



THINK LIVING AND ENVIRONMENT

KD Navien Sustainability Report 2022

 navien

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Overview of the Report

The KD Navien Sustainability Report 2022 contains economic, environmental, and social efforts and values being made by the Company through corporate activities based on its commitment to social contribution. KD Navien will continue communicating with stakeholders and transparently disclosing its ESG performance and activities by publishing the Sustainability Report annually.

Reporting Standards

This Report was created in accordance with GRI (Global Reporting Initiative), the global standards for sustainability reporting. In addition, the indicators required for the Electrical and Electronic Equipment criteria of SASB (Sustainability Accounting Standards Board) were reflected. The financial performance, unless otherwise notes, was based on the consolidated financial statements in accordance with K-IFRS (Korean International Financial Reporting Standards).

Reporting Period

Published on July 7, 2023, this Report covers the Company's economic, environmental, and social performance from January 1 to December 31, 2022. Some performance data up to March 2023 were included. In addition, as this is KD Navien's first Sustainability Report, issues concerning important important activities prior to January 1, 2022 were also included. For quantitative reporting, data from the past three years was included to identify yearly trends.

Reporting Scope

This Sustainability Report covers the Company's financial performance on a consolidated basis and non-financial performance separately by Seoul office, factories (Seotan, Pyeongtaek, Songtan, Gasan), and research institute, which are domestic worksites. For the environmental and social performance data, those of key subsidiaries such as KD Everon, KD Polyum, and KD TS were included.

Report Assurance

To ensure transparent disclosure of sustainability management activities to stakeholders, this Report was verified through third-party assurance by Lloyd's Register. The Independent Assurance Statement can be found on page 98-99.

Inquiry

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CEO Message

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CEO Message

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Dear Stakeholders,

2022 was a year when uncertainties in the global environment were further amplified as a result of the unstable international conditions and economic crisis following the COVID-19 pandemic. Despite such circumstances, KD Navien changed the market paradigm based on customer needs and, at the same time, strengthened competitiveness by accelerating global market entry. As a result, in 2022, we recorded KRW 1.1609 trillion in sales, for a 5.3% year-over-year increase. We also solidified the basis for our share in the global market including North America.

Under the vision of becoming a “Smarter Living Environment Partner,” we are moving forward based on the Pursuit of Principle to make not only customers’ residential environment but also the global environment that we will pass on to our future generations healthier and smarter. Just like our motto “Energy and Environment Navigator,” we are committed to contributing to energy saving and air quality improvement with eco-friendly, high-efficiency technologies and providing integrated solutions to help our customers create optimal living environments.

Furthermore, based on the management philosophy of practicing “Social Contribution through Business Success,” we will lead the development of technologies required in our society so that we can contribute to society by performing business activities. To this end, we will continuously dedicate efforts as follows to fulfill our responsibilities for society and environment and realize transparent governance:



First, we will seek solutions and propose the right path and propose the right path.

Air pollution is worsening and greenhouse gas emissions are increasing, resulting in the acceleration of global warming. Therefore, carbon neutrality has become one of the world's most urgent missions. While preparing for transition to future energy by developing hydrogen condensing boilers, KD Navien will support the Earth's environment by contributing to eco-friendly, high-efficiency energy use in the home.

Second, we will create an environment where all people are happy.

The “smarter living environment” that KD Navien aims to create starts with the interest of people who live in the environment. While respecting employees' autonomy and responsibilities, we will continuously develop a healthier, safer organizational culture and carry out our business activities based on a cooperative relationship to achieve shared growth. We will also further expand activities to share warmth with neighbors in need by participating in home building campaigns, supporting condensing boilers for the low-income class, and donating heating mats, etc.

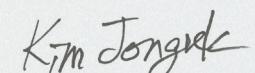
Third, we will walk the right path based on communication that is more transparent.

As the only listed company in the industry, KD Navien is righteous the Right-Path management by carrying out transparent management activities since its initial public offering in 1995. Moving forward, we will strive to win stakeholders' greater trust by improving the standard of our information disclosures. To this end, we will strengthen communication by building a transparent, healthy organization while complying with various domestic and international information disclosure guidelines.

KD Navien will grow into a “Living Environment Solution Provider” that creates a sustainable future through innovation. We would like to ask for your continued interest in and support for KD Navien as we march toward a better future.

Thank you.

KD Navien CEO
Kim, Jong-uk

A handwritten signature in black ink, appearing to read "Kim Jong-uk".

Corporate Profile

Corporate Overview

KD Navien creates a smarter living environment by providing products and services that affect the temperature and quality of our water and air, including boilers to water heaters, air conditioners, and ventilation.

Since its establishment in 1978, KD Navien has grown into Korea's premier boiler manufacturer. Having developed high-efficiency condensing technology for the first time in Asia in 1988, we started our export in 1991, and have held on to the No. 1 position in export for 30 years, leading Korea's boiler industry.

As a smarter living environment partner, KD Navien with its conviction and passion for environmental protection, social contribution, and technology development has focused on condensing technology to reduce fine dust and introduced the heating mat with the goal of creating an optimal, comfortable sleeping environment for customers. Today, we are providing our children with clean air by supplying the ventilation system.

