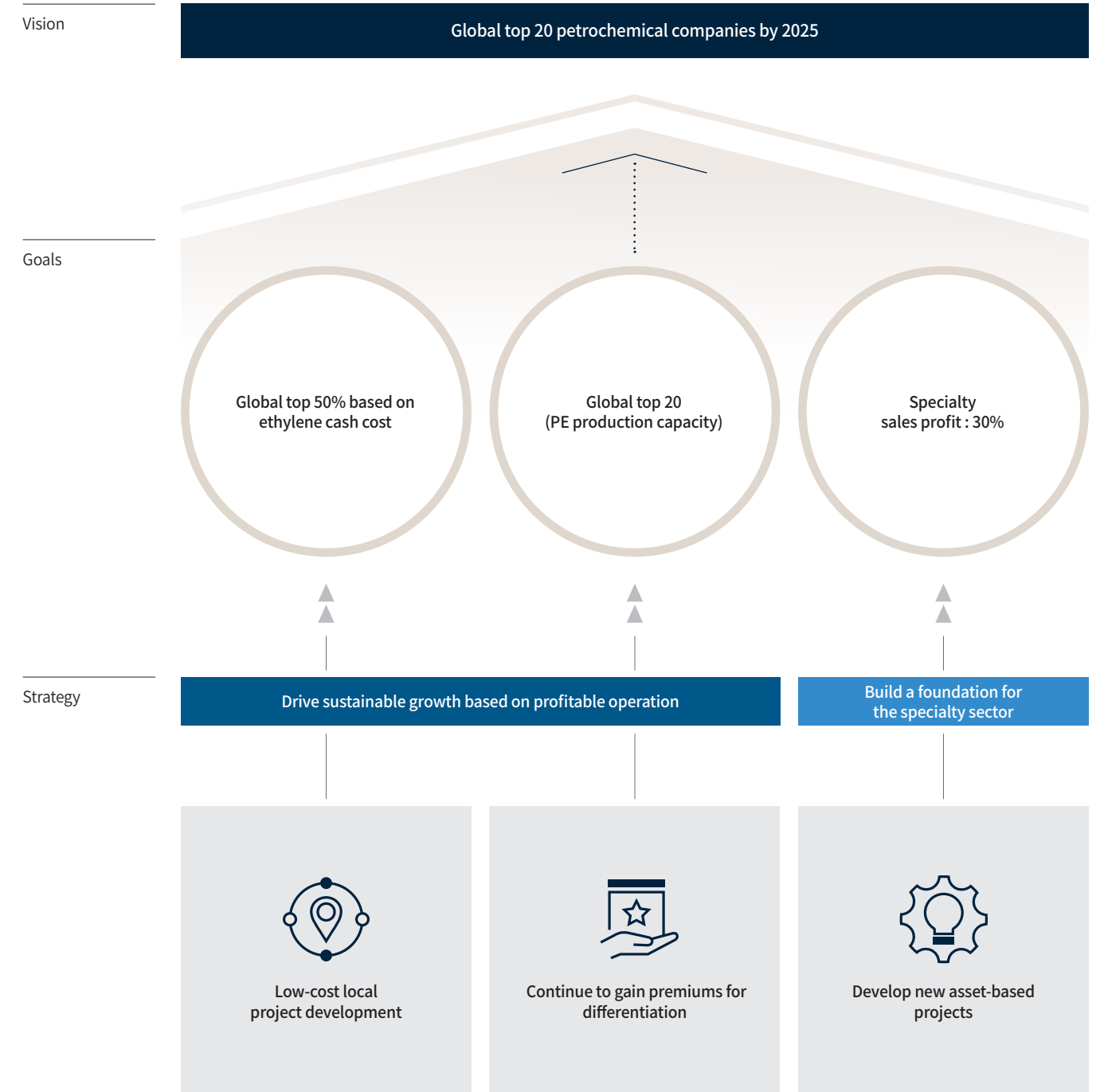
Despite the growing uncertainty, the market environment is promoting inter-industry convergence to support sustainable business operations. DL Chemical is thriving for innovation and sustainable growth by gaining competitive advantages and developing unique products based on core competencies while exploring new business opportunities and expanding our presence in the market.

Our Mid/Long-term Strategies

Our unique position in the industry comes from exclusive technical expertise and unmatched O&M capabilities. That is what makes us different in the market. We also develop new projects based on our assets and advance into low-cost markets by strengthening our core business development capabilities to step up as one of the global top 20 petrochemical companies by 2025.



1) Project Developer Competency
 Organization competency of creating unique values of Petrochemical Division through Biz Modeling, Financing, and Clearance of Regulation including the entire process (Project exploration → planning → EPC → O&M)



Housing & Building Business Division

The DL E&C Housing & Building Business Division opened up a new era of branded apartments with e-Pyeonghansesang, the first of its kind in Korea, and has successfully launched its premium brand ACRO in the market.

We have acquired extensive experience, know-how, and expertise by working on landmarks such as the National Assembly Building and the Sejong Cultural Center. Recently, we have completed the Acro Seoul Forest Project, our own business based on our extensive technical expertise and know-how, proving our competitiveness as a developer. We will continue to increase the developer projects to maximize our profit generation.

- Korea's first brand apartment "e-Pyeonghansesang" (2000)
- Lifestyle housing platform "C2-House" (2019)
- Completion of Acro Seoul Forest (2020)

1ST
Korea's first
brand apartment,
e-Pyeonghansesang

C2-HOUSE
Lifestyle housing
platform "C2-House"

HIGH-END
High-end housing
standard "ACRO"

259,129
Total No. of household units
supplied since the launch of
e-Pyeonghansesang in 2000

Civil Business Division

Civil Business Division has steadily earned reputation for best performances in its works on major infrastructure projects specializing in roads, long-span bridges, hydropower, irrigation dams, river improvements, railroads, subways, and high speed railway structures. Various landmarks are built by DL E&C including Singapore Tuas Terminal Port Project (221 caissons, each weighing 15,000 tons) and the world's longest suspension bridge in Turkey widely known as Canakkale Bridge (main span of 2,023m).

After focusing resources into researching and development of construction technology, DL E&C has steadily gained competitiveness and claimed our exclusive capabilities in bridge and port sectors. With our extensive experience and expertise in development, construction, and operation of hydropower projects and water treatment facilities (the largest domestic sewage treatment facility, known as Seonam Water Regeneration Center with capacity of 1.63 million tons per day), We strive to expand our business into eco-friendly markets dealing with environmentally sustainable projects, specifically in hydropower and water treatment projects, as your public and private partners.

- The first in South Korea and Sixth in the world to self-perform the construction of suspension bridges
- Secured contract for construction of the longest bridge in the world (Canakkale, Turkey)
- Constructed the most number of offshore bridges in South Korea

2,023M

The World's Longest Suspension Bridge
(L = 2,023m)

1-2-3

Competitive Experience in Construction of 1-2-3 Pylon Suspension Bridge

221

The World's Largest Port Facility, Caisson Type 221 Caissons (15,000 tons/EA)

No.1

No.1 in South Korea, Retains the Track Record and Technology for the Construction of the World's Longest Suspension Bridge

Temburong Bridge CC2, CC3 Project, The longest bridge in Brunei

Plant Business Division

The Plant Business Division offers total services from engineering, procurement, and construction to basic design, commissioning, operation, and maintenance based on high performance in various fields including oil & gas, refinery, petrochemical, and power generation. Since we entered into the overseas plant markets for the first time in the industry in 1973, we have undertaken more than 600 projects in the Middle East, Southeast Asia, Africa, and China. We are also focusing on the business in the area of eco-friendly plant including carbon capture, transportation, storage, and hydrogen production, such as carrying out basic design for the first commercialized CCU (Carbon Capture Utilization) plant in South Korea.

- Over 600 projects in 35 countries around the world
- 47 years of experience in designing
- FEED (Front End Engineering Design), EPC (Engineering, Procurement, Construction), and O&M (Operation & Maintenance) Total Service

600+

Over 600 projects in 35 countries around the world

47 YEARS

47 years of experience in plant design

40+

More than 40 years of experience in petrochemical plant O&M service

TOTAL

A total service provider with FEED, EPC, and O&M



YNCC NCC No.2 Revamp and 2nd BD Project, South Korea

DL Chemical

DL Chemical has strong competitive advantages in the polyethylene and polyisobutylene sectors with 47 years of experience in petrochemical plant operation and innovative technology. In addition to the polyethylene sector with world-class metallocene catalyst technology, and the polyisobutylene sector, where we are ranked first in terms of production and sales, we are developing a high value-added material business by acquiring Cariflex, the world's number one raw material producer for synthetic rubber gloves for surgical use.

Through continuous R&D and innovation as well as a strategic partnership, we will lead the market and step up as a leading high-value-added chemical company.

- Commercialization of metallocene PE technology for the first time in South Korea
- First Korean petrochemical company to export technologies to the US
- The highest market share for Poly-Isobutylene in the global market
- Expansion of overseas specialty synthetic rubber sector
- World-class operation and facility management capabilities

47 YEARS

47 years of experience since its establishment in 1975

1ST

First Korean company to commercialize Metallocene PE technology

TECHNOLOGY PROVIDER

First Korean petrochemical company to export the PB technology to the U.S.A.

Global No.1

World's largest PB production capacity with an annual production of 200 KTA (based on the open market)

EXPANSION INTO GLOBAL MARKET

Expansion of overseas specialty synthetic rubber business through the acquisition of Cariflex

PE Yeosu Plant, South Korea

ESG Highlights

01

Eco-friendly Products & Services

New Growth Engines

Safety First

Quality Management Practice

Eco-friendly Products & Services

Eco-friendly Design

Management Approach

In response to growing awareness and the importance of eco-friendly business operations around the world and climate change in the construction industry, global companies are sparing no efforts to reduce GHG emissions and promote energy saving. At DL E&C, we promote the development of various eco-friendly technologies to meet the needs of consumers in terms of the housing environment and establish a roadmap for mandatory zero-energy practice enforced by the Ministry of Land, Infrastructure, and Transport. We are also focusing on creating eco-friendly and highly efficient designs to that reduce energy consumption.

DL E&C Eco-friendly Design Technologies

Category		Design Factors	Key Technologies
Energy Saving	Efficiency	High-performance insulation, exterior insulation, highly functional windows, high-efficiency facilities, LED, etc.	High-performance exterior surface design technology
	Renewable Energy	Photovoltaic, solar power, geothermal heat, fuel cell, etc.	
Housing Quality	Indoor Air Quality	Integrated sensor & air purification system, indoor/public space fine dust reduction technology, UV LED anti-bacteria, radon emission reduction materials, etc.	Smart Clean & Care Solution
	Insulation/Condensation	Seamless insulation line, composite insulation, heat bridge prevention design, etc.	Heat bridge prevention design technology
	Noise	Noise control, windows, soundproofing estimation technology, etc.	Floor noise reduction technology

Energy Saving Technology (Heat & Sound Insulation PVC Turning Door)

DL E&C has developed PVC¹⁾ doors with superior heat and sound insulation performance in response to new laws and regulatory requirements on energy saving. The PVC doors are mainly applied to places for outdoor air conditioner units, balconies, and multi-purpose rooms. Thanks to its low thermal conductivity, it reduces energy loss during indoor heating and cooling, resulting in high efficiency. It can be used for areas with a high level of condensation, and our PVC turning doors have a better anti-condensation level than the legal limit. It also has superior sealing properties and sound insulation performance, so it can block the noise from the outdoor unit.

Going forward, we will continue to develop high-performance exterior elements including doors and windows to reduce energy, and further improve our eco-friendly design expertise.

1) PVC (Polyvinyl chloride) : Plastic with vinyl chloride as its main component, known as "polyvinyl chloride" or "vinyl chloride resin," and due to its low thermal conductivity and superior airtightness, it is used for doors exposed to the outside in apartment buildings.

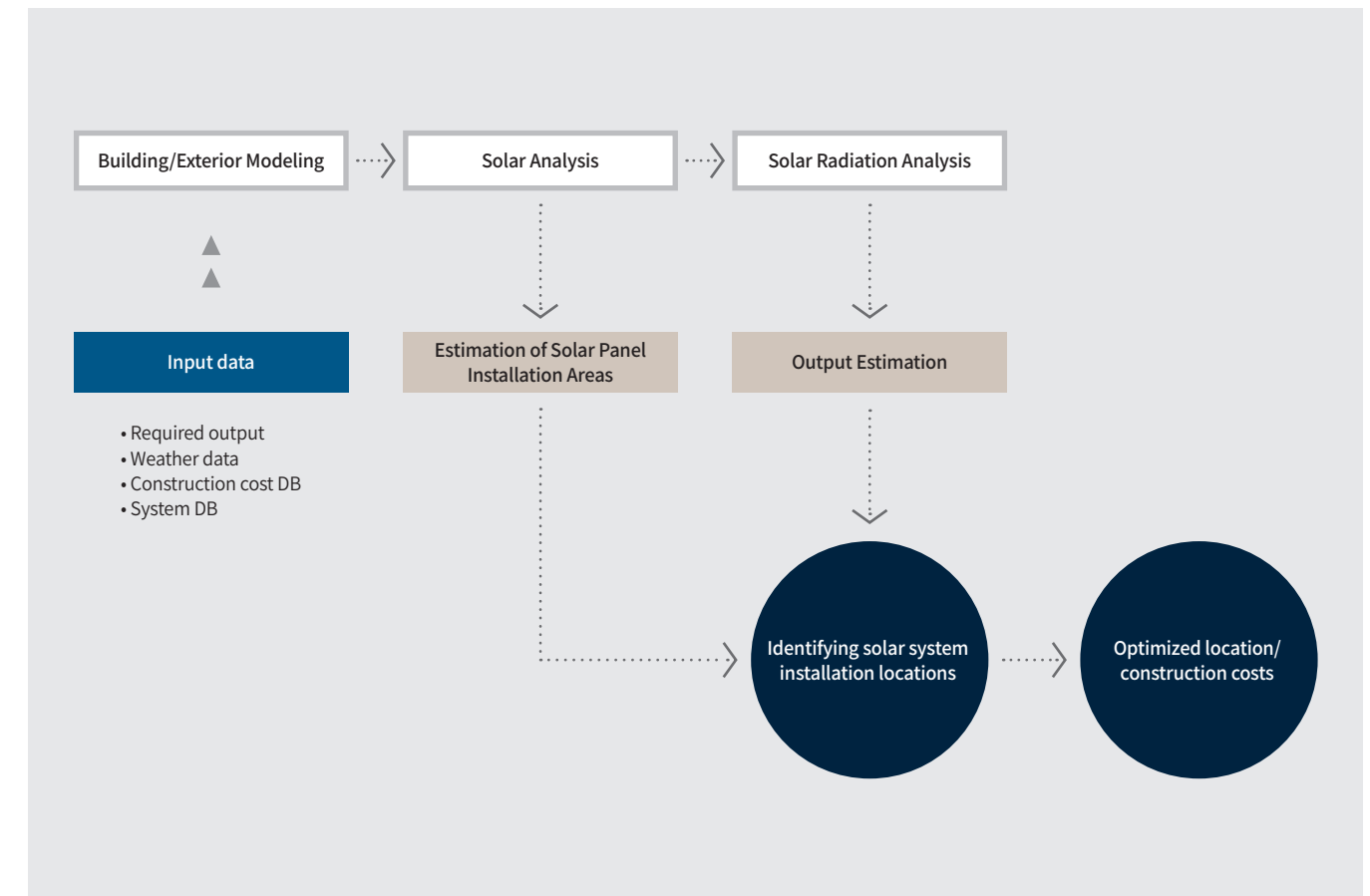
Development of Design Program for Multi-Unit Housing Solar System

In response to a growing demand for eco-friendly housing and tightening regulatory requirements, DL E&C is developing its design expertise with a focus on renewable energy. Solar energy is considered to have a relatively high level of efficiency, so outdoor solar panels are universally applied when building apartments. However, the existing solar power system design has a disadvantage in terms of efficiency. Such systems are built solely based on the installation capacity instead of actual power output and installation cost.

Therefore, we are developing a program that can present the optimal area and location of the system and maximize the power output when designing a solar power system for apartment buildings. The program is expected to help users to identify the optimal installation location based on 3D modeling and can further improve efficiency by calculating the optimal construction cost.

The optimal design method has been applied for patent registration. Once the development is completed, it will be applied and tested and the business plan will be subject to approval in 2022. In addition to meeting the growing demand for eco-friendly housing development, we will take a proactive approach to the government's zero energy policies on apartment buildings in 2025. Going forward, we will continue to develop low-carbon and sustainable technologies to solidify our position as an eco-friendly construction brand.

Optimized Solar Power System Design Process



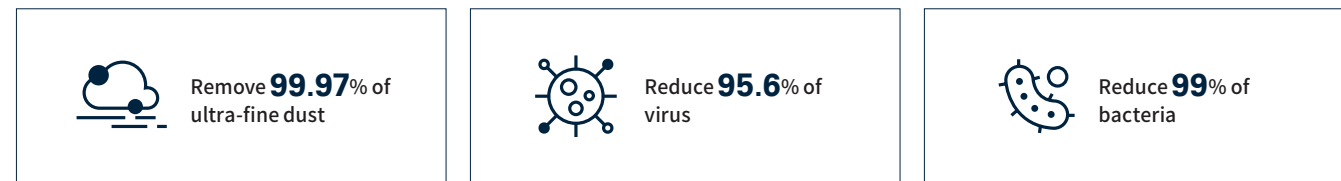
Improving Housing Environment through Air Quality Management (Smart Clean & Care Solution)

The Smart Clean & Care Solutions are designed to provide a comfortable living environment free of fine dust. The solutions include an indoor air quality management technology that encompasses the interior of a house and the public spaces within the complex, as well as various air quality measurement and purification technologies. One of the key technologies is the "Anti-virus Air Ventilation System." It features an anti-bacterial function using UV-C/A LED that catches bacteria and viruses during ventilation and removes 99.97% of ultra-fine dust with an H13 HEPA filter¹⁾. This reduces viruses up to 95.6% and bacteria up to 99% and maintains pleasant indoor air quality without needing to open windows.

Another key technology is the mist sprayer using nano-bubbles²⁾, installed in landscaping facilities, playgrounds, and pedestrian paths in large buildings. It is known to remove fine dust more effectively than existing systems. The nano-bubble technology improves the removal of fine dust, creating a comfortable environment in high traffic areas for residents. Moving forward, we will develop a range of innovative technologies to reduce fine dust and create a pleasant residential environment with a focus on air quality.

1) A 0.3µm (micrometer) filter that removes up to 99.97% of fine dust that features better efficiency at higher grades.
 2) Nano-bubbles : Gas and oxygen is retained in water bubbles in nano units (700 nm), capable of removing fine dust and bacteria.

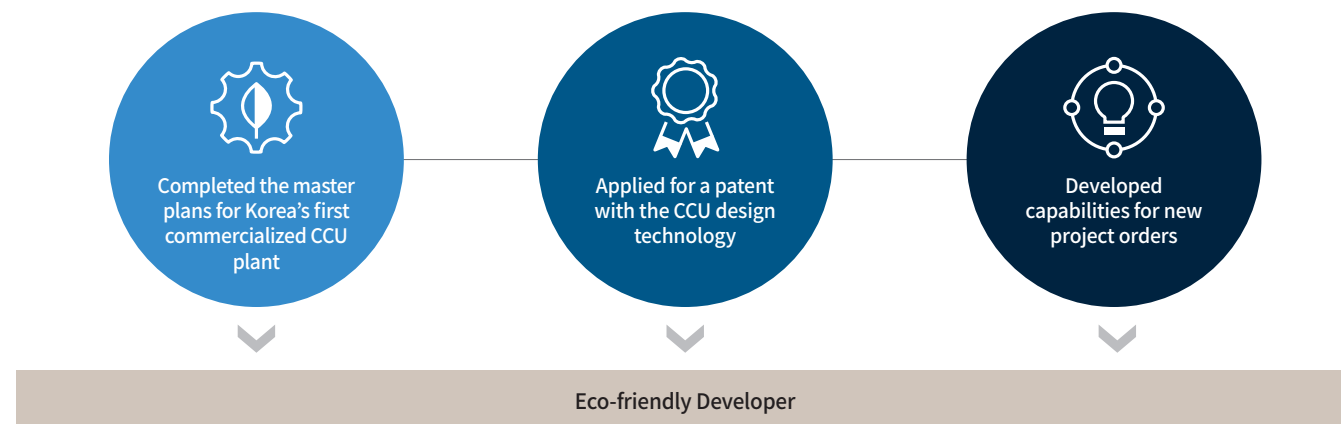
Anti-virus Air Ventilation System



Promoting Eco-friendly Operation with CCU (Carbon Capture Utilization)

DL E&C is planning to go into the hydrogen and CCU business in response to climate change by pioneering eco-friendly markets and strengthening its environmental sectors. We have completed the master plan for Korea's first commercial CCU (Carbon Capture Utilization) plant, and currently have a master plan package for large-scale CCU collection facilities (1.1 million tons/year). In 2021, a dedicated organization was established and is under operation. After reviewing the business plan for the hydrogen and CCU market, we are implementing strategies for each stage of operation. Additionally, a patent application for the CCU design technology is in progress while eco-friendly plant operations, including carbon capture, transportation, storage, and hydrogen production, and potential business sectors for the CCU market are under review. Going forward, we will continue to develop our expertise to undertake more projects for major power generation companies and hydrogen producers around the world. By doing so, we will step up as a leading eco-friendly developer and gain competitive advantages in the eco-friendly sectors.

CCU Business Operation

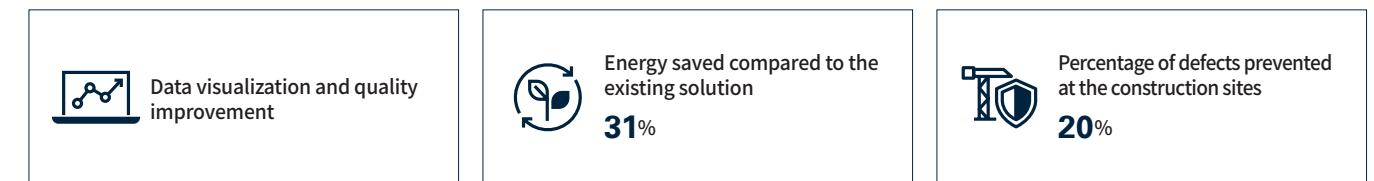


Energy Saving in Construction Sites (Smart Test Solution)

DL E&C is committed to reducing energy consumption at the construction sites for apartment buildings. The Smart Test Solution, introduced for the first time in Korea in 2020, uses a technology that can control the devices connected to a home network system. By applying it for two months before the completion of a building, it demonstrates a high level of usage in terms of eco-friendliness through efficient manpower operation and prevention of flaws, as well as reduction of unnecessary energy consumption.

The existing apartments test operation has a notable disadvantage: it consumes energy when workers enter public spaces and inside the apartment. Furthermore, it is inefficient since the workers have to visit the sites, and it is difficult to secure enough time to detect and prevent errors and defects. The Smart Test Solution is more efficient and eco-friendly because all inspections such as heating and lighting, elevator operation, and energy usage (electricity, gas, water) checks are performed through remote control from a PC or mobile device. All data is visualized through the portal platform, so the information can be accessed anywhere, and it can improve the quality of work and defect management. The result shows that it can save 31% more energy than the existing solution, preventing in advance 20% of the defects that may occur at worksites. Going forward, we will continue to develop and introduce new technologies to improve efficiency and construction capabilities while promoting eco-friendly designs.

Smart Test Solution



Test Portal Platform

Eco-friendly Products & Services

Eco-friendly Products

Management Approach

Recognizing the environmental impact of pollution, efforts to protect the environment are made around the world. In response to this trend, petrochemical industry spare no efforts to develop eco-friendly products and services based on their capabilities. At DL Chemical, we developed low-carbon products with a high level of efficiency and performance. These products, using our own catalyst technology, are expected to contribute environmental protection and help us to gain competitive technological edges.

BOCD – Low-carbon Products with a High Level of Efficiency and Performance

DL Chemical is committed to fulfilling its corporate responsibility and responding to long-term climate change. We managed to develop BOCD¹⁾ polyethylene, which is used as a material for packaging and Vinyl house, by applying our exclusive catalyst technology and commercializing it for the first time in Korea in 2019. This product takes advantage of metallocene catalyst-based polyethylene and Ziegler-Natta catalyst-based polyethylene and is considered to have the best physical properties among LLDPE (Linear Low-Density Polyethylene). Compared to existing metallocene products, it has superior physical properties and processability. It is recognized as a next-generation product that can greatly contribute to environmental protection since it is able to reduce plastic consumption and defects, as well as improving unit production cost. We are also operating a dedicated plant for metallocene LLDPE based on our expertise in catalyst and process technology. Thus, we continue to build a foundation for sustainable growth through differentiated products and innovative services.

1) BOCD : Broad Orthogonal Composition Distribution



BOCD - Main applications

1

Used for Vinyl house, silages, and mulching films and extends product life while protecting crops based on its superior toughness



2

Used for industrial materials such as stretch hoods and bags for heavy objects, and suited for logistics of heavy industrial materials, based on its toughness

3

Used for various packaging materials such as food, cosmetics, and shopping bags, mainly for the innermost layer of the laminated packaging materials for sealing



New Growth Engines

Smart Construction

Management Approach

As we move deeper into the Fourth Industrial Revolution, we are focusing our resources on developing new information technologies and cutting-edge construction processes as part of new growth engines such as smart construction. We are committed to improving our work efficiency and productivity while saving costs and energy through digital transformation with AI, BIM, drones, and IoT. DL E&C drives sustainable growth based on innovative technologies and responsible practice with state-of-the-art design and smart construction, as well as renewable energy for the development of buildings with a high level of energy efficiency.

Quality Inspection System for Exterior Walls Using Drones

DL E&C has developed a quality inspection system for exterior walls, using drones and other smart construction technology to overcome the limited access to work areas due to its height. We are able to solve the defects in exterior walls and prevent complaints raised by customers and additional costs related to materials and labor incurred as a result. The drone used to inspect the exterior walls is equipped with a high magnification camera so it can take pictures of the walls. After analyzing the image using AI, it automatically analyzes the quality. Furthermore, we developed a web-based exterior wall quality management system to integrate and manage the data collected by drones. With this, we aim to realize zero exterior faults by making immediate responses to the faults during the construction process. Moving forward, we will establish a process to promote the quality inspection system for exterior walls using drones after undertaking more systematic test operations.

Development of Multi-purpose Self-driving Robot

DL E&C is developing a multi-purpose self-driving robot for tasks that are dependent on manpower, such as safety management, quality inspection, and cleaning in underground parking lots. The robot will be used to maximize work efficiency when used for these purposes, implemented for existing tasks that cannot solely rely on manpower, including patrolling safety blind spots and monitoring fire risks. Going forward, we will continue to invest in technical innovation to create an environment for smart construction by developing system modules that can be attached to cleaning vehicles and used at construction sites.



Quality Inspection System for Exterior Walls Using Drones



Multi-purpose Self-driving Robot

Productivity Analysis Using Heavy Equipment Monitoring System

DL E&C is implementing a heavy equipment monitoring system to check the workload at construction sites, set up an accurate process plan, and improve the efficiency of equipment and manpower. IoT sensor monitoring systems are installed on all heavy equipment to collect data in real time, based on which the productivity of individual heavy equipment is analyzed for assessment. When there is any deviation in the process, the input plan and work areas are adjusted accordingly. Updating the status in real time can expedite the process and save energy.

Camera-based Pile Rebound Value Check

DL E&C is developing a technology for automating pile rebound value check¹⁾, using a camera to protect workers from industrial accidents. Previously, workers had to directly check the pile rebound value. Exposing them to the risk of safety accidents when they access pile drivers. To solve this problem, we are developing a camera technology that can check the pile rebound value without having to access the equipment. After testing it, we plan to introduce it to all worksites to ensure the safety of all workers. In addition, we will create a smart construction environment that efficiently manages data by developing a dedicated application, secure quality through more accurate pile rebound value checks, and improve the safety of workers.

1) Pile Rebound Value Check : A test for checking the support of concrete piles using a pile driver such as a heavy weight at the initial stage of construction.



Productivity Analysis Using Heavy Equipment Monitoring System



Camera-based Pile Rebound Value Check

New Growth Engines

Increasing Specialty Business

Management Approach

In response to the fast-changing market environment, we are paving the way for new growth engine. We are especially strengthening our specialty sector by investing in high value-added materials, which are rapidly growing despite the pandemic. DL Chemical is actively investing in the production of high-performance synthetic rubber materials through the acquisition of Cariflex to expand our specialty business and develop new growth engines for the future.



Cariflex : High-performance Synthetic Rubber Materials for medical application

In 2020, DL Chemical acquired Cariflex, a high value-added synthetic rubber producer, to achieve its vision of becoming “Leading Global Developer” and to gain competitive advantages in a fast-changing market environment. The isoprene synthetic rubber and latex produced by Cariflex are used for medical supplies and have the highest market share in the global market since they are used for surgical rubber gloves. In response to the growing global demand for medical supplies due to COVID-19, we have decided to expand Cariflex plant located in Brazil in order to further develop our future growth engines by entering into the medical supplies market, which is dependent on overseas technology and our specialty business division. This investment is expected not only to respond to the increase in demand for medical supplies, but also will serve as a cornerstone for advancing our specialty business division. We are integrating DL Chemical’s technologies and experiences with Cariflex’s anion catalyst based synthetic rubber production in order to diversify our business portfolio into high value-added specialty products such as medical devices and functional tires. We will also enhance our R&D capabilities and expertise on specialty materials. By doing so, we will continue to expand our high value-added materials business as we maximize our capabilities through business diversification.

Safety First

Enhancing Safety Management

Management Approach

Due to the prolonged COVID-19 pandemic, there is growing uncertainty in business and the safety of workers is being threatened. At the beginning of the pandemic, DL E&C implemented an emergency response system to take preventive measures for the safety of employees at both the head office and business sites while conducting thorough safety activities including non-contact medical services. In addition, we are organizing various safety management activities using data to prevent accidents, which are prevalent due to the nature of the construction industry. Moving forward, we will continue to focus our resources on the advancement of safety management to ensure the safety of workers.

Emergency COVID-19 Response System

Since the WHO (World Health Organization) declared COVID-19 as a pandemic, we have implemented COVID-19 prevention programs including a dedicated control tower and measures following the guidelines of health authorities to prevent possible risk factors caused by COVID-19. The response activities are divided into Plan A for response activities, Plan B for protecting local communities, and Plan C for confirmed cases in workplaces, so we can take appropriate measures according to the situation. In addition, daily monitoring is conducted on employees and business partners at our domestic and overseas business sites. In case of an emergency, effective preventive actions and responses are implemented in cooperation with relevant teams. By protecting the safety of our employees, customers, and partners, we will maintain a preemptive approach in response to this global crisis.

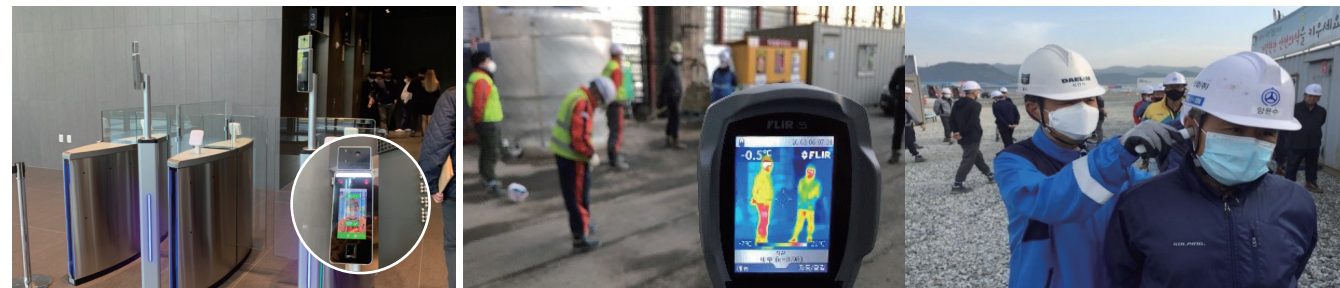
On-site Prevention in Response to COVID-19

Preventive Measures

Since the first confirmed case in Korea, DL E&C has been announcing the precautions against COVID-19 throughout the company. We are dealing with risks by establishing a case-by-case response plan for not only confirmed cases but also those with abnormal symptoms and suspected contacts. In addition, various measures are taken to minimize the risk of infection among employees, such as health checkups for all employees, temperature checks through thermal imaging cameras, quarantine procedures at the office building, and telecommuting programs.

Management of Overseas Employees

In order to prevent infection among employees who are on business trips or working outside Korea, DL E&C ensures self-quarantine procedures and tests before they resume their work while providing masks and quarantine supplies to 12 other countries including Pakistan. We have also signed an agreement with Seoul National University Hospital to provide "non-contact medical service" in five medical areas, including Family Medicine, for employees who are not able to travel abroad due to COVID-19.



Temperature check at the entry points using thermal cameras Regular temperature checks for field workers

DL E&C COVID-19 Response Programs

- Establish and distribute company-wide response guidelines
- Check temperature of all workers for any identify abnormal symptoms
- Switch to small group meeting and training
- Conduct quarantine at office buildings and public areas
- Reschedule meal time and install table compartments
- Attach antibacterial films in elevators
- Place hand sanitizers in the lobby
- Mandate wearing masks while working
- Operate a dedicated control tower
- Provide non-contact medical services
- Ban on meetings with more than 10 people (video conferencing)

Data-based Safety Management

DL E&C established a system for reporting accidents in real time and developed a safety data analysis system that can be used as big data by analyzing 28 items including types of accident, work, and cause. In 2020, more detailed analysis and big data became available as we subdivided the cause analysis items into more than 7,000 categories.

The analyzed safety data is used for weekly analysis, monthly disaster prevention, and selection of key management factors for each type of field work, and it is listed on the main page of the intranet, so any employee can access the information at any time. In particular, the monthly Pinpoint Management uses big data to derive the characteristics and abnormal signs of accidents related to specific times such as hot, rainy, winter, and thawing seasons and notifies about preventive measures accordingly. In addition, we provide information necessary for on-site safety management through the auto-mailing report service, depending on the conditions of the site, to the employees at the site. Going forward, we will continue to enhance our data-based safety management programs that can be utilized through analysis of external factors and accidents. This includes the selection of hazardous work according to the climate conditions of the site and sending automatic notifications to the site supervisor.

Data-based Safety Management Report

Injury & Disaster Prevention Management

Common Management	Pinpoint Management						
<ul style="list-style-type: none"> • In 00, the number of injuries to new personnel with experience of less than a month was relatively high (an average of 30% in 00 - 00 → Increased to 40% in 00) • Personnel injured within 1-2 days account for 00% of all accidents within 1 month and focused management is required. 	<p>「Pinpoint management at worksites with "high frequency of accidents in 00" by work type and disasters of other companies」</p>						
<p>➤ Results of data analysis (00 cases of LMS data in 00, 2018 - 2020) for employees with less than 1 month of working (00 cases, 00%)</p>							
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <ul style="list-style-type: none"> ■ Less than a month ■ 1 - 2 months ■ 2 - 3 months ■ 3 - 6 months ■ 6 - 12 months ■ Over 1 year </div> <div style="text-align: center;"> </div> <div style="margin-left: 20px;"> <p>00 injuries in less than 1 month, 00 on average per day</p> <ul style="list-style-type: none"> • 00 in 2 days or less (average 00 times per day ↑) • By job: Service (00%), equipment operator (00%) • 00 in 7 days or less (average 00 times per day ↑) </div> </div>							
<ul style="list-style-type: none"> • Focus on newly assigned personnel - Sharing work information (position, work location, etc.) on the day of work (Band, social media, etc.) and directly checking safety (at least twice a day) - Ban the organization of a team consisting solely of service personnel (mixed assignment with existing personnel) and prevent non-experienced personnel from working at the site (first access to the site) 							
<p>➤ By Job Type</p> <table border="1"> <tr> <td style="background-color: #003366; color: white;">Housing</td> <td>[Column/Wall Formwork → Euro-form] 00% Collapse of the wall form that cause injury during the mold work: 00 and 00 sites</td> </tr> <tr> <td style="background-color: #003366; color: white;">Civil Engineering</td> <td>[Bridge/Road → Rebar Work] 00% Pinched fingers in rebar bending machine during rebar processing: 00 and 00 sites</td> </tr> <tr> <td style="background-color: #003366; color: white;">Plant</td> <td>[I&C → Connecting Trays] 00% Sprained ankles by stepping on the misplaced parts of the platform: 00 and 00 sites</td> </tr> </table>		Housing	[Column/Wall Formwork → Euro-form] 00% Collapse of the wall form that cause injury during the mold work: 00 and 00 sites	Civil Engineering	[Bridge/Road → Rebar Work] 00% Pinched fingers in rebar bending machine during rebar processing: 00 and 00 sites	Plant	[I&C → Connecting Trays] 00% Sprained ankles by stepping on the misplaced parts of the platform: 00 and 00 sites
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Plant	[I&C → Connecting Trays] 00% Sprained ankles by stepping on the misplaced parts of the platform: 00 and 00 sites						
<p>➤ List of Disasters of Other Company in 00</p> <p>[Pinching] <injury while turning a crawler crane> Insufficient access control within the turning radius and rearward monitoring of signalmen: 00 including Ray County</p> <p>[Fire] <fire during welding of air conditioner gas pipes> Poor control of welding sparks: 00 and 00 on-site</p> <p>[Housing] Checking the installation of form ties, braces, or supports</p> <p>[Civil Engineering] Inspection of rebar processing machines/tools (e.g. foot cover switch, grounding, safety sensor)</p> <p>[Plant] Inspection of the platform at the cable tray installation sections</p> <p>[Crane] When approaching within the turning radius, an alarm is triggered, and signalmen and controllers are assigned separately</p> <p>[Welding Fire] Protective covers are located as close to the work areas as possible, and hazardous materials are removed within 11m of the work area.</p>							

Safety First

Emergency Response to COVID-19

Management Approach

The global crisis caused by COVID-19 is bringing profound changes to our daily lives. Companies are preparing for prolonged uncertainty coming up with all-round countermeasures for the safety of personnel and business operation. At DL Chemical, we have organized a crisis management team to prevent the spread of COVID-19 and are working together to overcome challenges through preemptive responses to constantly changing situations and public support for the local community. Going forward, we will continue to set the safety of employees as our top priority and focus on safety management practice.

Emergency COVID-19 Response System

In response to COVID-19, DL Chemical organized a crisis management team to prevent confirmed cases at the head office and business sites. Guidelines for preventing COVID-19 along with emergency response scenarios have been prepared to specify the process in each stage. Through company-wide emergency response training, we check and improve our response process to protect our employees from COVID-19 and prevent business-related loss. By taking a proactive approach to the uncertainty caused by the prolonged pandemic, we will overcome this global disaster crisis and promote the safety of our employees, customers, and business partners.

On-site Prevention in Response to COVID-19

DL Chemical continues to prevent infection in its workplace and the spread of COVID-19. We ensure full compliance with the quarantine guidelines including disinfection, partitions in the cafeteria, keeping a record of commuter bus passengers, and non-contact handovers. We spare no efforts to create a safe working environment by mandating tests and filling out quarantine forms for anyone who enters our business premises, including outside visitors and employees on business trips.



Disinfection in offices & cafeteria

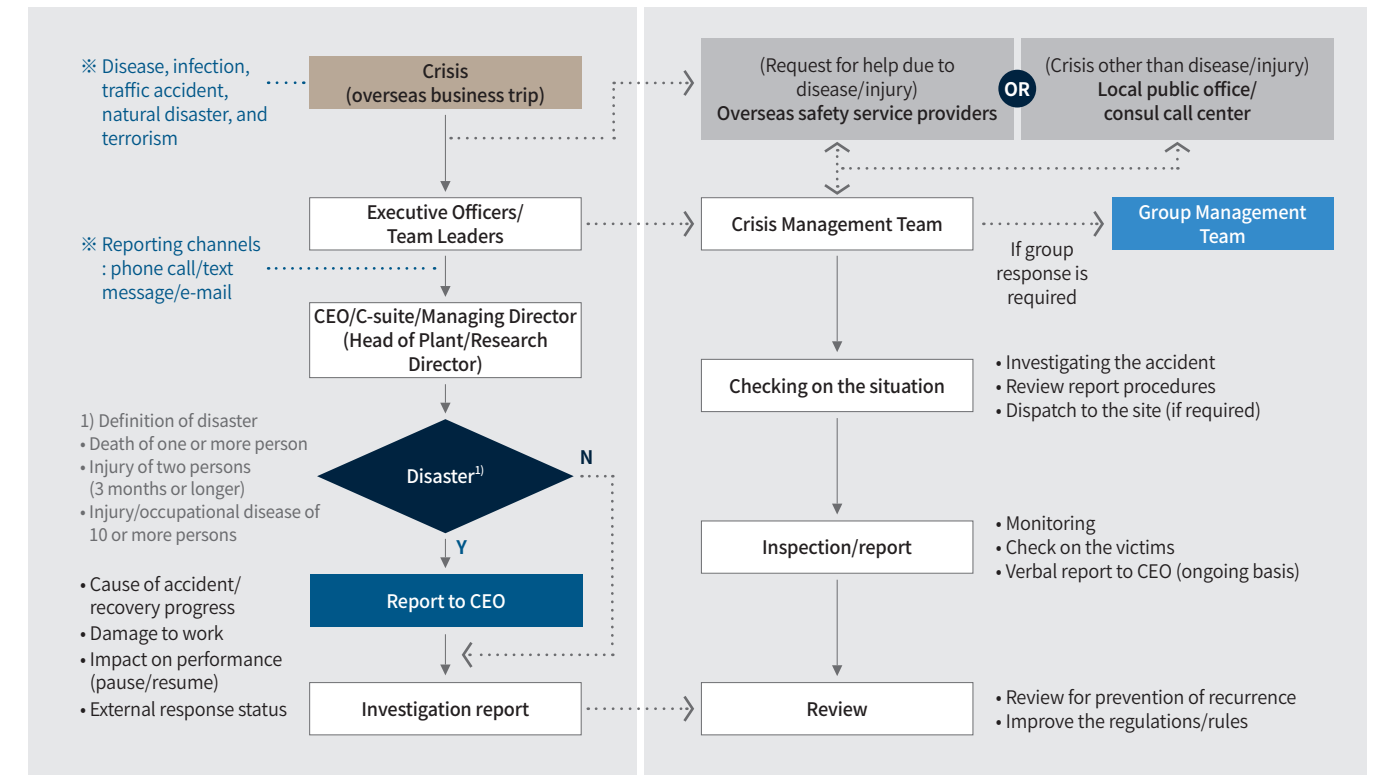


Temperature check

Safety Guide for Overseas Business Trips and Emergency Manual

DL Chemical has prepared the Safety Guide for Overseas Business Trips and Emergency Manual to help its employees deal with emergencies with a focus on infection, traffic accidents, natural disasters, and terrorism. We encourage our employees to take action for their safety by preparing for emergencies before going on a business trip, maintaining contacts, and responding according to the type of accident. They are also informed of personal safety rules to ensure their safety in advance. Furthermore, we distribute safety guidebooks for each country, help them learn basic information about the locations, and provide detailed emergency contact information and support in case of an emergency.

Crisis Reporting Process



Case COVID-19 and Public Support

As a responsible corporate citizen, DL Chemical is sparing no efforts and resources to overcome the crisis and support the recovery of local communities. We engaged in collaborate efforts to prevent the spread of COVID-19 by donating masks and hand sanitizers worth KRW 20 million to Yeosu City Hall. We will contribute to the development of the local community and take the lead in social value creation by actively participating in solving social problems faced by the local community.