KD Navien advances toward a better future to protect customers' health and happiness based on convenient, reliable technologies, considerate innovation to put customers first, and firm intent to place the highest priority on the environment.

Company Name	KyungDong Navien Co., Ltd. Energy and Environment Navigator Navien: Navigator + Energy and Environment
CEO	Sohn Yeon-ho, Kim Jong-uk
Date of Incorporation	March 16, 1978
Head Office	95 Suworam-gil, Seotan-myeon, Pyeongtaek-si, Gyeonggi-do, Korea
Total Assets	KRW 1.018 trillion
Sales	KRW 1.1609 trillion
No. of Employees	1,500
Business Areas	Boiler, water heater, heating mat, ventilation system, smart home system, etc.
Website	https://www.kdnavien.co.kr

Corporate Philosophy and Vision

The corporate philosophy of “Social Contribution through Business Success” is the essence and core of the KD Navien brand that applies to every level of the business, from products and services to customer interactions, social contributions, and environmental initiatives. Based on such corporate philosophy, we develop technologies and services sought by society ahead of others and strive to fulfill our responsibilities to ensure that our customers enjoy a pleasant and healthy life.

Corporate Philosophy	Social Contribution through Business Success			
Vision	Smarter Living Environment Partner			
Core Values	These are the three practical values upheld by KD Navien to become a smarter living environment partner for customers.			
Pursuit of Principle	We predict Future Technologies needed by society and develop them ahead of others. To address air pollution issues, we introduced the condensing boiler to reduce fine dust generation and increase energy efficiency for the first time in Asia. We predict the Future Technologies needed by society and constantly promote innovation for a pleasant, safe living environment (in homes and communities) and a healthy global environment.	Innovation for Living and Environment	We tirelessly pursue perfect quality in our efforts towards becoming a reliable living environment partner. Quality born through collaboration reflects the passion and expertise of every KyungDong employee and their efforts to be the best. By exerting our best effort in our individual positions, we can grow into a genuine living environment partner for our customers.	Commitment to Quality
Social contribution through business success is the root of KyungDong's foundation and practical value. We have dedicated our best efforts based on the Pursuit of Principle to fulfill our corporate social responsibilities and make products that are beneficial to the environment and society. We constantly pursue actions to build towards toward a better world.				

Core Value of the Brand

Corporate philosophy to achieve social contribution through business success

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Smarter residential environment

Healthier global environment

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History

Since its establishment in 1978, KD Navien has grown into Korea's premier boiler manufacturer. Having developed high-efficiency condensing technology for the first time in Asia in 1988, we started our export in 1991, and we have held on to the No. 1 position in export for 30 years, leading Korea's boiler industry. To provide customers with a pleasant living environment, KD Navien has started new businesses including ventilation system supply and water treatment service. Through the expansion of our business areas, we aim to be reborn as a living environment solution provider.

1978-1999

The Beginning of a Grand Ambition

- 1978 Established KyungDong Machinery Co., Ltd.
- 1979 Released Korea's first compact rectangular oil boiler
- 1988 Released KyungDong Condensing Gas Boiler "Turbo" for the first time in Asia
- 1991 Changed the company name to KyungDong Boiler Co.,Ltd.
- 1992 Received the industry's first One Million Dollar Tower of Export for the first time in the industry
- 1993 Listed shares in the securities market through the Korea Exchange
- 1996 Received the industry's first One Billion Dollar Tower of Export for the first time in the industry
- 1997 Released Korea's first solar energy system boiler
- 1999 Acquired KC mark and Eco Label (first in the industry) for condensing gas boiler
- Acquired ISO 14001 environmental management system certification



2000-2009

Leading Boiler Export Industrialization

- 2000 Acquired the Highly Energy-Efficient Appliance certification for gas boiler for household use for the first time in the industry
Sponsored the 1st Nulpurun Environmental Landscape Design Contest
- 2002 Became the industry's first to export condensing gas boilers to the US
- 2003 Released Asia's first condensing oil boiler
- 2004 Hosted the KyungDong VISION 2014 declaration ceremony
- 2005 Acquired 4-Star (highest thermal efficiency) rating from CE, the European quality certification, as the first in Asia
- 2006 Changed the company name to KyungDong Navien Co.,Ltd.
- 2008 Became the industry's first to enter the US market with instantaneous condensing gas water heater
Released Navien's Condensing Oil Boiler "LCB"
- 2009 Ranked No. 1 in the US instantaneous condensing water heater market



2010-Present

Advancing toward Global No. 1 Company

- 2010 Became the industry's first to acquire ASME certification for condensing boiler and condensing water heater
- 2011 Designated as a Consumer-Centered Management (CCM) Company for the first time in the industry
- 2013 Navien America selected as Innovator of the Year by ABL of the US
- 2014 Recorded the largest share in the North American condensing gas water heater and condensing gas boiler market
- 2015 Won the Korea Innovation Award 2015 for Navien HYBRIGEN SE
- 2017 Hosted the KyungDong VISION 2022 declaration ceremony
- 2018 Recorded more than one million cumulative condensing product sales volume in North America
- 2019 Released the Navien Ventilation System
Received a Citation from the Minister of Trade, Industry, and Energy on the 56th Trade Day
- 2020 Established the KyungDong symbol mark and changed CI and BI to become a smarter living environment partner
Received the industry's first Three Hundred Million Dollar Tower of Export
- 2021 Released Navien Ventilation System Kitchen Plus
Designated as Korea KS Powerhouse
- 2022 Designated as World-Class Product of Korea in the wall-mounted gas boiler category three times in a row
Released Navien Condensing ON AI Boiler, the start of new hot water home appliance
Received the industry's first Five Hundred Million Dollar Tower of Export



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Profile of Affiliates

KD Living and Environment Partners

The five KD Living and Environment Partners are committed to achieving the common goal to enrich customers' lives through continuous technology development and creative thinking, contributing to KD Navien's advancement into a global No. 1 company in their respective fields.

	KD One	KD Everon	KD Polyum	KD TS
Overview	 <p>As the holding company of the KD Group, KD One leads eco-friendly construction and commercial material production and home network system development.</p>	 <p>KD Everon develops and manufactures the core components of products.</p>	 <p>KD Polyum is a company developing and manufacturing core components including water pipe modules for boilers, water heaters, and heating mats.</p>	 <p>KD TS is a service company that leads the protection of customers' rights and interests by providing service for all KyungDong's products and fostering excellent engineers.</p>
Description	<p>Launched in 2010 as a holding company overseeing the investment and brand management activities of each subsidiary, KD One acquired and merged with eco-friendly material development leader KD CERATEC and home network specialist KD NETWORK to achieve management rationalization. Through the merger, KD One maximizes synergy by combining the corporate capabilities of the three companies; thus advancing as a leading living environment solution provider.</p>	<p>KD Everon is a manufacturer of core components for various energy appliances. Just as the heart that is the source of life, KD Everon is committed to becoming a global No. 1 in the core components field that breathes life into products. Currently developing boiler components such as heat exchangers and burners, KD Everon is recognized for its technological power by being the world's first to develop the plate-type condensing stainless steel heat exchanger, a core component of Navien Condensing Boiler.</p>	<p>KD Polyum specializes in the production of highly functional electronic components. It manufactures high-quality products by standardizing the entire process from plastic material input to molded item extraction. In particular, the company enhances cost competitiveness by modularizing each part of the water pipe, a key component for boilers, water heaters, and heating mats.</p>	<p>KD TS, which stands for Total Solution and Service, specializes in the maintenance service for not only boilers and water heaters but also ventilation system and home network system. In addition, it improves the quality of customer service and protects customers' rights and interest by fostering outstanding service engineers through training. Under the banner of consumer-oriented management, KD TS evolves from a domestic to a global service company.</p>
Performance	<p>2020 Sales (Unit: KRW, by company)</p> <p>2021 Sales¹⁾</p> <p>2022 Sales</p> <p>119,025,246,781</p>	<p>2020 Sales</p> <p>2021 Sales</p> <p>2022 Sales</p> <p>204,221,318,102</p>	<p>2020 Sales</p> <p>2021 Sales²⁾</p> <p>2022 Sales</p> <p>106,843,917,717</p>	<p>N/A</p> <p>2020 Sales</p> <p>2021 Sales</p> <p>2022 Sales</p> <p>19,493,505,165</p>

1) Including profit and loss from discontinued operations related to the split-off PL sector/The PL sector of KD One split off on Jul. 1, 2021, the base date of split-off

2) Period 1: Jul. 1 - Dec. 31, 2021/The PL sector of KD One split off on Jul. 1, 2021, the base date of split-off

Corporate Profile

Profile of Products



Boiler

Having developed condensing technology in 1988 for the first time in Asia, KD Navien is establishing itself as the originator and pioneer of condensing technology in Korea. Based on technological prowess recognized worldwide, we have been ranked No. 1 in boiler export for 31 years in a row since 1991, and continuously strive to provide safe and reliable products to customers.



Ventilation System

The ventilation system is an air quality control system with both air purification function and clean ventilation functions. It removes not only ultra fine dust but also hazardous substances that can only be removed through ventilation, such as carbon dioxide, radon, and TVOCs. Kitchen Plus is a premium product created by applying a 3D air hood to the ventilation system. It effectively controls air quality around the home by taking in particulate matter and odor remaining in the kitchen.



Water Heater

Based on advanced water heater technological power, KD Navien has been ranked No. 1 in condensing gas water heater sales for 14 years in a row in the North American market. We secured competitiveness by recording a 77% share in the North American water heater market as of 2022. We supply hot water in a clean, efficient way by swiftly and safely responding to customers' various needs for hot water use.