Donation of Quarantine Supplies to Yeosu City Hall

Quality Management Practice

Quality Management

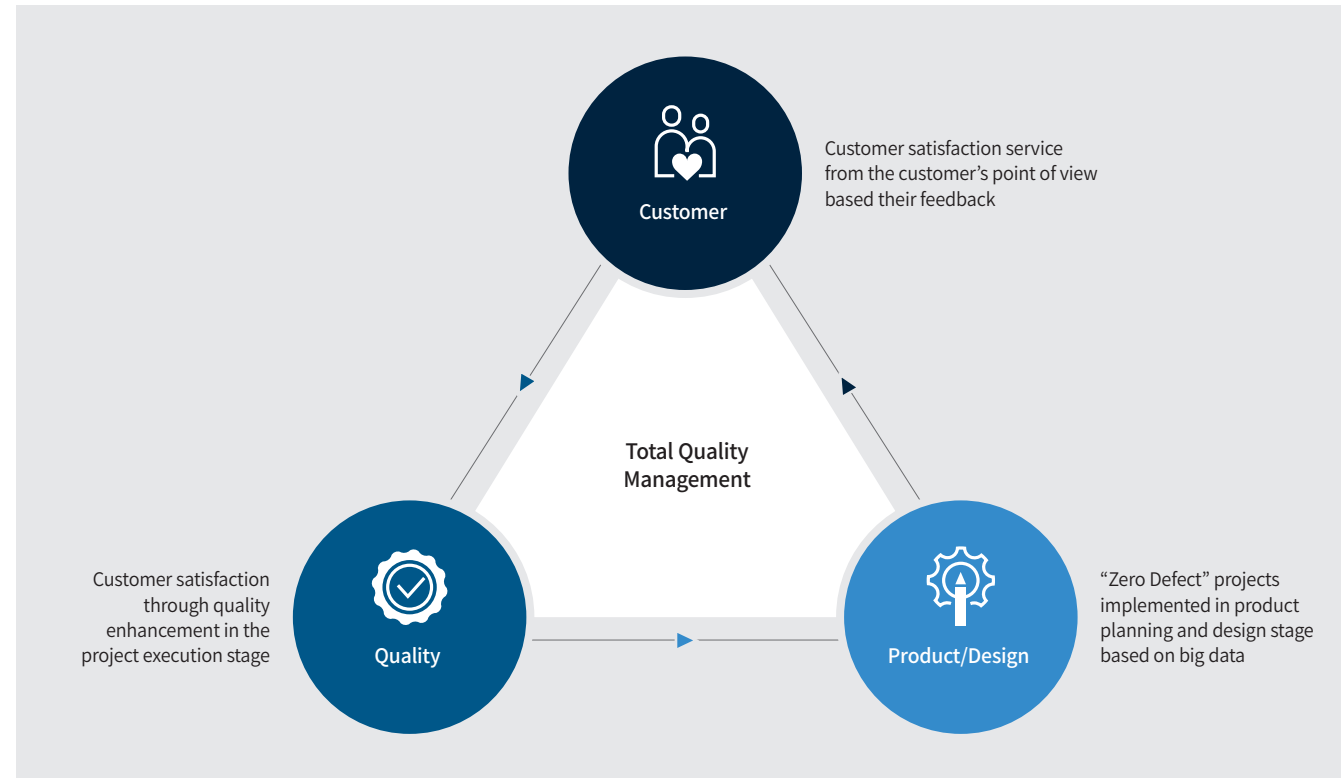
Management Approach

In response to the growing demand from stakeholders for quality assurance and responsibility, the importance of quality management is being emphasized more and more because it serves as the driving force behind a company's sustainable growth. DL E&C sets quality objects for each unit and promotes data-based quality management to deliver the highest quality products and services and to step up as a global leader. We are also committed to continuously improving our quality management system by verifying the status of implementation.

TQM (Total Quality Management) from Customer's Perspective

DL E&C understands the quality level required by customers from the customer's point of view and sets a target level to deliver customer satisfaction by carrying out TQM (Total Quality Management). Under TQM, all employees are subject to quality management in order to maximize customer value from the planning to implementation, completion, and operation.

The criteria for defining quality flaws are promptly and clearly set from the customer's point of view and are shared horizontally by all executives and employees to come up with the best ways to make necessary improvements. This is done by analyzing the causes behind flaws, and this information is then used to apply improvements in practice. The outcome is managed using big data and applied to all stages of product planning, design, and construction to achieve Zero Defect.



Data-based Quality Management

At DL E&C, we are committed to preventing quality issues by implementing preventive measures based on quality data including structure history information gained at each construction stage and types of defects by type.

Throughout the entire process from groundbreaking to completion, we expand the areas of mobile to implement a data-based quality management process. By accumulating data such as the origin of raw materials related to structures, ready-mixed concrete suppliers, working environment at the time of mixing, and concrete strength, we use the structure history management system that promotes analysis and tracking of the causes of defects in the structure. For the separation of materials and crack management process, it is not easy to manage documents for the entire area even though it is a key point of external inspection. In addition, a mobile material inspection system was developed to expedite the process that relies on the existing document work and the inspection of materials upon receipt and to enable tracking and management of defective materials based on accumulated data.

1 On-site Material Acceptance

2 Mobile Material Inspection System

3 Acceptance Inspection

4 Photo Shooting

5 Material Inspection Checklist Input

6 Auto Input of Material Inspection Request

Quality Control of Materials Using Mobile Inspection System

ESG Management

02

Environment
Human Resource
Safety & Health
Customer Satisfaction
Shared Growth Management
Social Contribution

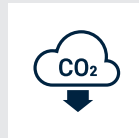
ENVIRONMENT

Environment

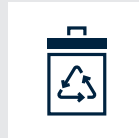
Amid growing concern about climate change, the global community is expressing a strong commitment toward carbon neutrality by 2050. The goal was reaffirmed at the Leaders Summit on Climate held on Earth Day, and as Korea is expected to further raise its national GHG reduction target in 2030. As a result, we need to strengthen our corporate responsibility in response to climate change. As global interest in biodiversity and the depletion of natural resources crises, it became necessary to promote the development of green technology and production based on eco-friendly design and construction.

KEY Performance Indicators (KPIs)

Reduced GHG emission intensity (domestic) compared to the previous year
7%



Recycling of wastes generated from construction work
99.8% (Achieved 100% in 2020)



Recycling of water used for construction work
40.2% (Achieved 100% in 2020)



Environmental Management Strategy and System

DL E&C is committed to overcoming environmental challenges such as climate change and energy depletion by strengthening its ESG management and taking a preemptive approach to these issues. Since 2017, we have promoted innovation in all areas of our business including design, R&D, construction, and purchasing, and a dedicated ESG team was organized to support systematic implementation of ESG management. In addition, the EQ RM Team, as a working-level environmental management organization, is dedicated to saving resources and promoting CCS and hydrogen energy businesses through Smart Construction that applies digital technologies such as Drone, AI, and BIM. We are also working on eco-friendly policies in all areas of our business through the company-wide DL campaign and support for the environmental practice of our partners. Going forward, we will continue to explore new green business models, secure green technologies, enhance the environmental practice of our partners, reduce environmental impact and wasted resources to promote our Smart Construction and sustainable lifestyle.



Integrated Environmental Information System

DL E&C introduced an integrated environmental information system to deliver information and service more efficiently. The system organizes and provides the summary of laws and regulations, related guidelines, forms, FAQs, and best practices for 25 environmental laws and regulations at a glance while improving the user accessibility and convenience for environmental information and work process. Going forward, we will continue to promote the system through ongoing updates and mobile support in order to carry out our eco-friendly management activities.

On-site Environmental Management Using Environmental Map

DL E&C creates a map for environmental management using drones at civil engineering sites taking place near mountains or rivers. In particular, drones are used in places with low accessibility due to the wide range of construction areas including housing sites or reclamation and based on the captured images, we create a map that reflects environmental factors and management standards. By doing so, we comply with the environmental impact analysis reports and management issues and prepare a plan in consideration of the surrounding environment to prevent violations throughout the process and share them with workers in advance. Furthermore, we manage environmental impacts by organizing training for workers and supervisors of our partners, to operate environmental facilities and comply with standards while monitoring them. Using drones can reduce GHG emissions from vehicle operations by reducing inspection and management activities in the field.

Undertaking Eco-friendly Projects (Plant)

In 2020, the IMO (International Maritime Organization) strengthened its regulatory standards against pollutants discharged from ships, and the EU(European Union) tightened the emission standards for diesel vehicles. In response to this trend, DL E&C is taking a proactive approach to the new regulations, and when it comes to the plant business, we are focusing our resources on eco-friendly projects and getting orders. The eco-friendly diesel production plant project (ULSADO Project in Malaysia) and RHDS (Residue Hydro-DeSulfurization Unit) plant project (S-Oil PKG4 Project) are the outcomes of our commitment towards eco-friendly construction. We will continue to receive new project orders for building eco-friendly facilities, thereby dealing with environmental regulations and strengthening our eco-friendly construction capabilities that can contribute to global carbon neutrality.

Environmental Management Using Environmental Maps



Response to Climate Change

Climate Change Response Strategy

Recognizing climate change as a serious threat to its survival, DL E&C declared the Green Management and has responded to the issue since 2009. To this end, the Green Committee was organized with the CEO as the chairperson, and we plan to establish the ESG Management Committee under the BOD before 2022 to strengthen company-wide environmental practice.

Currently, each unit of DL E&C analyzes associated risks and opportunities and other environmental issues every quarter and reports those with a high level of impact to the Green Committee to set strategic directions. Decisions are reflected and implemented in the strategy, and the performance is managed on an ongoing basis. The present climate change response strategies include investment in renewable energy, CDM project development, and zero energy programs through research and development of eco-friendly and high-efficiency energy buildings, while promoting new businesses such as carbon utilization and eco-friendly hydrogen energy collected through CCS¹⁾. We will also acquire the ISO 50001 (Energy Management System) certification in the second half of 2021. Thanks to these efforts, DL E&C has achieved results such as the CDM project through investment in the Gulpur Hydroelectric Power Plant in Pakistan and the construction of zero-energy apartment buildings in Namyang New Town located in Hwaseong, Gyeonggi-do.

1) Carbon Capture and Storage

Climate Change Risk Management

As climate change affects our daily life as well as policies, finance, and industrial structure, we analyze associated risks and opportunities in all business activities, including raw material pricing and supply and demand, product design, production and sales, and services. Therefore, effective response strategies need to be implemented. In the construction industry, companies are exposed to a variety of potential risk factors, including physical risks caused by abnormal climate events as their activities take place outdoor. As it is greatly affected by new government policies such as building energy permit standards, the suspension of coal power plant construction, and the promotion of renewable energy, it is essential to analyze and deal with risk factors and provides opportunities for new growth engines for the future.

Process of Managing Climate Change Risks and Opportunities

Risk and Opportunity Analysis Strategies and Goals Response Activities Management Performance	1	<ul style="list-style-type: none"> • Key Risk Factors 1) Tighten national GHG and energy regulations, expansion of the GHG emission trading scheme, mandatory zero-energy building policies, etc. 2) Increase in high-efficiency energy building construction cost, etc. 3) Decline in brand value due to poor response to climate change 4) Financial loss due to construction delays, damage to buildings, and abnormal weather conditions e.g. heat waves, cold waves, typhoons, and floods 	<ul style="list-style-type: none"> • Key Opportunity Factors 1) Market growth e.g. green remodeling and renewable energy generation 2) Acquisition and sale of emission credits through the CDM project 3) Increased purchasing power through the development of green products e.g. high-efficiency energy buildings
	2	<ul style="list-style-type: none"> • Analysis of the impact of key risk and opportunity factors 	<ul style="list-style-type: none"> • High-risk issues and environmental target setting • Reflection of business strategy and implementation plan
	3	<ul style="list-style-type: none"> • Semi-annual performance review 	<ul style="list-style-type: none"> • Monitoring and reduction of GHG emissions • Review of policies and laws related to climate change
	4	<ul style="list-style-type: none"> • Analysis and reporting of environmental management performance e.g. GHG emissions and energy consumption 	<ul style="list-style-type: none"> • Reporting of sales performance related to eco-friendly products

Case Best CDP Climate Change Response Company

Recognizing climate change as one of our risk factors, we established a response strategy to promote our environmental practice. As a result, we were named by the CDP (Carbon Disclosure Project) the top company in the construction industry for our response to climate change, especially, in the areas of carbon emission targets, performance management, and risk management, and received "Leadership A". This is the highest rating out of 8, and we are at the top among domestic construction companies. Going forward, we will continue to strengthen our environmental management to step up as a leading eco-friendly company and actively respond to climate change by supporting carbon neutrality by 2050.



CDP Best Climate Change Response Company

Solar Powered Noise & Fine Dust Monitoring Stations

DL E&C installed 5 solar-powered noise and fine dust stations at the construction site of Ulleung Airport, which started construction in November 2020. The stations are designed to minimize the environmental impact of the construction work and prevent noise and fine dust from exceeding legal limits. In consideration of the shortage in electricity supplied to Ulleungdo due to the geographical condition of the island, we expect to see that the total amount of GHG emissions is reduced by 10 tons during the construction period by powering the system that consumes 854 kWh of electricity per year. In addition, the Saemangeum South-North Road Section 3 has reduced GHG emissions by 520 tons so far as it has been powering the offices, training centers, restrooms, and restaurants with solar power systems since 2018. Going forward, we will expand the project through eco-friendly design and system operation in line with the site conditions.

GHG Emission Reduction through CDM Project

DL E&C is developing the CDM (Clean Development Mechanism)¹⁾ project based on renewable energy as part of its response to climate change. In July 2020, a total of four solar power plants were completed in Chile, and within the first quarter of 2023, they will be recognized as domestic reduction after they get approved by CDM. The PMGD²⁾ solar power project in Chile is scheduled for commercial operation for the next 25 years and is expected to reduce GHG emissions by about 140,000 tons per year, 3.5 million tons in total. In March 2020, the Gulpur Hydroelectric Power Plant project in Pakistan was completed and put into commercial operation. By doing so, about 348GWh of electricity has been produced over the past year, and the CDM will be applied after the emission factors are determined through performance monitoring for the past three years. DL E&C will continue to contribute to the reduction of GHG emissions with a focus on renewable energy.

1) CDM (Clean Development Mechanism) : a GHG emission reduction project jointly promoted by developed and developing countries to deal with global warming under Article 12 of the Kyoto Protocol adopted at the General Assembly of the Convention on Climate Change
 2) PMGD (Pequeños Medios de Generación Distribuidos) : small-scale power businesses



1 Solar power plant built in Section 3 of Saemangeum North-South Road
 2 Solar powered noise and fine dust measuring system at Ulleung Airport

3 PMGD SOL DE SEPTIEMBRE Solar Plant in Chile (completed in July 2020)
 4 Gulpur hydroelectric power plant in Pakistan (completed in March 2020)

GHG Emission Management

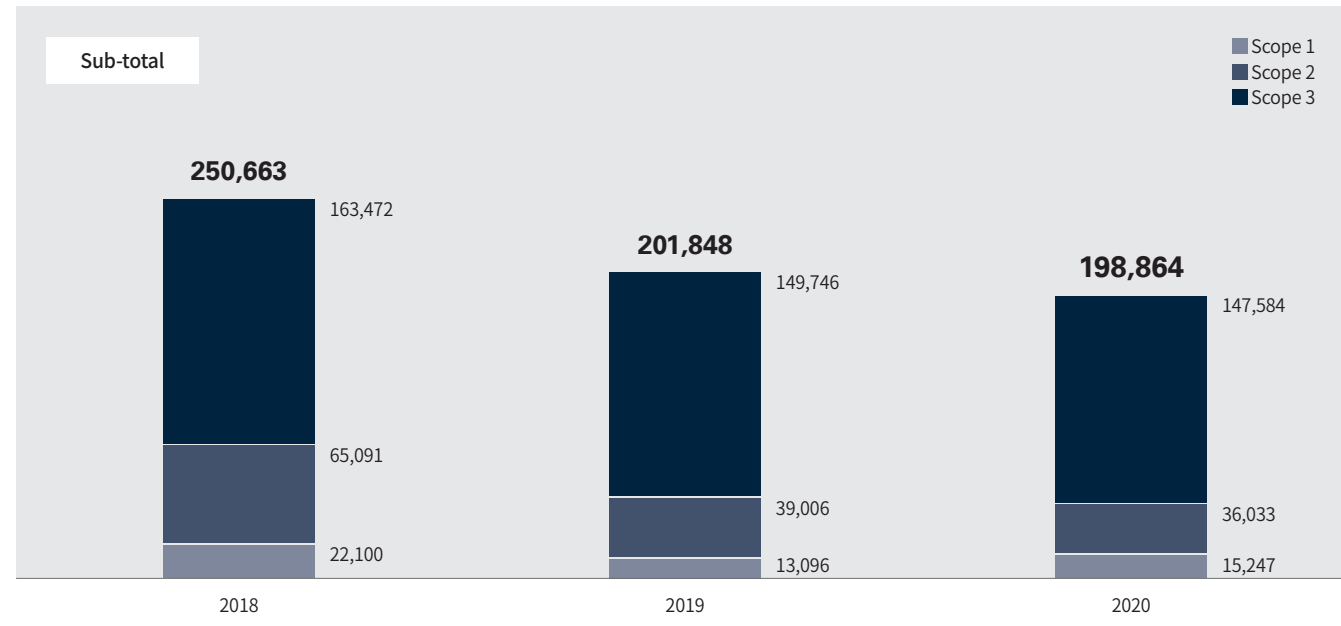
DL E&C's Response to GHG Emissions

In response to climate change, DL E&C has been managing its GHG emissions from overseas business sites and conducting third-party assurance to ensure the reliability of data since 2019. When it comes to construction sites, we fulfill our obligations for third-party assurance on GHG emission monitoring plans and specifications. After the spin-off, DL E&C is expected to be subject to the GHG emission target management scheme. Therefore, we are committed to reducing GHG emissions by signing an agreement with the Ministry of Land, Infrastructure, and Transport and the Korea Real Estate Board to promote the reduction in the construction industry.

GHG Emissions Status

DL E&C has re-established emission facilities and monitoring processes to ensure the accuracy of assurance and disclosed the data changed in 2018 and 2019 in this report. Specifically, we classified the personal vehicle item in the Scope 1 emissions, which is conservatively calculated based on personal and business vehicles, among the fuel purchased for vehicles at construction sites, to the Scope 3 emissions. When it comes to the equipment that pays fuel costs at the construction site, the emission is recalculated by subdividing the monitoring process from the one that was based on the fuel consumption and operating hours for each piece of equipment to the actual measurement process that calculates the actual fuel purchase.

Classification	2018			2019			2020					
	Sub-total	Scope 1	Scope 2	Scope 3	Sub-total	Scope 1	Scope 2	Scope 3	Sub-total	Scope 1	Scope 2	Scope 3
Head office building, etc.	5,746	2,552	3,194	-	5,017	2,395	2,622	-	4,041	2,063	1,978	-
Construction sites	244,917	19,548	61,897	163,472	196,831	10,701	36,384	149,746	194,823	13,184	34,055	147,584



* Scope of calculation : head office building, condominium, training center, etc.

* Scope 1 (direct emissions) : LNG, LPG, fuel for vehicles/boilers, etc.

* Scope 2 (indirect emissions) : office/temporary accommodation/electricity, steam

* Scope 3 (other indirect emissions) : construction equipment (partners, etc.), employee vehicles

※ The GHG emission data has been recalculated according to the range and factors of calculation as well as the emission trading scheme standards, and assurance has been completed through a third-party agency.

Voluntary Agreement to Reduce GHG Emissions in the Construction Industry

In December 2020, DL E&C signed a voluntary agreement to reduce GHG emissions in the construction industry, presented by the Ministry of Land, Infrastructure, and Transport and supervised by the Korea Real Estate Board. It will be effective for four years, and the goal is to reduce GHG emissions and save energy in the construction industry in response to climate change. Construction companies participating in the agreement, including DL E&C, will receive support from the Korea Real Estate Board to build an inventory and review internal reduction performance, and based on this, promote eco-friendly construction sites. Going forward, DL E&C will continue to support the establishment of various types of cooperation among public and private sectors and the government.

GHG Emission Reduction Target Management

DL E&C considers changes in management sites due to corporate division and changes in emissions due to the inclusion of greenhouse gas emission rights at construction sites. To support the "2050 carbon neutrality" and "24.4% reduction target by 2030 from 2017", we have set the mid/long-term GHG reduction targets in consideration of the fluctuations of emissions. We will diversify our efforts to achieve a "40% reduction target by 2030 from 2017" and "carbon neutrality by 2050". For example, we will replace all corporate vehicles with hybrid cars, promote the use of low-carbon equipment such as electric forklifts, build more renewable energy systems and energy-efficient cooling and heating systems for temporary offices, and operate power loss prevention facilities, and maintain a proper temperature in the office. We will reaffirm our commitment to achieving the GHG reduction targets by acquiring ISO 50001 (energy management system) certification in 2021. In addition, we will monitor and manage GHG emissions and performance at our overseas business sites as well, including Pakistan and Indonesia.

Improving Efficiency and Environmental Impact through AWP (Advanced Work Package)

DL E&C has successfully completed DL Chemical's polyethylene production plant expansion project in Yeosu, Jeollanam-do by applying the AWP for the first time in Korea. The project was an extension project, and it was difficult to manage the process because the site was small and the interruption of existing facilities had to be minimized. Therefore, we combined the AWP, BIM, and 4D simulation systems, and improved the productivity of major projects such as civil engineering works by 8.7% and plumbing works by 15.7%. By doing so, the construction equipment was less used, and through material optimization, GHG emissions, air pollutants, and wastes, and unnecessary transportation were reduced. We will also apply the AWP to new overseas projects in Qatar and Russia to improve our productivity and minimize environmental impact.



Signing ceremony for GHG emissions reduction in the construction industry



DL Chemical polyethylene plants in Yeosu, Jeollanam completed using the AWP

Response to GHG Emission Trading Scheme

Since the implementation of the emission trading scheme in 2015, DL E&C has been making various efforts to minimize the risks. We set a short-term goal of a 6.1% reduction within the planned period (2018 - 2020) by analyzing the GHG emissions against the allocated credits, and minimize financial risks by reflecting the costs of reduction activities and management. In addition, we established a strategy to prepare for the volatility in the market by increasing renewable energy use and purchasing offset credits.

DL E&C GHG Emissions in 2020 (Unit : ton CO₂-eq)



Radon-Free Apartment Building Process

At DL E&C, we developed the radon-free apartment building process for the first time in Korea. This process minimizes the effect of radon in all construction activities by eliminating external factors to fundamentally prevent the generation of radon at the planning and development stage and internal factors arise in the design/construction stage. First, in the design stage, the use of stone produced in areas with a high level of radon is prohibited to prevent any use of non-conforming construction materials while replacing them with radon-free materials and creating a database on radon content in each type of material. For materials such as concrete, which is difficult to replace, an indoor radon level estimation program has been developed to provide a customized ventilation system for each site. By operating the ventilation system, we ensure that the radon level before the move-in date is within the standard limit (148 Bq/m³). As a result of these efforts, we won the Minister of Environment's Award at the "15th Construction Environment Management Best Practices Competition" hosted by the Ministry of Environment and Ministry of Land, Infrastructure, and Transport in 2019, leading to the creation of an eco-friendly and healthy residential environment for customers.

Environmental Certifications

Since 1997, Daelim Industrial has maintained ISO 14001 certification, an international environmental management system. In 2017, we carried out environmental management activities to meet the latest revision requirements under ISO 14001: 2015. We also have one Green certification and going forward, we will establish an energy management system by reviewing and applying the requirements of ISO 50001 in order to reduce the energy supply and demand based on fossil fuels and to effectively reduce GHG emissions.



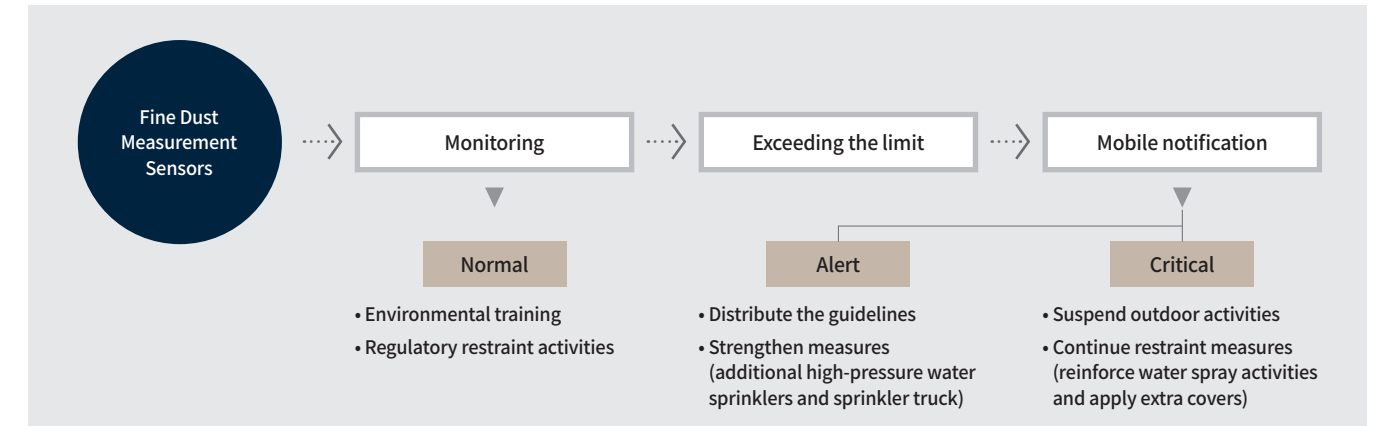
Air Environment Management

DL E&C is engaging in various environmental management programs to improve air quality and reduce fine dust. In order to reduce dust in our construction sites, we identify processes that produce fine dust and implement prevention measures for each process. We have also established internal guidelines and regulations that are more stringent than legal requirements by conducting IoT-based fine dust measurement management, restriction on the use of old construction equipment, and adjusting the work schedule in case of emergency measures. In addition, we plan to strengthen our reduction activities by using hot air fans and solid fuels that emit less fine dust instead of lignite when curing concrete in the winter.

IoT-based Fine Dust Management

We monitor the fine dust level in real-time to optimize our responses for each step. After measuring the level of fine dust in real-time and, we prepare a three-step response plan to reduce fine dust based on the results. In the normal stage, training and emission control activities are carried out. In the alert stage, a text message is sent to the persons in charge of the field to inform them of how to deal with the situations and enhance the measures to prevent fine dust. At the critical stage, suspension of fine dust emission construction work, and then systematic management is enacted to implement restraint measures, evacuate workers indoors, and keep them on standby.

IoT-based Fine Dust Management Process



Response to Emergency Reduction Measures against High Density Fine Dust

Under the Special Act on Fine Dust Reduction and Management that came into effect in 2019, DL E&C submitted emergency reduction management cards to the local government, adjusted the construction timeline, and reduce outdoor activities. The number of sites participating in the program increased from 52 in 2019, when the act was enforced, to 60 in 2020, and more construction sites are supporting emergency reduction measures. Going forward, we will continue to promote this program by calculating rescheduling costs through DEMS, our internal environmental management system.

Case Reducing fine dust by creating an urban forest

DL E&C is building an urban forest by developing the Central National Arboretum Project to reduce fine dust. It prevents the spread of fine dust from the source, and supplies and absorbs good quality air. The Central National Arboretum, located in Sejong City, is taking the lead in reducing fine dust by transplanting species recommended by the Korea Forest Service, such as Italian poplar and cypress.



National Sejong Arboretum

Voluntary Fine Dust Reduction Agreement

In December 2019, DL E&C signed an agreement to voluntarily reduce seasonal high concentration fine dust with the Ministry of Environment. The goal is to improve the air quality by reducing fine dust, and we had the most construction sites (80) participating in the program. The main activities include road cleaning, limiting the use of lignite, disclosure of measured fine dust levels, and establishing an emergency contact system. Going forward, we will continue to promote our fine dust reduction performance by participating in the agreement until 2022.

Scattering Dust Reduction Planning and Performance Management by Site

DL E&C prepares a scattering dust reduction plan by each site that is divided into a seasonal management period and a normal period when measures are issued and manages their performance separately. Risks by construction type are analyzed in the management plan, and a facility operation map for each task is prepared and implemented. When curing concrete in the winter, we limit the use of lignite and replace it with a hot air fan that produces less fine dust.

Water Resource Management

Saving Water

DL E&C is committed to establishing a sustainable water circulation system and protecting water resources. We introduced eco-friendly designs before construction begins while minimizing water consumption and increasing the recycling rate during construction. In the case of treated water, it is recycled for wheel washing facilities, sprinkler water, and sprinklers for suppressing scattering dust. About 419,780 tons of treated water were recycled when operating the on-site sprinkler in 2020. With the goal of 50% recycled water usage by 2030, we are expanding our data collection and going to include overseas sites for the target.

Reducing Water Contamination

Eco-friendly Sand Basin

DL E&C protects the ecosystem of rivers near our housing sites of about 661,157 m² located in migratory bird habitats. In order to prevent the environmental impact of soil runoff, we create eco-friendly sand basins. By doing so, the ecosystem was preserved, and storage capacity was secured in case of heavy rain in compliance with water quality standards, and suspended solid were reduced by 58%. Moving forward, we will continue to take initiatives in water pollution reduction by sharing best practices.

Development of Water Treatment Facility Operation Technology

Desorption Filtrate¹⁾ Coagulant Reuse Technology

For water quality management, DL E&C has developed a technology to minimize the environmental impact of chemicals and waste fluids, and reduce facility maintenance costs. We tested the reuse of coagulant in the main treatment facilities (treatment facility for rebound water²⁾, a treatment facility for total phosphorus³⁾). By doing so, it is expected to save the maintenance costs of the Seonam Water Recycling Center by approximately KRW 15 million. Going forward, the quality of the discharged water will be checked in consideration of the negative impact of impurities contained in the desorption filtrate on water resources including rivers, and measures to reduce maintenance costs (chemical usage) when designing environmental facilities will be promoted.

1) Desorption filtrate: Filtrate discharged from the dehydrator except the sludge produced in the dewatering process

2) Rebound water : High-concentration sludge water and filtrate that cannot be treated in the sludge treatment process and return to the water treatment process, affecting water quality.

3) Total phosphorus : One of the indicators of eutrophication of rivers and lakes, it refers to the total amount of phosphorus contained in water

Preservation of Biodiversity

DL E&C protects legally protected species in order to minimize the impact of our business on biodiversity and the ecosystem. If their habitats are in danger due to our business operation, we rescue and relocate them to safe habitats.

Protection of Endangered Species

DL E&C conducts a site survey before commencing housing projects to inspect the ecological environment. At the construction site of the Yeongjongdo apartment building in Incheon, the habitat of a Class 2 endangered species (narrow-mouth frog) was found near the site. Then, we stopped the construction and built fences to prevent entry and damage to the site, and relocate them to a safe habitat. We plan to keep monitoring and preserving biodiversity by conducting a preliminary ecological survey at all our construction sites.

Preservation of Biodiversity

In Sejong National Arboretum built by DL E&C, about 2,900 species of plants are preserved in an optimal environment. As of March 2021, there are 657 species of native plants, 2,300 species of cultivated plants, 172 species of rare plants, and 77 species of endemic plants. As part of our efforts to protect endangered plants, rare and endemic plants are protected in a separate greenhouse. DL E&C will continue to preserve biodiversity including plants.

Waste Management

Improving Recycling Rate through Smart Waste Management

In order to achieve a 99% recycling rate of waste by 2030, DL E&C has established an automatic announcement system that uses dedicated sacks for each type of wastes and installs digital CCTVs around the waste storage to prevent discharge outside of designated hours. We also provided information on local recycling companies to the site by checking time wastes that are processed improperly by the waste electronic management system in real time, based on the smart waste management system. In addition, wheel sludges (construction sludge) are removed and dried to be used as a filling material, and waste concrete is crushed to be recycled as a road sub-base.

Reducing Waste

DL E&C introduced a BIM-based drawing review system to reduce wastes from March 2019. By doing so, we are able to prevent re-construction due to inconsistency between on-site architectural drawings and structural drawings, solving the causes of increased wastes, and change the construction process, improve the quality of materials, and manage construction losses to reduce wastes itself. In addition, we organize an annual environmental management contest to discover and share best practices across all business sites to raise awareness of employees and workers.

Protection of Endangered Species



DL E&C Waste Discharge (Unit : ton, %)

Category	2018	2019	2020
Total Waste	913,934	1,078,066	340,226
Recycled Waste	910,580	1,077,502	339,642
Recycling Rate	99.6	99.9	99.8

Minimizing the Use of Plastic

DL E&C promotes the use of products with low plastic content by providing information about the plastic content to the purchaser when they purchase and use MRO (Maintenance, Repair, and Operation) products. By analyzing the annual purchase data of MRO products, we replace products with high plastic content with those with low content and minimize their environmental impact by managing the purchase data of plastics content per employee.

Management of Waste Disposal Companies

DL E&C operates a system in which the head office manages 68 waste disposal companies (as of July 2020) for outsourcing waste disposal. Since July 2018, the head office has reviewed and approved the companies to exclude those that are disqualified. In March 2021, we linked the waste electronic documentation system with the accounting system to manage accounting flow in real time and ensure transparency in our waste disposal process.

Noise & Vibration Management

3D Noise Simulation

DL E&C conducts noise impact analysis in stages before commencing construction work in order to minimize the environmental impact of noise that may disrupt the quality of life for residents of local communities. For construction sites located in downtown areas, we perform 3D noise simulations and identify high-risk sites through analysis to pay more attention. The 3D noise simulation is designed to improve the effectiveness of noise reduction measures by identifying the noise from all the surrounding buildings and making decisions based on big data. We also share the results with residents to gain their trust in our noise management measures. Going forward, we will further ensure its efficiency by developing an IT-based smart noise management system using drones and photogrammetry¹⁾.

1) Photogrammetry : A technology that creates 3D stereoscopic images by overlapping or synthesizing 2D photos taken from various angles



3D Noise Simulation using Photogrammetry

Strengthening Environmental Training

Employee Training

DL E&C organizes training on a regular basis to raise environmental awareness among employees and business partners and to gain insight into internal and external environmental trends and knowledge. It includes KOM (Kick-Off Meeting) to deal with environmental risks in the early stage of construction, competency training for head office and site managers, and environmental training for technical personnel working in construction, public service, and design sectors to improve the competency of supervisors and managers. After 2020, depending on the COVID-19 situation, we plan to expand online training with a focus on non-contact training and video conference training.

Environmental Training at Headquarters in 2020

Category	Training Period	Training Hours	No. of Participants
HQ Environment Managers	Jul.3	2 hrs	105 participants
On-site KOM Training	All year round	2 hrs/session	19 sites
On-site Environmental Managers (experienced)	Nov. 24 - 25	2 hrs	97 participants
On-site Environmental Managers (new)	Dec. 8 - 9	8 hrs	11 participants
On-site Supervisors	Jan. 14 - Feb. 27	1 hr	779 participants
Basic Job Training in Civil Engineering	Nov. 9 - Dec. 4	1 hr	80 participants

Environmental Training for Partners

Recognizing that the expertise and interest of our partners in the environment is the key to systematic and smooth on-site environmental management, we provide training for their managers and supervisors. We visit new sites to organize customized training on environmental practice for each company to support the initial system, and in the winter season, we provide training for managers and supervisors of all sites in the winter season on related issues and regulations, resource-saving and recycling, reduction method of energy and GHG emissions, etc. We are also raising environmental awareness through online training GHG emission reduction while improving the level of environmental management by operating the D-EEP (DL-Environment Enhancement Program for Partner) for partners with excellent performance. We also organize monthly environmental training sessions led by the environmental manager on the headquarters' environmental practice and issues for each site.

Environmental Training Performance

Category	2018		2019		2020	
	No. of Sessions	No. of Participants	No. of Sessions	No. of Participants	No. of Sessions	No. of Participants
On-site Kick-Off Meeting Training	21	63	25	75	19	57
Partner Manager Training	61	487	50	345	8	54

Initial Site Environment Set-up Process

DL E&C supports environment-related documents and systems to ensure the continuity of environmental management before holding KOM (Kick-Off Meeting). We prevent environmental accidents caused by missing or insufficient content by reviewing permits prior to construction. As a result of these activities, 16 sites were subject to review for new rental permits while 12 sites were supported with an environmental task set-up process before KOM to improve the efficiency of environmental impact management.

ENVIRONMENT

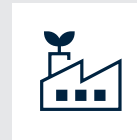
Environment

The international community is strengthening policies and regulatory requirements on climate change to minimize the environmental impact caused by global warming. Countries declared the “2050 Net-Zero” goal, and the Korean government has also announced the 2050 Carbon Neutral Declaration and the 2050 Carbon Neutrality Committee under the president while further raising the national GHG emission reduction target by 2030. As a result, there is a growing importance on our ability to preemptively manage risks due to climate change throughout our business operation by engaging in energy-saving programs and expanding GHG emission reduction projects as part of our environmental investment efforts.

KEY Performance Indicators (KPIs)

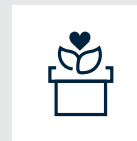
Reduction of GHG Emissions through Energy Saving (2018 - 2020 total)

5,649 tCO₂-eq



No. of Environmental Accidents (contamination spills)

0



Environmental Management Strategy and System

DL Chemical is committed to strengthening its ESG practice by fulfilling corporate social responsibility with a focus on environmental management strategies and systems. To this end, we set targets and implementation plans while improving environmental performance as a part of environmental management system. In order to minimize environmental impact in overall corporate operation and drive sustainable growth through carbon-neutral operation, we defined reduction of environmental impact and GHG emissions as our strategic tasks while preventing pollution and environmental accidents through their effective implementation.

Goals



Strategic Tasks

<p>Environmental impact</p> <ul style="list-style-type: none"> • Reducing air/water pollutant emissions • Waste/water recycling • Prevention of environmental pollution accidents 	<p>OEMS¹⁾ implementation</p> <ul style="list-style-type: none"> • OEMS Upgrade • OEMS dissemination : subsidiaries • OEMS audit system 	<p>HSE²⁾ leadership</p> <ul style="list-style-type: none"> • HSE leadership activities • HSE communication
<p>Carbon emission reduction</p> <ul style="list-style-type: none"> • Saving of electricity/steam • Renewable energy • Efficient management of emission credits 	<p>Safe facilities</p> <ul style="list-style-type: none"> • Facility safety diagnosis • New PSM (Process Safety Management) evaluation and rating 	<p>Safety culture</p> <ul style="list-style-type: none"> • HSE training programs • HSE reward system

1) OEMS (Operational Excellence Management System) : DL Chemical Safety, Health, Environment, and Quality Management System

2) Health, Safety, Environment

Response to Climate Change

Climate Change Response Strategy

Recognizing the seriousness of global climate change, DL Chemical is discussing its impact on the environment and business on the senior management level. Our climate change strategy and its direction is continuously discussed and reviewed at the executive meeting. The meeting is open to all members including CEO, heads of business division and working level teams to discuss and develop measures to climate change issues. In this context, DL Chemical is taking a proactive approach to climate change and systematically managing GHG emissions and energy consumption. We are defining detailed tasks and establishing action plans to set GHG emission targets and achieve environmental goals. In the process of investment, environmental risks associated with GHG emissions and environmental pollutants are reviewed, and the results are reflected in decision-making. Based on the estimated GHG emissions on new businesses, the cost of converting renewable energy is evaluated and environmental management is considered from the very beginning.

Climate Change Risk Management

DL Chemical recognizes the seriousness of climate change and the impact of climate change risks on the business environment. In response to climate change issues, the working-level teams in charge of strategy and environmental management monitor regulatory measures and keep track of market trends. Key information is reported to top-level executives including the CEO, and relevant articles are shared so that employees can understand environmental issues. A risk management process to assess climate change risks and opportunities has been implemented by identifying internal and external issues and stakeholder expectations. Going forward, we will effectively manage risks and turn them into opportunities to deal with climate change issues and meet stakeholders' expectations by aligning them with our business performance.

GHG Emission Reduction Activities

DL Chemical reduced its GHG emissions in 2020 by 25% compared to the previous year by undertaking various activities and improving energy efficiency. To this end, we propose energy savings initiatives and implement company-wide action plans. In the future, we will work with energy experts to check the energy efficiency of plant facilities and identify areas of improvement. By developing and implementing mid/long-term energy saving investment projects and action plans for energy saving, we will keep our GHG emissions to a sustainable level.

Optimizing the Energy Consumption in Processes

DL Chemical is committed to minimizing energy consumption in the production process by optimizing its plant facilities and process operation. We are reducing GHG emissions by saving resources and energy-based superior plant efficiency and optimizing the distillation tower operation through process modeling and analysis to save electricity and steam usage and reduce GHG emissions.

Optimizing the Energy Consumption of Facilities

DL Chemical is saving electricity by replacing existing facilities including pumps and compressors to increase their energy efficiency. By optimizing the size of the pump impeller and installing an inverter, we are improving energy efficiency and optimizing the use of energy needed to operate the facilities.

Replacement of LED for Better Efficiency

DL Chemical is committed to saving energy by replacing existing lamps with LED at its workplace. Since 2014, lamps have been replaced with LED lamps at about 3,000 office buildings, 500 processing areas, and 500 warehouses.



Replaced lamps in Yeosu packaging facilities with LED lamps. Energy analysis of Yeosu Plant

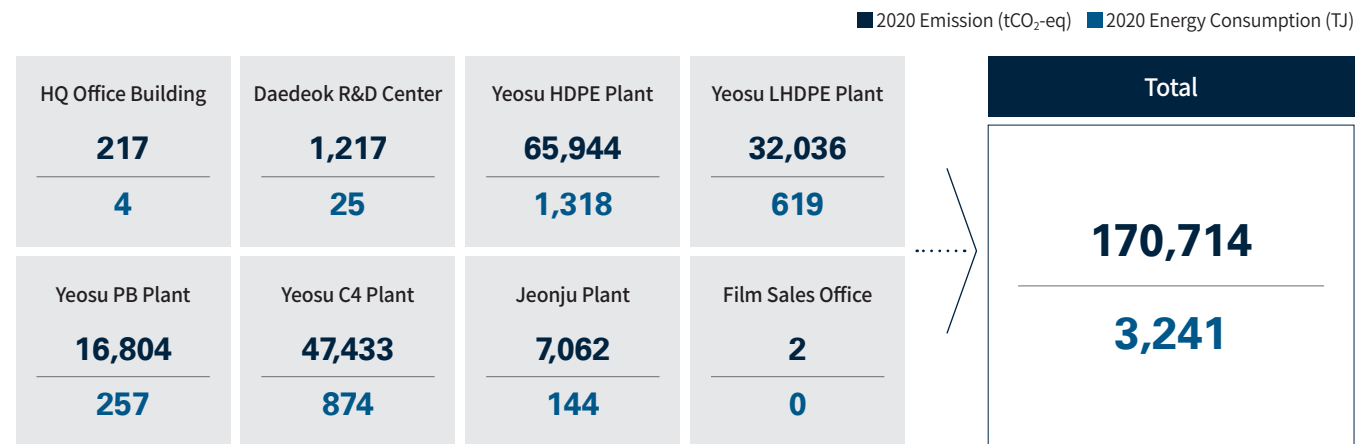
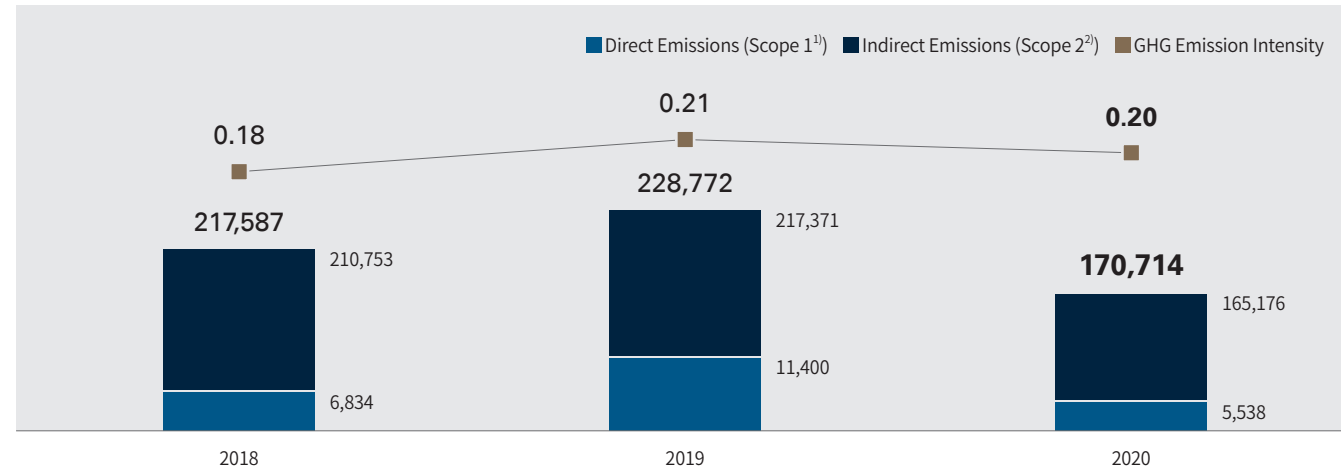
Jeonju Plant ESS (Energy Storage System) operation

GHG Emission Management

GHG Emission Data

DL Chemical has disclosed GHG emission data (Scope 1, 2) and GHG Emission Intensity in sustainability report. We keep records of GHG emissions in our head office, R&D centers and four production plants located in Yeosu. Total GHG emissions in 2020 were 170,714tCO₂-eq reduced by 25% compared to the previous year.