Key Products

- Condensing gas boiler
- General gas boiler
- Condensing oil boiler
- General oil boiler
- Electric boiler



Key Functions

Condensing Technology

Saving energy and reducing CO₂ emissions by reusing heat from exhaust gas

Dual Sensing Control

Providing accurate and pleasant heating through the dual-sensing of the temperature of heating water and return water

Hot Water Ready System

System enabling fast hot water use by filling the hot water pipe with hot water

Clean Filter System

Clean filter system mounted with a UV-LED module, removing ultra-fine particulate matter measuring 0.01μm in size and producing the effect of decreasing airborne bacteria and viruses

3D Air Hood

Forming an air curtain in the hood to prevent the spread of ultra-fine particulate matter and hazardous substances generated during cooking

Air Monitor

Measuring pollutants such as ultra-fine particulate matter, radon, CO₂, and TVOCs and displaying the measurements and intensity levels

Ventilation System

3D air hood Kitchen Plus

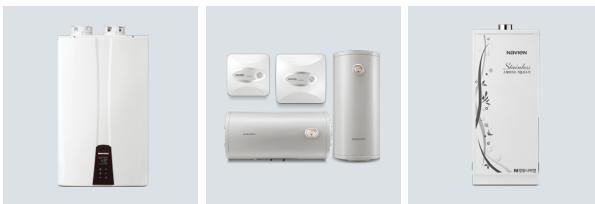
Mid-to large-scale ventilation system



Gas water heater

Electric water heater

Oil water heater



High TDR

Detailed system control according to the required energy input, reducing unnecessary gas consumption

Comfort Low System

Reducing the waiting time for hot water use and saving water by circulating hot water in the connected pipe

Cascade System

Saving energy and maximizing safety and convenient maintenance through the parallel connection of condensing gas water heaters according to the required capacity

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Profile of Products



Heating Mat

The heating mats developed with KD Navien's boiler temperature control technology create a pleasant sleeping environment for customers with the individual temperature control function. As the indoor temperature can be lowered while using the heating-mat, it contributes to saving heating energy as well as improving the quality of sleep.



Smart Home

Through the integration of cooling and heating air conditioning technology and smart technology, the smart home system provides control and security functions for inside and outside of the home; thus creating a safe, convenient living environment.



Zone Control

The zone control system enables users to set the optimal temperatures in each room according to their lifestyles. It also contributes to saving heating cost by providing temperature control service.

Key Products

- Hot water mat (The Care)
- Hot water mat (New Simple)
- DC heating mat (Comfy)



Key Functions

Dual Temperature Sensing

Accurately controlling the temperature change of the hot water mat in real time by checking the water temperature twice—once when water comes out from the hot water mat boiler and once when it returns to the boiler

Smart Heating Care

Sensing the temperature of the DC heating mat through temperature detection lines inside the mat to keep the set temperature, and detecting overheating of the mat to ensure safe use

Sleep Care System

Providing optimally customized sleep function according to individual customers' sleeping patterns and body temperature changes through the remote control function and app using a smartphone

- Smart home system
- Smart gate system
- Digital door lock



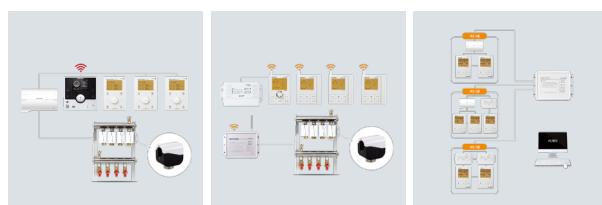
Visitor Access Control

Access control function to open the door by checking visitors through the door bell installed on the door

Device-linked Control

System linked to various home devices, enabling users' convenient control with a wall pad inside the home or smartphone

- Wired Zone
- Wireless Zone
- Commercial Zone



Heating Control by Zone

Controlling heating in each room in the selected temperature at the selected time

Remote Control with Smartphone

Controlling the heating temperatures of each zone in the home using smartphone

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Global Network

KD Navien has established a global network through subsidiaries in the US, Russia, China, and UK. We are advancing briskly to become a global living environment solution provider that creates a smarter living environment for customers.