GHG Emissions (Unit : tCO₂-eq, tCO₂-eq/sales(KRW million))



1) Scope 1 : Direct emission from fuel combustion and flare stack
2) Scope 2 : Indirect emission from electricity and steam

Response to GHG Emission Trading Scheme

As a company subject to the GHG emission trading scheme, DL Chemical established a plan for calculating GHG emissions and prepares an emission statement in accordance with the GHG Emission Credit Allocation and Transaction Act. We have received third-party assurance of our plan and statement and submitted the assurance report to the Ministry of Environment. Based on the national GHG reduction roadmap, we have established a GHG emission trading strategy and are implementing reduction tasks.

GHG Emission Reduction Target Management

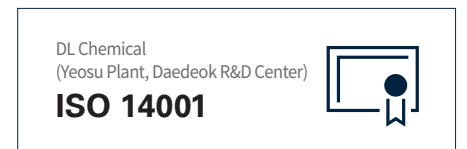
DL Chemical has established a strategy to promote carbon-neutral growth to maintain the net increase in carbon emissions at zero by 2050 through various reduction programs. While the amount of GHG emissions is expected to increase as a result of new business operations and expanding existing sectors, we plan to maintain the 2021 level in 2050. In this regard, we are reviewing our plans to establish annual GHG emission management targets and reduce them.

GHG Emission Reduction

NO.	Category	Type	GHG Emission Reduction (ton CO ₂ -eq)			
			2018	2019	2020	Total
1	Extension of Treater Regeneration Cycle	Electricity	10.6	10.6	10.6	31.7
2	Blower Type Change (1 Unit)	Electricity	0.0	65.4	65.4	130.7
3	Installation of Activator Fuel Saver	Fuel	30.0	30.0	30.0	89.9
4	Optimization of Chromium Catalyst Activation Conditions	Fuel	46.0	46.0	46.0	138.1
5	Operation of T2310 Steam Cut	Steam	504.1	504.1	298.8	1,307.1
6	Operation for T2311 Steam Reduction	Steam	99.1	99.1	40.7	238.9
7	Improvement of Pellet Transfer Air Compressor Operation Process	Electricity	0.0	33.2	35.4	68.6
8	Insulation of Extruder	Electricity	0.0	18.4	36.9	55.3
9	Reduction of Mixer Operation Time	Electricity	74.7	132.5	127.1	334.4
10	Replacement of GA711A Impeller	Electricity	14.7	122.6	159.6	296.8
11	Replacement of GA711B Impeller	Electricity	36.8	306.4	497.4	840.6
12	Installation of GB701C Inverter	Electricity	31.2	172.6	79.3	283.2
13	Installation/Operation of GA113A/B Min' Control Valve	Electricity	0.9	7.5	7.7	16.0
14	Reduction of Energy Consumption by Downsizing Y-GA901A Impeller	Electricity	7.5	20.2	22.5	50.2
15	Replacement with LEDs	Electricity	423.8	671.6	671.6	1,767.0
Total			1,279.3	2,240.2	2,129.0	5,648.5

Environmental Management System Certification

DL Chemical introduced the ISO 14001, an international standard for environmental management in 1996. By establishing strategies and targets to achieve our environmental policies, we are operating a consistent environmental management system. In addition, we monitor air and water pollutants, as well as waste and soil pollution, submit data to government agencies, and share important environmental conditions and information with stakeholders through various communication channels.



Certifications	Yeosu Plant	Daedeok R&D Center	Scope of Certification
ISO 14001	Environmental Management	Environmental Management	Development, production, and additional service of HDPE, LLDPE, PB, EPO/PAO
ISO 45001	Occupational Health and Safety	Occupational Health and Safety	Development, production, and additional service of HDPE, LLDPE, PB, EPO/PAO

Certification Standards	Certification Body	Date of Expiry
KS I ISO 14001:2015/ISO 14001:2015	Korea Gas Safety Corporation	May 15, 2006 (valid from Jan. 6, 2021 to Nov. 14, 2021)
KS Q ISO 45001:2018/ISO 45001:2018	Korea Gas Safety Corporation	May 11, 2020 (valid from Jan. 6, 2021 to Nov. 10, 2023)

Air Environment Management

DL Chemical measures air pollutants on a regular basis at its business sites to improve air quality. We apply a fine dust emission limit that is more stringent than legal requirements and introduced a direct combustion facility monitoring system. We are committed to ensuring full compliance with environmental laws and regulations by conducting self-inspection, making investments to reduce air pollutants, and carrying out tasks for improvement.

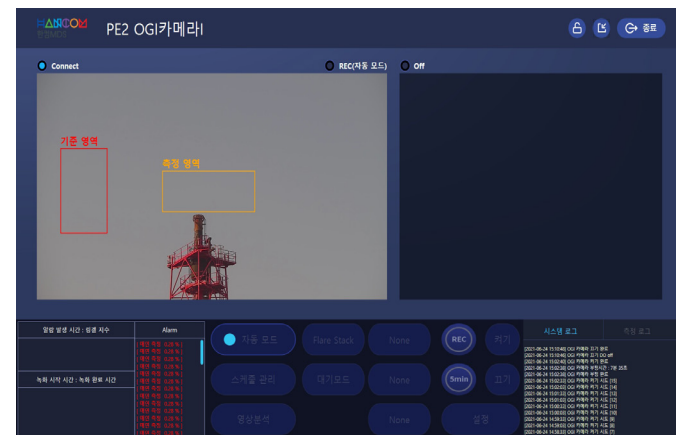
Flare Stack Optical Gas Detector

DL Chemical is operating an optical gas detector that monitors the direct combustion system (flare stack) to prevent incomplete combustion. The optical gas detection cameras use special thermal imaging wavelengths to detect invisible VOC (volatile organic compounds) and gas leaks immediately. Incomplete combustion is monitored in real time through an optical gas detector while preventing air pollutants by taking prompt action and analyzing the cause of the smoke.

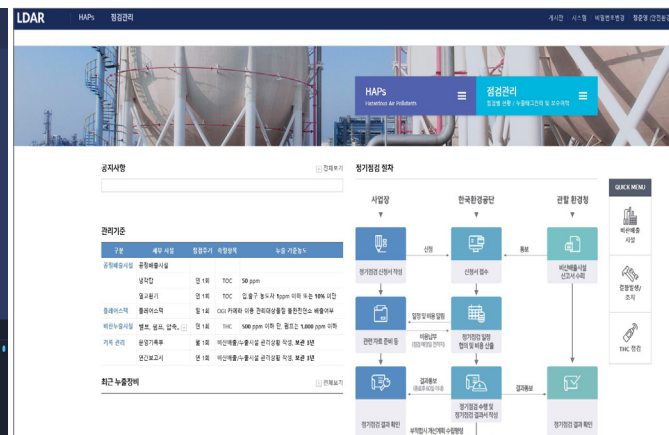
LDAR (Leak Detection and Repair) System

DL Chemical has built an LDAR (Leak Detection and Repair) system to prevent scattering HAPs¹⁾. By measuring and fixing the potential leaks in pumps, valves, and piping connections that are prone to leaking, we prevent leaks. Through the LDAR system, we are improving the air quality and our working environment by preventing the leakage of HAPs.

1) HAPs (Hazardous Air Pollutants) : Substances that are subject to air pollutant management because they can directly or indirectly harm human health or the growth of animals and plants by long-term ingestion or exposure at a low concentration level



Flare Stack Optical Gas Detector

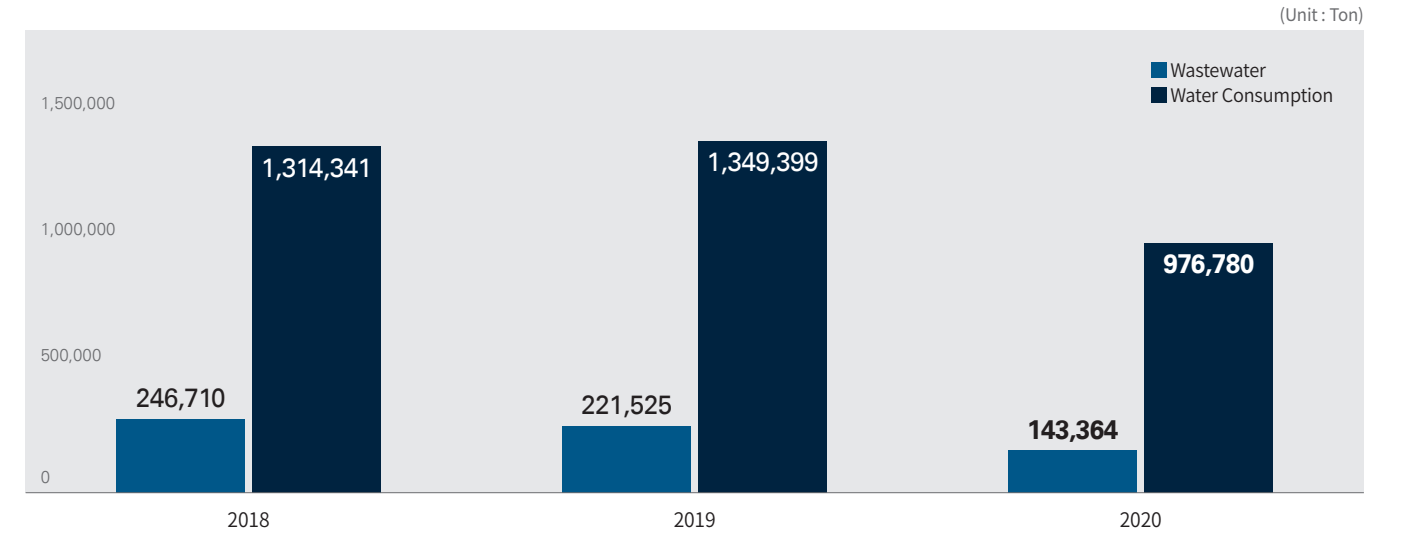


LDAR (Leak Detection and Repair) System

Water Resource Management

DL Chemicals physically and chemically treats wastewater generated during the process to ensure compliance with laws and regulations and prevents water pollutants from leaking. We strictly follow the legal standards by checking the properties (pH, COD, SS) of the treated water at the treatment plant on a daily basis. We manage sources of pollution in the plant and monitor the water quality using pH Meters¹⁾ installed at the last waterway.

1) pH Meter : A device that analyzes the acidity or alkalinity of a liquid



Preservation of Biodiversity

In order to minimize the impact on biodiversity throughout the entire value chain, DL Chemical organizes the Environmental Protection Day activities every two months in which all employees of the Yeosu Plant participate. They collect waste from the rivers around the business site and analyze the environmental impact to protect the ecosystem and prevent pollution.



Collecting Waste

Waste Management

DL Chemical minimizes the waste generated at business sites in compliance with the Waste Management Act. When hiring landfill and incineration operators we check their permit and waste disposal capacity, and check them on a regular basis. We are recycling waste that is incinerated or landfilled to promote eco-friendly waste disposal. In particular, waste oil, waste organic solvents, and waste oil/catalyst drum treatment processes have been improved to minimize waste and increase the recycling rate by hiring waste recycling companies.

Soil Contamination Management

In order to prevent and effectively manage soil contamination, DL Chemical complies with relevant laws and regulations and monitors target facilities subject to management. We check the level of soil contamination of facilities that store and handle pollutants by inspecting them through a specialized agency. If contamination is found as a result of the inspection, we investigate the cause to prevent recurrence, and the contaminated soil is restored through a cleaning company. In addition, we are inspecting the target facilities for corrosion and leakage of oil while improving outdated facilities.

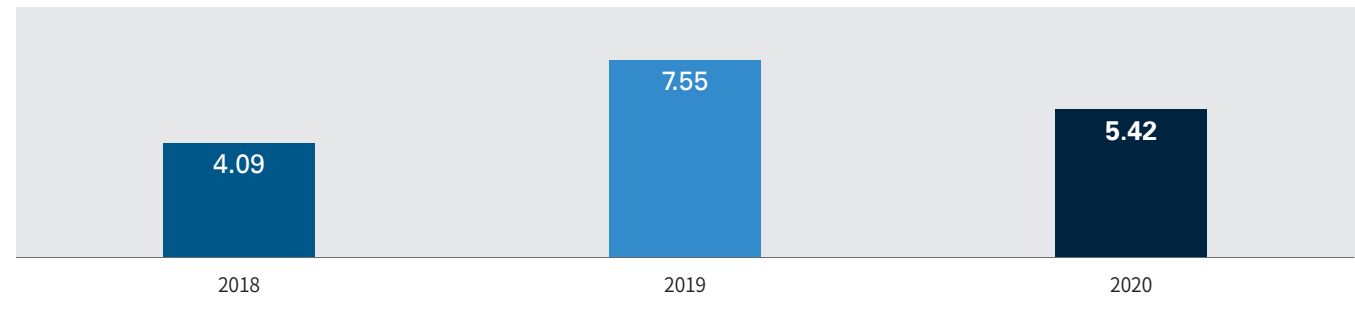
Hazardous Chemical Management

Chemical Management System

DL Chemical operates the DCMS¹⁾ to systematically manage chemical substance data. Through the chemical management system, we prevent leakage by managing the entire process of warehousing, shipping, use, and disposal of chemical substances at all our business sites. We are also responding to local laws and regulations around the world, and under the Chemicals Control Act, we report to the Ministry of Environment on the amount of chemical substances used by each business site on an annual basis while ensuring transparency and effectiveness of management.

1) DCMS : DL Chemical Management System

Hazardous Chemicals Discharged from DL Chemical's Four Yeosu Business Sites (target substances: toluene, 1,3-BD) (Unit : ton/year)



Amount of Waste Produced by DL Chemical (Unit: ton/year, %)

Category	2018	2019	2020
Total Waste	7,487	6,590	5,162
Recycled Waste	4,206	3,306	2,027
Recycling Rate	56	50	39



Hazardous Chemical Spill Response Training

DL Chemical is building an emergency response system to effectively deal with emergencies caused by hazardous chemical spills. We conduct annual emergency response training for target organizations and strengthen emergency response performance to minimize environmental impact and death in the event of a spill. We prepare for accidents by providing protective gear, pesticides, and MSDS (Material Safety Data Sheets) to handling facilities. We also prevent cracks, damage, and corrosion by carrying out regular inspection, maintenance, and RBI (Risk Based Inspection) of our plant facilities and equipment.

Environmental Training

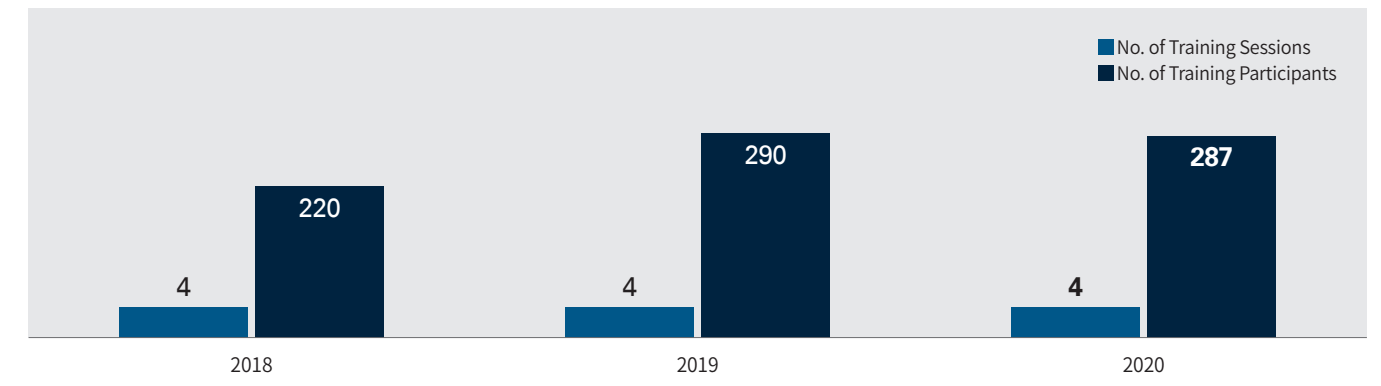
Environmental Training for Employees

DL Chemical is committed to dealing with environmental issues as part of its corporate social responsibility. We carry out an environmental training plan every year to raise employees' awareness and develop their expertise. We have also established personalized training programs and organized training for workers handling hazardous chemicals in the workplace and training to learn about the environmental laws to secure environmental management competency and expertise.

Environmental Training for Partners

To promote sustainable growth and collaboration, DL Chemical supports partners in establishing customized environmental management training and system. As part of our social responsibility towards environmental management, we provide training on chemical safety management and wearing personal protective equipment to all workers, including those hired by partners.

Hazardous Chemical Training Performance



Chemical Spill Response Training



Training Reports

SOCIAL

Human Resource

In response to growing importance of employees as a source of corporate innovation and creativity, companies are implementing various programs to recruit, develop, and retain talent. Therefore, the focus of human resource management is on offering various programs so that the talented workforce can stay in the company for a long time. At DL E&C, we promote respect for human rights and a horizontal organizational culture by establishing systematic talent development strategies based on the Concept of Hansup Person.

KEY Performance Indicators (KPIs)

Development and Operation of New Online Training Programs

21 Programs



Rate of returning to work after maternity leave

98%



Increasing Female Managers

2% (No. of Female Managers/Positions YOY)



HR Development and Recruitment

Ideal Employees

DL E&C hires talented individuals who can pave the way for a sustainable future for the company and grow into global leaders. The right person for DL E&C is someone who fits to the concept of "Hansup person", which we defined 7 different concepts as followings; "Look ahead," "Look for something new," "Be the best in one's area," "Be a team player," "Know the customers," "Keep promises," and "Be economical."



Fair Recruitment

DL E&C is putting the best and all of its efforts in securing top talent through a fair and transparent recruitment process, which begins with this idea that people are the key cornerstone for a corporate to achieve the sustainable development in the global market. In 2020, we carried out year-round open recruitment for local talent at both experienced and graduate level as well as targeted recruitment to secure professionals from the global market we are entering. Priority consideration will be given to those candidates who are passionate and have a clear goal in their careers. We strive to select talent who fits our company the best through interviews that are specialized for each job and position in addition to the application reviews and personality test.

Open Talent Recruitment in 2020 (Unit : person)



HR Development System & Strategy

HR Development Strategy

From 2020, DL E&C has developed an online-based long-term/continuous talent development program, moving away from the one-off training program in the past. New programs has been continuously developed based on Micro Contents¹⁾ which improve employees' concentration in online based learning, and to internalize knowledge acquired through discussions and various type of assignments. From the first half of the year, we have provided training programs for team leader positions (team leader, Project/Site Manager), and changed the introductory course for employees with job experience and key courses for each business division to online training programs. These new online training programs allow employees to complete their training courses on their own schedule. These online-based training courses help more employees acquire knowledge at low cost compared to offline courses. In 2021, we plan to change most job courses to online sessions, and improve the quality of the courses based on data obtained through training (learning patterns of employees and improvements on the content).

1) Micro Contents : video or card news within 15 minutes containing one subject and one action in a single content

Rational Evaluation System

DL E&C provides compensation and opportunities for development to high-performing employees regardless of their seniority through a rational evaluation system based on their ability and performance. To ensure fair and reliable evaluation, we conducted peer evaluation and calibration sessions to consider multiple perspectives, and employees can formally request a review based on their results. Starting in 2020, we have introduced an evaluation system that allows timely feedback process in the course of work, improving the objectivity of evaluation and promoting performance improvement through development.

HR Development Programs

Core Talent Development

DL E&C defined competencies required to be developed over a long period of time and established training programs to help officers acquire the knowledge. These programs do not just focus on leadership, but consist of courses that can strengthen their ability to respond to unexpected risk factors from the officer's point of view and internalize customer data-based work processes. In 2021, we plan to expand the target group from the candidates for executives (head of the department) and continue to provide training programs to increase the number of personnel who can perform managerial tasks in advance.

Job Training (e-Learning, Internal Training, Outsourced Training)

DL E&C has introduced an online training course on advanced engineer technology and processes in order to gain a continuous advantage in the rapidly developing industry. In the case of the latest technologies and processes that are difficult to acquire internally, we select outstanding employee so they can develop expertise through external training. We also provide training for our employee through internal training (training with internal instructors). By taking this training process, we create intellectual assets. Most of the job training is provided online from 2020, and as a result, employees with relatively few training opportunities can access more training benefits. Also, we provide e-learning programs based on personalized training plans and improve our training environment so that it is tailored to the needs of our employees.

Global Training

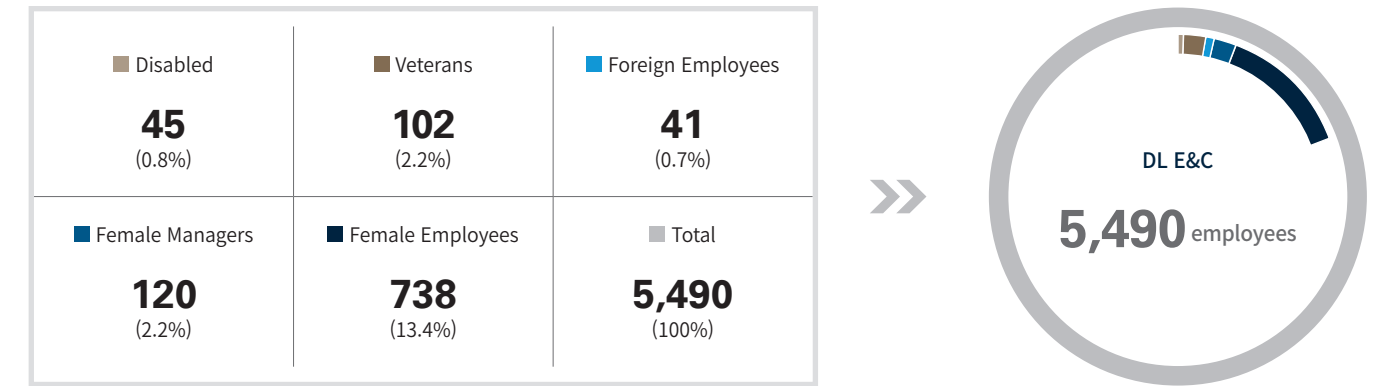
Our global training programs are developed to focus on the language skills required for overseas business not for just language skills. For example, before being assigned overseas, we provide Advanced English Language Course in Construction for key field personnel including directors. The course consists of language practice in various situations that may occur in overseas sites and feedback from professional instructors. In addition, we support external online training according to the company's internal regulations so that they can develop the language skills necessary for their jobs.

Respect for Human Rights

Diversity through Equal Opportunities

When it comes to compensation and promotion, DL E&C provides equal opportunities without discrimination based on gender, age, nationality, marital status, health, or political opinions. Recognizing diversity as a foundation for improving competitiveness and fulfilling social responsibility, we are committed to promoting diversity in our organization by giving equal opportunities to social minorities such as women, foreigners, veterans, and people with disabilities. We continue to put our efforts into identifying and developing outstanding female workforce, and instead of hiring female employees for the sake of just hiring them, we provide equal opportunities for career development based on talent and competency regardless of gender as we assign them to key positions and appoint female executives. As a global developer, we make sure to hire not only local talent but also global talent with diverse backgrounds for the successful business in the global market.

2020 DL E&C Social Minorities



Human Rights Impact Analysis and Results

DL E&C conducts human rights impact analysis at all 175 business sites to protect human rights and manage risk factors in advance. The seven areas of analysis include fair practice, discrimination, human rights, working environment, safety and health, and personal data. The analysis is conducted annually to ensure that there are no negative impacts at all our business sites. The results were generally good, but the level of awareness of sexual harassment and information protection was relatively low. Therefore, we conducted workplace harassment prevention training, assigned a female member to the Grievance Committee, organized Information Protection Day, and conducted a self-assessment on information security. In the following analysis, the perception of sexual harassment improved by more than 80% compared to the previous year, and it was found that 99% of the employees understood the security regulations. Going forward, we will subdivide the areas of analysis, identify risk factors, and take preemptive measures to promote human rights in our workplace.

Grievance Handling Channel

The Grievance Committee is organized to listen to and effectively deal with grievances from employees. The committee is composed of heads of departments in charge of each area of work to promote the grievance handling system and provide employees counseling and on-site sessions. In the on-site counseling sessions, committee members visit the site and provide counseling on grievances. When grievances are reported, the counselor should inform the reporter of the measures taken and the outcome within one month. Matters that are difficult to deal with directly are referred to the Central Operation Committee for review. In addition, an online grievance handling team is operated within Groupware so that employees can report anonymously. A permanent offline counseling center is also running so that employees can visit and receive counseling in person.

Human Rights Protection for Partners

DL E&C identifies and deals with risk factors in the human rights management of partners. Therefore, in 2020, we established the Code of Conduct on the human rights and ethical management that applies to our supply chain. Going forward, we will announce and distribute the Code of Conduct to all our partners and reflect their compliance in our selection and evaluation process.

Case In-house Cafe with People with Developmental Disabilities (Bear Makes Coffee Better)

DL E&C operates an in-house cafe in the D Lounge, a cultural and communication complex, as a convenience facility for the welfare of its employees to support people with developmental disabilities by outsourcing the operation to companies that hire them.



Bear Makes Coffee Better

Organizational Culture

Open Communication

We are committed to creating a communication-friendly environment through various internal channels. In particular, we focus on increasing our communication channels to keep pace with environmental changes inside and outside the organization while promoting harmony and horizontal communication. Our “Hansup Speech Forum” is designed to eliminate the wrong practices in the workplace and support direct communication with the management while those who are unable to communicate directly can ask questions through the Hansup Council (labor-management council) Chairpersons. The management communicates directly with employees through “quarterly dialogues with the head of Division” and the Hansup Council serves the role of facilitating communication with the management on an ongoing basis.

DL E&C Internal Communication Channels

	Channels	Description
Existing Channels	Hansup Bulletin Board/Hansup Talk Talk/Hansup Clubs	Employee communication channel
	Grievance Handling Group	Reporting workplace harassment and violation of working hours (to the chairman of the Hansup Council) Reporting complaints from female employees (to the Female Grievance Handling Committee)
	Hansup Council Q&A	Communication channel for Hansup Council Chairman Group
	Hansup Broadcasting	Weekly/daily news on policy and performance
	Hansup Speech Forum	Policy proposals to practice improvement and development of the company
New Channels (2020-)	Senior Communication Committee Member	Establish the Senior Communication Committee Member system
	Division Head Seminar (monthly)	Set up a discussion forum for communication with the management every month
	Appointment of Change Agents	Facilitate communication between the management and employees
	Online Communication Channel	Communication and idea proposal channel between Hansup committee members and employees

Labor-Management Communication Channel (Hansup Council)

The Hansup Council has been organized based on the engagement and cooperation of employees from each division to adapt the new corporate environment and promote sustainable growth. The council visits domestic and overseas worksites to collect input from employees, and through the activities of the Central Operation Committee held on a regular and ongoing basis, it shares ideas for sustainable growth and employee motivation with management. We also engage in various activities to improve working conditions with a focus on salary, welfare benefits, job security, social contribution, health, and safety. The chairman and vice-chairman communicate with employees through various channels while organizing a “conversation with the head of Division” on a monthly basis as part of efforts to facilitate communication between management and employees. In 2020, we stressed the importance of the Hansup Council as a communication channel and reorganized the system to promote open communication with employees.

Family-Friendly Programs

We are putting all of our efforts into supporting a healthy work-life balance for our employees. Through maternity program registration, we are providing maternity leave and reducing work hours during childcare, along with reduced work during pregnancy, fetal examination leave, perinatal leave, and miscarriage leave. In addition, “Hansup Daycare Center,” our in-house daycare center, was established to help our employees raise children and we support their financial stability by providing tuition for children from kindergarten to university. The Hansup Council (labor-management council) holds family-friendly events every year. In 2020, “Santa Claus in May” and “Wise Family Life” are organized as cultural events for Children’s Day to support a family-friendly working environment.

Our working hour management program includes a PC On-Off system that manages working hours under the supervision of assigned approvals when overtime is required in addition to the designated 40 hours, and the PC shuts down automatically when the approved working hours are over. Our employees work within 52 hours a week according to their work schedule and comply with the on-site working conditions by using the “two-week work schedule” and “three-month work schedule.” In addition, the flexible commuting program allows our employees to adjust their commuting time to accommodate family circumstances.

Prospective Retiree Support Program

DL E&C provides the “Career Support Program” to help prospective retirees plan their retirement life and career development. The program provides opportunities for self-assessment, career assessment, and career planning, and helps them plan their own career path. The program is available to not only office personnel and those with permanent positions, but also all employees covered by the employment insurance, and the entire process is provided online so that field workers can use the program at their convenience without any time and space constraints.

Employee Benefits

DL E&C provides various employee benefits including group insurance, annual health check-ups, medical expenses, and resort membership so that they can focus on their job and maintain a healthy work-life balance.

Professional nurses are stationed in our medical office to provide health counseling in response to COVID-19, and we offer support programs to overseas personnel who are unable to use medical services. In 2020, we signed a partnership agreement with Seoul National University Hospital to provide non-contact medical services to help our employees manage their mental and physical health.

Employee Benefits

Family-friendly	Livelihood	Health	Leisure	Education	Others
<ul style="list-style-type: none"> Child tuition fees Financial support/Leave for congratulations and condolences Hansup Daycare Center (in-house) Congratulatory money for multi-child birth 	<ul style="list-style-type: none"> Employee loans Moving expenses Group insurance Echo of Love Fund (employee mutual aid) Disaster relief fund 	<ul style="list-style-type: none"> Annual health checkup Medical expenses In-house medical service Non-contact medical service for overseas business sites Smoking Cessation Clinic 	<ul style="list-style-type: none"> Welfare Points and Point Mall Access to resort facilities (condominium) In-house clubs 	<ul style="list-style-type: none"> Online education (Hansup e-Campus) Language education/test support Legal education/outside education support Support for recommended certifications 	<ul style="list-style-type: none"> Rewards for long-term employment Mutual assistance for employee’s death Cafeteria/commuter bus Special benefits for acquiring technical qualifications

SOCIAL

Human Resource

Recruiting and retaining talent is a valuable assets for a company's long-term growth. Businesses are managing their human resources through investment and institutional support while promoting talent development and innovation in organizational culture. DL Chemical is developing a human resource development system and strategy based on the Concept of Hansup Persons and practicing human resource management through talent development and horizontal organization culture.

KEY Performance Indicators (KPIs)

Rate of returning to work after maternity leave
100%



Rate of performance evaluation target
100%



Annual training hours per employee
72 hours (in addition to legal training)



HR Development & Recruitment

Ideal Employees

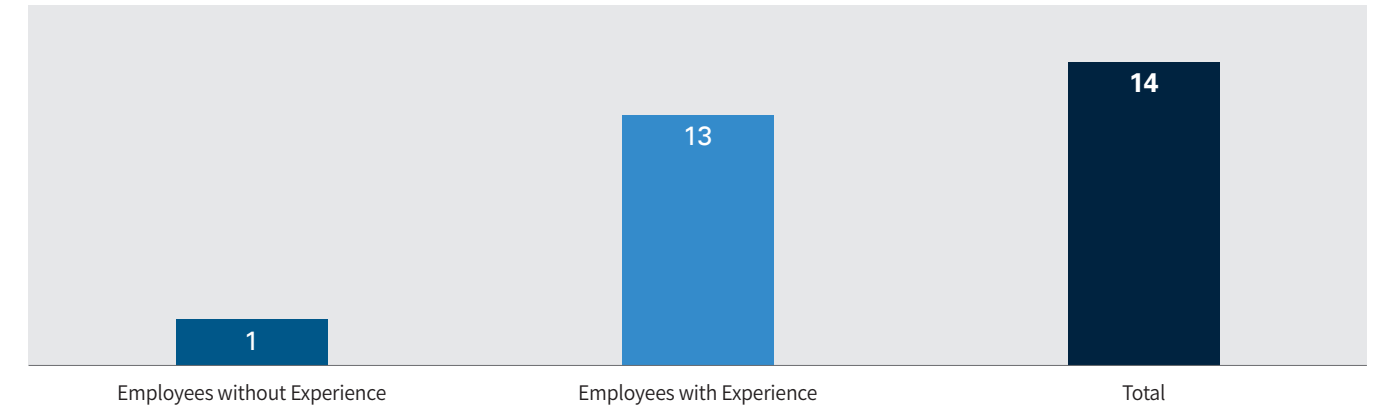
DL Chemical hires talented individuals who can pave the way for a sustainable future for the company and grow into global leaders. The right person for DL Chemical is someone who fits to the concept of "Hansup person", which we defined 7 different concepts as followings; "Look ahead," "Look for something new," "Be the best in one's area," "Be a team player," "Know the customers," "Keep promises," and "Be economical."



Fair Recruitment

Based on the Seven Concepts of Hansup Persons, DL Chemical is committed to implementing a fair and transparent recruitment process without discriminating against anyone based on their gender, religion, race, country of origin, or regional background. DL Chemical conducted a target recruitment in order to secure talented and global experts who will lead sustainable growth in global market. When hiring, we conduct document review, personality review, and interview in accordance with the Concept of Hansup Persons.

2020 On-going Open Recruitment (Unit : person)



HR Development System & Strategy

HR Development Strategy

DL Chemical created a human resource development system to facilitate the replacement of talent and develop core human resources. By structuring the framework into "core talent" and "expert," we developed training programs with focus on job rotation, task performance, coaching, and training. As an example, we are conducting job placement training such as commissioned education on heavy chemical facilities/chemical process/safety in cooperation with Chonnam National University to promote job competency development for new employees at the Yeosu Plant. A series of training programs are provided to support the development of expertise for engineers. We plan to organize a range of job training courses with focus on online training instead of one-off training sessions.

Rational Evaluation System

DL Chemical provides rewards and opportunities for high-performing employees regardless of their seniority through our evaluation system with a focus on ability and performance. Quarterly evaluations are conducted to ensure a fair and reliable evaluation process, and an objection system in which employees can formally request a review is in place to increase acceptance of the results. By introducing the "Ongoing Feedback System," which allows timely feedback in the course of work, we are improving the objectivity of evaluation and promoting performance enhancement.

HR Development Program

Core Talent Development

DL Chemical provides training for core talent in the three areas of business, strategy, and innovation and organizes training courses to help them internalize core competencies. Training is conducted using a variety of training methods including job rotation, task performance, coaching, training, etc.

Job Training (e-Learning, In-house & external training, Commissioned education, etc.)

DL Chemical conducts job training that includes e-learning, commissioned education and in-house & external training to improve employees' competency in response to fast-changing business environments and corporate growth. By doing so, we focus on helping our employees reach their full potential along with the growth of the organization. The e-MBA course (5 months) is available to assistant managers and staff through e-learning, and a manufacturing and technology course organized by Chonnam National University is also being offered. In addition, a new job-based course has been established to provide basic job training including marketing, accounting, statistics, and documentation.

Global Training

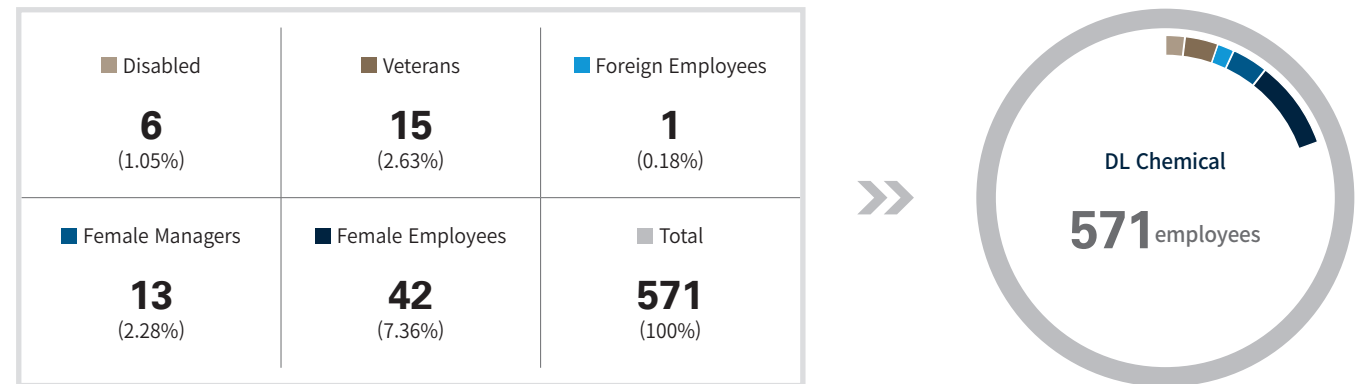
DL Chemical supports various training programs to gain competitive advantages in the global market. We have developed e-learning and in-house/external training programs to improve the foreign language skills of our employees. The language program can be voluntarily taken when employees feel the need to learn. Furthermore, we engage in global training activities to support expatriates through the Advanced Foreign Language Course organized by Hankuk University of Foreign Studies.

Respect for Human Rights

Diversity through Equal Opportunities

DL Chemical supports an employment policy that does not discriminate against anyone based on gender, age, nationality, marital status, or political beliefs, and provides equal opportunities for promotion without discrimination. Recognizing diversity as the basis for enhancing competitiveness and fulfilling social responsibility, we are committed to providing equal opportunities to women, foreign workers, veterans, and people with disabilities. We especially focus on the development of female employees from the recruitment stage and provide opportunities to talented individuals with strong competencies and qualifications.

2020 DL Chemical Social Minorities



Employee Human Rights Training

(Unit : person, hour/person)

Subject	Training Participants	Training Hours
Ethical Management	574	2.06
Sexual Harassment Prevention	574	2.00
Information Security	574	2.00

Grievance Handling Channels

DL Chemical's grievance handling channels are established to handle internal grievances and prevent harassment in the workplace. We designate a person in charge for each department so that grievances can be handled, and after grievances are reported, they conduct an investigation to take measures to protect the victims, disciplinary actions against the perpetrators, and provide prevention training. Through the channels, we resolve complaints on the working environment and conditions and identify areas of improvement while maintaining a healthy labor-management relationship.

Organizational Culture

Open Communication

DL Chemical is promoting open communication through organizational innovation. To ensure close communication among employees, we operate various internal communication channels and create a culture of harmony and collaboration through horizontal communication. We also support two-way communication between employees and are building a system for realizing open communication. By doing so, we will strive to create a happy work environment for all.

Horizontal Organizational Culture

DL Chemical is promoting mutual respect and vibrant organizational culture through various organizational support programs. By analyzing our organizational culture on a regular basis, we identify key areas of improvement and prepare specific action plans. In particular, various action plans are introduced to prevent discrimination and remove authoritarianism in the workplace. To this end, we are focusing on promoting horizontal communication by building trust within the organization, and creating an autonomous/active work environment through the flexible working schedule, UP Day, feedback, and anti-authoritarianism campaigns led by Junior DL programs. Through these efforts, we are promoting various activities to improve the organizational culture and programs to ensure diversity in the workplace.

Junior DL

Junior DL, consisting of assistant and deputy managers, is a two-way conversation channel that shares opinions of the MZ generation with the management directly. The channel contributes to management with a focus on the onsite operation by reflecting the voices and ideas of employees. The members of different departments participate to understand each other and share ideas, thereby resolving conflicts between teams. By doing so, we are improving our organizational culture. Junior DL will continue to serve as a communication coordinator and change facilitator for the healthy growth and development of the organization. In this regard, each business site is holding a Junior DL appointment ceremony, and we reaffirmed our commitment through the official commencement event.

Junior DL Appointment Ceremony



Flexible Working System

At the R&D Center, an intensive and flexible working system is implemented to create an immersive work environment suitable for our R&D organization. The system has realized positive effects as it increased job satisfaction and maintain a healthy work-life balance.

UP Day

With the vision to achieve a “Boundless” organization, “UP Day” was organized to promote communication without boundaries between departments and generations, and encourage various sports, cultural and leisure events among employees. It is expected to support smooth communication and motivation among employees and creates an open and flexible organizational culture.

Ongoing Feedbacks

By introducing an ongoing feedback system for employee performance management and communication, we are maximizing the effectiveness of communication, review, and coaching on work progress, performance, and improvements. We contribute to the growth of our employees by providing feedback on their goals and performance in line with work schedules.

Respect for Diversity

Engagement and Development of Female Talents

DL Chemical is establishing a communication channel to promote the engagement of female talent in Junior DL and to remove obstacles to the growth of the female workforce. In addition, through our Women’s Leadership Skill Development Program, we are helping women set and achieve their vision and roadmap for their careers as leaders and increase their impact in organizations.

Preventing Discrimination in the Workplace

DL Chemical provides equal opportunities for recruitment, promotion, compensation, and training to all employees in accordance with the UN SDGs (Sustainable Development Goals). Any discrimination based on gender and social status is strictly prohibited. To create a healthy organizational culture, we are raising awareness of anti-discrimination and promoting changes in conduct. Furthermore, we are conducting anti-discrimination training with a focus on bullying, sexual harassment, and awareness of the disabled in the workplace.



Inter-generation communication



Ongoing performance management and coaching

Labor-Management Communication Channels

DL Chemical supports the freedom of association and creates a labor-management culture that promotes shared growth. A labor-management council meeting is held on a quarterly or semi-annual basis with employees elected by each organization. The meeting is held regularly and on an ongoing basis to collect opinions from all employees and to present them to motivate our employees, thereby promoting mutual respect and cooperation between labor and management.







Family-Friendly Programs

DL Chemical provides telecommuting, flexible commuting, and alternative leave to create a safe work environment in response to the COVID-19 pandemic. We are committed to maintaining a healthy work-life balance through various family-friendly programs including reduced work hours during pregnancy, fetal examination leave, maternity leave, miscarriage leave, and parental leave.

Employee Benefits

DL Chemical provides a variety of employee benefits including group insurance, tuition for children, annual health check-up, medical expense support, and resort support so that employees can focus on their job by improving their quality of life. We also operate a point mall where welfare points can be freely used.

Employee Benefits

					
Family-friendly	Livelihood	Health	Leisure	Education	Others
<ul style="list-style-type: none"> • Child tuition fees • Financial support/ Leave for congratulations and condolences • Congratulatory money for multi-child birth 	<ul style="list-style-type: none"> • Employee loans • Moving expenses • Group insurance 	<ul style="list-style-type: none"> • Annual health checkup • Medical expenses • In-house medical service • Smoking Cessation Clinic 	<ul style="list-style-type: none"> • Welfare Points and Point Mall • Access to resort facilities (condominium) • In-house clubs 	<ul style="list-style-type: none"> • Online education (Hansup e-Campus) • Language education/test support • Legal education/ outside education support • Support for recommended certifications 	<ul style="list-style-type: none"> • Rewards for long-term employment • Cafeteria/commuter bus

SOCIAL

Safety & Health

There is a growing awareness of safety as a corporate responsibility around the world. As regulatory demands for safety management strengthen, a systematic safety and health system has become an essential part of sustainable growth.

KEY Performance Indicators (KPIs)

No. of participants who completed training in safety experience school
2,793 (Jan. 2019 - Dec. 2020)



No. of companies completed Level 1 Training after the introduction of D-SEP (Daelim-Safety Enhancement Program for partner)
188



No. of deaths reduced by
50% (2 in 2019, 1 in 2020)



Safety & Health Policy

DL E&C has built trust with customers through proactive Health and Safety management activities, carrying out various EPC projects both in and outside Korea. To encourage these efforts, we have established and implemented a Health and Safety Policy. Going forward, we will continue to improve our Health and Safety management system by announcing the policy with stakeholders, setting goals, and monitoring progress on a regular basis for successful implementation.

Safety Guidelines

We recognize that health and safety is an absolute priority for sustainable development.

We strictly comply with applicable health and safety laws and regulations and settle a world-best safety culture.

We recognize risk in advance and establish safety measures at every single stage.

We ensure a healthy and safe workplace and maintain it at all times.

We get workers involved in health & safety activities and encourage them to conduct safety initiatives.

Management consistently shows commitment to health and safety and provides the resources needed.

Health and Safety System

DL E&C has built trust with customers through proactive Health and Safety management activities, carrying out various EPC projects both in and outside Korea. To encourage these efforts, we have established and implemented a Health and Safety Policy. Going forward, we will continue to improve our Health and Safety management system by announcing the policy with stakeholders, setting goals, and monitoring progress on a regular basis for successful implementation.



Health and Safety Management Activities

Employee Safety & Health Activities (Safety Report System)

DL E&C developed the "Safety Report" mobile application in the second half of 2020 and applied it to all sites so that workers can participate in safety activities, including on-site risk reports and best practices with their mobile phones. The safety report can be accessed using a QR code, and it is designed to be attached to their helmets so that it can be accessed without any restrictions at their convenience. Workers who actively participate in the program are motivated through rewards. The mobile safety report system ensures their access and minimizes the duration of risk factors, thereby preventing accidents, and is expected to raise the safety awareness of our employees.