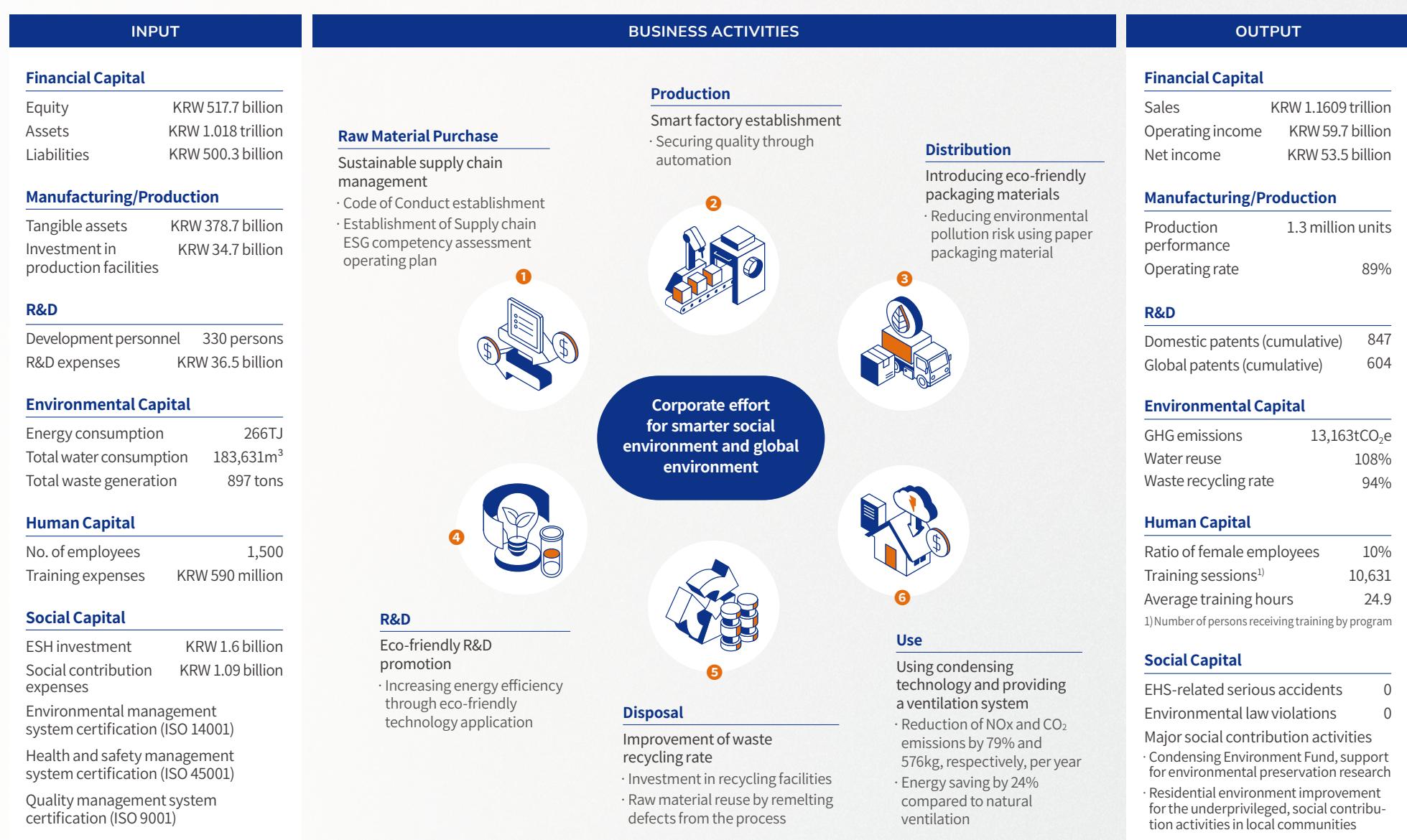
Domestic Worksites

Worksite	Address
Headquarters (Seotan Factory)	95 Suworam-gil, Seotan-myeon, Pyeongtaek-si, Gyeonggi-do, Korea
Seoul Office	22 Gukhoe-daero 76-gil, Yeongdeungpo-gu, Seoul, Korea
Research Institute	15 Gyeongin-ro 53-gil, Guro-gu, Seoul, Korea
Pyeongtaek Factory	663 Gyeonggi-daero, Pyeongtaek-si, Gyeonggi-do, Korea
Songtan Factory	57 Sandan-ro 121-beongil, Pyeongtaek-si, Gyeonggi-do, Korea
Gasan Factory	104 Sapgyocheon-ro, Seonjang-myeon, Asan-si, Chungcheongnam-do, Korea

Overseas Subsidiaries

Worksite	Name	Address
Russia	Navien RUS LLC	117342, Moscow, Profsoyuznaya st. 65K1, 16F, Russian Federation
UK	Navien UK Ltd	Building 2, Guildford Business Park, Guildford, GU2 8XH
China	Beijing KyungDong Navien Heat Energy Equipment Co., Ltd.	Mapo Juyuan Gong Ye Qu, Juyuan Dong Rd #27, Shunyi District, Beijing
	Hebei KyungDong Navien Heat Energy Equipment Co., Ltd.	Kua Yue Rd West Side and Patriotic Rd South Side, High-tech Industrial Development Zone, Weixian Country Xingtai City, Hebei Province
US	Navien, Inc.	20 Goodyear, Irvine, CA 92618
Canada	Navien CANADA, Inc.	555 Hanlan Road, Unit 7, Woodbridge, Ontario, Canada, L4L 4R8
Uzbekistan	Navien UBK LLC	2a, Kichik Khalka Yuli st., Yakkasaray district, Tashkent city, Republic of Uzbekistan
Mexico	Navien Mexico, S.A. de C.V	Presa Pabellón 38, Col. Irrigación, Miguel Hidalgo, 11500 Ciudad de México, México

Sustainable Value Chain



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ESG Strategies of KD Navien

ESG Strategy System

Based on the Pursuit of Principle, KD Navien strives to improve the quality of life for all customers, and it is growing steadily to achieve harmony among energy, environment, and living.

To advance as a “Smarter Living Environment Partner” and create sustainable values amid the rapidly changing domestic and international management environments, we have established the ESG strategy system conveying our identity and directivity.