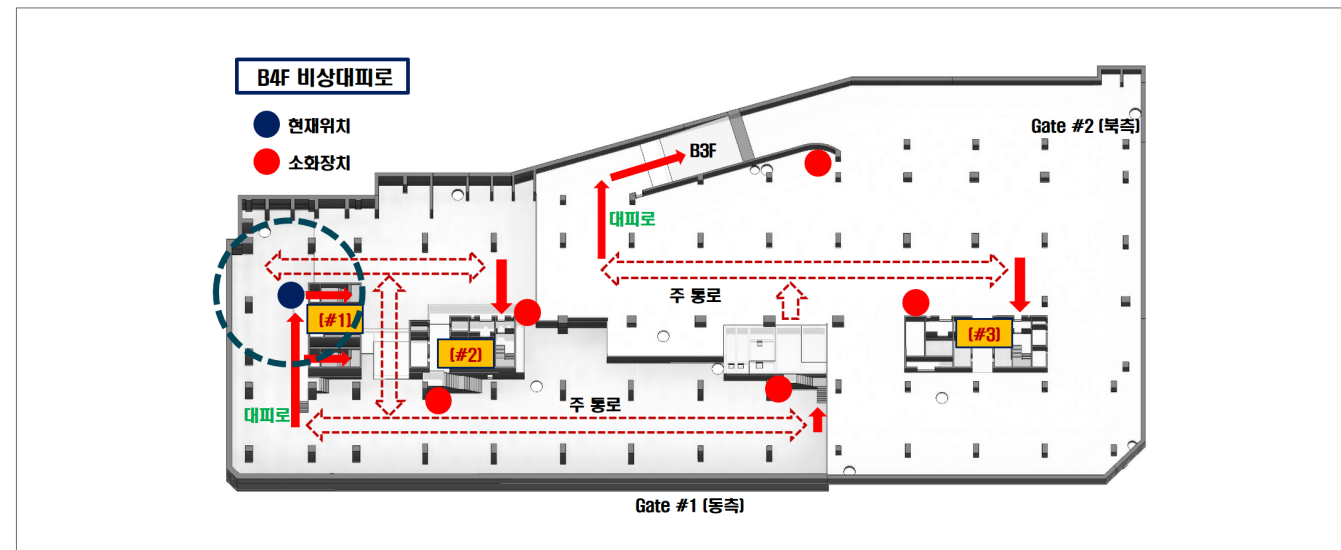


Safety reporting process using QR code

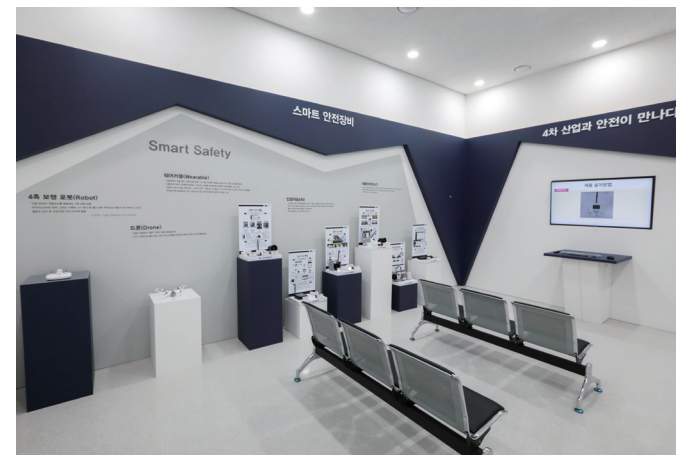
Smart Safety Management

DL E&C conducts safety management using BIM which is a building design and construction optimization program based on a 3D information model and is used for establishing specific safety management plans and other safety practices. We organize video training sessions for on-site safety managers to identify the location and amount of safety facilities, establish an emergency evacuation plan, and identify risk factors caused by interruptions. In addition, smart safety management technology is applied rapidly to eliminate blind spots in safety management. With the introduction of drones and CCTV, the scope of safety management is expanded to make it more accessible. Laser guides are also installed to prevent equipment crashes and a horizontal notification alarm to minimize equipment-related accidents. Furthermore, a smart safety display booth has been prepared within the safety experience school. We also introduce smart safety systems including smart safety devices that can prevent falls, suffocation, pinching, and collapse using beacon¹⁾ and tracker²⁾, which are based on IoT (Internet of Things), and drones used for inspection. Wearables are worn by workers to allow them to request rescue by pressing the SOS button in case of an emergency or to notify the safety officer immediately if there is no movement for a certain length of time. Smart safety systems have been installed in six safety experience facilities, and instructions on how to use them during training are delivered to training participants.

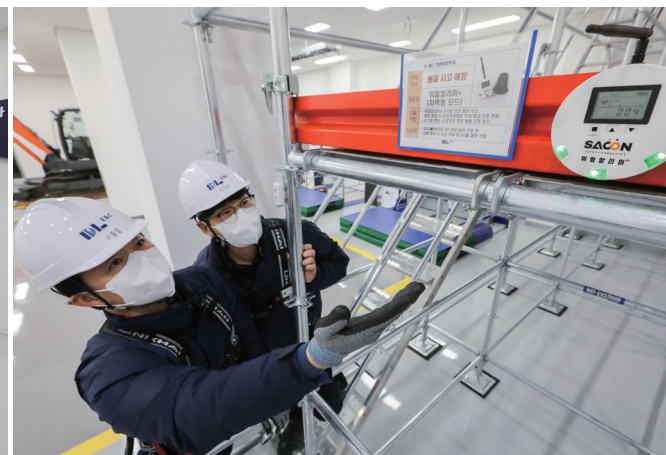
1) Beacon : Bluetooth device with wireless communication that delivers location information to a smart device (tracker) in a short distance.
 2) Tracker : Each worker reads the location information and delivers the current location to the central system using this device.



Emergency Evacuation Planning based on BIM



Smart Display Booth



Smart Safety Device for Collapse Risk Notification

D-100 Zero Accident Campaign

DL E&C organized a safety campaign to achieve zero accidents for the remaining period (D-100) with the civil engineering, housing, and plant divisions. We created a safe environment and managed places and times that are vulnerable to accidents to carry out customized safety management activities according to the processes. Furthermore, by raising safety awareness and creating a safe work environment through video conferences, we achieved the goal without any accidents for the remainder of 2020.

Employee Safety Training

Safety Experience School

DL E&C built a safety experience school in Suamwon, Yongin in January 2019 to enhance health & safety culture, and conducted the last training session in the first half of 2020. In 2021, the safety experience school was relocated to the Daedeok Research Center in Daejeon. Until then, safety training was provided to employees of DL E&C and partners, and as of the end of 2020, a total of 2,793 participants (2,604 in 2019, 189 in 2020) were provided with training to experience facilities and gain safety knowledge. The new facilities will include training systems for scaffolding, oxygen cutters (fire/explosion), and electric tools (electric shock), and we plan to add more systems in the future. Currently, because group training cannot be performed due to COVID-19, we are producing and distributing video training materials focusing on daily safety practices, such as CPR and emergency braking systems.

No. of Participants Completed
 Safety Experience School



2,793

(Jan. 15, 2019 - Dec. 31, 2020)



View of Safety Experience School



Safety Training at Safety Experience School



Safety Practice at Safety Experience School

Private Safety Experience Training Center Certification

On June 28, 2021, DL E&C Safety Experience School acquired the "Private Safety Experience Training Center Certification" from the Korea Occupational Safety and Health Agency for the first time in the industry. The agency operates a certification program to prevent industrial accidents through safety training and collaboration. We also acquired ISO 21001:2018, an international standard for educational organization management systems, for the first time among safety training facilities in January 2020. Going forward, we will strengthen our role in promoting the safety-first practice and raising awareness by providing diverse safety training programs to employees of our company and partners.

Safety & Health Certifications

DL E&C was recognized for its commitment to health and safety and acquired domestic and international health and safety certifications. After acquiring OHSAS 18001, we managed to complete the conversion process and obtained the ISO 45001 which was established in 2018. We also obtained KOSHA 18001, a Health and Safety management certification given by the Korea Occupational Safety and Health Agency. The KOSHA 18001 certification is valid until the end of June 2022, and certification conversion must be performed according to KOSHA-MS (new rules) before the deadline. We plan to complete the process by the end of 2021. Thus, we are operating our safety management systems in accordance with international standards and will make continuous improvements and optimize the systems at all our worksites.

Health and Safety Management in Supply Chain

Reward Program Based on Safety Performance of Partners

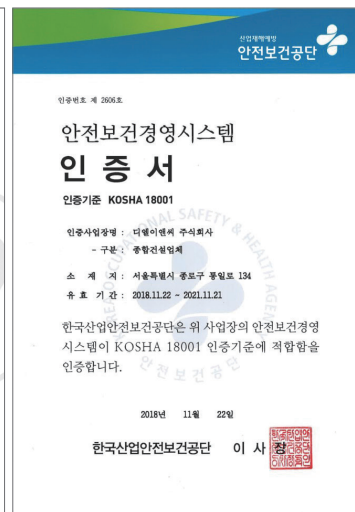
In 2019, DL E&C introduced a reward program based on the safety performance of business partners to promote voluntary safety activities at 9 worksites and 16 partners and provide incentives to motivate partners. The management including the CEO conducted the "Safety Inspection Day" event and safety inspections to encourage our commitment to safety and encouraged supervisors to participate in safety activities to raise awareness. In addition, using our standard safety guidelines, we support safety process training and safety experience training, and present rewards based on the performance of 23 participants. As a result, 20 of 23 partners maintained zero accidents. In 2021, we plan to expand the scope of the performance sharing system to 30 small and medium-sized partners and provide additional consultation to 18 partners to improve their safety and health management system.



Private Safety Experience Training Center Certification



ISO45001 - Domestic & Overseas Business Sites



KOSHA18001 - Domestic Business Sites

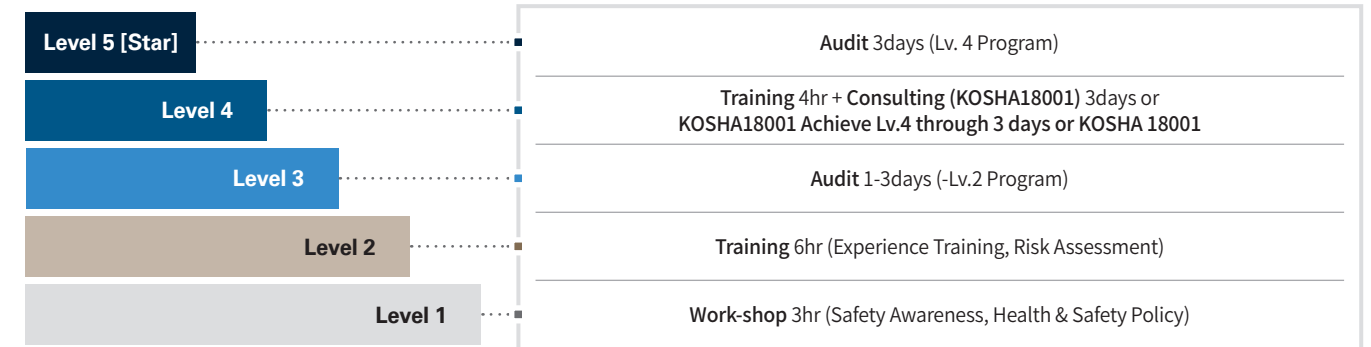
Partner CEO Seminar and Safety Experience Training

DL E&C holds a CEO seminar and safety experience training to raise safety awareness and promote cooperation with partners. The training focused on the aspects of mindset and experience, and in July 2019, five training sessions were held for 142 CEOs from among our partners, and 3 sessions for 67 partners in May 2020 due to the pandemic. By doing so, we instilled a sense of responsibility for safety among the CEOs of our partners, asked for their support so that they can participate in our safety experience training for their employees including field team leaders, and listened to their complaints.

D-SEP (DL E&C-Safety Enhancement Program for Partners)

We introduced D-SEP (DL E&C-Safety Enhancement Program for Partners), a step-by-step health and safety enhancement program for partners, to overcome the limitations of safety management led by the main contractor, and established a system to support the Health and Safety management system that is led by partners. D-SEP consists of five levels of enhancement and supports partners to improve the level of Health and Safety management. To achieve Levels 1, 2, and 4, they are required to conduct workshops, training, and consultation. Incentives such as safety penalty reduction are given if they reach Level 3 or above. By doing so, we can justify their commitment to safety and help them recognize safety as an integral part of corporate management.

D-SEP(DL E&C-Safety Enhancement Program for partner)



Safety Experience Training & Seminar with CEOs of partners



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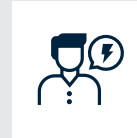
Safety & Health

Providing safe and healthy workplaces is an integral part of sustainable growth. As the importance of safety and health management increases, the government is strengthening the Serious Accident Punishment Act and other safety regulations emphasizing the need to establish a systematic safety and health management.

KEY Performance Indicators (KPIs)

No. of victims of severe disasters

0



No. of process accidents

0



Safety & Health Policy

DL Chemical has set health, safety, and environment as the core values of its business operation. We are committed to implementing effective policies to protect human life and the environment throughout the value chain while complying with the laws and regulatory requirements when it comes to health, safety, and the environment.

HSE Guidelines

All employees and partners should comply with the laws and company regulations on health, safety, environment, and quality.

We should establish an organization and system for promoting the core values of health, safety, environment, and quality, and support continuous improvement.

We should minimize the risks associated with health, safety, and environment, and deliver the highest quality through continuous technological innovation and training.

We should implement emergency measures to minimize loss of life and environmental pollution caused to our company and local communities.

We should assess the impact on health, safety, and environment throughout the entire process of product production, and promote the use of eco-friendly materials and technologies as part of our social responsibility toward resource conservation and environmental protection.

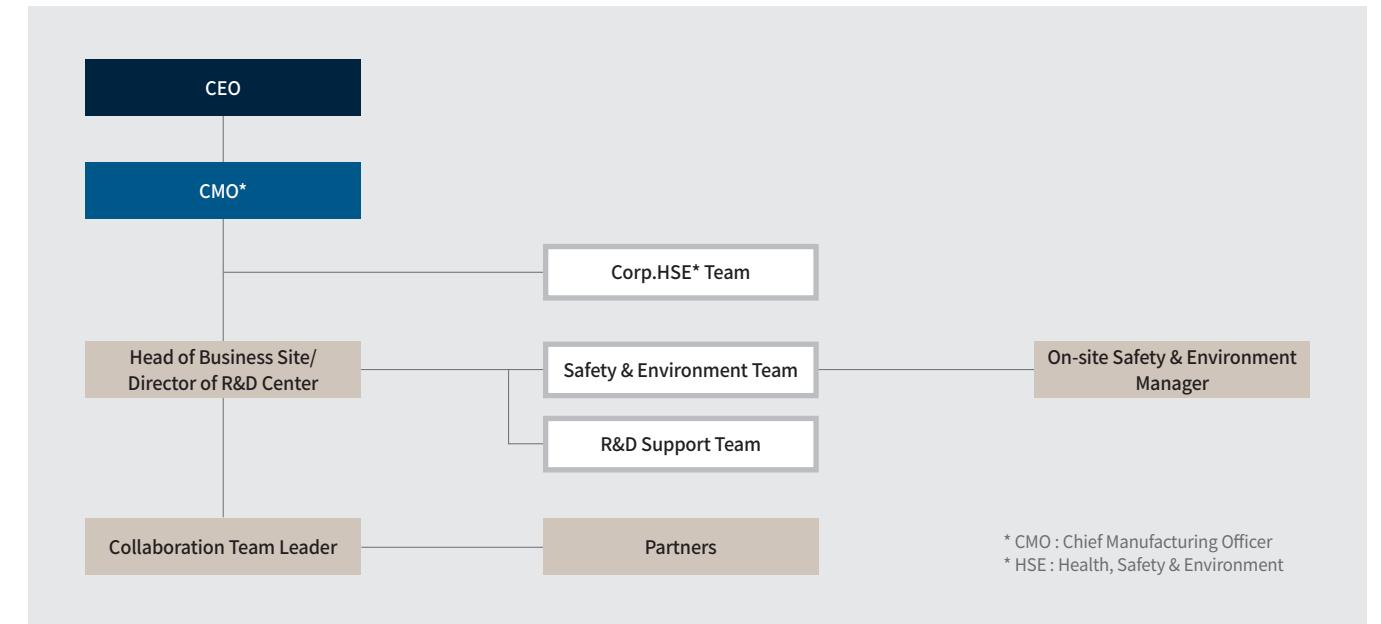
This policy should be shared with all our employees and stakeholders, and activities related to health, safety, environment, and quality should be implemented based on the RC Declaration to ensure transparent disclosure.

Safety & Health Management System

DL Chemical is operating ISO 45001 (Safety and Health Management System), an international standard for management systems of occupational health and safety, at Yeosu Plant and Daedeok R&D Center. To promote safe and healthy working conditions and protect the environment, we have announced the Safety and Health Environment Policy and communicated with our stakeholders. We have also introduced a risk management process for our employees and partners to prevent accidents and losses by raising awareness and enhancing the soundness of our assets. In preparation for emergencies including accidents, spills, and natural disasters, our emergency response organization focuses on preventing loss and damage through regular training.

HSE Management Organization

DL Chemical has established safety, health, and environmental management system led by the Corp.HSE team and departments in charge of safety and environment. The Corp.HSE team serves as a control tower, operates the HSE Committee, plans HSE strategies, and identifies and responds to health and safety trends. In addition, the departments in charge of the safety and environment department in the workplace are conducting on-site safety inspections and managing the safety and health of partners.



HSE Committee

The DL Chemical HSE Committee is the top decision-making body that manages risks associated with safety, health, and environment, and is composed of the CEO, C-Suite, and the head of the business division. The committee meeting is held on a quarterly basis to review and make decisions on the company-wide safety and environmental performance and management plan. The Yeosu Plant operates the Occupational Safety and Health Committee in accordance with the Occupational Safety and Health Act, and reviews and makes decisions on important matters to prevent industrial accidents in the workplace. In addition, HSE council meetings and seminars are organized by the plant managers and team leaders respectively to share safety and health issues and reflect their input in practice.

Category	Organizer	Period	Description
HSE Committee	CEO	Quarterly	<ul style="list-style-type: none"> Decision-making on safety and health issues Report on the progress of implementation of key tasks
Yeosu Plant HSE Council	Head of Plant	Bi-monthly	<ul style="list-style-type: none"> Sharing the results of HSE programs and making decisions
Occupational Safety & Health Committee		Quarterly	<ul style="list-style-type: none"> Discussing ways to improve HSE practice between labor and management Planning for industrial accident prevention/measures to prevent recurrence of industrial disasters
Partner Leaders Seminar		Annual	<ul style="list-style-type: none"> Sharing and ensuring compliance with safety management standards Rewarding companies with excellent performance
Packaging & Shipping HSE Seminar		Bi-monthly	<ul style="list-style-type: none"> Discussing the status of implementation of safety measures Listening to grievances and suggestions
Team Leader HSE Seminar		Team Leader	Monthly

Safety & Health Management Activities

Emergency Response Training

DL Chemical has implemented a process to effectively respond to emergencies such as fire, explosion, gas and hazardous chemical leak. Procedures for crisis management and emergency response are prepared at each business site so that they can respond efficiently by working with the head office in case of an emergency. Based on its emergency response scenario, the Yeosu Plant conducts emergency response drills in which employees, business partners, and local fire departments participate to minimize damages on a regular basis. Through this effort, we strive to contain potential damages to minimum level and prevent further escalation of accidents.

Safety Awareness

DL Chemical has implemented tasks for raising safety awareness to a global level. In 2019, in order to raise awareness of employees and improve their actions, its safety culture was analyzed by Dupont, a company specializing in safety awareness, and tasks to raise the level of safety awareness were carried out. By reinforcing management's safety leadership and establishing safety rules, we are raising the organization's awareness of safety, while promoting and internalizing the culture of safety.

Personal Safety Rules		
1	Wear designated personal protective equipment	
2	Wear and fasten seat belts when working at height	
3	Do not drink alcohol or use illegal substances	
4	Do not operate or work without permission	
5	Do not disable safety devices or by-pass without permission	
6	Power off and engage LOTO before operating machinery	
7	Do not work alone in confined spaces	
8	Do not operate equipment without a license	
9	Work in pairs when working on new tasks	

Emergency fire/explosion response training



Safety Management of New Facilities and Regular Maintenance

DL Chemical operates a special safety management program to prevent accidents during new construction, expansion, and regular maintenance. The safety inspection team led by the plant manager checks the energy sources and safety measures prior to work. In addition, mobile CCTV is used to monitor blind spots and ensure the safety of employees and partners through step-by-step on-site safety management.

Firefighting Facilities

Assuming the worst-case scenarios when it comes to fire and explosion, DL Chemical is operating disaster prevention and fighting facilities to minimize the damage and loss of life. We establish various fire and explosion scenarios and conduct regular drills based on our response plan. To this end, automatic fire detection systems, fire monitoring devices, remote fire monitors, and flame detectors have been installed. We also respond to accidents involving fire and explosion by improving gas-type firefighting facilities, foam firefighting equipment, and fire-resistance painting for structures to ensure an effective initial response to emergencies.

Health Management

DL Chemical promotes an employee health program where employees who are found to be positive as a result of the examination are subject to special care through the follow-up program, and jobs with a heavy load on the musculoskeletal system through the musculoskeletal disease prevention program is improved in terms of engineering and management. We assess the working environment twice a year and protect the health of our employees and those of partners while creating a healthy working environment by installing facilities to prevent a high level of exposure to harmful factors.



1 Safety management campaign for new facilities and regular maintenance
2 Safety management using mobile CCTV

3 CPR training
4 Assessing working environment (noise)

Employee Safety Training

Safety & Health Training

DL Chemical is introducing a systematic training process to improve employee safety performance for the safety of processes, jobs, and chemical operations. This includes statutory safety training under the Occupational Safety and Health Act, on-site safety training for new employees and transfers, special safety training hosted by the plant manager during expansion and regular maintenance, and in-house safety training for workers and partners. By doing so, we are raising safety awareness and improving their response.

Yeosu Plant Safety & Health (Unit : person)

Training Subjects	Training Hours	No. of Participants
Managers & Supervisors	More than 16 hours per annum	235
Workers	More than 6 hours per quarter	156
Special Training	More than 16 hours	41
Changes in Job Details	More than 2 hours	162
Special Safety Training Led by Plant Manager	More than 2 hours	505
Special Maintenance Safety Training	More than 2 hours	194

Safety & Health Management System

DL Chemical has acquired the ISO 45001 (Safety and Health Management System) certification, an international safety and health standard, to enhance its safety and health management and meet stakeholders' expectations. We updated the Occupational Health and Safety Management System (OEMS¹⁾ in 2020 to improve the safety and health management system, comply with domestic laws (e.g., Occupational Safety and Health Act, PSM Review Standards) and manage risks associated with safety and health. Based on the leadership of the management and the company-wide participation, the safety, health, and environment management system is implemented and regular internal audits are performed. As a result, DL Chemical is fulfilling its social responsibility to prevent accidents and creating a healthy workplace while protecting the environment.

1) OEMS (Operational Excellence Management System) : DL Chemical's integrated HSE management system



Safety & Health Management in Supply Chain

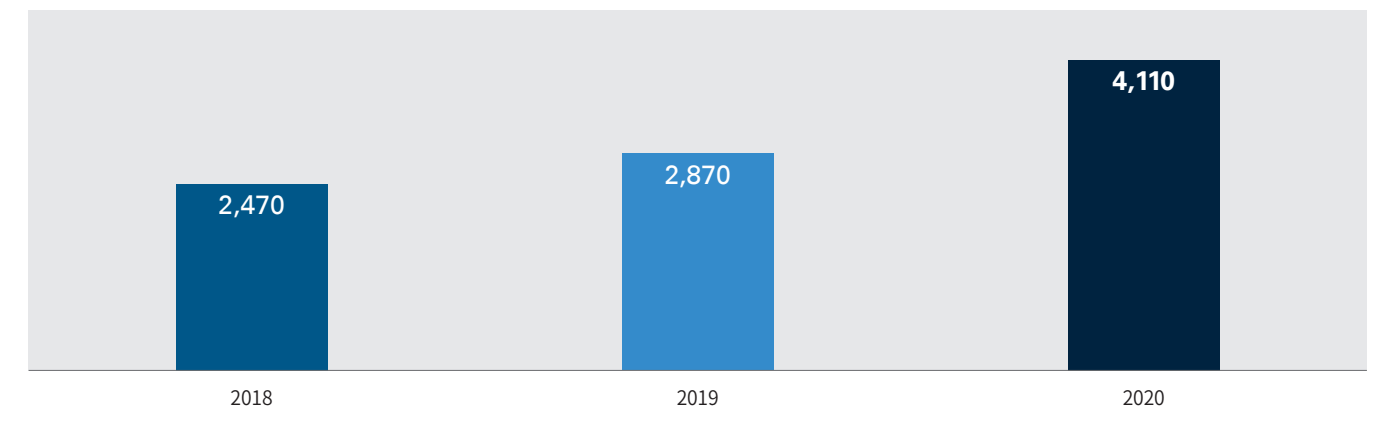
Support for Safety & Health Management in Supply Chain

DL Chemical supports the safety management of its partners to ensure the safety of their employees. When registering and signing contracts with them, we select qualified companies by evaluating the level of their safety and health practice as well as compliance through regular inspection. Before undertaking the work, our supervisor, the safety manager of the partners, and the site manager identify risk factors and conduct risk assessments to establish safety measures. Finally, through the TBM (Tool Box Meeting), we inform partners about risks in advance to prevent accidents.

Safety & Health Training for Partners

DL Chemical provides safety and health training programs to ensure the safety of workers of its partners. We provide systematic training on safety rules, actions to be taken in case of an accident, safety procedures, and the use of personal protective equipment. In 2020, a total of 4,110 employees of our partners completed the safety training. Going forward, we will continue to raise their safety awareness and improve safety practices.

No. of safety training participants (Unit : Person)



Safety & Health Cooperation with Partners

DL Chemical holds regular meetings with representatives from its partners to improve their safety and health management and raise managers' awareness. By doing so, we share safety and health issues and case studies in the same industry. We evaluate their safety and health practices and reward those with excellent performance. In addition, we have organized a joint safety inspection team with our partners to identify and deal with risk factors in the workplace.



Employee safety and health training for partners

Meetings with representatives from partners

Joint safety and health inspection with partners

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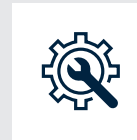
Customer Satisfaction

Customers are the broadest group among stakeholders, and customer-oriented management is an essential part of corporate sustainability. Therefore, it is critical for companies to adopt a customer-oriented approach to their business operation and deliver the best quality and services based on trust.

KEY Performance Indicators (KPIs)

No. of remaining AS cases at the time of move-in 2020

1 case/household



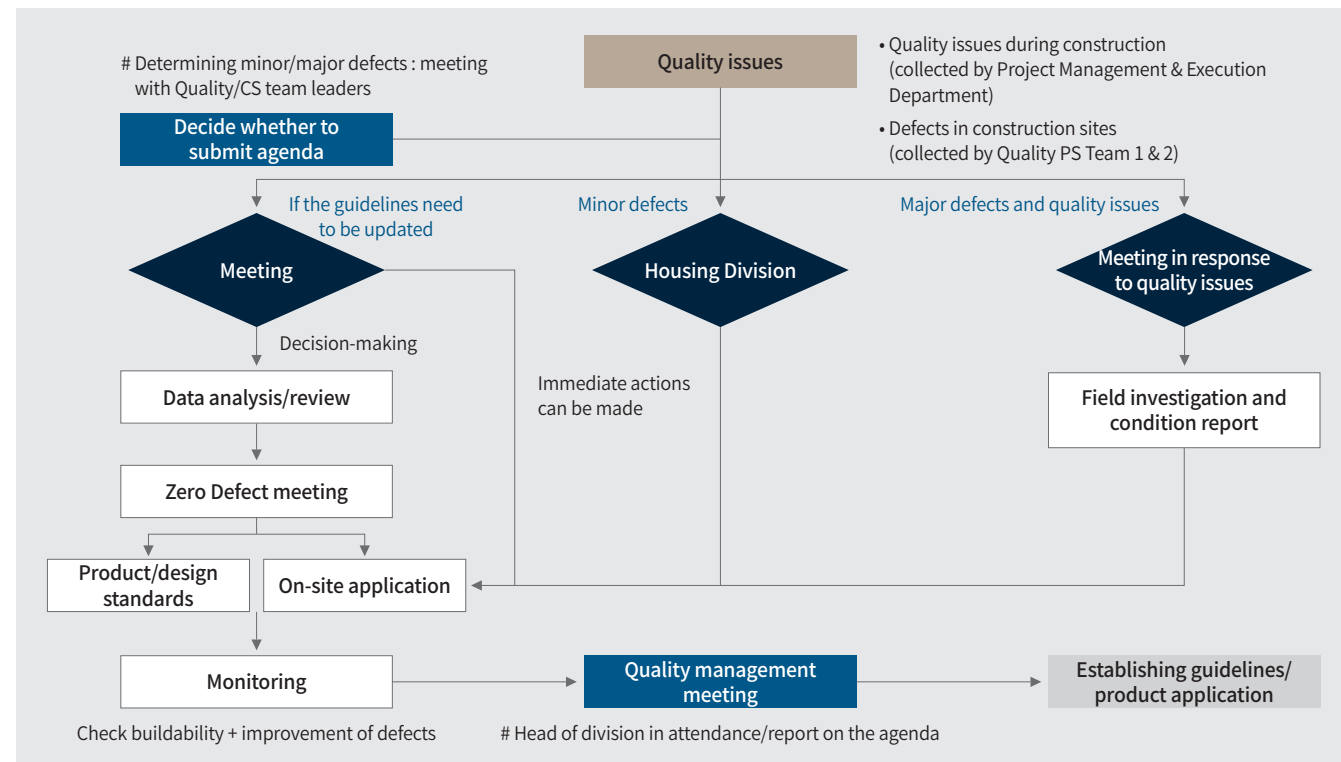
No. of disputes in 2020

4 cases



Quality Management Meeting

Since August 2020, DL E&C has held quality management meetings every fourth Monday to facilitate the decision-making process on quality issues. The key agenda includes the status of quality activity implementation, the results of the Customer Experience Day, measures to prevent recurrence, report on the Zero Defect agenda, and decision making are carried out in the following order. By doing so, we prevent the recurrence of quality defects, and share new quality guidelines and decisions with the construction sites, and apply them to products to promote customer satisfaction.



Customer Satisfaction Activities

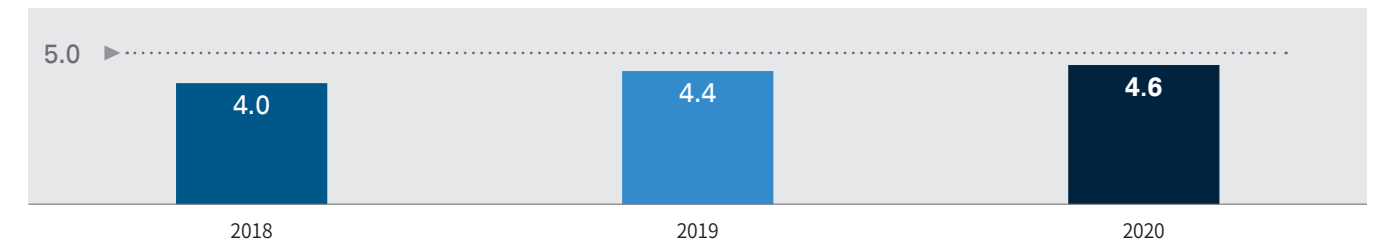
In-house Quality Check and Pre-visit Inspection

DL E&C conducts in-house quality inspection (D-90) and pre-visit Inspection (D-45) to ensure customer satisfaction. When it comes to in-house quality inspection, employees and resident inspectors jointly conduct inspections from the customers' perspective in order to resolve 100% of all defects prior to pre-visit Inspection. By doing so, we are able to improve customer satisfaction while reducing the cost of repair after moving in. We plan to promote these activities in the future to achieve "zero defects" when customers move into new apartment buildings.

Pre-visit Satisfaction Survey

DL E&C conducts satisfaction surveys among the customers who make their first visit to the site since contract signing for pre-visit inspection to enhance customer satisfaction. Customer satisfaction is surveyed by classifying items such as traffic, friendliness, operation procedures, and events, and areas of improvement are identified and reflected in future events. In 2020, due to COVID-19, we organized a non-contact event through implementation of kiosk system verifying customer identification and "mobile service guide video" to allow customers to perform pre-visit inspection. By doing so, customers were able to check their houses with confidence despite the pandemic. Going forward, we build upon the non-contact events to gain trust from our customers during pre-visit inspection by strengthening our management system.

Pre-visit Satisfaction Level (Unit : Point)



Mobile Defect Management Service

DL E&C introduced a mobile defect management service that enables real-time monitoring for the first time in the industry in order to respond to inquiries about the repair process and facilitate communication during the reception process. When a customer requests repair with a picture of the defect attached, they can check the processing status in real time. This ensures accurate communication between managers, companies, and customers, and reduces the time spent exchanging information through real-time communication. We plan to further upgrade the system in which customers are simply asked to take a picture then AI will automatically recognize defects (location, type, etc), submit to the system and customers can book service personnel according to their schedule.



Pre-visit Events (Self-inspection)



Mobile Defect Management Service Screen

고객님께 문자로 보내드린 URL(<https://mobileas.dlenc.co.kr>)로 접속하시거나,

LOHAS Service

The LOHAS service is designed in response to the increasing demand for leisure activities from customers. It is also provided because it is difficult to promote community operation before the tenant representative meeting is formed at the beginning of the move-in period. This service allows residents to freely use facilities with an access card after registration at the e-Pyunhan Sesang Community Center information desk. It is operated free of charge for 6 months after the end of the designated period for moving in. After purchasing the basic items necessary for membership registration, fitness guidance, and operation, it is delegated to the management office to support continuous community operation. This allows smooth operation of community facilities, supports customers' leisure activities, and provides continuous services including community consultation after the establishment of the tenant representative meeting.

Orange Service

With the Orange Service, we implement management practice which is difficult for individual households to arrange in the first to fifth years after moving in. For landscaping plant maintenance, we support weeding, pruning, control, and deadwood cleaning (1st to 2nd year). A professional cleaning team visits and performs cleaning and replacement of filters and stove hoods, cleaning of ventilators, and disinfection for mattresses (3rd to 5th year). Exterior glass cleaning is also done by experts (5th year). Thanks to these services, residents of e-Pyunhan Sesang can maintain the value of their assets and enjoy pleasant, higher quality living.

Declaration of Quality Innovation

DL E&C declared quality innovation in December 2020 to change employees' perception and make 2021 the first year of quality innovation. In 2021, we shared the "Zero Defect" process and awarded 4 quality catchphrases and 6 quality slogans selected through a public contest. The catchphrases are used before and after meetings, and quality slogans are shown on banners to raise awareness of quality. Going forward, we will further enhance customer satisfaction through active quality innovation.

Customer Experience Day

DL E&C recognizes that the same defects recur due to the relocation of personnel after completion of work, unaware of customer evaluations on the types and patterns of defects and quality improvement activities. Therefore, we organize "Customer Experience Day" to visit the site one year after completion, so that the field personnel can directly check the conditions and deal with defects and major complaints. By doing so, we raise awareness of quality by identifying areas of improvement and share them with our employees.

Communication with Customers

DL E&C prevents delays in responding to VoC (Voice of the Customer) and focuses our resources on communication with customers. Once their feedback is received, the response is to-be completed within 72 hours. A text message is sent to the senior manager and executive officer until the issue is resolved, giving the person in charge a sense of urgency and responsibility. This improves customer satisfaction by expediting the feedback process, and we will further improve our customer response capabilities by improving the response process.



LOHAS Service (fitness center)



Orange Service

Customer Satisfaction Survey

Our Happy Call service is designed to manage defects and improve customer service satisfaction. Upon completion of the repair work, a text message is sent to the customer's mobile phone, and they can rate the work and their level of satisfaction. Then, the results are reflected in HR management or the service provider evaluation, giving the workers and managers a sense of urgency and greater focus on the importance of customer satisfaction. We also conduct customer evaluations on the operation of the CS Center) and reward those with excellent performance every month to raise awareness to enhance customer satisfaction.

Category	Unit	Q4 2019	Q4 2020
Happy Call Rating	Point	81	95.8
Average Completion Days	Day	11	8
CS Center Rating	Point	77.7	84.9

Brand Renewal

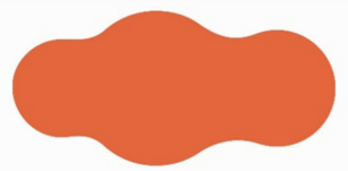
DL E&C renewed its brands to enhance customer value by differentiating its two major brands in response to changing market environment. On the 20th anniversary of the e-Pyunhan Sesang brand, we have solidified our value as a leading apartment brand in Korea by building upon the existing brand value and providing unique experiences. We defined our identity by reinventing our brand, strengthened the competitive advantages of each brand, and set new standards for products, services, and marketing.

Brand Renewal

각 카테고리의 대표주자로서 철저히 분리, 서로 다른 차원의 브랜드 연상 확보

대한민국 대표 No.1 아파트

아파트 카테고리를 대표하는 '독창성·선망' 이미지 선점을 통해 고급감 제고 및 Value-up 실현



하이엔드 주거의 상징

아파트의 범주를 넘은 주거 형태의 확장, 희소성에 기반한 독보적인 브랜드 경쟁력 확보

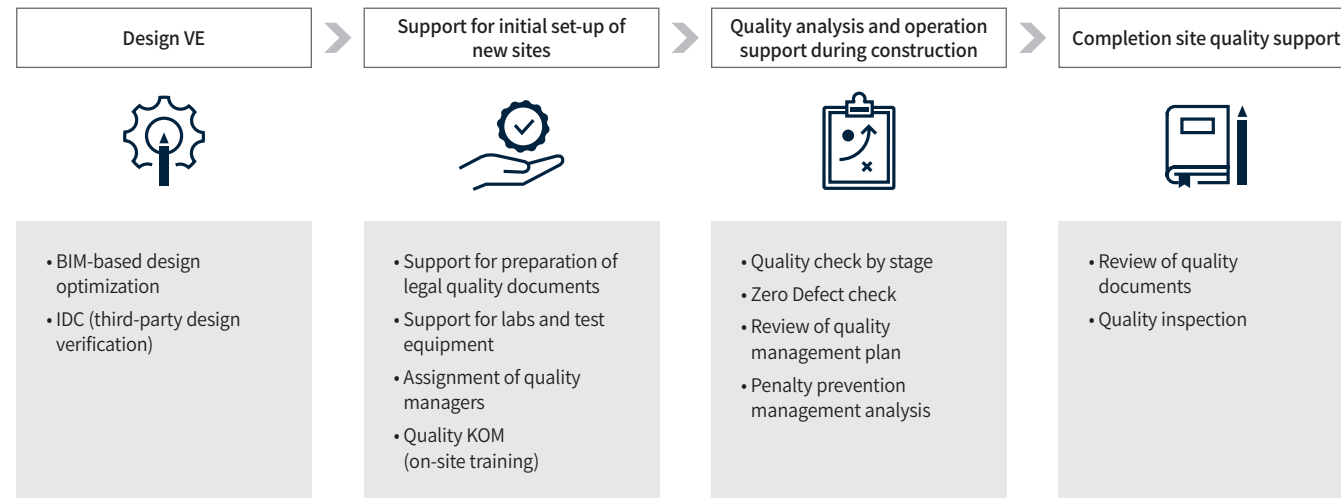
ACRO

Evaluation of Safety of Products & Services

DL E&C evaluates the safety of products and services to ensure the safety of consumers. The American Society of Mechanical Engineers has acquired and maintained ASME certification for technology for manufacturing and installation of nuclear boilers, pressure vessels, and piping, and for the safety of related services and products. We have also obtained and maintained the KEPIC certification that guarantees product safety in accordance with the electric power industry technical standard requirements. In addition, the International Association of Boiler and Pressure Vessel Inspectors assessed the safety of the performance of boilers and pressure vessels in the United States to obtain and maintain NBBI certification.

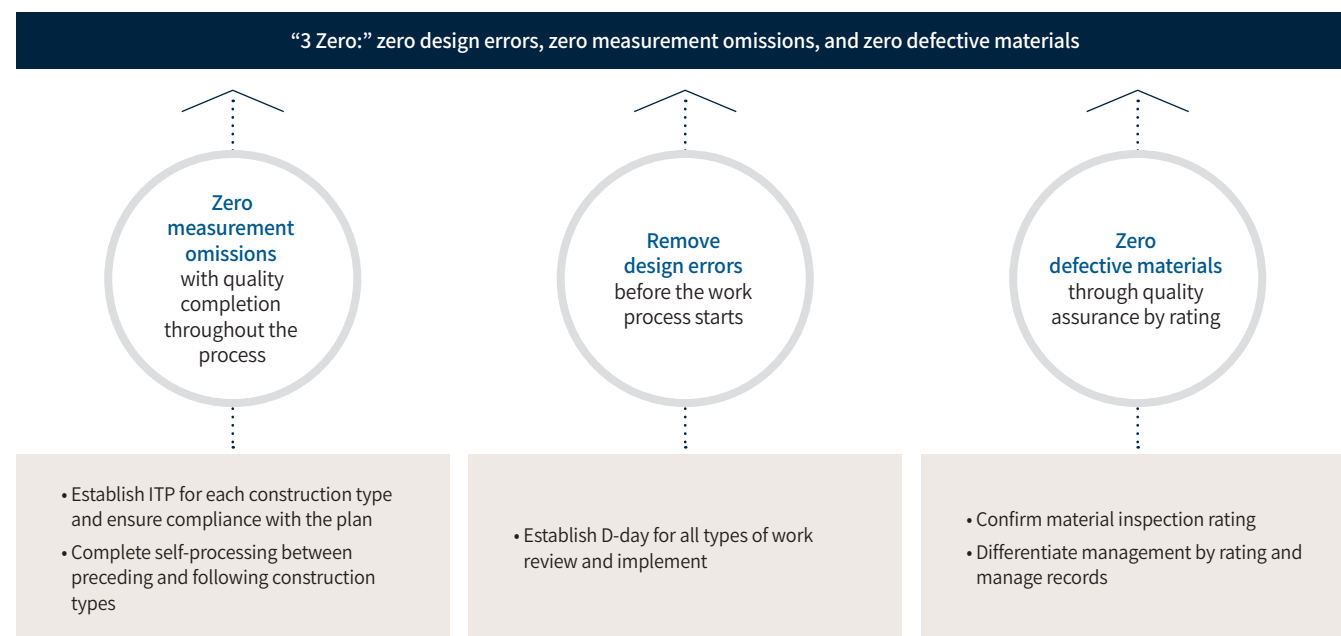
On-site Quality Support by Stage

DL E&C performs design VE through BIM and IDC (third-party design verification) before the work starts, and is carrying out initial set-up activities for new construction sites to help establish a quality management plan tailored to the site. We also perform quality inspections on the implementation of the plans and quality issues for ongoing sites to assess each site as well as help improve quality through additional on-site training. In case of near-completion sites, we support for reviewing the adequacy of quality completion documents.