Under the ESG slogan “Think Living and Environment for a Better Tomorrow,” we will internalize the ESG strategy system consisting of the 3 pillars of environment, people, and trust and 11 key management areas across our management activities and implement the key tasks in gradual stages.

Vision	Smarter Living Environment Partner		
Company Name	KD Navien: Energy and Environment Navigator		
ESG Slogan	Think Living and Environment for a Better Tomorrow		
ESG Pillar	Think Environment	Think People	Think Trust
ESG Management Areas	<ul style="list-style-type: none">Establish and upgrade the environmental management systemStrengthen eco-friendly product and technology developmentCreate an eco-friendly workplaceAchieve carbon neutrality and energy transition	<ul style="list-style-type: none">Achieve health and safety improvementFoster a culture of respecting human rightsPromote shared growthStrengthen human resource management and development	<ul style="list-style-type: none">Strengthen ESG responsible managementActively practice ethics managementStrengthen stakeholder communication

ESG Governance

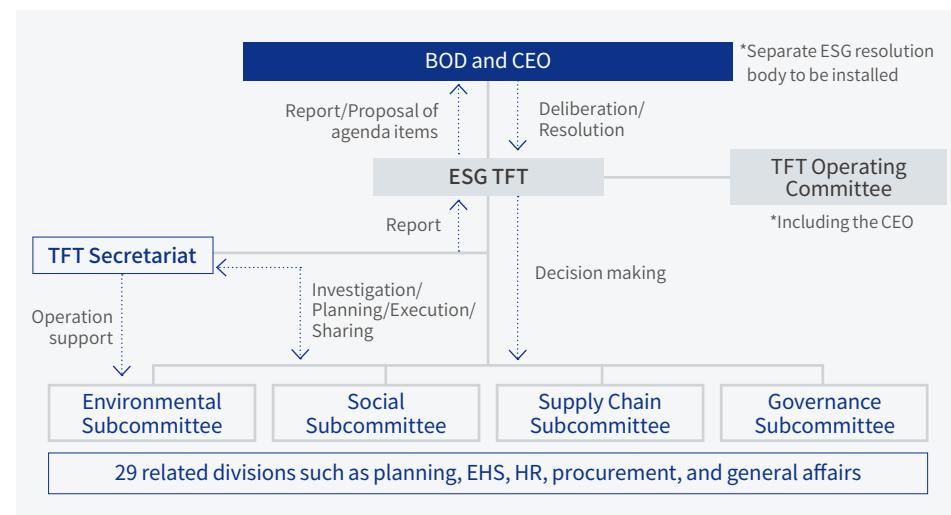
For systematic ESG management, KD Navien established the ESG TFT (Task Force Team) in 2022. The Director-level executives including the CEO participate in the TFT operation and encourage the engagement of all employees.

The TFT consists of four subcommittees for environment, society, supply chain, and governance. In each subcommittee, the team managers and members of related divisions participate in the meetings to improve response capabilities. Through the regular monthly meetings, each subcommittee sets tasks, manages the task promotion status, and establishes the direction and detailed roadmap for ESG management in 2023.

The current ESG TFT is an ESG consultative body, which is a working group. The TFT Secretariat will be restructured to a team dedicated to ESG management in order to increase the efficiency of organizational operation.

Based on the ESG consultative body and the established strategic system, KD Navien's ESG promotion plans, progress, and performances are monitored. We will also share the sustainable values created through the ESG management activities with internal and external stakeholders.

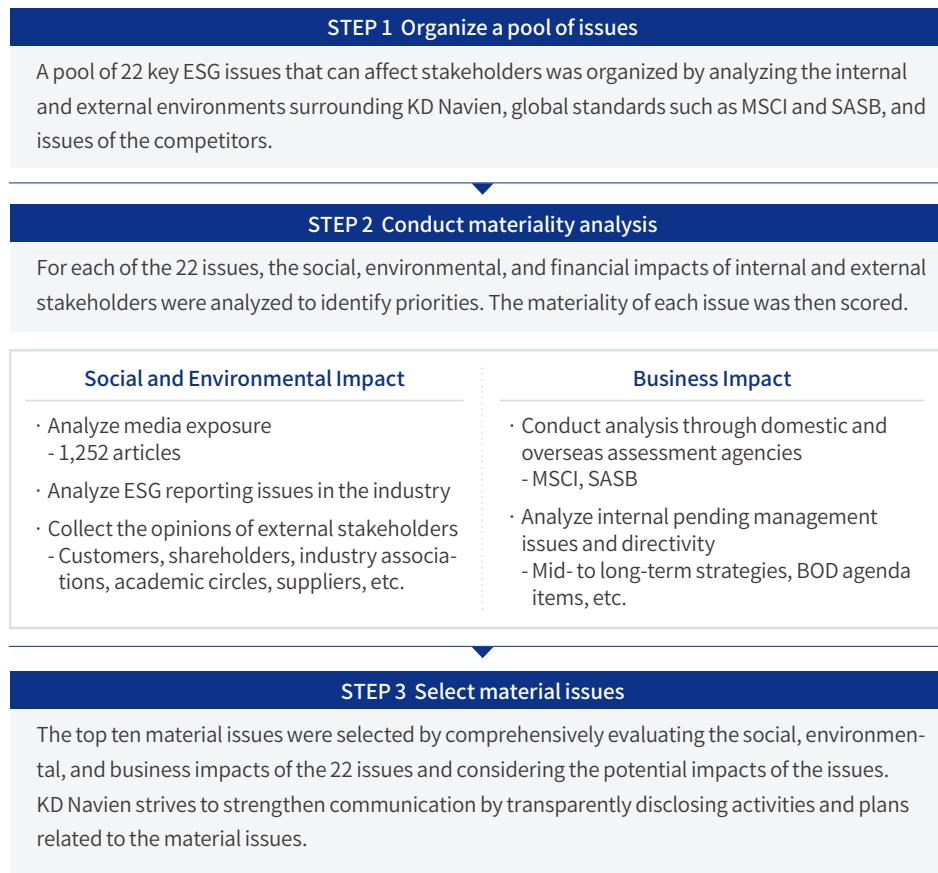
In addition, a legislative organization to make ESG-related decisions—which will approve the ESG management strategies and mid-to long-term plans and manage and oversee the handling of non-financial risks through deliberation on the key ESG agenda items—will be installed.