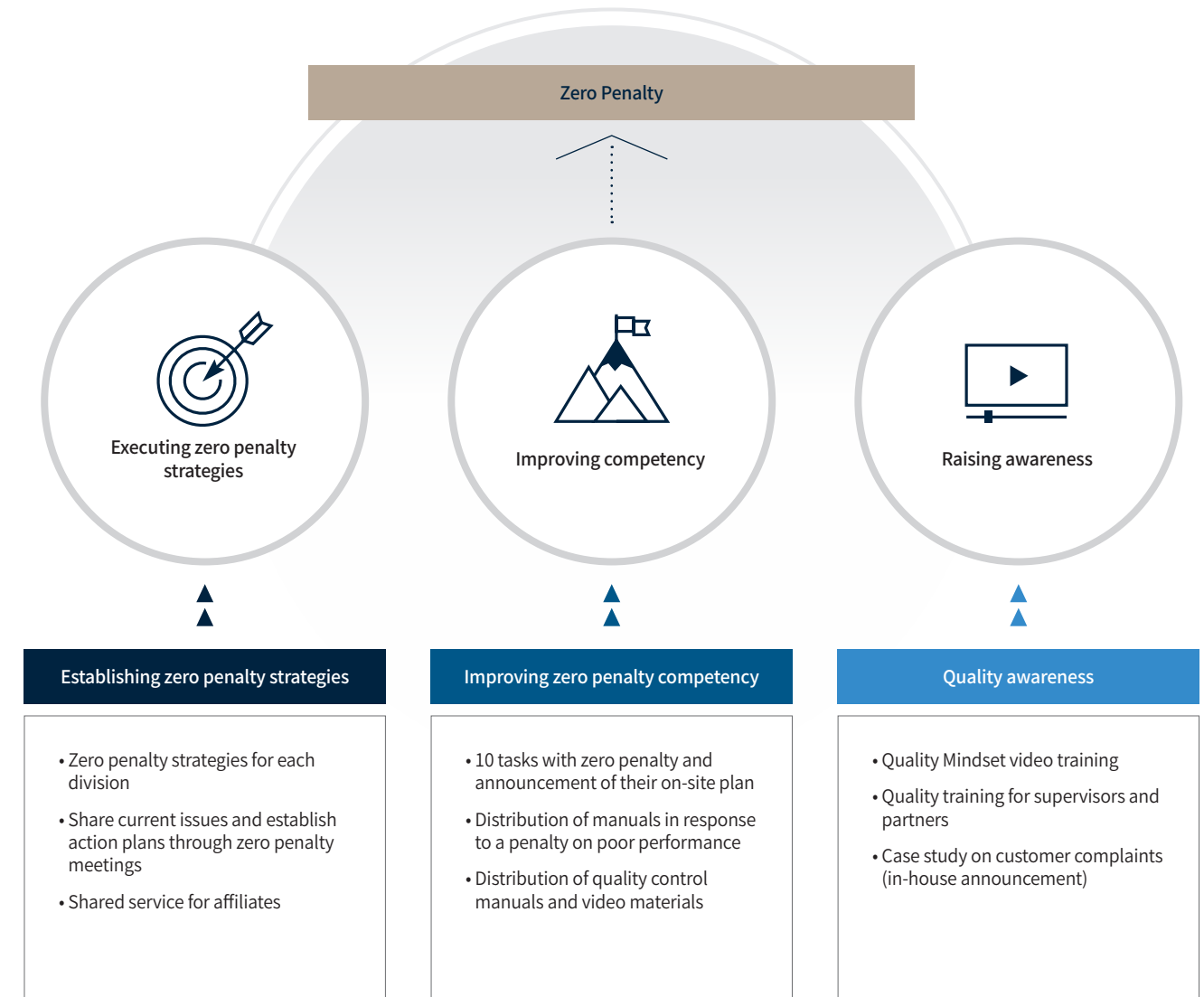
Quality Management System from Customer's Perspective

In order to fundamentally prevent the occurrence of quality issues, DL E&C is committed to improving and standardizing the work process at each stage by incorporating the requirements from the customer's point of view and promote "3 Zero:" zero design errors, zero measurement omissions, and zero defective materials. We are implementing integrated quality management activities by reflecting the quality goals in operation and monitoring the progress.



Penalty Prevention & Management

DL E&C is implementing a penalty management process to prevent risks such as restrictions on pre-sales due to the strengthening of the penalty point system including reorganization of calculation method. We have established strategies and management indicators for each division to achieve zero penalty, and share the results on a quarterly basis.



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Customer Satisfaction

Customers are the most strategic stakeholders in sustainability of a company, and it is critical to develop competitive advantages through customer-oriented management. We will deliver the best quality and services continue to create value for customers through R&D innovation in the eco-friendly sectors while strengthening technological expertise.

KEY Performance Indicators (KPIs)

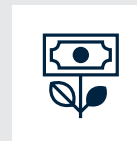
Explore areas of
BIO/hydrogen/energy/recycling/
Future materials

Key Index : Eco-friendly R&D Project Development



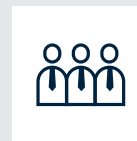
R&D Investment in 2020

KRW 13,307.4 million



No. of R&D personnel

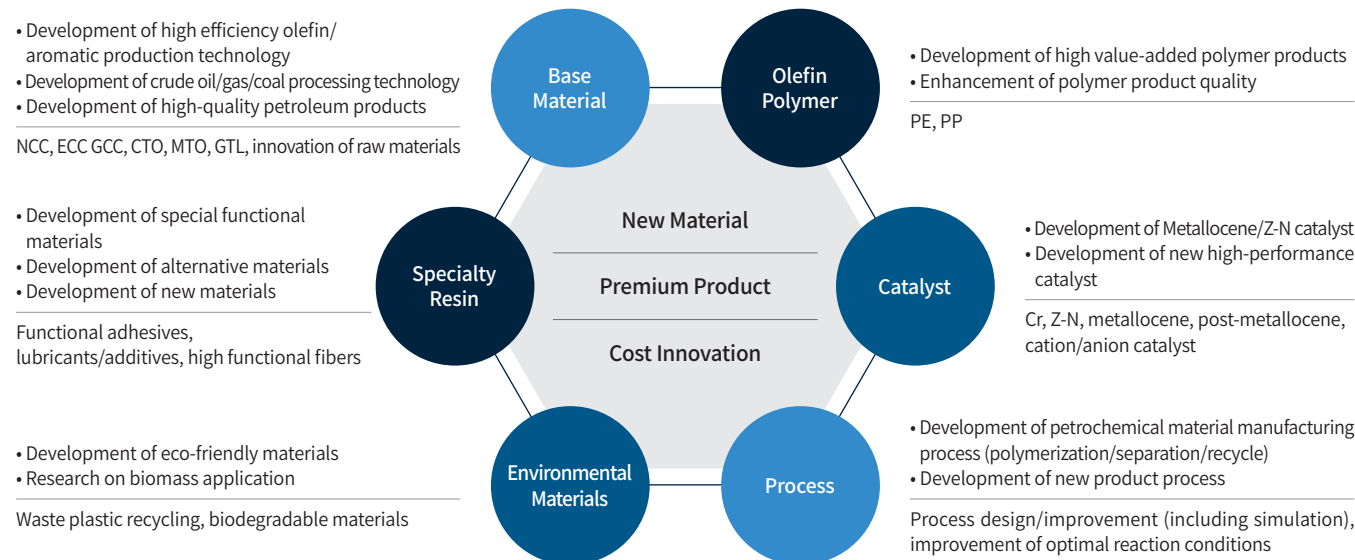
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Research Planning

Mid/Long-term Development Strategy

DL Chemical is establishing mid/long-term development strategies to promote sustainable growth based on the utilization and expansion of our catalyst/process/reaction technology. By doing so, we will play a major role in achieving our vision and goals as well as preparing a systematic response to uncertainty in the future. Going forward, we will continue to operate and manage in line with the rapidly changing environment by exploring new business opportunities.



R&D

Polymer Materials

Polyethylene, which takes up the highest proportion of the petrochemical industry, is widely used in industrial sites and our daily life. DL Chemical is creating value for customers by successfully developing and commercializing metallocene polyethylene with superior physical properties compared to existing products. Our polyethylene is expected to increase customer satisfaction based on high-quality product development technology and process operation. Going forward, we will continue to work as a partner to enhance values for our customers by developing competitive edges of existing products and deliver high-value-added products.

Liquid Materials

Polybutene is used as an eco-friendly material that reduces the emissions of environmental pollutants since it is used for lubricant additives and fuel detergent. We successfully developed and commercialized this material, and only three companies in the world currently have the technology to produce highly reactive polybutene (HRPB). Our production technology is the only one that enables conventional polybutene and HRPB to be produced in a single facility, and we sold this technology to Lubrizol, a global major lubricant additive manufacturer, through technology licensing. We will lead the global market based on superior technological expertise.

Development of New Materials

In order to create a new growth engine for the future and drive sustainable growth, DL Chemical has been developing new materials in the specialty sector including adhesives, lubricant materials, and high value-added synthetic rubber. Anionic polymerization reaction and latex technology of the recently acquired Cariflex¹⁾, in particular, serves as a great foundation for the development of new customer-specific high value-added materials. Meanwhile, we are making inroads into new markets while strengthening the competitiveness of existing business models based on customized mix technology and expertise that we attained to meet the our customers' needs.

Research on Catalyst/Process/Formulation

In addition to our metallocene catalyst technology, cationic polymerization technology, and liquid reaction process technology, our R&D center secured our anionic polymerization technology and latex technology through the acquisition of Cariflex. These technologies can be selectively applied or formulated for the development of specific materials. In order to further refine the development of new materials, we will continue to work on the catalyst/process/formulation.

1) Cariflex : A company that produces isoprene rubber and isoprene latex



1 Metallocene polyethylene sample
2 Liquid polybutene

3 Metallocene Lab
4 Polybutene Storage Tanks at the Yeosu Plant



BOCD Polyethylene Resin

R&D Case Study

Development of BOCD¹⁾ Polyethylene

Although the existing metallocene catalyst-based polyethylene has excellent mechanical properties, it has limitations in terms of processability, whereas Ziegler-Natta catalyst-based polyethylene has better processability despite its limitations in physical properties. We managed to develop BOCD polyethylene, which offers the advantages of these two areas, for the first time in Korea, and successfully commercialized it in 2019. By further raising the level of physical properties of existing metallocene products and realizing its properties at the same level, we can significantly reduce plastic consumption and contribute to environmental conservation. Going forward, we will increase application to diverse sectors through development.

1) BOCD : Broad Orthogonal Composition Distribution

Lubricant for Viscosity Control

DL Chemical is sparing no efforts to develop new projects based on the process know-how and metallocene catalyst technology we've developed. We have successfully developed and commercialized a new type of lubricant by combining metallocene catalyst technology and liquid processing technology. Our synthetic oil has a longer life cycle and can be used as automobile gear oil, industrial lubricants, and viscosity modifiers, thanks to its superior stability compared to other materials. Going forward, we will further enhance our cost competitiveness by providing fuel efficiency and durability through superior oxidation stability and low-temperature resistance.

Synthetic Oil



DL Chemical Daedeok R&D Center

Commitment to Competitive Advantages

Competency and Talent Development

DL Chemical continues to invest in developing technological competitiveness. Based on various enhancement programs, we are developing and reinforcing the competencies required for business performance with customized development plans. By promoting collaborative group activities for researchers, we provide opportunities to solve business problems and enhance performance through communication and training.

External Research Activities

DL Chemical is committed to exploring of research tasks and new project development for the future. To this end, we are working with external research experts through innovation based on consultation with domestic and foreign industry-academia-research experts, outsourcing, and joint research. To gain technical competitiveness, we are undertaking various types of programs that utilize external research capabilities along with internal capacity enhancement and will continue to promote growth and explore new business opportunities through external research projects.

View of DL Chemical Daedeok R&D Center



SOCIAL

Shared Growth Management

Businesses need to work together and share their growth by building a sustainable supply chain and supporting partners to reinforce their competitiveness. For this purpose, mutual cooperation between large and small businesses is emerging as an important topic in sustainable growth.

KEY Performance Indicators (KPIs)

Win-Win Cooperation Fund Raised

KRW 100 billion

(direct financing KRW 50 B/win-win fund KRW 50 B)



Support for 2nd/3rd-Tier Partners

Introduced Nomubi.com and full subsidization for transfer fees



Performance Guarantee Rate

50% discount and issue fees

(For Best Partners)



Shared Growth Management Strategy

Based on our philosophy that DL E&C's key competitiveness is driven by partners' success, we operate the top-level support program in the industry to strengthen partner partners' competitiveness and performance from the long-term perspective. To promote fair practices, shared growth, and win-win cooperation, we focus on four areas: Setting Fair Trade Environment, Financial Support, Management Activity Support, and Technology Development Support. In recognition of these efforts, we received the highest rating in "2019 Shared Growth Index" announced in 2020, a commendation from the Minister of SMEs and Startups at the "2018 Construction Cooperation Promotion Award" and the Minister of Land, Infrastructure, and Transport at the "2019 Asia Construction Comprehensive Award," and "2020 Construction Cooperation Promotion Award."



Selection and Evaluation of Partners

Selection and Operation of Partners

DL E&C is committed to securing high-performing partners, creating a solid business foundation for shared growth, and supporting the operation and selection of partners with a focus on cost reduction, thorough safety/environment, and quality management.

Registration

Partners that are qualified in terms of credit rating and licenses are registered to our system. Unlike other construction companies that use an annual registration process, we use an ongoing open partner registration system to make it easier for partners to register for selection.

Evaluation

DL E&C carries out quarterly partner evaluations in the areas of work performance management, process management, cost management, cooperation/communication, environmental management, safety management, and quality management. When it comes to civil engineering and construction materials, a comprehensive evaluation is conducted at least once a year¹⁾ on five items: management stability (credit rating), delivery time, quality, safety, and environment. For technology materials, the managers in charge of engineering, procurement, and construction are evaluated for each project.

1) A comprehensive evaluation depends on the scale of orders placed

Restrictions

In the case of downgraded credit ratings and poor evaluation results, our team reviews the results and applies restrictions on tender participation if there is any problem with the company.

Improvement Measures

In order to improve companies with poor evaluation results, we provide employee training and financial consultation support for better credit rating management.

Improving Sustainability in Supply Chain

DL E&C is committed to promoting responsible and sustainable practices to improve sustainability in its supply chain. In order to enhance the overall competitiveness of our supply chain and minimize risks, we include requirements for safety, health, and environment in the contract and encourage their participation.

ESG Enhancement Support for Partners

Safety Management

We are committed to supporting the safety management of our supply chain by classifying partners into five tiers according to their safety performance. We then conduct training and evaluation to strengthen their safety management. In 2019, we introduced the Performance Sharing Program to promote voluntary safety activities, raise awareness, and encourage them to prevent accidents, and provide incentives based on the evaluation. In 2020, we plan to offer support for those with a high level of accidents and those recommended by the business division through health and safety consultation from third-party firms. We expect this will improve their level of health and safety, and ultimately prevent industrial disasters and financial loss.

Shared Growth Program

Technology Support

Joint R&D Performance Sharing Program

In order to help improve the quality and drive technical innovation for our partners, we lead joint R&D projects and provide financial support.

[Technology Development with Purchase Support](#)

If a new technology is developed jointly with a partner with technical expertise as part of procurement-linked technology development, the partner can build a foundation for growth while we secure competitive advantages through a virtuous cycle of shared growth.

[Support for Technical Information Escrow](#)

In order to help protect confidential business data and intellectual property rights of our partners, we support the technical information escrow system of Korea Foundation for Cooperation of Large & Small Business, Rural Affairs.

Financial Support

[Improving Payment Conditions for Partners](#)

Since October 2017, we have offered industry-leading payment conditions for partners by making payment on the 10th of every month. We also maintain 100% cash and cash equivalents (B2B+)¹⁾ payment and 98% in cash payment for outsourcing in 2020, which is the highest level in the industry.

1) B2B+ : secured loan of credit sales without recourse

[Direct Fund Loans for Shared Growth](#)

In order to relieve the financial pressure for our partners, we significantly increased the volume of direct fund loans to KRW 50 billion in 2018 as part of our efforts to improve their liquidity.

[Win-Win Cooperation Loan for Partners](#)

We operate a win-win fund to support partners with financial constraints. The win-win fund is a system that provides a certain portion of the interest accrued from the bank deposits of large corporations as a loan interest for partners. We increased the fund to KRW 50 billion in cash to offer a 1.3% point on the loan interest rate.

[Payment System and Zero Fees](#)

We monitor payments made to our 1st-tier (Primary) partners to ensure that 2nd and 3rd-tier (Secondary) partners are paid. In 2014, we introduced the payment system, “nomubi.com” for all working sites, and in January 2018, we became the first construction company to offer zero transfer fees to encourage the use of the payment system.

Management Support

[Low Price Bid Deliberation Committee](#)

To prevent excessive competition between partners, which can result in bankruptcy and insolvency, we've organized the Low Price Bid Deliberation Committee. To focus on quality and performance overpricing, we increased the amount for review from 82% to 86% of the existing budget.

[Support for Partner Settlement Appraisal Fees](#)

DL E&C has introduced a swift consultation procedure through publicly trusted external appraisals to improve negotiations with partners. By doing so, we will support the financial stability of our partners, and provide full appraisal fees for small and medium-sized companies.

[Contribution to the Win-Win Cooperation Fund](#)

As part of our efforts to support management, research, talent development, and productivity of small and medium-sized partners since 2013, we have been contributing to the Korea Foundation for Cooperation of Large & Small Business, Rural Affairs and the win-win cooperation fund for small, medium, and large-sized companies to implement various policies for shared growth. In 2018, we significantly increased the amount of our contribution for strengthening win-win cooperation in our supply chain.

[Financial Consulting for Partners](#)

In order to ensure financial stability and prevent issues, we analyzed the financial condition of our partners and identify risks in advance. We also provide various support, including annual financial consulting through credit rating agencies, to improve their financial position.

[Employee Training Support for Partners](#)

We provide support through employee training on management innovation, cost reduction, labor, quality, and safety for our partners to help them develop talent and stay competitive. To improve the business operation of partners and contract management, we will focus on cooperation with academic institutes rather than one-time training. (delayed due to COVID-19)

Communication with Partners

[Regular Invitational Events \(Hansup Partners Day\)](#)

Since 2019, we have held invitational events for partners through policy briefing sessions and the biannual Hansup Partners Day while improving our policies to meet their needs through open communication. In 2020, we continued our efforts by organizing online events in response to COVID-19.

[Direct Communication Channel](#)

Through a direct communication channel, we collect the input from all our partners on a quarterly basis. This also serves as a window to resolve disputes over transactions.

[Cyber Whistleblowing Center](#)

We created an online channel on our website to collect and reflect complaints of unethical requests or practices, suggestions for improvement, and grievances from partners in the event of a transaction or contact with our company to make it more convenient for them to express their opinions.

[Shoulder-to-Shoulder](#)

Through our partner portal, “Shoulder-to-Shoulder,” we collect suggestions and complaints from our partners on an ongoing basis.

[Win-Win Council](#)

By organizing the Win-Win Council Meeting, the on-site communication channel for our partners, on a regular basis, we share complaints and ideas for improvement while forming a consensus for shared growth to minimize disputes associated with subcontract work.

[Visits to Partners](#)

In order to build trust and teamwork, we conduct interviews with our partners on an ongoing basis while building a partnership for shared growth through regular communication channels.

Creating Environment for Fair Practice

[Standard Subcontract Agreement](#)

In order to strengthen the partnerships with our partners and promote fair practices, we introduced a standard subcontract agreement form to lay the foundation for win-win cooperation. Its content includes the prohibition of unfair special agreements or fake contracts, guidelines against retaliation, and obligations for confidentiality.

[Performance Guarantee System](#)

DL E&C changed the method of accepting a contract performance guarantee to ensure a sufficient period of guarantee issue and fulfill the obligations of written issuance. We also implemented a system to reduce the contract performance guarantee rate to 5% for partners that meet certain standards. For small and medium-sized businesses, we provide additional benefits for guarantee fees and limits in order to reduce financial pressure and secure additional guarantees and sales capabilities.

SOCIAL

Shared Growth Management

Companies are creating synergies through collaboration in their industries, and as a result, shared growth with partners through sustainable supply chain management is becoming more important. We are committed to creating a healthy industrial ecosystem by managing risks in the value chain and fulfilling our responsibilities and efforts for shared growth between large and small businesses.

KEY Performance Indicators (KPIs)

Partners (Term Contract)
Management and Operation Planning/Implementation



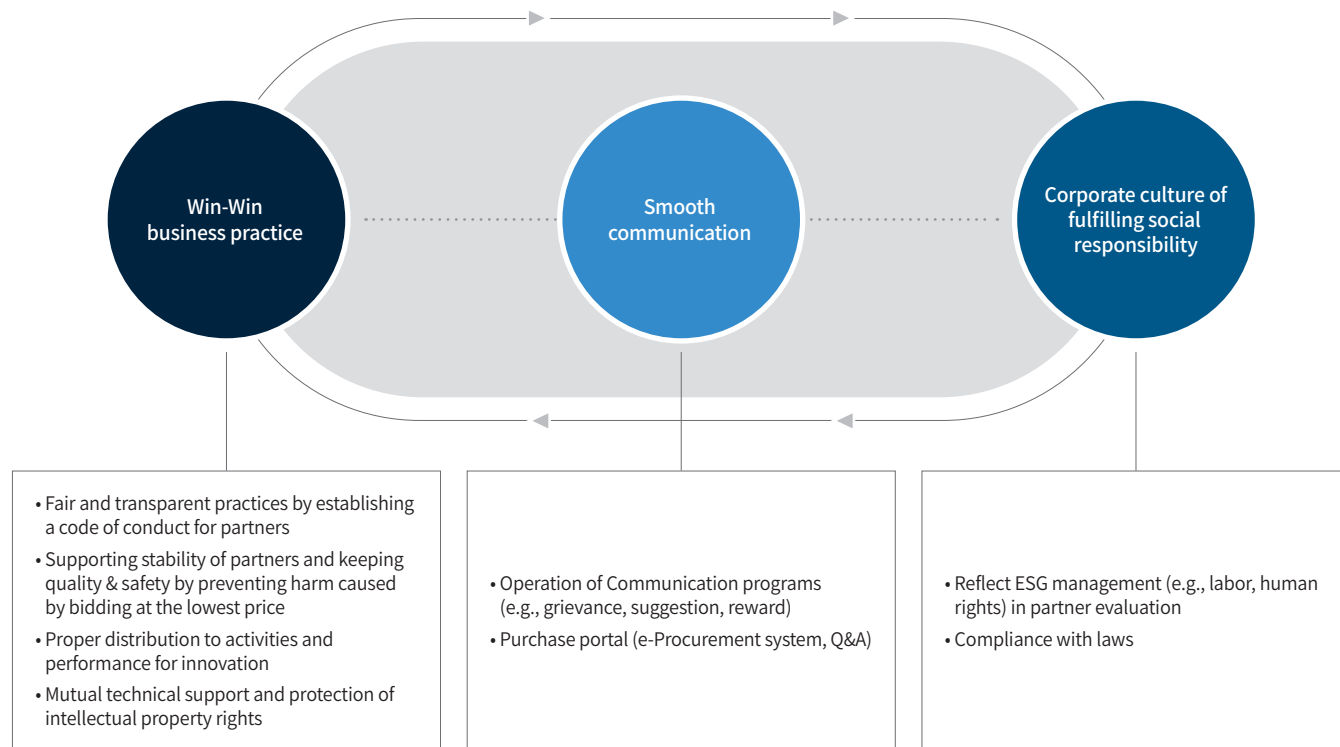
Payment
 100% Cash Payment (within 15 days)



Compliance with Laws
 Fair Trade Act, Subcontracting Act, Code of Ethics, etc.



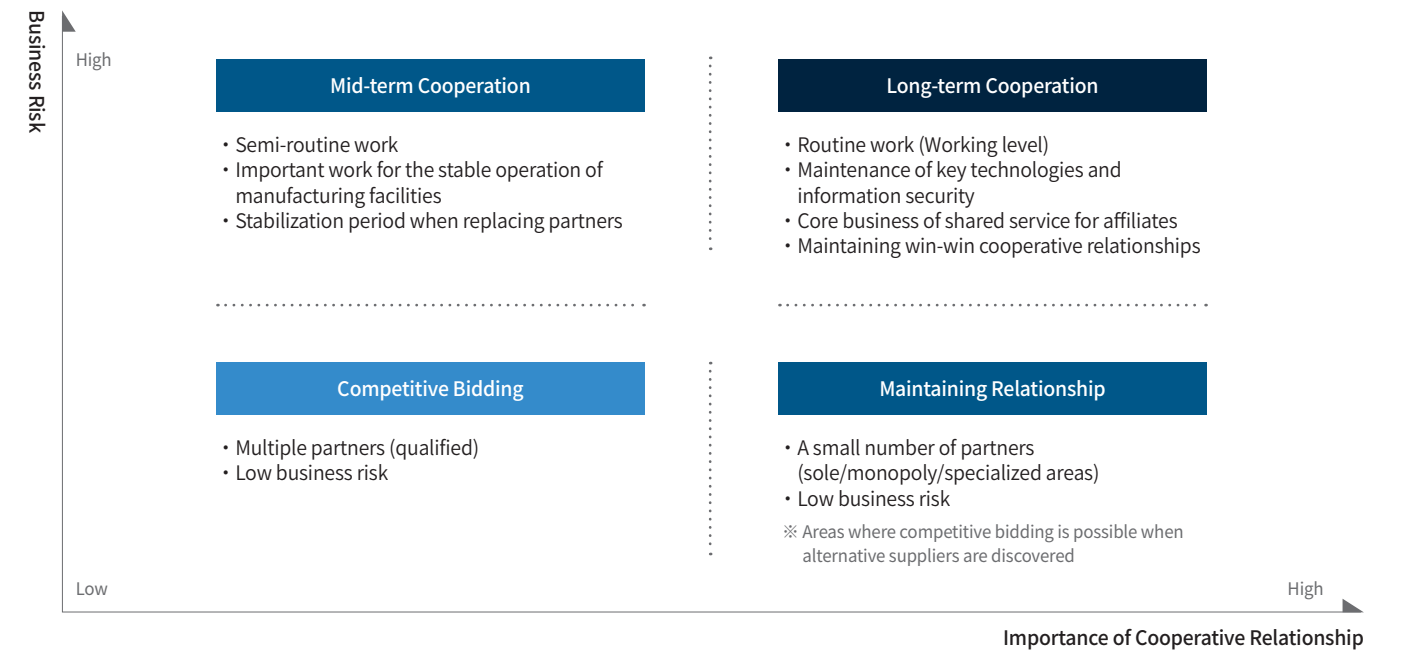
Shared Growth Management Strategy



Selection and Evaluation of Partners

Selection and Operation of Partners

DL Chemical is committed to developing a sustainable cooperative system based on management of risks and opportunities in the supply chain. Our goal is to promote transparent and fair business practices by clearly defining the criteria for selecting and managing partners and to improve customer satisfaction through management at all stages, from selection to operation and evaluation. Going forward, we will continue to develop competitive advantages by establish mutually stable business foundation, reducing costs, promoting strict safety, and improving environmental and quality management.



Registration

DL Chemical is establishing selection and management process in consideration of business risks and the importance of cooperative relationships as part of its long-term cooperation strategy. In accordance with these process, we are evaluating partners based on the DL Chemical Supplier Pool for the selection of responsible companies. When it comes to the evaluation process, financial status (credit rating, cash flow), national tax payment, occupational accidents, and business licenses are considered.

Evaluation

DL Chemical conducts ongoing and regular evaluations of its partners. Despite the difference in terms of evaluation period and items, we focus on four areas: quality, construction, safety, and environmental management. The departments that issue requests, implement, manage safety/environment check the areas of evaluation, including satisfaction and cooperation in the four areas, and the results are reported to the head of each site once a year. As a result of the evaluation, we provide an opportunity to participate in all tenders in the relevant sector to partners with excellent results and extend the contract period by monitoring the performance of partners. Going forward, we will continue to improve the evaluation process and reflect changes in the business environment.

Improvement Measures

We are committed to strengthening our capabilities and improving safety systems by providing technical support to partners based on the results of their evaluation.

Restrictions

DL Chemical disqualifies companies that may cause problems by post evaluation. As a result of the supply chain evaluation, if the required score is not met, necessary conducts are taken as termination of contract or cancellation of registration. We also minimize risks associated with our partners in accordance with the termination conditions.

Support for Sustainability

DL Chemical is supporting win-win cooperation with partners throughout the supply chain, including business management, safety, and quality practice in response to the growing demand for responsible supply chain management. In order to enhance the competitiveness and minimize risks of our partners, we encourage their participation by attaching our standardized safety, environmental, and health specifications to the contract.

Support for ESG Management of Partners

DL Chemical provides support to improve the efficiency of outsourcing under long-term contracts and to ensure their stable business operation. As part of our efforts to improve their safety management, we offer support for safety and health-related training and conduct assessment on their operation. We also maintain close communication with our partners on safety-related risks, and by doing so, we manage to improve the level of safety and health.

Through the training and long-term contract (5 - 10 years) programs, our partners are able to improve their work competency and the prices are adjusted on an annual basis according to the evaluation. Going forward, we will continue to systematically manage and monitor risks in order to help them gain competitive advantages and ensure sustainable growth.

Shared Growth Programs

Technical Support

[Technical Support & Inspection](#)

DL Chemical inspects for technical support on a quarterly basis to strengthen the management of its HSE practices of partners. The areas of the inspection include training, safety and health regulations, work process, the status of qualifications, on-site equipment protection systems, and the site/equipment checklist. After the inspection, we identify areas for improvement and support the improvement of our partners' capabilities.

Financial Support

[Financial Support](#)

DL Chemical ensures to make full cash payment within 15 days of completion of work to support the financial stability of partners. We also minimize their financial burden on the cost by immediately reflecting the purchase unit price linked to the price of raw materials. In addition, we are helping our resident partners efficiently manage safety and health practices by providing them with a registration fee for KOSHA (Korea Occupational Safety and Health Agency). Going forward, we will continue to expand our financial support for partners by waiving the submission of performance guarantees or establishing conditions for support through financial programs.

Communication with Partners

[HSE Seminars](#)

DL Chemical holds annual HSE seminars with partners to deal with their complaints and support safety and health management. Through these seminars, we select about 20 companies and present appreciation plaques to 3 outstanding companies while conducting safety management training through external instructors and listening to difficulties for improvement. The Safety and Health Cooperation Program is organized with 7 partners. By doing so, we assess the risks of our partners, take improvement measures according to the results, support training, and organize monthly meetings and monitoring for working-level employees, thereby promoting a culture of shared growth. We are improving safety and health management by resolving complaints and managing safety and health-related risks through close communication with partners.

Creating Environment for Fair Practice

Standard Subcontract Agreement

DL Chemical uses the standard contract forms to promote fair practice when dealing with partners in order to prevent unfair practices. We have added a termination clause to the standard contract in regard to inappropriate entertainment. We also established the Cyber Whistleblowing Center to ensure fair practice. Going forward, we will continue to support fair and transparent cooperation and promote shared growth based on the standard contract.


SOCIAL

Social Contribution

In response to a growing awareness that CSR is not only limited to economic performance but also includes contributions to local communities, many companies commit to creating social values through close relationships with the communities.

KEY Performance Indicators (KPIs)

Total CSR Expenditure KRW 7.7 billion	Increase of Total CSR Expenditure from Previous Year 10%	
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No. of Annual Visitors to D Museum 97,223 <small>(Reduced in 2020 due to COVID-19 pandemic)</small>	
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Annual Employee Volunteer Hours 3,080	No. of Annual Employee Volunteers 810	
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Social Contribution System and Strategy

In order to help our neighbors in need and improve the quality of their lives, DL E&C is committed to human respect, building trust with customers, and creating values for the future, and established the Five Activities of Sharing: Sharing Happiness, Sharing Love, Sharing Culture, Sharing Cleanliness, and Sharing Wish as a foundation for its CSR practice under the vision of “Your partner for shared growth with local communities.”



CSR Activities

DL E&C is firmly committed to fulfilling its social responsibility as a corporate citizen. Based on the Hansup spirit of “Creating a comfortable and rich environment for people,” we promote various social contribution activities to promote shared growth with our local community. In order to help our neighbors in need lead a happy and rich life, we focus on five areas of CSR activities: Sharing Happiness, Sharing Love, Sharing Culture, Sharing Cleanliness, and Sharing Wish. We take full advantage of our business expertise and internal competency to help those in need through close communications and cooperation with local communities nationwide.



Sharing Happiness

Home improvement for the underprivileged

Since 2005, DL E&C and its employees have improved homes for the underprivileged as part of the “Sharing Happiness” campaign. In 2020, we organized the “Repairing Houses for Love” project where we improve outdated housing and welfare facilities in Seoul and the Metropolitan areas with Habitat Seoul in strict compliance with the quarantine procedures despite the difficult situation created by COVID-19 pandemic. The project focuses on improving energy efficiency by utilizing our employees’ talents and expertise in the industry as we replaced walls and flooring and installed insulation systems and LED lighting. For welfare facilities, we built a barrier-free space so that people in wheelchairs can move freely.

Sharing Happiness

Employee volunteer activities for local communities

As part of the “Sharing Love” campaign, DL E&C seeks out and helps people in need by working with local daycare centers, nursing homes, and welfare groups nationwide to offer support and assistance. In addition, reflecting the characteristics of the construction industry, we organize annual presentation with local residents around the work site to collect opinions from local residents and contribute to local communities. At our head office, we organized such programs as making bread for the underprivileged and making eco-bags for children of underdeveloped countries in Southeast Asia. In 2020 in particular, we developed non-contact CSR programs despite difficult circumstances due to the COVID-19 pandemic, and continued efforts for the underprivileged.

Sharing Love



▲ Saemangeum Site Presentation for Local Community



▼ Decorating Eco-Bags

Creating art and cultural content for the public

DL E&C operates an art gallery to organize contemporary art and design exhibitions and support young artists. Founded in 2002, Daelim Museum provides easy access to artworks for the public under the vision of “where our life becomes art.” In 2015, we opened the D MUSEUM to further expand our vision and points of contact with the public. We also established D PROJECT SPACE Collecting Beads to Create Pools in 2012 with the goal of supporting unique and experimental creative work.

Sharing Culture



D MUSEUM

Sharing Cleanliness



Sharing Cleanliness

Environmental initiatives for the preservation of mountains and rivers across the country

To protect and preserve our environment for future generations, we organized the “Sharing Cleanliness” project. As part of the project, our employees from head office and nationwide worksites formed “Sharing Cleanliness Volunteer Groups” and joined the “One Mountain, One River, One Street” campaign in collaboration with local governments in 10 districts. Since 2005, employees of the head office and their families have participated in a quarterly environmental clean-up activity at Namsan. The activity is also participated by the group affiliates.

Support for people with disabilities and students through scholarship foundation

As part of the “Sharing Wish” project, the DL E&C donates money and goods for the disabled and the socially underprivileged in need of self-support, and scholarships for college students who are the future of our society. Since 2004, we have donated our PCs and computer devices in collaboration with self-support organizations. Celebrating our 50th anniversary in 1989, the Daelim Suam Scholarship and Cultural Foundation, a non-profit public interest foundation for scholarship and academic support, was founded to provide financial support for college students.

Donation of Computer Resources



Sharing Wish

SOCIAL

Social Contribution

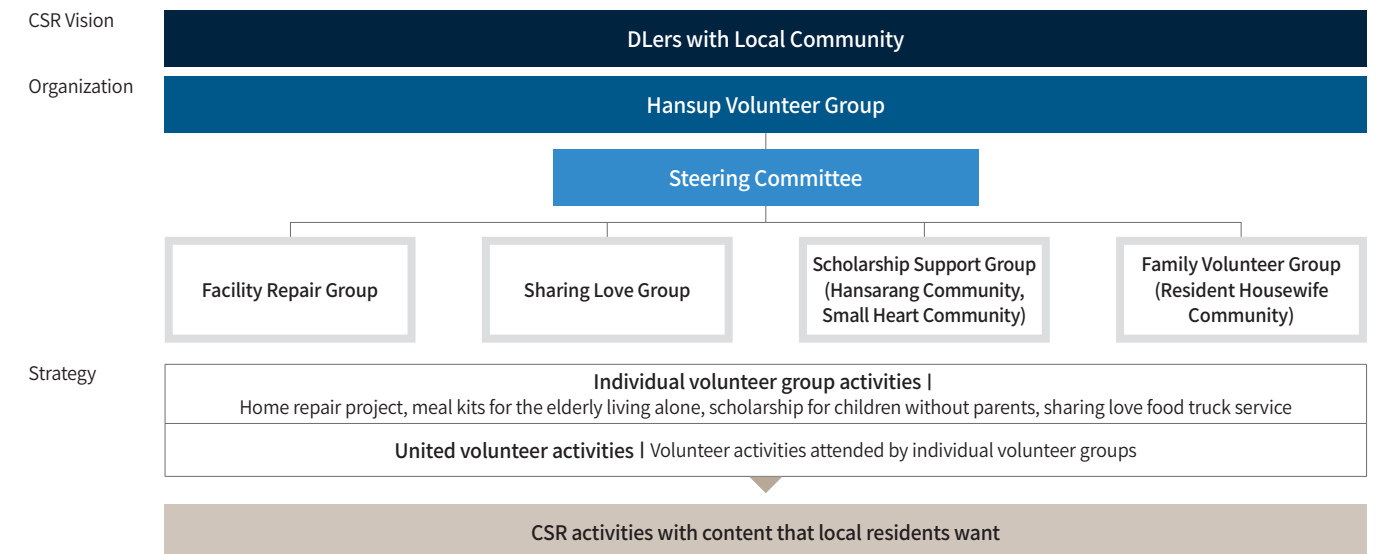
In order to make our society a better place to live and fulfill our social responsibilities as a member of the society, we continue to support those who are underprivileged and vulnerable. As a corporate citizen, we maintain close communication and engage in various activities to create social values.

Category	Unit	2018	2019	2020
CSR Donations	KRW million	19.3	28.8	40.2
Repairing Facilities	Household	12	11	-
Food Truck	Time	10	8	1
Event Support for Local Community	Time	12	15	3

※ Switched to non-contact CSR activities due to COVID-19 pandemic in 2020 (donation of masks and hand sanitizers)

Social Contribution System and Strategy

In order to help our neighbors in need and improve the quality of their lives, DL Chemical is committed to human respect, building trust with customers, and creating values for the future. To go beyond the conventional group-based volunteer activities, we organized the Hansup Volunteer Group with all employees to promote our CSR activities in September 2004.



CSR Activities

Hansup Volunteer Group

DL Chemical has been contributing to the development of the local community and fulfilling its social responsibility to create value for the society. Based on DL Chemical's Hansup spirit of "creating a comfortable and rich environment for people," we helped the socially underprivileged and vulnerable populations. To this end, the "Hansup Volunteer Groups" was organized and four groups are operated for each activity area.

Facility Repair Group

DL Chemical continues to improve the environment for people living in outdated houses. The Facility Repair Group focuses on repairing homes for youth who support their families and the elderly living alone. Mainly, the group repairs and replaces electricity, gas, boiler, wallpaper, and flooring. We also carry out projects where we replace and repair outdated facilities in elderly welfare centers. Going forward, we will continue support our local community by helping people in need and creating a safe environment.



Sharing Love Group

DL Chemical is committed to spread a culture of sharing with underprivileged neighbors in local area as the COVID-19 pandemic continues for a long time. The Sharing Love Group makes social contributions to local communities through free meal service, bathing support, support for welfare centers, and delivery of meal kits for the elderly living alone. By doing so, we are communicating with people in need and supporting our local community. Going forward, we will continue to develop new CSR projects to help our community.



Family Volunteer Group

The Family Volunteer Group is organized to help underprivileged children and senior citizens through food trucks, year-end kimchi making and donation, helping children supporting their families, and supporting welfare facilities. In addition to improving the quality of life for children and senior citizens in need, we strive to practice charity and care. Going forward, we will continue to organize volunteer activities to raise awareness and support our local community.



Scholarship Support Group

DL Chemical is committed to its social responsibilities by supporting talent development and making donations to help local communities. The Hansarang Community provides scholarships to children supporting their families at local schools to help realize their dreams. The Small Heart Community donates money and supplies to the Yeosu Ssangbong Welfare Center on a quarterly basis to fulfill its social responsibilities to the local community. In addition, in 2020, we donated masks and hand sanitizers worth about KRW 20 million to Yeosu City Hall to support the prevention of COVID-19 in the community. Through these programs and volunteer activities, we will strengthen the development of local communities and the creation of social values.



CSR Performance

DL Chemical applies the LBG¹⁾ model, which is a CSR evaluation tool, to manage the input cost of the activities. The amount of CSR donations is systematized into expenditures by type, including the number of CSR participants, operating expenses, donations (cash, cash equivalent), and average hours.

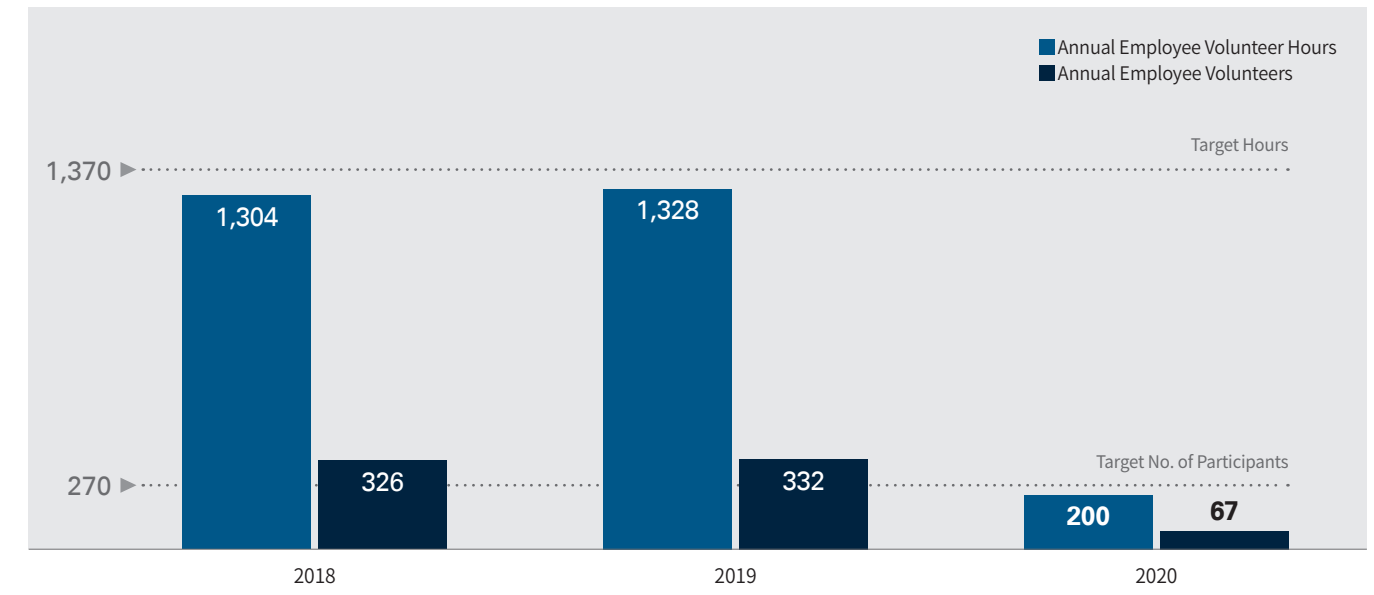
1) LBG : London Benchmarking Group

CSR Donations

Category	Unit	2018	2019	2020	2021 Target
Annual Participants	Person	186	182	67	270
Total Expenditure	KRW million	25.1	34.1	40.4	31
Operating Cost	KRW million	5.8	5.3	0.2	5.5
Donation ¹⁾ (culture & art)	KRW million	19.3	28.8	40.2	25.6
Avg. Hours of Activity per Person	Hour	4	4	3	5

1) Donation of masks and hand sanitizers (KRW 20 million to Yeosu City Hall)

Employee Volunteer Activities



Governance

03

Governance

Ethical Management

Compliance Management

Risk Management

Governance

DL is committed to building sound governance to maximize the transparency and efficiency of its business operation. To this end, we established the “Governance Charter” in 2005 and officially announced our principles and procedures in relation to our governance of shareholders’ rights, directors’ role and responsibilities, and the composition and operation of the board of directors and Audit Committee. We also disclose all information for stakeholders including shareholders on a regular basis every year in the Corporate Governance Report, which contains the principles and status of our governance structure. Going forward, we will continue to do our best to strengthen our governance for sustainable growth and development.

Board of Directors

Roles of the Board of Directors

The DL Board of Directors makes resolutions on matters specified in law and articles of incorporation and implements supervisory for job performance of directors and executive officers. In addition to resolutions on the matters, the board also holds strategic workshops to discuss medium and long-term business strategies and current agenda to support fair and rational decision-making process.

Status of the Board of Directors

The board of directors is composed of directors qualified for responsible practice and transparent decision-making. Directors are appointed at the general shareholders’ meeting based on the nomination in accordance with the Commercial Act and articles of incorporation. The qualification and expertise of outside directors are, in particular, verified by the Outside Director Nomination Committee.

Operation of the Board of Directors

The board of directors is subject to regulations on the board of directors to ensure its efficient operation and posts them on the company website. The meetings of the Board of Directors consist of ordinary meetings to take place once or twice in every quarter and extraordinary ones to be held if necessary. The details of the meeting including agendas and resolutions are disclosed on the company website and electronic disclosure. In 2020, the meetings were held 11 times; in these meetings, they made resolutions on a total of 29 agenda items. The board of directors passes a resolution with a majority of the affirmative votes cast by a majority of directors attended at the meeting unless specified otherwise by the laws and the articles of incorporation.

Composition of the Board of Directors

* As of June 30, 2021

Classification	Name	Job Title	Date of Appointment	Areas of Expertise
Inside Director	Bae Weon Bog	CEO, Chair of the BoD	Jan. 4, 2021	
		Member of Outside Director Nomination Committee and Finance Committee		
Non-executive Director	Shin Hyun Sik	Chair of Remuneration Committee Member of Finance Committee	Jan. 4, 2021	
Outside Directors	Yi Han Sang	Chair of Audit Committee Member of Governance Committee, Outside Director Nomination Committee and Finance Committee	Jan. 4, 2021	Accounting
	Lee Young Myung	Chair of Governance Committee Member of Audit Committee, Outside Director Nomination Committee and Remuneration Committee	Jan. 4, 2021	Finance
	Lee Yoon Jung	Member of Audit Committee, Governance Committee and Remuneration Committee	Jan. 4, 2021	Brand

Independence and Expertise of the Board of Directors

Our board of directors is in compliance with Article 542-8 of the Commercial Act in terms of independence. Outside directors are responsible for ensuring the fairness and transparency of corporate management, providing advice and expertise on major decisions of the company, and overseeing its business practice as advisors and collaborators. To ensure the independence of outside directors, we appoint candidates without any business relationship or conflict of interest for serving as an outside director and who can bring expertise in the field to represent the shareholders and their interests in a balanced way and to pursue sustainable growth. We also organized the Outside Director Nomination Committee through which we verify the qualification of the candidates in terms of independence and expertise prior to submitting the agenda to the board meeting and general meeting of shareholders.

DL E&C Composition of the Board of Directors

* June 30, 2021

Classification	Name	Job Title	Date of Appointment	Areas of Expertise
Inside Directors	Ma Chang Min	CEO Chair of Remuneration Committee and Finance Committee Member of Outside Director Nomination Committee	Jan. 4, 2021	
		Nam Yong		
Outside Directors	Lee Chung Hun	Chair of Audit Committee Member of Governance Committee, Outside Director Nomination Committee, and Finance Committee Senior Outside Director*	Jan. 4, 2021	Law, Finance, Accounting, Management
	Park Chan Hee	Chair of Governance Committee Member of Audit Committee, Remuneration Committee, Outside Director Nomination Committee, and Finance Committee	Jan. 4, 2021	
	Kim Il Yoon	Member of Audit Committee, Governance Committee, and Remuneration Committee	Jan. 4, 2021	

* DL E&C appoints a senior outside director to represent the outside directors after the spin-off (Jan. 28, 2021)

DL Chemical Composition of the Board of Directors

* June 30, 2021

Classification	Name	Job Title	Date of Appointment	Areas of Expertise
Inside Directors	Kim Sang Woo	CEO, Chair of the BoD Chair of Finance Committee Member of Governance Committee and Remuneration Committee	Jan. 4, 2021	
		Nam Yong		
Non-Executive Director	Chung Jae Ho	Chair of Outside Director Nomination Committee Member of Audit Committee	Mar. 23, 2021	
Outside Directors	Kim Eui Chang	Governance Committee, Remuneration Committee Member of Audit Committee, Outside Director Nomination Committee, and Finance Committee	Mar. 23, 2021	Law, accounting, management
	Lee In Su	Chair of the Audit Committee Member of Governance Committee, Outside Director Nomination Committee, Remuneration Committee, and Finance Committee	Mar. 23, 2021	

Board Committees

DL has organized five committees within the Board of Directors, including the Finance Committee, Audit Committee, Outside Director Nomination Committee, Remuneration Committee, and Governance Committee in accordance with the articles of incorporation and the regulations on the Board of Directors. All committees within the board are subject to their own regulations, which are posted on the company website. These rules include the purpose of the committee's establishment, authorities and responsibilities, activities, composition, qualifications, and appointments. All resolutions of each committee are reported to the board of directors, and the details of their activities are disclosed on the company website and DART (<https://dart.fss.or.kr>).

Finance Committee

The Finance Committee manages the company's financial risks through reviewing and resolving major financial matters assigned in accordance with the board regulations.

Audit Committee

The Audit Committee is made up of all three outside directors with expertise in accounting, finance, and law to ensure its independence. It oversees the execution of duties of directors and audits the accounting and makes decisions on the appointment of external auditors. In order to support an efficient audit process, the committee discusses audit plans and results of financial statements and the operation status of the internal accounting management system with external auditors.

Outside Director Nomination Committee

The Outside Director Nomination Committee is responsible for reviewing the eligibility and expertise of candidates and recommending those who can contribute to the values of shareholders.

Remuneration Committee

The Remuneration Committee is responsible for determining the limit of remuneration for registered directors and reviewing the company's performance evaluation and remuneration system.

Governance Committee

The Governance Committee is composed of three outside directors and plays a role in reviewing and deciding on the matters affecting shareholder value as well as the resolution on large internal transactions. We are reviewing ways to expand and reorganize the Governance Committee so that it can deal with sustainability issues.

Shareholding Structure

The largest shareholder of DL is Daelim Corporation (21.67% of common stock), and its related parties including the largest shareholders' common stock ownership of 23.12%. As of the end of 2020, the National Pension Service owns the second-largest shares of 13.34%, following the largest shareholders and its related parties. Foreign investors account for 31.98% of the total shares. DL makes decisions at the general meeting of shareholders based on the principle of supporting shareholders' interests in the event of significant changes in the company's existence and shareholders' rights, including changes in the articles of incorporation, merger, spinoff, and capital. In addition, we ensure accurate and timely disclosure of our business information using various communication channels such as business reports, corporate disclosure system, and the company website.

Shareholding Structure (Unit : %)

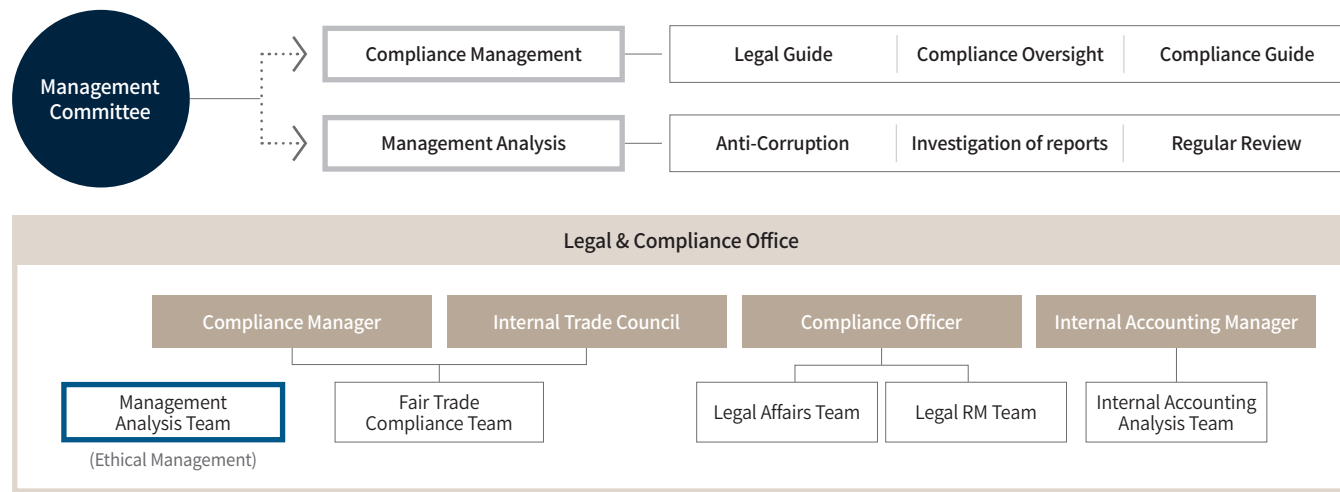


* As of the time of division in January 2021

Ethical Management

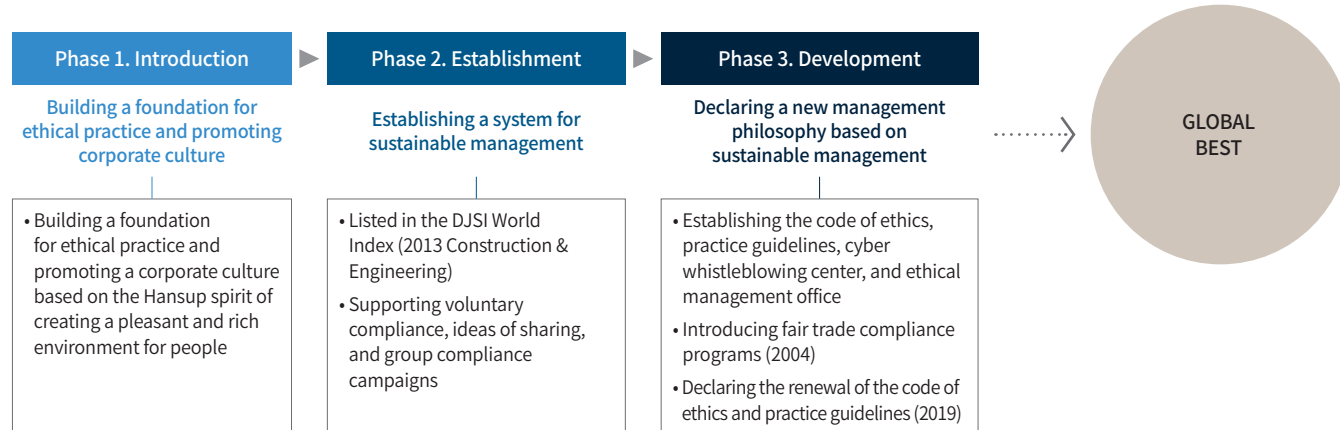
DL E&C takes an organic approach in its ethical management as it operates the Compliance Management Office, which ensures compliance with legal requirements and fair practice in order to fulfill its social responsibilities, and open and ethical management. We organized Management Analysis team that is responsible for preventing unethical practice and investigating reported cases while raising awareness and creating an environment to support ethical management.

Ethical Management Organization



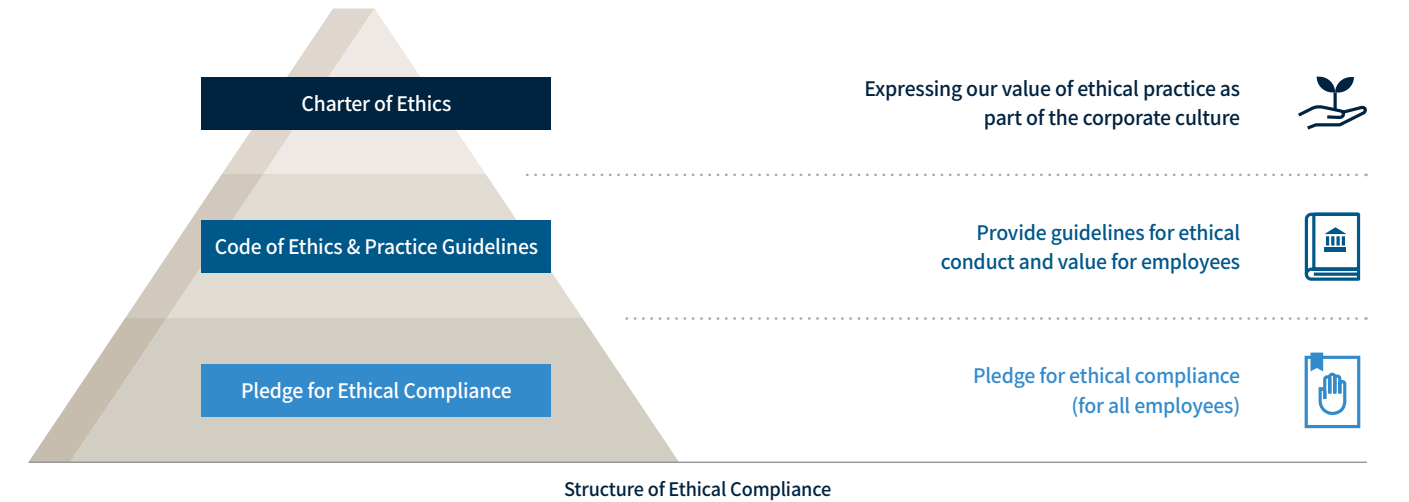
Ethical Management System

Since its foundation, DL E&C has been committed to ethical management based on its founding principles of honesty and trust. In 2000, we declared the Ethical Management as our new corporate philosophy and renewed our Code of Ethics with the participation of our employees to meet the global standards in 2019. While complying with the Charter of Ethics, Code of Ethics, and Practice Guidelines, we operate a cyber whistleblowing center and voluntary compliance programs with the goal of promoting "Global Best" and corporate sustainability management.



Establishment and Declaration of the Code of Ethics

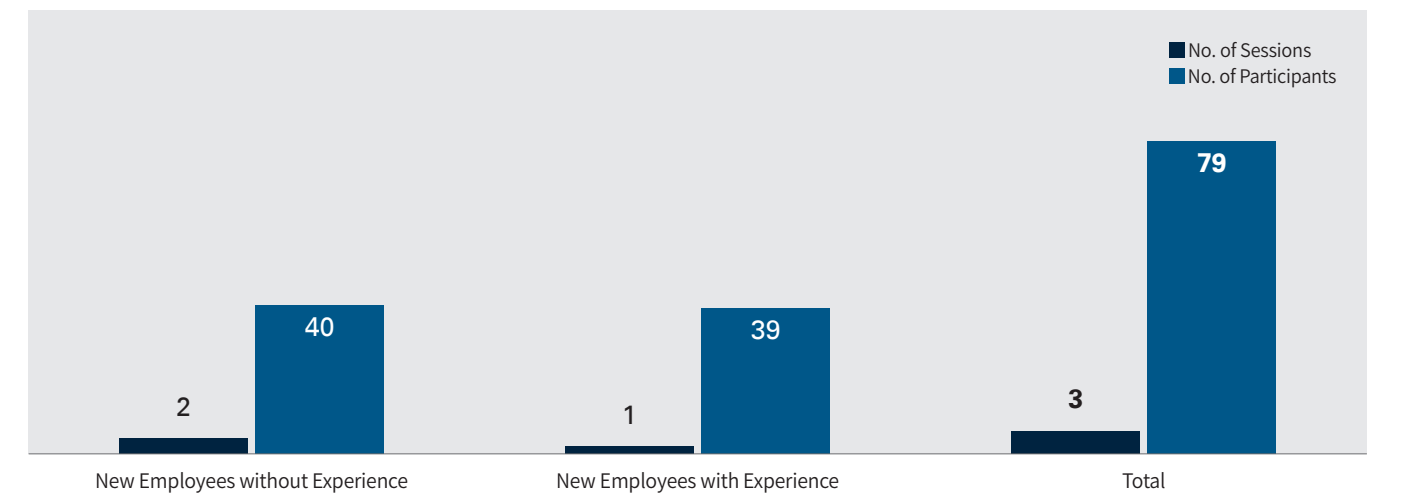
After establishing and declaring the Code of Ethics in 2000, we updated its practice guidelines in 2019. The purpose of this is to lay the foundation for continuous growth through which each employee can compete in the global market by internalizing ethical management in response to a growing demand for ethical management. We also share guidelines and code of conduct that can be applied to various situations in the course of job performance and relationships with various stakeholders including customers and partners.



Expansion of Ethics Training

Our employees become familiar with the roles and duties of individuals and learn how to respond to ethical dilemmas in their jobs through ethics training. The training is divided into online training sessions and group sessions through the Hansup Broadcasting. In order to reflect the meaning of ethical management, and encourage their participation, our employees reaffirm their commitment by signing the pledge for compliance with the code of ethics once a year.

Ethics Training (2020)



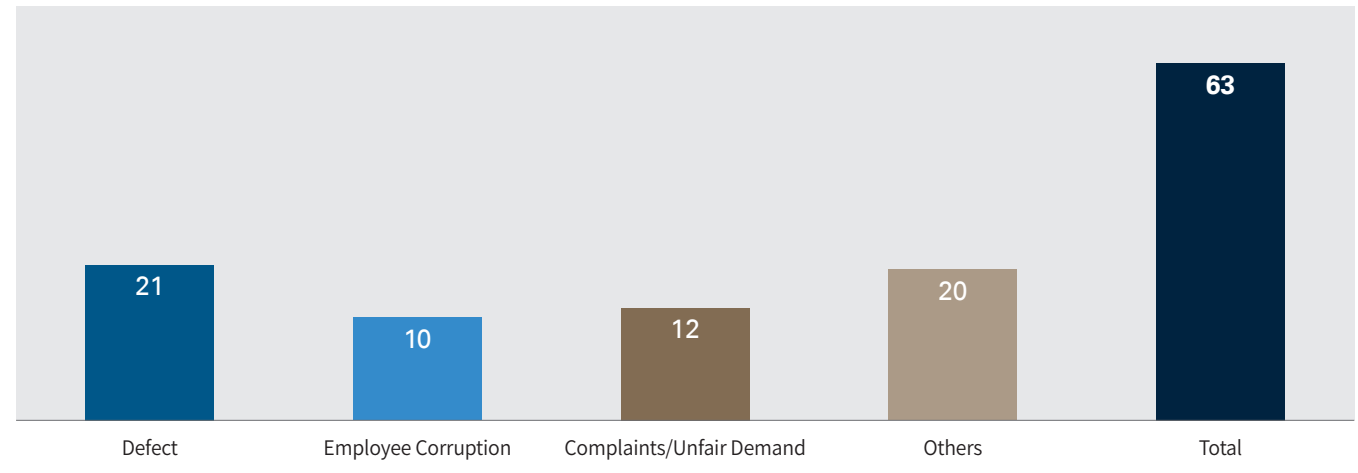
Ethics Training of Partners

Our ethical management system is designed to prevent unfair practices when dealing with our partners. The Charter of Ethics, Code of Ethics, and Practice Guidelines require our employees to fill out and submit a "Money/Gift Receipt Form" to the Compliance Office when receiving gifts from partners. We also have the Cyber Whistleblowing Center on our website through which people can report unfair or corrupt practices.

Cyber Whistleblowing Center

DL E&C operates the Cyber Whistleblowing Center to receive reports and suggestions on fraud and unfair conducts and practices of its employees from stakeholders including employees, partners' employees, customers, and shareholders under the ethical management policies. Cyber Whistleblowing Center allows anonymous reporting to ensure complete anonymity for reporters. We have also established a variety of reporting channels to facilitate the reporting process through dedicated e-mail and phone calls. Through this, we identify violations of the code of ethics in advance and take necessary measures to improve and prevent them.

Operation of Cyber Whistleblowing Center in 2020 (Unit : Case)



* Measures completed 100%

Ethical Management Audit and Measures

DL E&C takes disciplinary actions against employees' unethical conduct under the rules. In 2020, employees who have committed violations such as bribery and privacy and the violators and their manager were subject to disciplinary actions according to their severity.

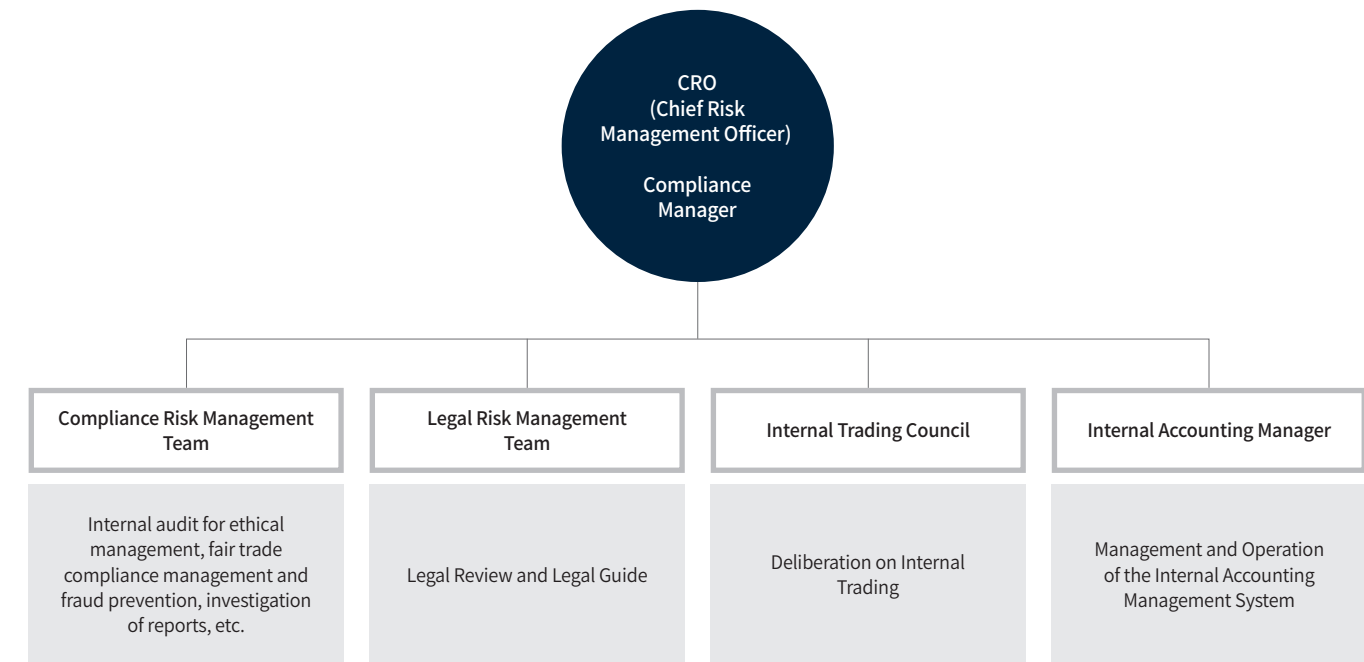
Cases of Unethical Conduct (Unit : Case)

Category	2018	2019	2020
Dismissal	1	2	5
Suspension	2	4	3
Reduction in Salary	3	8	10
Reprimand	5	15	9
Total	11	29	27

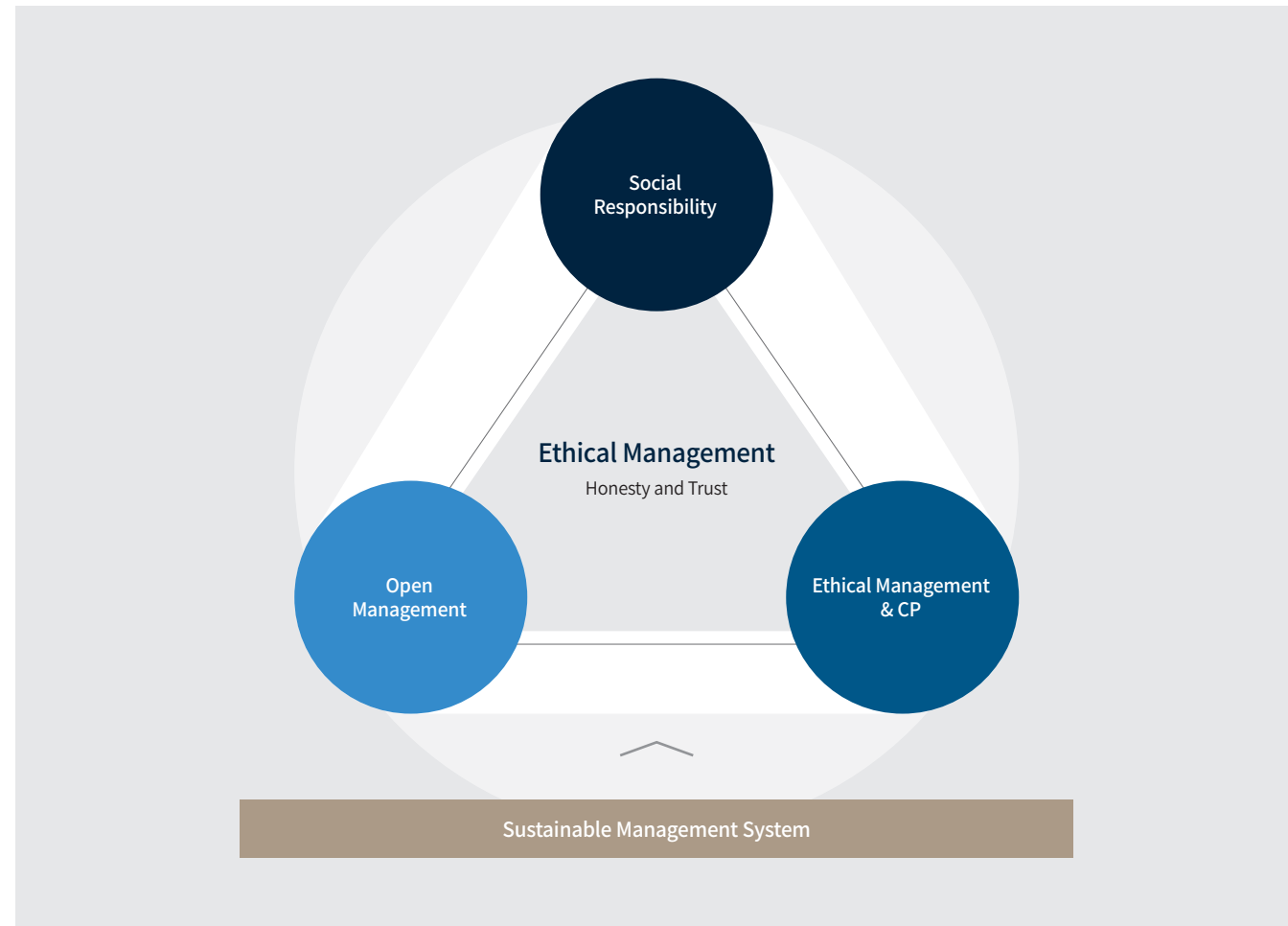
Ethical Management

DL Chemical maintains strong ethical practice through combination of the Compliance Risk Management Team, which is in charge of internal audits including ethical management, fair trade compliance management, fraud prevention, and investigation of reports, and the Legal Risk Management Team, which provides legal review and guidance in order to establish an organizational culture based on ethical management.

Ethical Management Organization

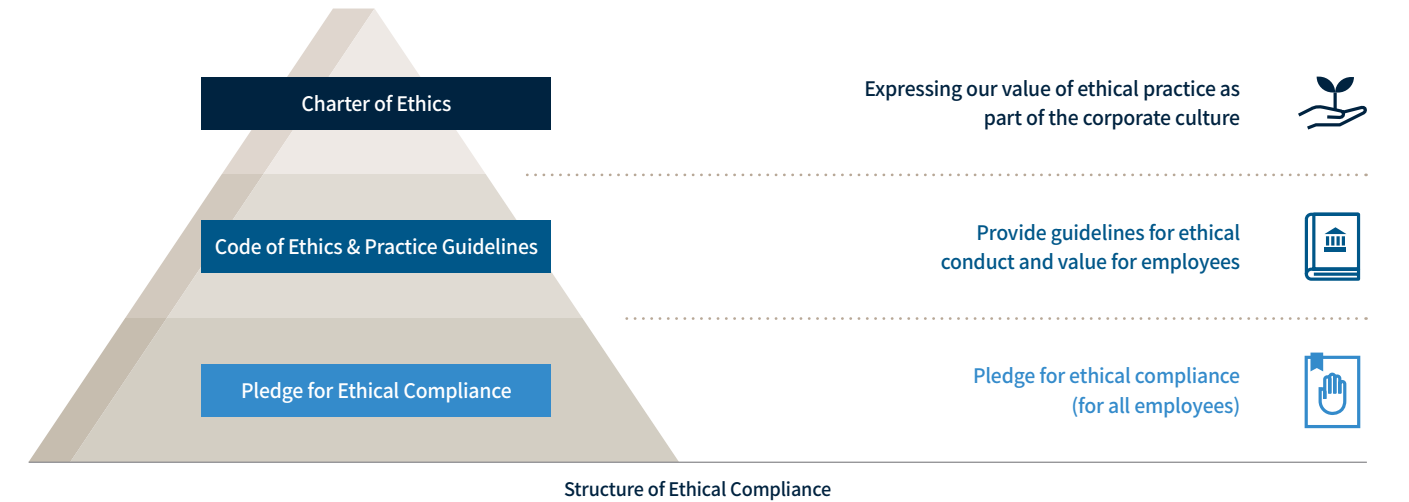


DL Chemical is building a sustainable management system based on its philosophy of “open management,” “ethical management,” and “social responsibility” under the founding principle of “honesty and trust.” In 2021, we are promoting a global ethical management system by renewing the code of ethics practice guidelines. In addition, we ensure full compliance with the Charter of Ethics, the Code of Ethics and Practice Guidelines while operating the Cyber Whistleblowing Center and fair trade compliance programs, and promote sustainable management under the vision of becoming the “Global Best”.



Establishing and Distribution of Regulations on Ethics

Since the establishment and declaration of the ethical regulations including the Code of Ethics in 2000, all employees at DL Chemical have been required to sign the pledge for compliance with the code of ethics every year. In response to the growing demands and interest in ethical management through anti-corruption convention and international standards, we are laying the groundwork for sustainable growth so that each of our employees can internalize ethical practice to compete in the global market. In addition, we are sharing and updating our guidelines for implementing the Code of Ethics as a basis for ethical practice in various situations that may arise in the performance of duties and relationships with stakeholders, such as employees, customers, and partners.



Ethical Management of Partners

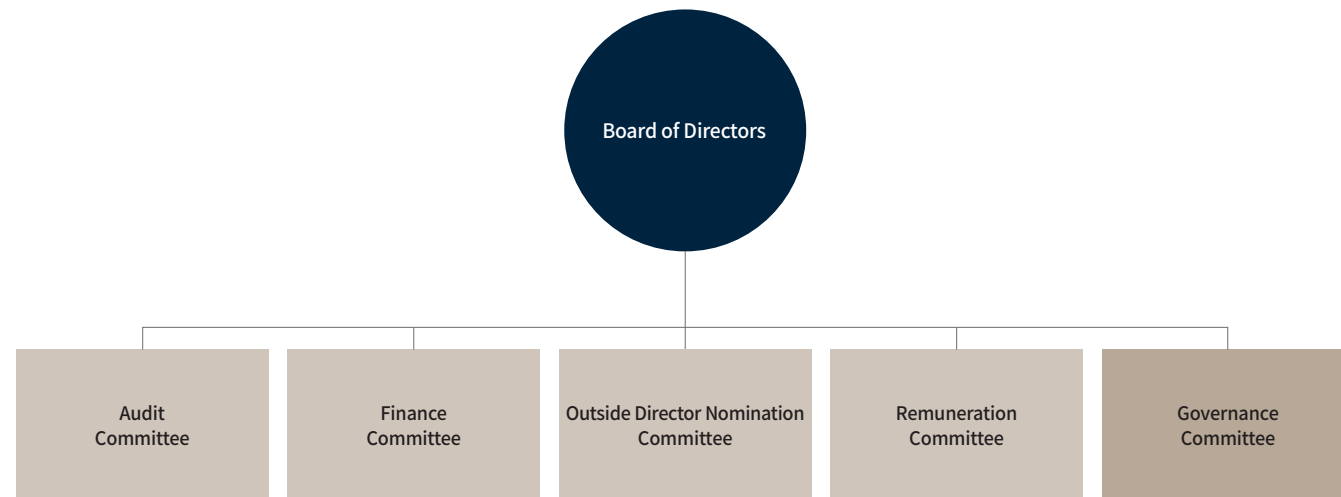
DL Chemical has established an ethical management system to prevent unfair practices with partners. The Charter of Ethics, Code of Ethics, and Practice Guidelines require our employees to fill out and submit a “Money/Gift Receipt Form” to the Compliance Office when receiving gifts from partners. We also have the Cyber Whistleblowing Center on our website through which people can report unfair or corrupt practices.

Compliance Management

DL E&C maintains strong ethical practice through combination of the Compliance Risk Management Team, which is in charge of internal audits including fair trade compliance management, fraud prevention, and investigation of reports, and the Legal Risk Management Team, which provides legal guidance in order to establish a healthy organizational culture based on ethical management.

Improvement Independence of Fair Trade Promoting Organization

In 2018, DL E&C has established the Internal Transaction Committee as part of the board of directors to ensure transparency and fairness when it comes to internal transaction with affiliates under Article 11-2 of Monopoly Regulation and Fair Trade Act ("Fair Trade Act" hereafter). In March 2020, in order to support the independence and role of the Internal Transaction Committee, the committee rules were revised so it was only composed of external directors. And in accordance with the change in rules, the Internal Transaction Committee has secured the authority to approve large-scale internal transactions of more than KRW 5 billion in accordance with the Fair Trade Act and review those transactions with less than KRW 5 billion with affiliates. In 2021, we changed the name of the Inside Trade Committee to Governance Committee along with the name of the company to ensure more comprehensive review on our practice. The department of the Governance Committee monitors internal transaction with affiliates, such as funds, assets, and securities, and reports major internal transactions to the Committee, such as transactions with related parties, and presents matters that require review at the decision of the Committee. Thus, we are strengthening the monitoring and oversight of internal transactions as we improve the independence of the committee and increase the scope of review.



Fair Trade Compliance Program

Since the introduction of the "Fair Trade Compliance Program" in 2003, we have encouraged our employees to comply with fair practice in order to take the initiatives and proactive approaches in ensuring transparency. All executives and employees must understand and comply with the "Fair Trade Compliance Program Operation Rules" in relation to their jobs, and designate and comply with the rules related to customers, competitors, and partners, in particular. Furthermore, the Compliance Officer, who is in charge of the Fair Trade Compliance Program, reports the progress (e.g., training, inspection, improvement) to the Audit Committee on a regular basis. Our Fair Trade Compliance Operation System consists of six items to support fair practices based on the "CP Regulations" of the Korea Fair Trade Commission and the "CP Rating Guidelines" of the Korea Fair Trade Mediation Agency.

1	CP Establishment	2	CP Dissemination & Promotion	3	CP Operation	4	Evaluation, Feedback
	CP Operation Organizational Improvement & Regulation Management	CP Operation Guidelines Establishment & Utilization	CP Training	Monitoring System Operation	Restriction & Incentive	CP Operation Evaluation/Improvement/Report	
	<ol style="list-style-type: none"> 1. Declaring CEO's commitment to compliance 2. Appointing Compliance Officer and authorization at the board meeting 3. CP dedicated organization designation and support 4. CP regulation management and operation planning 	<ol style="list-style-type: none"> 1. Establishment/revision 2. Distribution/utilization 	<ol style="list-style-type: none"> 1. Planning 2. Implementation 3. Evaluation 	<ol style="list-style-type: none"> 1. Question/consultation (preliminary discussion) 2. Inspection (voluntary inspection, CP inspection) 3. Operation of whistleblowing system 	<ol style="list-style-type: none"> 1. Implementing restrictions 2. Providing incentives 	<ol style="list-style-type: none"> 1. CP operation evaluation and improvement 2. Reporting CP operation 	

Fair Trade Training

In order to ensure compliance with the government fair trade guidelines and laws, DL E&C has established a process to prevent violations and conducts annual employee training to raise awareness every year. Since 2019, we have carried out enhanced on-site training on the Fair Transaction in Subcontracting Act once a year for all employees at our domestic sites, and from 2020, we have enhanced our training program on the Act on Fair Labeling and Advertising.

2020 Fair Trade Training Performance

Areas of Training	Participants	No. of Training Sessions	No. of Participants
Concept of Fair Trade Act and Direction for CP Operation	Employees at worksites	-	-
	Employees at head office	9	164
	Subtotal	9	164
Examples of Violation of the Subcontracting Act and Measures for Prevention	Employees at worksites	1	2,054
	Employees at head office	1	330
	Subtotal	2	2,384
Total	Employees at worksites	1	2,054
	Employees at head office	10	494
	Subtotal	11	2,548

Publication of CP Newsletters

DL E&C prepares compliance rules to promote employees' understanding and raise awareness, and publishes CP newsletters to promote their compliance with the law. The CP newsletter is distributed to employees working at the sites by the CP manager, and can also be accessed on the CP forum. Until May 2021, we have covered such topics as CP concept and code of conduct, CP operating system, CP review of changes in subcontract, and review of collusion and internal trading. We will continue to disclose information about our CP practice.

Promoting Fair Trade of Partners

Feedback of Partners for Compliance with the Subcontracting Act

DL E&C collects feedback from small and medium-sized partners on a regular basis from the third quarter of 2019 in order to check compliance with ethical practice and identify the risk of violations of the Subcontracting Act. We find improvement regarding legal compliance by investigating the partner's claims on the relevance of facts, and we are committed to creating an environment to promote shared growth by actively reviewing their feedback.

Posting Subcontracting Act Compliance Rules on Site

DL E&C has established compliance rules to help both worksites and partners to understand and implement the Fair Transactions in Subcontracting Act and to raise employees' awareness by posting the rules in a form of poster and signboard at the worksites. We expect that it will encourage them to report on violations and promote our commitment to compliance and our CP as a result.

1. CP 개념

What is Compliance Program?

사업추진 과정에서 기업이 자발적으로 공정거래 관련 법규를 준수하도록 하기 위한 시스템
법규, 규약, 기업문화를 준수하도록 하기 위한 사내 자체 프로그램

1. CP 운영체계의 필요성

CP 운영체계란?

기업이 공정거래 관련 법규를 자율적으로 준수하고, 임직원이 효율적으로 CP 활동을 할 수 있도록 운영하는 경영법에 대한 교육·자문·점검의 체계

CP 운영체계는 왜 필요할까요?

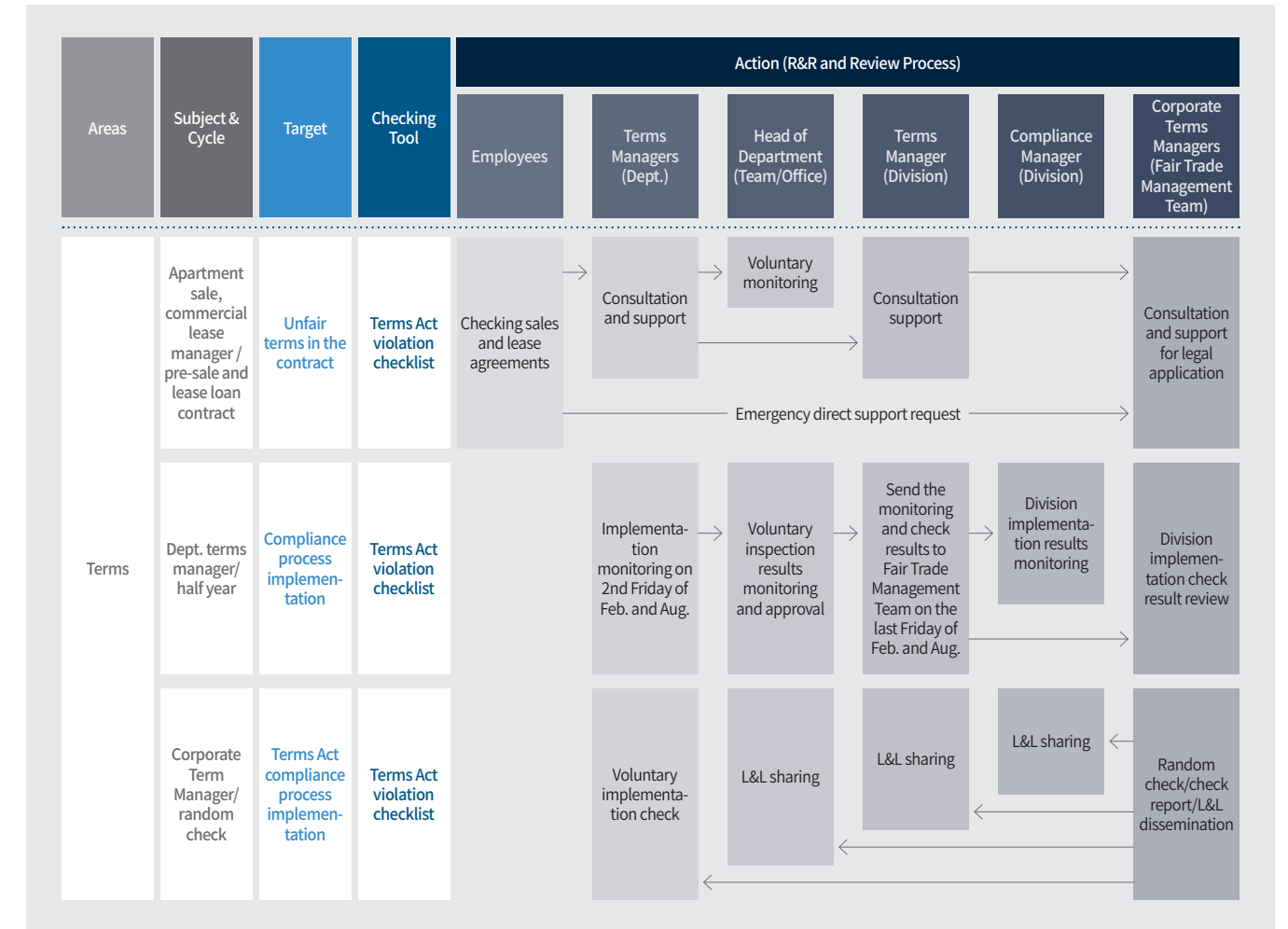
- ✓ 법 준수를 위한 명확한 행동기준을 제시하고, 법 위반 행위를 사전에 예방하여 회사와 임직원을 보호
- ✓ 추가적으로는 자발적으로 CP를 도입·운영하는 기업에 대상으로 공정위/조정원에서 평가를 통해 A등급 이상 획득 기업에게 주는 인센티브 효과(직권조사 면제, 과징금 감경 등)를 통한 기업 손실 축소

Publication of DL E&C CP Newsletters

Response to the Act on the Regulation of Terms and Conditions

Response Process

DL E&C reviews and updates unfair terms and conditions for consumers in response to the increase in risk factors due to the strengthening of the law to support fair practice. For new terms and conditions, risk factors are managed through the response process.



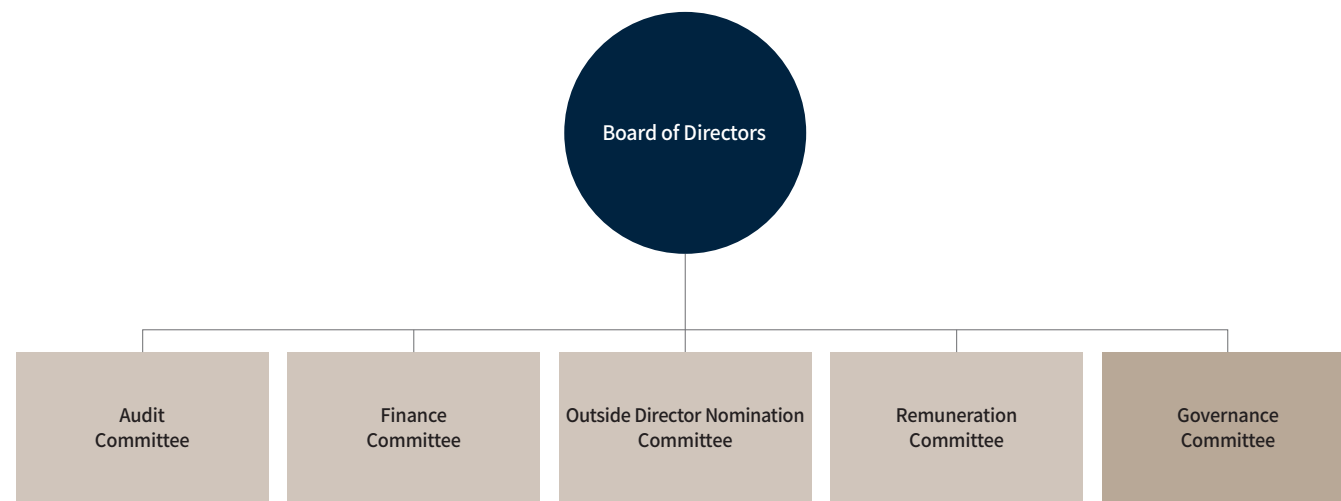
Response Process

Compliance Management

DL Chemical is committed to promoting transparent and fair business operation in all corporate activities. We have organized the Governance Committee under the BoD to prevent violations of the Fair Trade Act by strengthening the supervision of internal transactions. In addition, we are establishing a healthy corporate culture by raising employees' awareness through regular training and monitoring violations under the Fair Trade Act and the Subcontract Act.

Enhancing Independence of Fair Trade Organization

DL Chemical established the Governance Committee as an organization under the Board of Directors in January 2021 to ensure transparency and fairness in internal trade with affiliates in accordance with Article 11-2 of the Monopoly Regulation and Fair Trade Act ("Fair Trade Act"). In March 2021, two of the three committee members were replaced by outside directors, creating an environment where internal trade can be reviewed from a fair and objective perspective in order to strengthen the independence and review process of the Governance Committee. Therefore, we are supporting the monitoring of internal trade by strengthening the independence of the Governance Committee by increasing the number of outside directors while reviewing internal trade through a consultative body composed of team leaders from key CP departments as part of our efforts for compliance management.