Materiality Analysis

Materiality Analysis Process

KD Navien conducted a materiality analysis to identify the business-related sustainability issues and reflect them in the company-wide management strategies and goals. The materiality analysis was conducted in three stages: organization of pool of ESG issues, analysis on the materiality of the issues, and selection of material issues. As a result of the materiality analysis, 10 of 22 issues in the KD Navien ESG issue pool were derived as material issues, and the selection was finalized through a report to the BOD. We will regularly conduct the materiality analysis to evaluate our environmental, social, and governance issues and comprehensively control the selected issues.



KD Navien ESG Issues

E	<ul style="list-style-type: none">Development of eco-friendly product, content and serviceClimate change response and management of GHG emissions	<ul style="list-style-type: none">Reduction of energy consumptionWater resource managementWaste discharge management	<ul style="list-style-type: none">Circular economy promotionReduction of pollutant and hazardous substance dischargesBiodiversity preservation
S	<ul style="list-style-type: none">Employee health and safety improvementHR management and developmentHuman rights protection and promotion	<ul style="list-style-type: none">Product and service quality improvementCustomer health and safety improvementPersonal information protection and information security (customer)	<ul style="list-style-type: none">ESG management in the supply chain (partners and suppliers)Management of contribution to and impact on local communities
G	<ul style="list-style-type: none">Securing future competitivenessTransparent and sound BOD organization	<ul style="list-style-type: none">Integrated risk managementEstablishment of ethics management	<ul style="list-style-type: none">ComplianceStrengthening stakeholder communication

Materiality Analysis

Materiality Analysis Result

Legend: ●●● High, ●●○ Medium, ●○○ Low

Material Issue	Definition	Key Stakeholders	Social and Environmental Impact	Business Impact	GRI
 Eco-friendly product, content, and service development	Activities to manufacture various eco-friendly products including improving the eco-friendliness of existing products—such as reducing environmental pollutant discharge and increasing energy efficiency—and expanding the eco-friendly product lineup	Customers, suppliers	●●●	●●●	302-5
 Securing future competitiveness	Activities to secure market leadership in the rapidly changing industrial environment and sustainable growth engine by searching future income sources	Shareholders and investors, suppliers, employees, customers	●●○	●●●	201-1
 Product and service quality improvement	Activities to achieve customer satisfaction by manufacturing zero-defect products based on continuous R&D, technological innovation, and strict quality control, providing correct information, and swiftly responding to customer needs	Customers, suppliers, employees	●●○	●●●	416-1,2 417-1,2,3
 Integrated risk management	Activities to identify and evaluate the potential impact of financial and non-financial risks that can occur in the course of business operation and management and control and respond preemptively to the risks	Shareholders and investors, employees, suppliers, local communities	●●○	●●●	-
 Human rights protection and promotion	Activities to establish a human rights management system in order to protect all employees including those of suppliers from discrimination and prevent human rights violation	Employees	●●○	●●○	405-1,2 406-1
 Climate change response and management of GHG emissions	Activities to establish a management system preemptively by identifying climate change-related corporate risks and minimize the negative impact of corporate activities on the climate by managing GHG emissions, etc.	Local communities, suppliers, shareholders, and investors	●●●	●○○	305-1,2,3,4
 ESG management in the supply chain (partners and suppliers)	Activities to evaluate the ESG risk factors across the value chain and manage ESG risks preemptively in order to achieve stable raw material procurement and strengthen the ESG capabilities of suppliers	Suppliers	●●●	●○○	308-1 414-1
 Transparent and sound BOD organization	Activities to improve transparency in the BOD operation by strengthening the responsibility and roles of the BOD and ultimately increase shareholder benefits by establishing sound governance	Shareholders and investors, employees	●○○	●●○	-
 HR management and development	Activities to upgrade the benefit programs to improve employees' quality of life and secure and maintain competent human resources by operating individual capability development programs and fair performance-based compensation system	Employees	●●○	●○○	401-1 404-1,3
 Employee health and safety improvement	Activities to create a safety-oriented organizational culture and provide a healthy, safe workplace by preventing occupational chronic diseases, etc.	Employees, suppliers	●●○	●○○	403-8,9,10