Changes to Governance Committee

Category	Before Change	After Change	Purpose
Composition of Committee	3 Inside Directors	1 Inside Director, 2 Outside Directors	Enhanced independence of the committee

Fair Trade Compliance Program

Since the introduction of the "Fair Trade Compliance Program" in 2004, we have encouraged our employees to comply with fair practice in order to take the initiatives and proactive approaches in ensuring transparency. All executives and employees must understand and comply with the "Fair Trade Compliance Program Operation Rules" in relation to their jobs, and designate and comply with the rules related to customers, competitors, and partners, in particular. Furthermore, the Compliance Officer, who is in charge of the Fair Trade Compliance Program, reports the progress (e.g., training, inspection, improvement) to the Audit Committee on a regular basis. Our Fair Trade Compliance Operation System consists of six items to support fair practices based on the "CP Regulations" of the Korea Fair Trade Commission and the "CP Rating Guidelines" of the Korea Fair Trade Mediation Agency.

1	CP Establishment	2	CP Dissemination & Promotion	3	CP Operation	4	Evaluation, Feedback
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Fair Trade Training

In order to ensure compliance with the government fair trade guidelines and laws, DL Chemical has established a process to prevent violations and conducts annual employee training to raise awareness. In 2020, we were unable to organize training for many employees due to the COVID-19 pandemic. However, in 2021, CP training with online sessions will be conducted.

2020 Fair Trade Training

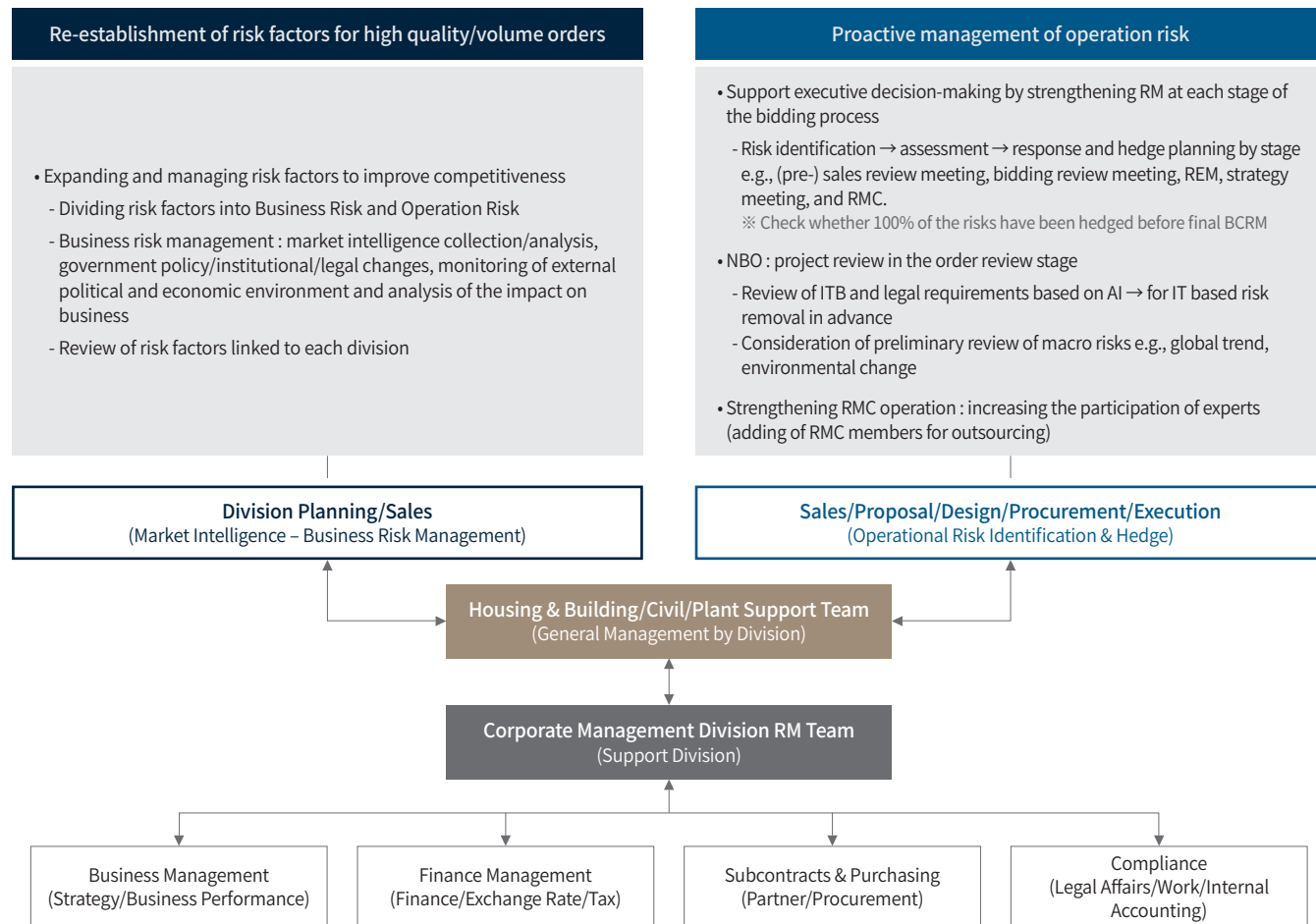


Risk Management

DL E&C operates the Compliance Risk Management Team that is in charge of internal audit and ethical practice including fair trade, anti-corruption and investigation of reports, and the Legal Risk Management Team offering legal guidance. By doing so, we raise employees' awareness of corporate ethics and promote a healthy organizational culture through ethical practice.

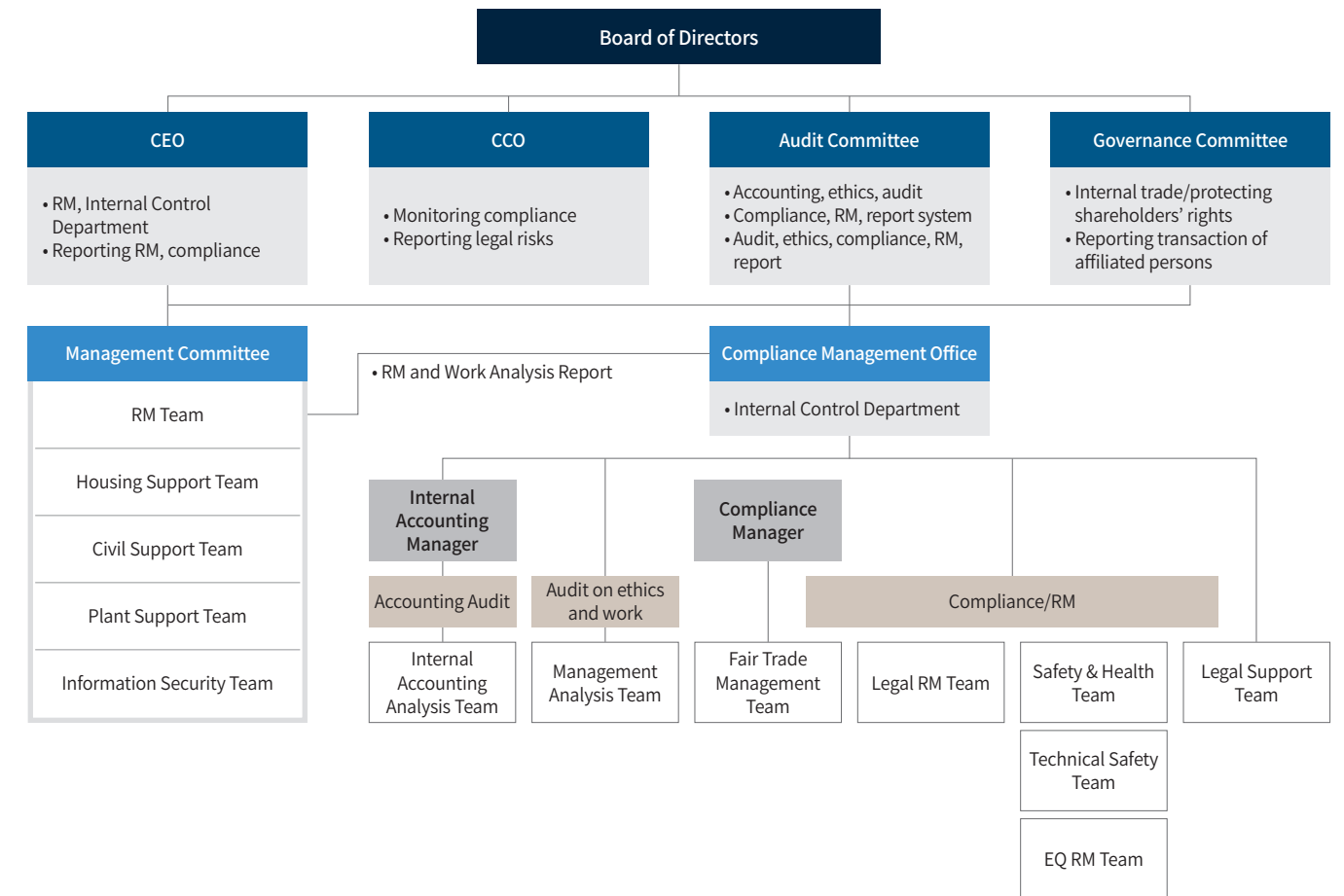
Risk Management System

As a Global Developer, DL E&C has established a corporate-wide risk management system to preemptively identify, assess, and respond to various types of risks associated with complex business environments. Risks are classified into Business Risk and Operation Risk for the integration and organic management of project order management and execution. Market intelligence associated with business risks, government policies, various systems, and regulations, external political/economic environment and other factors affecting the business are monitored on a regular basis, while impacts are analyzed with a focus on projects with high possibility of winning, thus enabling risk management. We also manage risks throughout the life cycle of the project in which all operational risks of business performance are identified in advance through integrated risk profiling in the bidding preparation stage, and the hedge plan is reviewed and transferred to the contract/groundbreaking/completion stage.



Risk Management Organization

DL E&C manages risks preemptively and systematically by establishing a mutual risk monitoring system under the board of directors. Each organization identifies, determines, and responds to situations, supports integrated management of identified risks, sets response strategies, and supports responses, and reports key issues to the management for decision-making. We also established compliance/ethical management and transparent organizational culture for sustainable practice and ensures effectiveness and sustainability through compliance monitoring and internal control through the Compliance Management Office. Management analysis and internal audit on DL E&C, its subsidiaries, and affiliates are conducted along with a fair trade compliance program and internal accounting management system to control and manage risks associated with business activities, execution, settlement, and follow-up.



Risk Management Activities

Operation of NBO (New Business Opportunity)

When selecting projects, we analyze the feasibility of potential project orders by identifying the risks (global/national trends, construction environment) and reviewing our competency (experience, human/technical expertise) to focus our resources.

Operation of RMC (Risk Management Committee)

Through integrated risk profiling management using a checklist, all risks of business operation are identified for review of hedge plans and any unresolved risks are transferred to the contract, commencement, and completion stage by reaching an agreement after collective discussion.

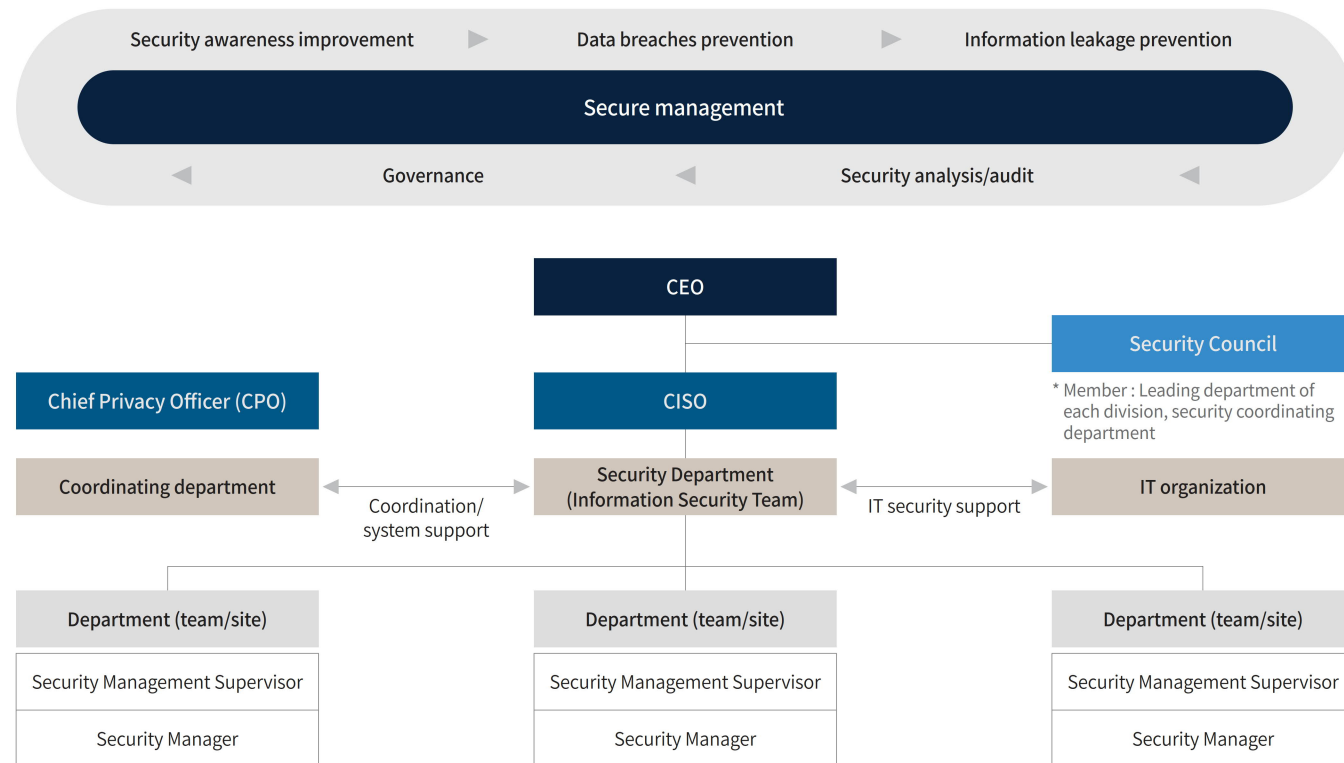
Internal Audit & Analysis of Subsidiaries/Affiliates

In order to identify and prevent risks in subsidiaries and affiliates, we conduct internal audits and management analysis on a regular basis.

Information Security

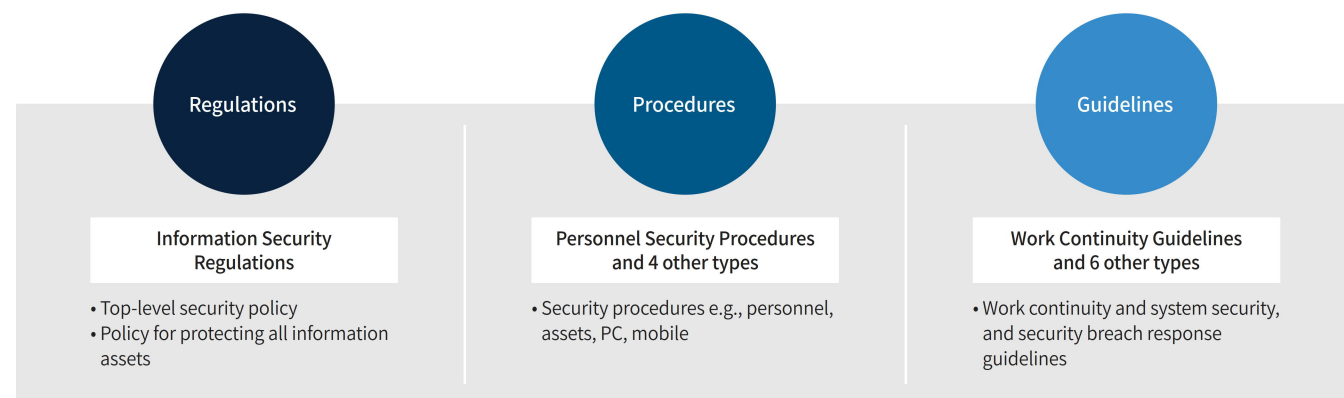
Information Security Policy and System

DL E&C is building a secure environment by establishing information security strategies in five areas: security awareness improvement, data breaches prevention, information leakage monitoring, security analysis and audit, and governance. In order to support the 7 major duties of the CISO (Chief Information Security Officer) under the Information and Communications Network Act, we organized a dedicated information security organization under the CISO, and build an organic collaboration system with individual departments throughout the company.



Information Security Policy

The DL E&C's information security policy consists of 1 type of regulation, 5 types of procedures, and 7 types of guidelines, which control information assets by blocking external threats and preventing internal security breaches while protecting the rights and interests of employees, and ultimately promote secure operation of the company. We protect information assets in accordance with detailed procedures and guidelines based on the "Information Security Regulations," the top-level security policy.



Privacy Protection

DL E&C is committed to preventing social loss caused by violations of privacy in compliance with the Personal Information Protection Act. Management plans for each level of security has been established while a company-wide security organization (CPO, Privacy Protection Manager, Privacy Team Leader, Privacy Officer) is managed. We provide annual employee privacy training and check whether the laws and internal regulations on privacy have been implemented. The application of technical protection measures on access control of personal information system, access record management, and data encryption against hacking are being strengthened. By preventing privacy violations through security management, no personal information breaches were committed in 2020 as we maintained a system for minimizing damages.

Protection of Information Assets

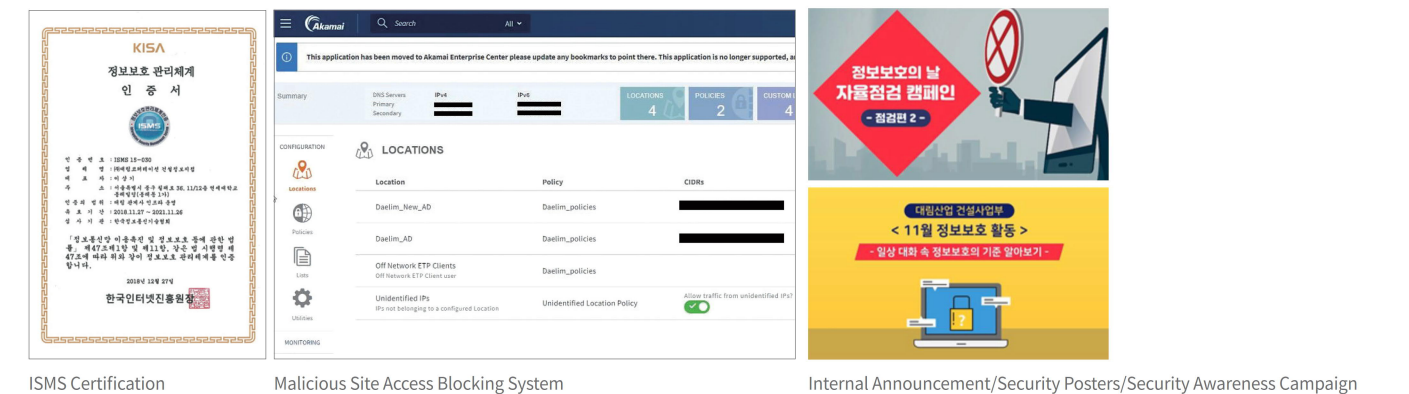
DL E&C is building a secure environment to protect the personal information, intellectual property rights, and trade secrets of the company. A system built in a specialized data center that has obtained ISMS certification has been established, and various systems are in place for secure management and protection of information assets, including document security solutions, monitoring to prevent security breaches, and organizing the HR Committee for violations.

Preemptive Response to Security Threats

DL E&C is committed to minimizing new security threats by preemptively responding to changes in the external environment. We analyzed issues related to the increase in telecommuting due to COVID-19 pandemic and established action plans, introducing a system to block access to malicious sites based on big data in line with the growing fourth industrial era trends. We also maintain a secure work environment for our employees through regular training against simulated spam and malware infection. In addition, we identify and respond to potential problems in advance through integrated log-based analysis.

Security Awareness Campaign

DL E&C is committed to raising employees' security awareness through regular training, announcement and security posters for improving the company-wide security performance. The last Wednesday of every month was designated as the "Information Security Day," and our employees organized data on their PCs to promote participation in information protection and a campaign for security. In order to raise security awareness as an organizational culture, various campaigns are carried out on a quarterly basis.



Risk Management

Risk management is an essential part of sustainability by identifying potential risk factors that have a significant impact on a company's business environment in response to uncertainties. DL Chemical explores new opportunities by efficiently identifying and dealing with risks through systematic risk management.

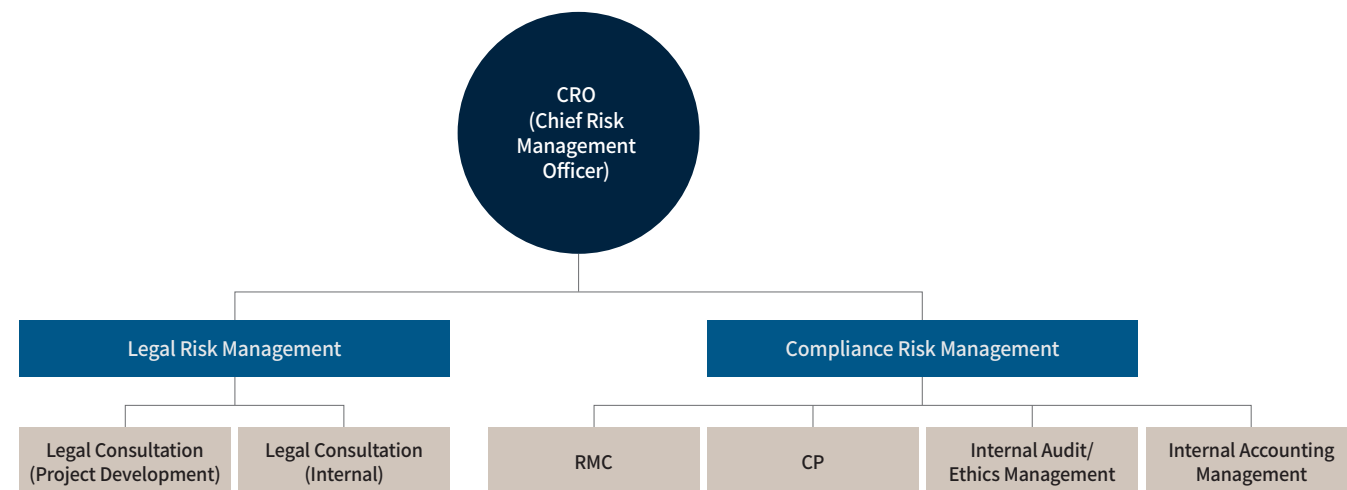
Risk Management System

DL Chemical introduced a risk management system to step up as a global petrochemical company. In order to effectively identify, assess, and respond to risks, the CRO (Chief Risk Management Officer) is in charge of company-wide risk management and classifies them into legal risks and compliance risks to ensure systematic and organic management.

Risk Management Organization

DL Chemical has an organization led by the CRO (Chief Risk Management Officer) that is in charge of legal risk and compliance risk. Legal Risk is managed by the Legal Risk Management Team, which consists solely of attorneys and reviews legal risks in advance or real time when carrying out a project that requires large investment. By doing so, we not only support optimal investment decision-making, but also provide legal advice on legal risks in business management, including plant operation, purchase, human resources, finance, and accounting.

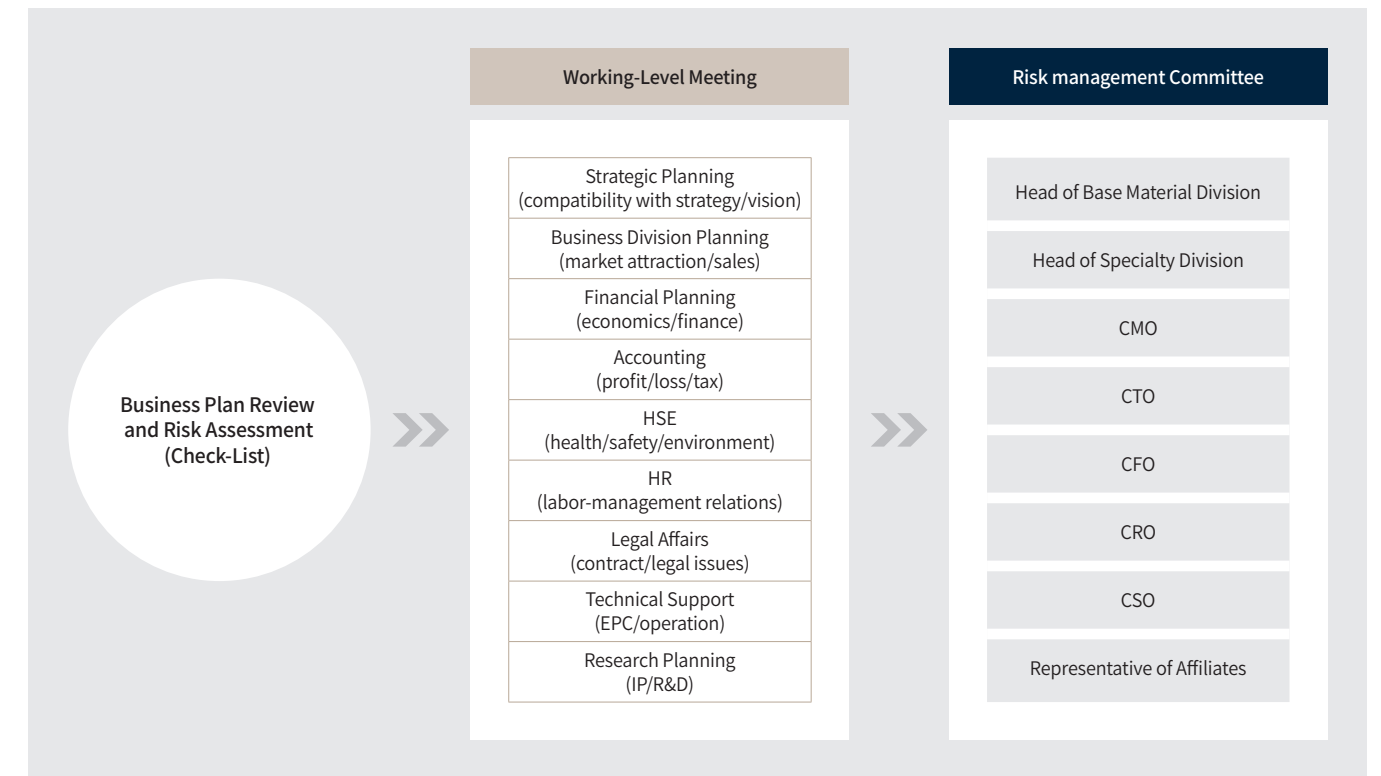
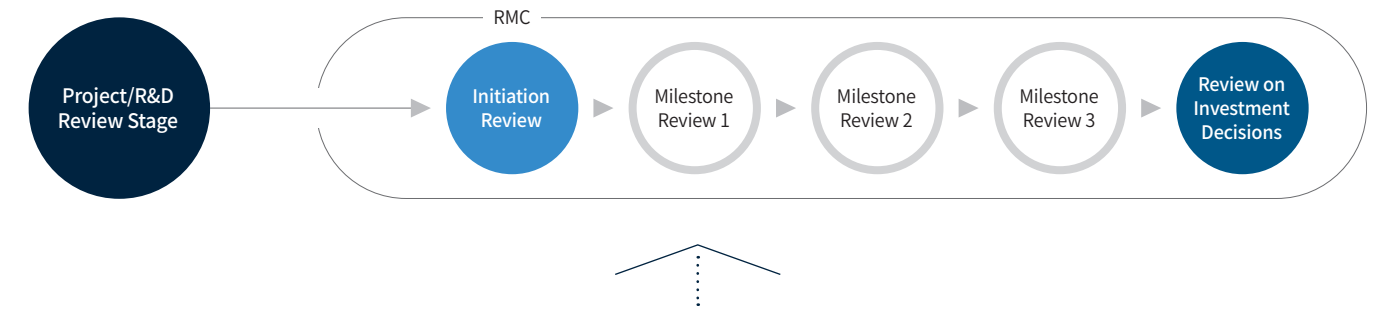
Meanwhile, compliance risk is managed by the Compliance Risk Management Team. When undertaking a project that requires large investment, we operate RMC (Risk Management Committee), an organization composed of 1st-tier executives who make decisions on whether to proceed with the project, based on a systematic analysis of the economic feasibility and factors affecting the business such as government policies, various systems and regulations, external political and economic environment. In addition, management and internal audits are performed to manage and supervise risks associated with the operation of DL Chemical and its subsidiaries and affiliates, and violations of laws and regulations. We are also operating the Fair Trade Compliance Program to prevent risks related to the Fair Trade Act and the Subcontracting Act. CP monitoring and training are conducted for our own employees, and an internal accounting management system is in place to manage accounting and financial risks.



Risk Management Activities

RMC (Risk Management Committee) Operation

DL Chemical's RMC is composed of 1st-tier executives to manage risks in projects that require large investment. We check possible risks through the RMC checklist and effectively respond to them by establishing and reviewing the regulations (initiation/milestone/final).



Internal Audit & Management Analysis of Subsidiaries/Affiliates

In order to identify and control risks in DL Chemical, its subsidiaries, and affiliates, we conduct internal audits and management analysis on a regular basis.

Appendix

04

Stakeholder Engagement

Materiality Test

ESG Data

Awards & Memberships

UN SDGs

SASB

TCFD

GRI Standards Index

Third-party Assurance Statement

GHG Assurance Statement

Stakeholder Engagement

Definition of Stakeholder

DL defines its stakeholders through media analysis, benchmarking and interviews with partners and employees and incorporates their input and feedback into its business operations through communication channels dedicated to each group.

DL Stakeholder Communication Channels

Customers	Shareholders & Investors	Partners
<ul style="list-style-type: none"> Website (Cyber Whistleblowing Center) e-Pyeonhan Sesang Customer Contact Center Customer Satisfaction Evaluation Homemakers Advisory Committee Online Community 	<ul style="list-style-type: none"> General Meeting of Shareholders DL Website (IR) Investor Relations DART (Data Analysis, Retrieval, and Transfer System) Business Report 	<ul style="list-style-type: none"> Shoulder-to-Shoulder Excellent Partner Award Partner Seminar Shared Growth Partner Communication
Employees	Local Communities	Public Sectors
<ul style="list-style-type: none"> Hansup Broadcasting Hansup Talk Talk Hansup Speech Forum Hansup Council Hansup Clubs Grievance-Handling Forum 	<ul style="list-style-type: none"> Website CSR Programs (Sharing Happiness/Culture/Love/Hope/Nature) Charity Bazaar & Affiliation 	<ul style="list-style-type: none"> Industry Conference Legal Hearing Construction Councils (Construction Association of Korea, Korea Federation of Construction Contractors, etc.) Government Projects/Conferences

Key Issues and Expectation by Stakeholder Group

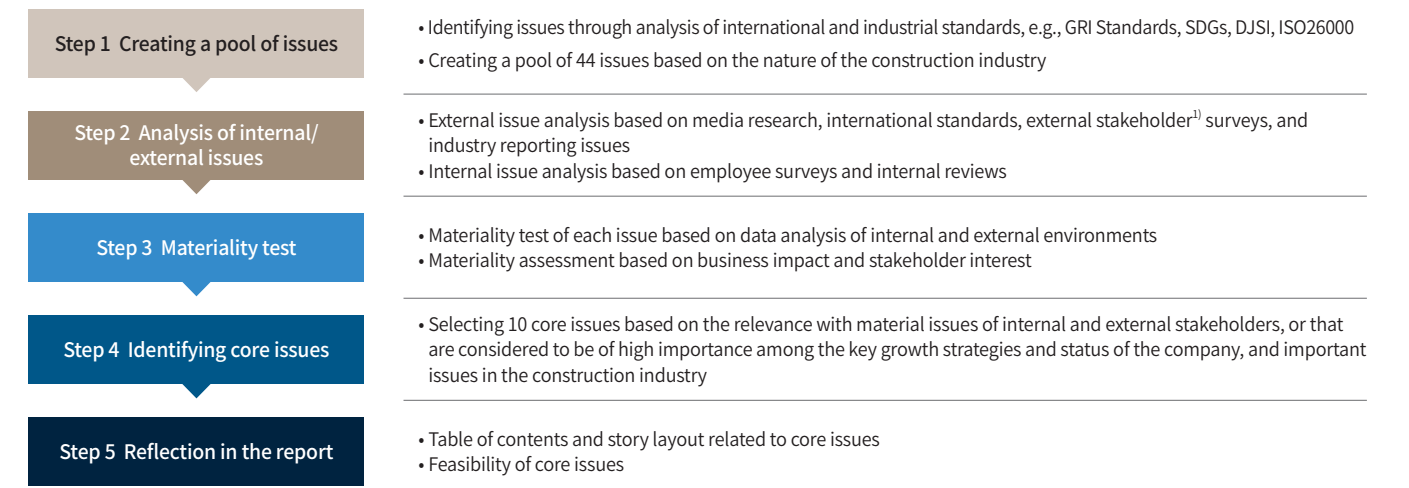
DL conducts surveys to reflect the interests of stakeholders in management and has selected the following issues for the survey. The activities corresponding to each issue are incorporated into business operations.

Category	Economic Aspect	Environmental Aspect	Social Aspect
Customers	<ul style="list-style-type: none"> Quality products/services Customer satisfaction management 	<ul style="list-style-type: none"> Eco-friendly technology development and delivery of products 	<ul style="list-style-type: none"> Customer satisfaction activities Quality management
Shareholders & Investors	<ul style="list-style-type: none"> Capital & investment Distribution of business performance 	<ul style="list-style-type: none"> Eco-friendly technology development Operation of green business 	<ul style="list-style-type: none"> Ethical management Technical innovation
Partners	<ul style="list-style-type: none"> Shared growth 	<ul style="list-style-type: none"> Green purchase, green procurement 	<ul style="list-style-type: none"> Win-win management
Employees	<ul style="list-style-type: none"> Wage and compensation Increase in productivity 	<ul style="list-style-type: none"> Practice of Green Habit New technology/patent registration and award 	<ul style="list-style-type: none"> HR development Welfare and benefits Zero disasters
Local Communities	<ul style="list-style-type: none"> Donation 	<ul style="list-style-type: none"> Eco-friendly construction, biodiversity Engagement in local environmental preservation 	<ul style="list-style-type: none"> CSR activities
Public Sectors	<ul style="list-style-type: none"> Tax payment 	<ul style="list-style-type: none"> Compliance with environmental laws 	<ul style="list-style-type: none"> CP (Compliance Program) activities

Materiality Test

DL conducted a materiality test to identify the factors that have a significant impact on its sustainability and focus on them. Based on the benchmarking of the industry's reporting issues, media analysis, international standard analysis, and stakeholder surveys, we created a pool of material issues. We also assessed their materiality in terms of impact on business and stakeholders' interests to be based on the key issues of sustainability management required by international standards and the topics reported in the media and industry

Materiality Test Process



1) Employees of project developers, head and members of union, investment companies, partners, etc.

Results of Materiality Test

Based on the sustainability analysis of the internal/external environment, we created a pool of 44 sustainability issues. The materiality test is conducted according to two criteria: relevance to business and stakeholders' interest. In consideration of the test results, we selected ten core issues as reporting topics, and confirmed that there is a growing interest in environmental areas including waste management and energy saving.



ESG Data | Economic Performance

Consolidated Financial Statements

(Unit : KRW)

Classification	2018	2019	2020
Assets			
I. Current Assets	6,366,648,560,495	6,739,682,949,664	9,327,817,394,762
Cash and cash equivalents	2,134,502,269,006	2,559,152,679,308	1,134,780,682,945
Short-term financial instruments	372,598,214,324	172,448,545,939	38,840,189,954
Trade receivables and other accounts receivable	1,808,822,122,734	1,333,415,713,904	247,341,005,802
Contract assets	727,583,730,678	1,094,475,375,875	3,873,438,720
Income taxes receivable	10,825,012,049	15,695,664,192	688,404,040
Inventories	998,864,024,596	1,120,088,813,774	145,507,032,654
Financial assets at FVPL	12,508,592,544	74,226,352,632	2,353,089,213
Financial assets at FVOCI	593,014,400	855,400,923	
Derivative assets	950,719,032	23,689,679	
Other current assets	272,506,117,779	364,825,799,356	19,277,294,299
Non-current assets held for sale	26,894,743,353	4,474,914,082	12,639,207,168
Assets to be distributed by owners			7,722,517,049,967
II. Non-current Assets	6,467,068,171,071	6,705,541,228,108	4,574,042,445,493
Long-term financial instruments	24,260,948,595	20,862,123,140	18,424,790,700
Long-term trade receivables and other accounts receivable	1,286,390,477,476	1,405,320,547,977	25,349,718,514
Shares of associates and joint ventures	1,147,359,508,746	1,337,574,105,369	1,350,066,647,010
Investments in associates and joint ventures	214,977,212,844	195,336,936,414	57,481,839,398
Financial assets at FVPL	52,913,209,125	61,250,177,496	45,016,337,152
Tangible Assets	2,070,162,249,991	2,017,340,959,317	1,457,813,307,191
Investment property	1,149,537,069,277	969,633,011,331	1,085,270,583,150
Intangible Assets	51,707,208,330	66,257,904,353	477,442,123,600
Right-of-use assets		82,281,579,618	33,927,057,550
Derivative assets	31,661,745	315,880,135	
Deferred tax assets	435,259,225,483	527,620,590,375	22,596,004,270
Other non-current assets	34,469,399,459	21,747,412,583	654,036,958
Total Assets	12,833,716,731,566	13,445,224,177,772	13,901,859,840,255

* For a list of consolidated subsidiaries, please refer to DL Co., Ltd. April 5, 2021 (Revised) Business Report p.7-8

(Unit : KRW)

Classification	2018	2019	2020
Liabilities			
I. Current Liabilities	4,530,043,097,731	4,271,441,266,973	8,367,655,725,684
Trade payables and other accounts payable	1,650,573,484,350	1,700,601,474,919	4,098,407,123,578
Contract liabilities	1,346,288,152,862	1,105,327,661,148	
Short-term borrowings and current portion of long-term liabilities	813,782,755,661	637,522,226,299	298,366,575,904
Lease liabilities		57,486,367,551	7,171,862,917
Income taxes payable	126,971,727,233	172,182,031,878	35,789,190,272
Other current provisions	370,926,317,292	307,926,663,424	13,762,972,966
Financial guarantee contract liabilities	25,985,987,578	72,172,368,679	9,428,649,774
Provision for construction warranties	23,166,756,590	32,625,457,294	
Derivative liabilities	1,287,407,087	4,789,341,475	637,721,818
Other current liabilities	171,060,509,078	180,807,674,306	43,065,695,363
Liabilities to be distributed by owners			3,861,025,933,092
II. Non-current Liabilities	2,253,429,532,203	2,437,076,101,329	2,322,880,194,159
Long-term trade payables and other accounts payable	54,168,947,318	30,343,181,812	37,448,287,715
Borrowings and debentures	1,845,592,988,246	1,949,060,039,606	2,043,386,563,713
Lease liabilities		72,560,105,554	34,519,500,883
Net defined benefit liabilities	31,200,200,521	47,102,130,677	4,283,366,172
Provision for construction warranties	151,482,988,194	176,595,360,398	
Other non-current provisions	38,304,671,587	2,030,231,090	87,784,712
Financial guarantee contract liabilities	3,843,355,361		
Deferred tax liabilities	112,391,788,129	146,490,644,457	201,165,517,672
Other non-current liabilities	16,444,592,847	12,894,407,735	1,989,173,292
Total Liabilities	6,783,472,629,934	6,708,517,368,302	10,690,535,919,843
Equity			
I. Equity Attributable to Owners of the Company	5,390,033,587,387	5,937,264,399,032	2,593,061,789,508
Capital stock	218,500,000,000	218,500,000,000	218,500,000,000
Other paid-in capital	538,858,177,086	538,429,692,928	-3,228,276,670,809
Retained earnings	4,792,991,457,618	5,329,942,337,341	5,771,434,429,011
Accumulated other comprehensive income	-160,316,047,317	-149,607,631,237	-168,595,968,694
II. Non-controlling Interests	660,210,514,245	799,442,410,438	618,262,130,904
Total Equity	6,050,244,101,632	6,736,706,809,470	3,211,323,920,412
Total Liabilities and Equity	12,833,716,731,566	13,445,224,177,772	13,901,859,840,255

ESG Data | Economic Performance

Consolidated Statements of Income

(Unit : KRW)

Classification	2018	2019	2020
I. Sales	10,984,485,292,300	1,660,433,291,503	1,566,148,811,684
II. Cost of Sales	9,564,323,684,890	1,400,618,363,390	1,251,799,225,891
III. Gross Profit	1,420,161,607,410	259,814,928,113	314,349,585,793
Selling and administrative expenses	574,803,461,695	123,829,140,896	195,299,820,114
IV. Operating Income	845,358,145,715	135,985,787,217	119,049,765,679
Other income	103,239,470,253	31,417,850,980	67,288,668,896
Other expense	278,071,603,473	50,121,670,576	177,155,622,704
Financial income	112,355,688,538	21,337,263,251	28,780,523,389
Financial expense	148,668,542,454	59,952,904,072	78,038,068,026
Share of profits of associates and joint ventures	260,227,539,688	190,637,657,491	84,487,200,134
V. Income before Income Tax Expense	894,440,698,267	269,303,984,291	44,412,467,368
Income tax expense	216,351,924,323	28,654,789,099	23,363,158,967
VI. Net Income	678,088,773,944	710,307,661,773	572,657,162,958
VII. Net Income Attributable To			
Owners of the Group	646,382,676,429	664,994,699,070	504,976,143,095
Non-controlling Interests	31,706,097,515	45,312,962,703	67,681,019,863
VIII. Net Earnings per Share			
Basic and diluted earnings per share of common stock	16,741	5,802	161
Basic and diluted earnings per share of preferred stock	16,791	5,852	211

Orders Received

Classification	Unit	2018	2019	2020	
Orders	New Orders (Total)	KRW 100M	76,825	63,551	101,210
	Order Balance (Total)	KRW 100M	209,220	212,992	219,063
Orders_Plant	New Orders	KRW 100M	14,201	13,216	3,258
	Order Balance	KRW 100M	18,349	22,005	10,606
Orders_Civil	New Orders	KRW 100M	11,597	14,610	15,183
	Order Balance	KRW 100M	42,690	50,912	45,950
Orders_Housing	New Orders	KRW 100M	51,027	35,725	82,769
	Order Balance	KRW 100M	148,181	140,076	162,507

Sales

Classification	Unit	2018	2019	2020
Total Sales	KRW million	10,984,485	9,700,079	10,269,983
Plant Sector	KRW million	1,275,596	965,026	1,602,594
Civil Sector	KRW million	1,583,983	1,645,154	1,459,511
Housing Sector	KRW million	6,394,884	5,381,292	5,675,042
Petrochemical Sector	KRW million	1,203,315	1,115,058	839,321
Other Sectors	KRW million	526,707	593,549	693,515
New Orders	KRW 100M	51,027	35,725	82,769
Order Balance	KRW 100M	148,181	140,076	162,507

R&D Performance

Classification	Unit	2018	2019	2020	
R&D Investment ¹⁾	KRW million	347.5	343.2	704.0	
No. of R&D Staff ²⁾	Person	59	63	66	
R&D Performance	R&D Projects	Project	40	39	33
	Industrial Properties ³⁾	Property	28	27	21
	Dissertations	Dissertation	17	20	14
	Awards	Award	0	0	0

1) R&D Center

2) As of the end of the year

3) Based on registration in the year

Contribution to Technical Support

Unit	2018	2019	2020
KRW 100M	20.2	14.8	11.2

External Awards Won by R&D Center

Unit	2018	2019	2020
No. of Awards	4	3	2

ESG Data | Economic Performance

Sales

	Classification	Unit	2018	2019	2020
Sales by Sector	Total Sales	KRW million	10,984,485	9,700,079	10,269,983
	Petrochemical Sector	KRW million	1,203,315	1,115,058	839,321
	Other Sectors	KRW million	0	0	0

* 2018 to 2020 data is the same as DL E&C data before DL Chemical spin-off

R&D

	Classification	Unit	2018	2019	2020
R&D Investment ¹⁾		KRW million	19,197	15,643	13,307.4
R&D Personnel ²⁾		Person	59	63	62
R&D Performance	Research Projects	Project	40	39	30
	Industrial Property Rights ³⁾	Rights	7	52	41

1) R&D Sector

2) As of the end of the year

3) As of the date of registration

ESG Data | Environmental Performance

Eco-friendly Purchase

	Classification	Unit	2018	2019	2020
Green Purchase ¹⁾	Green Product Purchase ²⁾	KRW million	60,365	74,209	43,914
	Raw Materials Purchase	KRW million	255,729	215,597	141,732
	Rate of Green Product Purchase	%	23.6	34.4	31.0

1) The 2018 and 2019 values were updated based on the estimation criteria.

2) Eco-label Certification/Healthy Building Material Certification /Good Recycled Mark, recycled aggregate, and renewable energy facilities

Sales in the Eco-friendly Sector

	Classification	Unit	2018	2019	2020
Eco-friendly Design & Product Sales	Eco-friendly Design & Product Sales ¹⁾	KRW million	4,412,556	2,521,529	2,334,808
	Total Sales of Domestic E&C Projects	KRW million	9,703,248	4,926,057	4,577,212
	Rate of Eco-friendly Design & Product Sales	%	45.5	51.2	51.0

1) Eco-friendly transportation, environmental business, eco-friendly energy business, and eco-friendly certified buildings

Violations of Environmental Laws

	Classification	Unit	2018	2019	2020
Total Fine		KRW	0	0	0
No. of Claims		Claim	0	0	0
No. of Non-financial Sanctions		Sanction	0	0	0

GHG Emissions

	Classification	Unit	2018	2019	2020
Total Emissions		tCO₂eq	250,663	219,133	237,845
Domestic		tCO ₂ eq	250,663	201,848	198,864
Overseas		tCO ₂ eq	-	17,285	38,981
Scope 1		tCO₂eq	16,812	15,602	25,644
Domestic		tCO ₂ eq	16,812	8,428	15,247
Overseas		tCO ₂ eq	-	7,174	10,397
Scope 2		tCO₂eq	65,091	41,554	37,203
Domestic		tCO ₂ eq	65,091	39,007	36,033
Overseas		tCO ₂ eq	-	2,547	1,170
Scope 3		tCO₂eq	163,472	149,746	174,998
Domestic	Partners' equipment, etc.	tCO ₂ eq	154,957	142,618	140,423
	Employee commuting	tCO ₂ eq	8,515	7,128	7,161
Overseas	Partners' equipment	tCO ₂ eq	-	7,564	27,414
Emission Intensity (Domestic)		tCO₂eq/KRW 100M	2.282	2.081	1.936

* The overseas emissions were not estimated in 2018.

ESG Data | Environmental Performance

Energy Consumption

Classification	Unit	2018	2019	2020
Total Energy Consumption	TJ	3,967.8	3,383.6	3,642.4
Domestic	TJ	3,967.8	3,121.8	3,076.8
Overseas	TJ	0.0	261.8	565.5
Power	TJ	1,247.7	831.7	746.1
Domestic	TJ	1,247.7	779.2	721.9
Overseas	TJ	0.0	52.4	24.1
Fuel	TJ	2,585.1	2,516.4	2,880.1
Domestic	TJ	2,585.1	2,307	2,338.4
Overseas	TJ	0.0	209.4	541.4
Others (steam, brown coal)	TJ	134.9	35.57	16.2
Domestic	TJ	134.9	35.57	16.2
Overseas	TJ	0.0	0.0	0.0
Energy Intensity (Domestic)	TJ/KRW 100M	0.036	0.032	0.030

Water Consumption

Classification	Unit	2018	2019	2020
Total Consumption	Ton	2,183,217	1,234,385	1,044,183
Waterworks	Ton	1,030,272	546,655	376,209
Underground Water	Ton	256,075	171,813	58,013
River Water	Ton	896,870	515,917	609,961
Recycled Water	Ton	357,427	249,592	419,780
Intensity (against Sales)	Ton/KRW 100M	32.5	31.5	28.7
Rate of Recycled Water Consumption	%	16.4	20.2	40.2

Critical Hazardous Chemical Leaks

Classification	Unit	2018	2019	2020
No. of Incidents	Case	0	0	0
Amount of Leak	Ton	0	0	0

Waste Production

Classification	Unit	2018	2019	2020
Total amount of Waste (Domestic)	Ton	913,934	1,078,066	340,226
Recycled	Ton	910,580	1,077,502	339,642
Landfill	Ton	1,422	60	126
Incineration	Ton	1,932	504	458
Recycling Rate	%	99.6	99.9	99.8

Expense & Investment for Environmental Protection

Classification	Unit	2018	2019	2020	
Environmental Protection Expense/Investment	Total Expense/Investment for Environmental Protection ¹⁾	KRW million	9.93	10.82	-
	Environmental Investment (Environmental R&D) ²⁾	KRW million	2,430	2,403	2,918
	Environmental Expense ³⁾	KRW million	18	24	22
	Total	KRW million	2,457	2,438	2,939
Environmental Training (Head Office)	Training Hours	Hour	3,567	3,554	1,956
	No. of Training Participants	Person	2,929	2,430	1,677
	Training Hours per Person	Hour/Person	1.22	1.46	1.17
Environmental Training (Worksite)	Training Hours	Hour	85,114	74,233	45,780
	No. of Training Participants	Person	6,881	6,177	2,740
	No. of Training Participants (Partners)	Person	78,671	45,127	19,337
	Total	Person	85,552	51,304	22,077
	Training Hours per Person	Hour/Person	0.99	1.45	2.07

1) Sharing Cleanliness (not conducted due to COVID-19 pandemic in 2020)

2) Environmental R&D, Labor Cost

3) Certification Cost (ISO, GHG)

Environmental Management Performance & Data

Indicators	2020 Target	Long-term Target (-2030)
Reduction of GHG emissions intensity	30% reduction in GHG emissions compared to the base year	40% reduction in GHG emissions compared to the base year
Increase in waste recycling rate	96% waste recycling rate	99% waste recycling rate
Increase in water recycling rate	22% water recycling rate	50% water recycling rate
Increase in green product purchase rate	28% green product purchase rate	40% green product purchase rate

* GHG emissions base year : 2017

ESG Data | Environmental Performance

Violations of Environmental Laws

Classification	Unit	2018	2019	2020
Total Fine	KRW	0	0	0
No. of Claims	Claim	0	0	0
No. of Non-financial Sanctions	Sanction	0	0	0

GHG Emissions

Classification	Unit	2018	2019	2020
Total Emissions	tCO ₂ eq	217,587	228,772	170,714
Emission Intensity	tCO ₂ eq/KRW million	0.18	0.21	0.20
Scope 1	tCO ₂ eq	6,834	11,400	5,538
Scope 2	tCO ₂ eq	210,753	217,371	165,176
GHG Emission Reduction	Case	4	5	7

* Total emissions based on round off at decimal point by emission facility, Scope 1 data (2019) updated

Energy Consumption

Classification	Unit	2018	2019	2020
Total Energy Consumption	TJ	4,243	4,340	3,240
Scope 1	TJ	130	111	105
Scope 2	TJ	4,113	4,229	3,132
Energy Intensity	TJ/KRW million	0.0035	0.0039	0.0039

* The previous data (2018-2019) have been updated due to recalculation.

Water Consumption

Classification	Unit	2018	2019	2020
Water Consumption	Ton	1,314,341	1,349,399	976,780

* The previous data (2018-2019) have been updated due to recalculation.

Wastewater Discharge

Classification	Unit	2018	2019	2020
Wastewater Discharge	Ton	246,710	221,525	143,364

Critical Hazardous Chemical Leaks

Classification	Unit	2018	2019	2020
No. of Incidents	Case	0	0	0

Waste

Classification	Unit	2018	2019	2020
Waste Produced (Amount, Domestic)	Ton	7,487	6,590	5,162
General Waste	Ton	6,842	5,955	4,654
Designated Waste	Ton	644	635	508
Recycled Waste	Ton	4,206	3,306	2,027
Recycling Rate	%	56	50	39

* The previous data (2018 - 2019) have been updated due to recalculation.

Air Pollutant Emissions

Classification	Unit	2018	2019	2020
NOx Emissions	Ton	0.000	0.006	0.054
SOx Emissions	Ton	0.007	0.000	0.000
Dust Emissions	Ton	0.519	0.361	0.361

Water Pollutant Concentration

Classification	Unit	2018	2019	2020	
BOD	HDPE	ppm	11.53	7.70	2.70
	LHDPE,PB,C4	ppm	23.63	31.90	19.50
COD	HDPE	ppm	45.33	35.00	37.20
	LHDPE,PB,C4	ppm	74.53	92.90	109.50
SS	HDPE	ppm	14.18	8.60	10.20
	LHDPE,PB,C4	ppm	31.53	48.00	59.50
T-N	HDPE	ppm	11.98	8.80	10.60
	LHDPE,PB,C4	ppm	40.92	63.00	52.44
T-P	HDPE	ppm	0.85	0.12	0.40
	LHDPE,PB,C4	ppm	0.57	1.69	0.63
n-hexane	HDPE	ppm	0.60	0.56	0.35
	LHDPE,PB,C4	ppm	0.90	0.70	0.58
Phenol	HDPE	ppm	0.06	0.03	0.00
	LHDPE,PB,C4	ppm	0.05	0.04	0.00

ESG Data | Environmental Performance

Use of Hazardous Chemicals

Classification	Unit	2018	2019	2020
Use of Hazardous Chemicals	Ton	189,299	190,420	163,416

Pollutant Release and Transfer Registers (PRTR)

Classification	Unit	2018	2019	2020
Butene-2	Ton	440	631	347
Butene-1	Ton	401	286	241
Butane	Ton	443	517	241
Aluminum	Ton	34	24	16
Others	Ton	40	93	41

Environmental Protection Expenditure & Investment

Classification	Unit	2018	2019	2020	
Environmental Protection Expenditure/ Investment	Total Expenditure/ Investment for Environmental Protection	KRW million	1,333	1,281	1,235
	Environmental Investment	KRW million	748	425	470
	Environmental Expense	KRW million	585	856	765
Environmental Training	Training Hours	Hour	4,496	1,268	4,308
	No. of Training Participants	Person	347	158	322

* The previous data (2018 - 2019) have been updated due to recalculation.

Air Pollutant Emissions at Four Sites of DL Chemical

Site	Type	Pollutant	Prevention Facilities	Legal Limit	Emission Concentration	Remarks
HDPE	Type 1 (Special)	Dust	Dust Collector, Centrifugal Force Dust Collector	30mg/Sm ³	10mg/Sm ³ or less	Exemption of base charge for emissions less than 30%
LHDPE	Type 3 (Special)	Dust	Dust Collector, Centrifugal Force Dust Collector			
PB	Type 5	Hydrocarbon	Direct Combustion Facility (YNCC 1 Site)	No emissions of air pollutant through flare stack		
C4	Type 5	Hydrocarbon	Direct Combustion Facility			

ESG Data | Social Performance

Employee Data

Classification	Unit	2018	2019	2020		
New Recruitment	New Recruitment by Gender	Male	Person	199	131	53
		Female	Person	16	26	18
Socially Vulnerable Population Employment	Employment of People with Disabilities	No. of Persons	Person	61	45	45
		Percentage	%	0.94	0.76	0.82
	Female Employment	No. of Persons	Person	893	803	738
		Percentage	%	13.74	13.50	13.44
Employment of Veterans	No. of Persons	Person	99	121	102	
	Percentage	%	1.52	2.03	1.86	
Region	Domestic	Person	6,175	5,647	5,282	
	South Korea	Person	6,134	5,604	5,237	
	New Zealand	Person	1	1	1	
	Russian Federation	Person	16	13	16	
	Malaysia	Person	2	2	1	
	Mongolia	Person	1	1	1	
	Myanmar	Person	1	7	12	
	USA	Person	2	2	3	
	Vietnam	Person	-	-	2	
	Uzbekistan	Person	2	2	2	
	UK	Person	2	1	-	
	Ukraine	Person	-	-	1	
	Japan	Person	-	1	1	
	Ethiopia	Person	1	-	-	
	Islamic Republic of Iran	Person	2	-	-	
	China	Person	3	4	1	
	Kazakhstan	Person	1	-	-	
	Cambodia	Person	5	4	1	
	Canada	Person	-	1	1	
Turkey	Person	1	-	-		
France	Person	1	1	1		
Philippines	Person	-	3	1		
Overseas	Person	324	299	208		
South Korea	Person	322	299	208		
Russian Federation	Person	1	-	-		
Canada	Person	1	-	-		

* Labor Union : established in 2020

ESG Data | Social Performance

Diversity in Workplace

Classification		Unit	2018	2019	2020
Male		Person	5,606	5,143	4,752
- 30		Person	143	198	222
30-50		Person	3,788	3,556	3,378
50+		Person	1,675	1,389	1,152
Female		Person	893	803	738
- 30		Person	93	109	114
30-50		Person	522	462	428
50+		Person	278	232	196
Elderly		Person	396	332	290
Foreigner		Person	45	41	41
Disabled		Person	61	45	45
Race	Asian	Person	6,486	5,935	5,480
	Black or African American	Person	1	-	-
	White	Person	7	6	7
	Indigenous or Native	Person	5	5	3
	Other	Person	-	-	-
Employment Status	Total	Person	6,499	5,946	5,490
	Executives	Person	112	88	91
	Permanent Position	Person	3,738	3,551	3,308
	Temporary Position	Person	2,649	2,307	2,091
	Others	Person	-	-	-

Turnover (Retirement) Data

Classification		Unit	2018	2019	2020
	Voluntary Turnover	%	12.47	16.95	12.06
	Turnover from Permanent Positions	%	28.40	34.63	18.69
Turnovers (Retirees) ¹⁾	Total No. of Turnovers	Person	99	131	112
	Total No. of Retirees	Person	794	773	929
	Voluntary Retirement	Person	0	142	231
	Retirement by Age Limit	Person	0	11	10
	Involuntary Retirement (e.g., Dismissal, Disciplinary Action)	Person	97	18	22
	Others (Personal Reason, Parental Care, Education, Employed by Other Companies)	Person	697	602	666
Gender	Male	Person	769	714	869
	Female	Person	25	59	60
Age	-30	Person	19	22	52
	30-50	Person	472	554	560
	50+	Person	303	197	317

1) Permanent Positions

Managerial Positions

Classification		Unit	2018	2019	2020
Female Managers	Total No. of Female Managers (Manager or Higher Position)	Person	80	87	115
	Female Executives	Person	3	4	8
Total	Total No. of Positions (Manager or Higher Position)	Person	2,115	2,133	2,220
	Total No. of Executives	Person	469	441	423

Maternity Leave

Classification		Unit	2018	2019	2020
No. of Employees on Maternity Leave	Total	Person	158	190	141
	Male	Person	144	167	130
	Female	Person	14	23	11
No. of Employees Returning After Maternity Leave	Total	Person	158	190	140
	Male	Person	144	167	130
	Female	Person	14	23	10
Return Rate (No. of Employees Returning/on Leave)	Total	%	100	100	99
	Male	%	100	100	100
	Female	%	100	100	91

Parental Leave (Permanent Positions)

Classification		Unit	2018	2019	2020
No. of Employees on Parental Leave	Total	Person	396	63	68
	Male	Person	382	43	42
	Female	Person	14	20	26
No. of Employees Returning After Parental Leave	Total	Person	389	60	61
	Male	Person	373	40	38
	Female	Person	14	20	23
Average Days of Leave	Day		53	111	259
Return Rate (No. of Employees Returning/on Leave)	Total	%	98	95	90
	Male	%	98	93	90
	Female	%	100	100	88
No. of Employees Working for More than 12 Months After Parental Leave	Total	Person	333	59	46
	Male	Person	320	39	35
	Female	Person	13	20	11
Return Rate (Worked More than 12 Months/ No. of Employees Returning)	Total	%	84	94	82
	Male	%	84	91	83
	Female	%	93	100	79

ESG Data | Social Performance

Ethical Management

Classification		Unit	2018	2019	2020
Offline Compliance Training	No. of Offline Training Participants	Person	3,132	2,388	164
	No. of Online Training Participants	Person	-	-	2,384
Violation of Fair Trade	No. of Violations	Case	1	2	0
	Penalty	KRW million	9	1,138	0

Shared Growth

Classification		Unit	2018	2019	2020	
Partners	Total No. of Partners	Company	3,785	3,321	2,897	
	Total Purchase	KRW 100M	52,357	46,098	32,761	
Major Partners	No. of Major Partners	Company	1,881	1,349	1,950	
	Purchase from Major Partners	Total	KRW 100M	42,034	37,547	27,801
		Percentage	%	80.3	81.5	84.9
Shared Growth Fund & Loan (Loan/Fund Raised)		KRW 100M	248/500	257/500	256/500	
Direct Fund Support and Executed (Executed/Fund)		KRW 100M	490/500	495/500	497/500	
Partner Training	Job Training	Person	188	97	203	
	Safety Training	Person	84	617	89	
No. of Partners Invited to Shared Growth Seminar		Company	45	300	118	
Partner Operation Type	No. of Restrictions	Case	14	9	7	

Site Inspection for Risk Management

Unit	2018	2019	2020
No. of Inspections	2,847	3,693	4,156

Industrial Disasters

Classification		Unit	2018	2019	2020
LTIR (Lost-time Injury Rate, Domestic)		%	0.55	Not Estimated ¹⁾	Not Estimated ¹⁾
No. of Deaths per 10,000 (Domestic)		‰	0.55	0.87	0.40
No. of Full Time Employees		Person	41,413	27,749	35,938
No. of Victims	Domestic	Person	235	144	160
	Overseas	Person	5	4	0
LTIR (Lost Time injury Rate)	Overseas	Case (per 200K hours)	0.029	0.038	0.0000
LTIR (Lost Time injury Rate)	Domestic/Overseas	Case (per 200K hours)	0.2848	0.2591	0.2256

1) Change in industrial accident indicators reflected in the preliminary review (PQ) for tender : (Before) LTIR → (After) No. of Deaths per 10,000

Safety Training

Classification		Unit	2018	2019	2020
No. of Participants		Person	1,619	3,711	724
Training Hours		Hour	18,176	51,497	3,979
Domestic	Partner Cooperation Safety Program	Company	18 (Partner Safety Point System)	142 (Partner CEO Seminar)	67 (Partner CEO Seminar & Safety Experience Training)
				16 (Partner Safety Management Performance Sharing System)	23 (Partner Safety Management Performance Sharing System)

ESG Data | Social Performance

Employee Data

Classification		Unit	2018	2019	2020	
New Recruitment	Gender	Male	Person	224	235	81
		Female	Person	14	12	21
Socially Vulnerable Population Employment	Disabled	No. of Persons	Person	7	7	6
		Percentage	%	1.07	1.00	1.05
	Female	No. of Persons	Person	43	42	42
		Percentage	%	6.54	6.01	7.36
	Veteran	No. of Persons	Person	14	15	15
		Percentage	%	2.13	2.15	2.63
Region	Domestic	Total	Person	650	692	571
	Indonesia		Person	0	1	1
	South Korea		Person	650	691	570
	Overseas		Person	7	7	0
	South Korea		Person	7	7	0

Diversity in Workplace

Classification		Unit	2018	2019	2020
Male		Person	614	657	529
-30		Person	78	98	71
30-50		Person	363	364	265
50+		Person	173	195	193
Female		Person	43	42	42
-30		Person	20	16	15
30-50		Person	23	26	27
50+		Person	0	0	0
Elderly		Person	65	84	97
Foreigner		Person	0	1	1
Disabled		Person	7	7	6
Race	Asian	Person	657	699	571
	Black or African American	Person	0	0	0
	White	Person	0	0	0
	Indigenous or Native	Person	0	0	0
	Other	Person	0	0	0
Total		Person	657	699	571
Employment Status	Executives	Person	15	18	19
	Permanent Position	Person	593	646	515
	Temporary Position	Person	49	35	37
	Others	Person	27	30	20

Managerial Positions

Classification		Unit	2018	2019	2020
Female Managers	Total No. of Female Managers (Manager or Higher Position)	Person	8	10	13
	Female Executives	Person	0	0	0
Total	Total No. of Positions (Manager or Higher Position)	Person	171	192	191
	Total No. of Executives	Person	15	18	19

Turnover (Retirement) Data

Classification		Unit	2018	2019	2020
Voluntary Turnover		%	2.89	4.43	3.33
Turnover from Permanent Positions		%	2.70	5.42	2.33
Total No. of Turnovers		Person	208	207	221
Total No. of Retirees		Person	16	33	26
Turnovers (Retirees) ¹⁾	Voluntary Retirement	Person	0	0	0
	Retirement by Age Limit	Person	1	3	6
	Involuntary Retirement (e.g., Dismissal, Disciplinary Action)	Person	0	0	1
	Others (Personal Reason, Parental Care, Education, Employed by Other Companies)	Person	15	30	19
	Gender	Male	Person	195	196
	Female	Person	13	11	23
Age	-30	Person	24	21	34
	30-50	Person	19	28	104
	50+	Person	165	158	83

1) Permanent Positions

ESG Data | Social Performance

DL Chemical Employees Subject to Performance Evaluation and Career Development Review

Classification		Unit	2018	2019	2020
Employees Subject to Performance Evaluation	Permanent Positions	Person	237	235	231
	Temporary Positions	Person	-	-	-
	Others	Person	-	-	-
Employees Evaluated	Permanent Positions	Person	237	235	231
	Temporary Positions	Person	-	-	-
	Others	Person	-	-	-
Percentage of Employees Evaluated	Permanent Positions	%	100.0	100.0	100.0
	Temporary Positions	%	0.0	0.0	0.0
	Others	%	0.0	0.0	0.0

Maternity Leave

Classification		Unit	2018	2019	2020
No. of Employees on Maternity Leave	Total	Person	22	20	9
	Male	Person	21	19	9
	Female	Person	1	1	-
No. of Employees Returning After Maternity Leave	Total	Person	22	19	9
	Male	Person	21	19	9
	Female	Person	1	0	-
Return Rate (No. of Employees Returning/on Leave)	Total	%	100	95	100
	Male	%	100	100	100
	Female	%	100	0	-

Parental Leave (Permanent Positions)

Classification		Unit	2018	2019	2020
No. of Employees on Parental Leave	Total	Person	1	1	-
	Male	Person	-	1	-
	Female	Person	1	-	-
No. of Employees Returning After Parental Leave	Total	Person	1	1	-
	Male	Person	-	1	-
	Female	Person	1	-	-
Average Days of Leave	Day	274	185	-	
Return Rate (No. of Employees Returning/on Leave)	Total	%	100	100	-
	Male	%	0	100	-
	Female	%	100	0	-
No. of Employees Working for More than 12 Months After Parental Leave	Total	Person	-	-	-
	Male	Person	-	-	-
	Female	Person	-	-	-
Return Rate (Worked More than 12 Months/ No. of Employees Returning)	Total	%	0	0	-
	Male	%	0	0	-
	Female	%	0	0	-

Labor-Management Council Data

Classification		Unit	2018	2019	2020
Percentage of Union Members		%	52	53	52
Labor-Management Council Meetings	No. of Meetings	Session	4	4	4
	No. of Agenda Resolved	Case	11	17	26

ESG Data | Social Performance

Ethical Management

Classification		Unit	2018	2019	2020
Offline Compliance Training	No. of Offline Training Participants	Person	-	42	16
Voluntary CP Rate		%	-	2	2
Violation of Fair Trade	No. of Violations	Case	0	0	0
	Penalty	KRW million	0	0	0

Shared Growth

Classification		Unit	2018	2019	2020	
Partners	Total Partners	Company	916	891	802	
	Total Purchase from Partners	KRW 100M	1,677	1,452	1,297	
Long-term Partners (min. 7 years)	1st-Tier Partners	Company	4	4	4	
	Percentage of Purchase from 1st-Tier Partners	Total	KRW 100M	132	148	164
		Percentage	%	7.9	10.2	12.6
Partners (min. 5 years)	1st-Tier Partners	Company	80	84	81	
	Percentage of Purchase from 1st-Tier Partners	Total	KRW 100M	109	106	94
		Percentage	%	6.5	7.3	7.2
Proposal/Improvement with Partners	Proposals/Improvement Activities	Company	-	46	3	
	Reward	KRW 100K	-	11	1	
Joint Development of New Products	No. of Partners	Company	5	5	5	
	Purchase	KRW 100M	95	94	104	
Job Training for Partners	Safety Training	Person	-	250	-	
HSE Seminars for Partners	1st-Tier Partners	Company	32	19	-	
	Participants	Person	51	39	-	
Technical Support for Environment and Safety	1st-Tier Partners	Company	4	4	4	
HSE Cooperation Programs	1st-Tier Partners	Company	7	7	-	

Occupational Safety & Health

Classification		Unit	2018	2019	2020
TRIR (Employees)		Case (per 1 million hours)	3.60	7.36	3.26
TRIR (In-house Partners)		Case (per 1 million hours)	2.40	3.72	4.86
Fatality Rate (Employees)		Case (per 1 million hours)	0.00	0.00	0.00
Fatality Rate (In-house Partners)		Case (per 1 million hours)	1.20	0.00	0.00
Process Accidents	Tier 1 basis for API RP 754	Case	0	0	0
Frequency of Process Accidents		Case (per 1 million hours)	0.00	0.00	0.00

Safety Training

Classification		Unit	2018	2019	2020
Domestic	No. of Participants	Person	576	544	705
	Training Hours	Hour	7,680	7,832	5,260
	Partner Cooperation Safety Program	Company	7	7	0 ¹⁾

1) Not applicable in 2020

Awards & Memberships

Awards

Awards	Hosts/Organizers
2020 Consumers Choice Most Trusted Brand (Apartment Category)	Digital Chosun Ilbo
2020 Overseas Construction Awards (New Market Development)	Money Today
2020 Green Star 1st Place (Apartment Brand e-Pyunhan Sesang)	Korea Management Certification
2020 Residential services Awards (private sector)	Money Today
The 14th Asia Business Daily Apartment Brand Awards (Overall-Acro)	The Asia Business Daily
2020 H1 Hankyung Housing Culture Awards (Apartment Category)	The Korea Economic Daily
2020 National Brand Awards (Apartment for Better Living Category / e-Pyunhan Sesang)	The Chosun Ilbo
2020 24th Best Apartments to Live (Apartment Big Company Category)	Maeil Business Newspaper
2020 Korea Brand of the Year (Living/Apartment Category)	Korea Consumer Forum
The 15th Asia Construction Awards (Architecture Category)	The Asia Business Daily
The 12th Asia Today Green Construction Awards (CSR Category)	Asia Today
2020 Eco-friendly Construction Industry Awards (Eco-friendly Complex Category)	JoongAng Ilbo
2020 Well-being Apartment Awards (Minister of Land, Infrastructure and Transport)	The Korea Economic Daily
2020 Korea Leading Apartment Awards (Best Prize)	Ministry of Land, Infrastructure, and Transport
2020 Korea Housing Awards (Housing Innovation Category)	Money Today
2020 Aju Business Daily Construction Awards (Overall Category)	Aju Business Daily
2020 Smart Construction Awards (Residential Innovation Category)	E-Today, Ministry of Land, Infrastructure, and Transport
2020 Green Housing Awards (Overall Category)	The Hankook Ilbo
The 11th Korea Green Construction Awards (Seoul Housing Culture-Mayor of Seoul)	Seoul Shinmun
The Herald Economy Daily Top House to Live 2020 (Civil Engineering Road Transportation Facilities Category)	The Herald Economy Daily
Korea Civil Engineering and Building Technology Grand Prize (Digital Sector Grand Prize)	Maeil Business Newspaper
2020 Korea Construction Award (Premium Apartment)	The Dong-a Ilbo
2020 Star Brand Award (Grand Prize in Construction Brand Field)	Maeil Business Newspaper
Web Awards Korea 2020 (Apartment Brand/e-Pyunhan Sesang)	KIPFA

Memberships

KOSHA 18001 Council	The Korean Structural Engineers Association	Korea Industrial Technology Association	The Korean Professional Engineers Association
Construction Association of Korea	Korean Society of Road Engineers	Korea Electric Association	Korea International Trade Association
Korea Specialty Contractors Association	Korea Listed Companies Association	Korean Society of Civil Engineers	Korea Fire Safety Institute
Seoul Chamber of Commerce and Industry	Korea Engineering & Consulting Association	Korea Fire Facility Association	Korea Electrical Contractors Association
Korea Facilities Maintenance Association	Korea Electric Engineers Association	Korean Society of Steel Construction	Korea Information and Communication Contractors Association
Construction Management Association	Korea Housing Association	Korea Construction and Transport New-Technology Association	Korea Concrete Institute
Korea Construction Engineers Association	Korea Plant Industries Association	Korea Environment Construction Association	International Contractors Association of Korea

UN SDGs

UN SDGs

DL supports the SDGs (Sustainable Development Goals) proposed by the UN in 2015 and engages in activities to promote each goal. By aligning our strategies with the goals, we will contribute to the UN SDGs, a global framework to bring a sustainable future.

SDGs indicator	Activities	Page
 <p>Goal 1 End poverty in all its forms everywhere</p>	Sharing Love Group	104-105, 108
 <p>Goal 3 Ensure healthy lives and promote well-being for all at ages.</p>	Safety & Health Management	74-85
 <p>Goal 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.</p>	Scholarship Support Group	107-108
 <p>Goal 5 Achieve gender equality and empower all women and girls.</p>	- Promoting diversity in workplace by offering equal opportunities - Family-friendly practice	65, 67
 <p>Goal 6 Ensure availability and sustainable management of water and sanitation for all.</p>	Water Resource Management	50, 59
 <p>Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all.</p>	Response to climate change through eco-friendly design and renewable energy	24-27, 44-48, 55-57
 <p>Goal 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.</p>	Recruitment	62-63, 68-69
 <p>Goal 11 Make cities and human settlements inclusive, safe, resilient, and sustainable.</p>	Facility Repair Group	107-108
 <p>Goal 12 Ensure sustainable consumption and production patterns.</p>	Support for sustainability in supply chain	97, 102
 <p>Goal 13 Take urgent action to combat climate change and its impacts.</p>	Environmental Management	42-61
 <p>Goal 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.</p>	Ethical Management	116-121

SASB

Sustainability Topics & Accounting Indicators

Topic	Accounting Indicators	Code	DL E&C
Environmental impact due to project development	No. of violations of environmental permits, standards and regulations	IF-EN-160a.1	No violation
	Discussion of environmental risk assessment and management processes related to project design, layout, and construction	IF-EN-160a.2	Assess the environmental impact of the project to support eco-friendly design and construction.
Structural defects and safety	Cost of defects and rework for safety	IF-EN-250a.1	Not disclosed
	Total financial loss due to legal proceedings in relation to defects and accidents	IF-EN-250a.2	Not disclosed
Employee health and safety	(1) Total Recordable Incident Rate (TRIR) and (2) (a) permanent employee (b) temporary employee death rate	IF-EN-320a.1	The TRIR is 0.2313, and the death rate of employees with permanent and temporary jobs is 0.
Impact of building and infrastructure in value chain	(1) No. of third-party multipurpose sustainability standard certified projects, and (2) No. of active certification-driven projects	IF-EN-410a.1	15 Green Building Certifications (2020)/76 in total 18 Building Energy Efficiency Ratings (2020)/78 in total
	Discussion of the process for incorporating energy and water efficiency into project planning and design	IF-EN-410a.2	Developed superior heat and sound insulation PVC turning doors, high insulation performance curtain walls, high-efficiency ventilators, smart energy systems using sensors, and smart test operation solutions for energy efficiency and PV systems for multi-unit housing for renewable energy sector. For water conservation and efficiency, the initial water treatment facility and rainwater infiltration block are considered in the design process through hydrological research and analysis around the project, and changes that occur during construction are reviewed to take measures against risks in advance. For key technologies, we acquired maintenance and operation technology in private/environmental projects by optimizing the operation of the pre-treatment process for wastewater membrane filtration.
Impact on climate	(1) hydrocarbon projects, and (2) renewable energy projects ¹⁾	IF-EN-410b.1	Backlog of hydrocarbon projects e.g., thermal power generation : KRW 206.9 billion Backlog of renewable energy projects e.g., water recycling, hydro/wind power generation : KRW 55.1 billion
	Amount of backlog cancellations related to hydrocarbon projects	IF-EN-410b.2	No cancellation of hydrocarbon projects
	Amount of backlog of non-energy projects related to climate change mitigation	IF-EN-410b.3	No backlog of arboretum and green space development project
Business ethics	For the Transparency International's 20 lowest ranked countries in terms of Corruption Perceptions Index ²⁾ : (1) no. of active projects, and (2) backlog	IF-EN-510a.1	There are no projects and backlogs in the bottom 20 countries in terms of the Corruption Perception Index.
	Total financial loss due to (1) Bribery or corruption, and (2) anti-competitive practice lawsuits	IF-EN-510a.2	There is no financial loss due to bribery or corruption-related lawsuits and a fine of KRW 20.1 billion in two lawsuits was imposed.
	Description of policies and practices for (1) Bribery and corruption, and (2) prevention of anti-competitive practice in the bidding process	IF-EN-510a.3	We operate an ethical management organization and share ethics charter, code of ethics and practice guidelines. All employees sign a pledge for compliance with code of ethics as part of its internalization. We organized the Internal Trading Committee and conduct fair trade compliance programs and training.

1) Remaining orders (number or value of projects not completed during the reporting period)

2) Somalia, North Korea, Myanmar, Afghanistan, Uzbekistan, Turkmenistan, Sudan, Iraq, Haiti, Venezuela, Equatorial Guinea, Burundi, Libya, DR Congo, Chad, Angola, Yemen, Kyrgyzstan, Guinea, Cambodia

Action Indicators

Action Indicators	Code	DL E&C's Response
No. of Active Projects ¹⁾	IF-EN-000.A	142 projects undertaken
No. of Assigned Projects ²⁾	IF-EN-000.B	N/A
Total Backlog ³⁾	IF-EN-000.C	KRW 15.9 trillion

1) Active projects are buildings and infrastructure projects under development that provide services as of the end of the reporting period, including, but not limited to, design and construction stages. Projects assigned during the reporting period are excluded from the active projects.

2) Assigned projects are defined as projects that were deemed to be completed during the reporting period and ready for servicing. These projects only include those provided with construction services.

3) Backlog is defined as the value of the projects not completed as of the end of the reporting period (i.e., revenue expected in the future but not recognized under the contract), or in consistency with the existing backlog. It can also be referred to as incomplete performance obligation or log with deferred revenue. The scope of disclosure is limited to building and infrastructure projects for which the company provides engineering, construction, construction, design, installation, planning, consulting, repair and/or other similar services.

TCFD

In order to take a more systematic approach to climate change, DL E&C is committed to compliance with regulatory requirements, implementing energy efficiency programs, and setting carbon reduction targets. After we joined the TCFD for the first time in the industry in May 2021, we have been monitoring global and regional climate change trends and their impact on business under the management of the EQ RM team led by the Green Committee. The team keeps track of and regularly reports GHG emissions, our progress towards the mid/long-term targets, and the energy efficiency. In consideration of the potential financial impact of climate change risks, we hereby disclose the following risks and opportunities based on the TCFD recommendations.

TCFD Recommendation		Response	CDP Alignment
Governance	Disclosure of the board's management and supervision on the risks and opportunities related to climate change	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C1.1
	Disclosure of the management's roles in managing and assessing the risks and opportunities related to climate change	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C1.2
Strategy	Disclosure of the risks and opportunities related to climate change identified from a short/medium/long-term perspective	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C2.1, C2.2, C2.3, C2.4, C3.1
	Disclosure of impact of the risks and opportunities on business, strategy and financial plans	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C2.3, C2.4
Risks & Opportunities Management	Disclosure of strategy's flexibility in consideration of climate change scenarios including those with 2°C or less	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C3.1
	Disclosure of the organization's process to identify and assess climate change risks	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C1.2, C2.2
Reduction Target	Disclosure of the organization's processes to manage climate change risks	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C2.2
	Disclosure of how the processes for identifying, evaluating and managing climate change risks are integrated into the organization's overall risk management	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C2.2
Reduction Target	Disclosure of indicators used to assess climate change risks and opportunities in line with management strategies and risk management processes.	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C4.1
	Disclosure of Scopes 1, 2 and 3 GHG emissions and related risks	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C6.1, C6.3, C6.5
	Disclosure of the goals set to manage climate change risks and opportunities and their performance	2021 Sustainability Report pp. 44 - 48, 55 - 57 (Response to Climate Change)	C4.1

GRI Standards Index

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	205-3	Confirmed incidents of corruption and actions taken	118	
Anti-competitive Behavior	103	Management Approach	122-127	

Topic	Index	Indicator	Page	Remarks
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	305-5	Reduction of GHG emissions	42, 54	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	147	
Wastewater and Waste	306-2	Waste by type and disposal method	145-147	
	306-3	Significant spills	144, 147	
Environmental Compliance	103	Management Approach	42, 54	
	307-1	No. of restrictions by non-compliance with environmental laws and regulations	143, 146	
GRI 400 Society				
Employment	103	Management Approach	62, 68	
	401-1	New employee hires and employee turnover and rate	149-155	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	67, 73	
	401-3	Parental leave	151, 155	
Occupational Health and Safety	103	Management Approach	74, 80	
	403-1	Occupational health and safety management system	74, 78, 80	
	403-2	Hazard identification, risk assessment, and incident investigation	74-85, 157-159	
	403-3	Occupational health services	75-79, 82-85	
	403-4	Worker participation, consultation, and communication on occupational health and safety	75-79, 82-85	
Training and Education	403-5	Worker training on occupational health and safety	75, 82	
	103	Management Approach	62, 68	
	404-1	Average hours of training per year per employee	145, 148, 157, 159	
	404-2	Programs for upgrading employee skills and transition assistance programs	62-73	
Diversity and Equal Opportunity	404-3	Percentage of employees receiving regular performance and career development reviews	154	
	103	Management Approach	65, 70	
	405-1	Diversity of governance bodies and employees	112-115, 149-151, 152-153	
Non-discrimination	103	Management Approach	65, 72	
	406-1	Incidents of discrimination and corrective actions taken	-	No significant incidents
Child Labor	408-1	Operations and partners at significant risk for incidents of child labor	-	No significant incidents
Forced or Compulsory Labor	409-1	Operations and partners at significant risk for incidents of forced or compulsory labor	-	No significant incidents
Human Rights Assessment	412-2	Employee training on human rights policies or procedures	70	
Local Communities	103	Management Approach	104, 107	
	413-1	Operations with local community engagement, impact assessments, and development programs	104-109	
Public Policy	415-1	Political contributions	-	No political contribution has been made in accordance with Article 31 (Limitation of Contribution) of the Political Funds Act
Customer Health and Safety	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-	No significant incidents
Marketing and Labeling	417-2	Incidents of non-compliance concerning product and service information and labeling	-	No significant incidents
	417-3	Incidents of non-compliance concerning marketing communications	-	No significant incidents
Customer Privacy	103	Management Approach	130-131	
	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	-	No significant incidents

Third-party Assurance Statement

To Stakeholders of DL

Introduction

BSI Group Korea (hereinafter the “Assurer”) was commissioned to provide an independent assurance statement for the 2021 DL Sustainability Report (hereinafter the “Report”). This Third-Party Assurance Report applies to the information included in the scope of assurance.

DL is solely responsible for all the information and claims contained in this report. The responsibility of assurance, which is applied with the assurance methodology to the specified scope, provides independent and professional assurance to the management and information to its stakeholders.

Assurance Standards

The Type 1 assurance type that ensures the conformity of the AA1000AP to the management claim and data based on the AA1000AS v3 was applied to this assurance. This includes the principles of inclusivity, materiality, responsiveness and impact according to the AA1000AP (2018) principles, and in addition, it was confirmed that the Core Option of the GRI standards was complied.

Scope of Assurance

The scope of the assurance applied to this report includes :

- reports that cover from January 1, 2020 to December 31, 2020, including performance in the first half of 2021 in certain cases
- key claims included in the report, such as sustainability policies, goals, projects, performance, and matters included in material issues as a result of materiality test, and GRI reports
- conformity and robustness of processes and systems for information collection, analysis and review
- The following is not included in the assurance:
 - financial information
 - additional information included in the website other than the report

Assurance Method

The Assurer observes the assurance standards using the methodology developed to collect sufficient information to reduce errors in the content of the report, and performed the following activities :

- Review and check conformity with the material issue analysis process to determine assurance priorities
- Review the sustainability strategy implementation process and system
- Review the conformity with the information that supports the issues discussed through interviews with senior managers with responsibility
- Check the process of creating, collecting, and reporting data for each area of performance

Conclusion

We reached the following assurance through the methods and activities described above :

- The report reflects the principles of inclusivity, materiality, responsiveness and impact of the AA1000AP, and the details are as follows.
- The information contained in the report is accurate and there are no significant errors or biases.
- The report represents the DL's sustainability management practice in a fair manner.
- Information is presented in a clear and easy-to-understand and access manner, so that readers can form a balanced opinion on DL's sustainability performance.

AA1000AP Principles

Inclusiveness | Stakeholder Engagement

DL has defined stakeholder groups as customers, shareholders and investors, partners, employees, local communities, and the public sector, and maintains communication channels for each group, through which it collects their opinions.

Materiality | Identification and Reporting of Material Issues

DL created a pool of issues by referring to various stakeholder issues and norms, prioritized them based on their importance from external/internal perspectives, and selected 10 material topics through an evaluation process based on stakeholder interest and business impact.

Responsiveness | Organization's Response to Material Issues and Communication with Stakeholders

DL responds to identified material issues, which can be checked in the reporting organization's policies, sustainability goals, indicators, and performance. The issues are reported through the report and communication channels. The information can be used as a reasonable basis for stakeholders to express their opinions and make decisions.

Impact | Impact of Material Issues on Stakeholders

DL identifies, measures and expresses impact in an effective way. For more effective decision-making and management within the organization, DL established a process for monitoring, measuring, assessing and managing the impact of its organizational activities.

Recommendation for Improvement

We present the following opinions to the extent that they do not affect our assurance.

- The report identifies issues of various stakeholders and material topics through materiality test, and reflects their performance. In order for these sustainability topics to develop into sustainable practice, it is important to clearly define and develop the responsibility structure, decision-making and reporting process at the top level of the organization, including the board of directors, that can deal with these topics.
- DL included Topics 1 to 10 as important sustainability topics in this report, and report its performance by topic. It is necessary to clearly express the directions for its policy by reporting mid to long-term goals on material topics. It is also expected that the performance of each topic will be developed into a system that can be reported to affected stakeholders in a timely manner through various media.

Independence and Qualifications

BSI Group is known for its expertise in the areas of quality, health, safety, social and environmental management as an independent firm that has provided assurance services for about 120 years. The Assurer has no business relationship with DL, has independently performed the assurance, and there is no conflict of interest.

The Assurer is composed of a team of members who have extensive experience and expertise in the fields of environmental, social, business ethics, health and safety management systems, and understanding of BSI Group's assurance standard methodology.

Review of GRI Standards Application Level

The Assurer confirmed that this report was prepared in accordance with the Core Option of GRI Standards, and checked that the following indicators are true based on the data provided by DL.

General Standard Indicators		Standard Indicators on Specific Topics
<ul style="list-style-type: none"> • Organizational Profile : 102-1 to 13 • Strategy : 102-14 • Ethics and Integrity : 102-16 • Governance : 102-18 	<ul style="list-style-type: none"> • Stakeholder Engagement : 102-40 to 44 • Reporting Practices : 102-45 to 56 • Management Approach : 103-1 to 3 	<ul style="list-style-type: none"> • Economy : 201-1, 203-1/2, 205-2/3 • Environment : 302-1/2/3, 303-1/3, 305-1/2/3/4/5/7, 306-2/3, 307-1 • Society : 401-1/2/3, 403-1/2/3/4/5, 404-1/2/3, 405-1, 406-1, 408-1, 409-1, 412-2, 413-1, 415-1, 416-2, 417-2/3, 418-1



July 27, 2021

Song Kyeong Soo, CEO of BSI Group Korea



GHG Assurance Statement

DL E&C

D-Tower Donuimun, 134 Tongil-ro, Jongno-gu, Seoul

Scope of Assurance

KSA (Korean Standards Association) was commissioned to assure DL E&C's Direct emissions (Scope 1) & Indirect emissions (Scope 2) of Greenhouse Gas Inventory Report for the calendar year 2020 based upon a reasonable level of assurance, and other indirect emissions (Scope 3) of Greenhouse Gas Inventory Report based upon a limited level of assurance.

Assurance Standards & Guidelines

KSA (Korean Standards Association) conducted the assurance in accordance with the following standards and guidelines.

- Guidelines for GHG emissions trading scheme report and certifications
- KS Q ISO 14064-1, 2, 3 : 2006
- IPCC Guideline : 2006/WRI GHG Protocol

Conclusions

We hereby assure that the GHG emission data has been calculated accurately, and nothing has come to our attention that would cause us to believe that the GHG emissions data set out in this report contains significant errors.

2020 GHG Emissions

(Unit : tCO₂eq)

2020	DL E&C GHG Emissions (tCO ₂ -eq)				
	Scope 1	Scope 2	Scope 3	Total	Other Facilities*
Domestic	15,247	36,033	147,584	198,864	3,258
Overseas	10,397	1,170	27,414	38,981	-
Total	25,644	37,203	174,998	237,845	3,258

* Facilities excluded from organizational boundaries due to the division of DL Group as of 2021 (D-Tower Gwanghwamun, office building in Susong-dong)

July 1, 2021

Korean Standards Association



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