Overview

02

Sustainability
Strategy ▾

ESG Strategies of
KD Navien

Materiality Analysis

Management Approach

Stakeholder
Communication

2022 Highlights

Focus Area

Environmental

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Appendix

Management Approach

Material Issue	Impact and Reasons for Selection	Management Plans	Performance in 2022	Page
Development of eco-friendly product, content and service	<ul style="list-style-type: none"> Increase in necessity of response to climate change and low-carbon policies Eco-friendly product lineup expansion and transition to clean energy 	<ul style="list-style-type: none"> Strengthen the eco-friendliness of existing products Carry out R&D activities for the transition to clean energy 	<ul style="list-style-type: none"> Acquired New Excellent Technology (NET) certification for the hot water pre-heating system to lower water consumption in the pre-heating process drastically Developed condensing hydrogen boiler technology and passed the UK Hydrogen-blend Ready certification test 	20-23, 30-32
Securing future competitiveness	<ul style="list-style-type: none"> Necessity of securing market competitiveness according to changes in the competition environment To secure market leadership through differentiated product development and supply 	<ul style="list-style-type: none"> Strengthen the performance of key products and diversify business areas Enter new regional markets 	<ul style="list-style-type: none"> Expanded the global market by establishing subsidiaries in Canada and Uzbekistan Expanded the product lineup to ventilation and cooling system and HVAC, etc. 	24-25
Product and service quality improvement	<ul style="list-style-type: none"> To create customer value through high-quality production To increase customer satisfaction through swift and accurate customer response 	<ul style="list-style-type: none"> Operate and upgrade the product safety quality management system to increase reliability Improve user convenience by reflecting customer complaints in product improvement 	<ul style="list-style-type: none"> Introduced the product safety quality management system Established consumer rights and interest protection goals 	26-27, 40, 50-57
Integrated risk management	<ul style="list-style-type: none"> Increase in stakeholder demand (customers, government, etc.) for non-financial risks To strengthen stability in corporate activities through preemptive and integrated risk management 	<ul style="list-style-type: none"> Promote risk prevention activities (monitoring, etc.) through a risk identification process Establish a governance system to report key risks by area to the BOD 	<ul style="list-style-type: none"> Identified non-financial risks based on a materiality analysis and reported the result to the BOD Reported safety and compliance risk management activities and plans to the BOD 	14-16, 72-73
Human rights protection and promotion	<ul style="list-style-type: none"> Increase in corporate responsibilities for and importance of human rights management 	<ul style="list-style-type: none"> Establish a human rights management policy and conduct human rights impact assessment Implement measures to alleviate human rights-related risk factors derived through assessment 	<ul style="list-style-type: none"> Established a human rights management policy Established a human rights impact assessment plan 	48-49
Climate change response and management of GHG emissions	<ul style="list-style-type: none"> Necessity of increasing response capabilities in line with the increased interest in global climate change issues To promote sustainable growth and development 	<ul style="list-style-type: none"> Establish the climate change response and carbon neutrality-related roadmap Conduct GHG emission reduction activities¹⁾ 1) Expand the monitoring and management scope, increase renewable energy use, etc. 	<ul style="list-style-type: none"> Established the GHG emissions inventory of Seotan Factory and performed voluntary third-party verification Expanded the scope of emissions management (worksites, Scope 3 emissions) Established a climate initiative response plan (CDP, etc.) 	33-35, 97
ESG management in the supply chain (partners and suppliers)	<ul style="list-style-type: none"> Increased cases where supply chain sustainability issues affect management activities Importance of identifying and managing supply chain-related risks 	<ul style="list-style-type: none"> Establish an integrated supply chain (external suppliers, internal partners) management system Perform supply chain ESG assessment and review the incentive payment based on the assessment results 	<ul style="list-style-type: none"> Designated the division in charge of supply chain management Improved related policies (Supplier Code of Conduct, Procurement Code of Ethics, etc.) 	58-61
Transparent and sound BOD organization	<ul style="list-style-type: none"> Need to make efforts for sustainability led by the BOD (to strengthen the roles and responsibilities of leadership) To foster a corporate culture of active communication with shareholders and stakeholders 	<ul style="list-style-type: none"> Perform an assessment of the BOD and externally disclose the results Review important non-financial risks led by the BOD Establish subcommittees to strengthen the expertise and independence of the BOD 	<ul style="list-style-type: none"> Operating the established BOD assessment system Disclosed the Governance Report and Sustainability Report 	68-70
HR management and development	<ul style="list-style-type: none"> To help individual employees realize their values by providing them with training and fair assessment 	<ul style="list-style-type: none"> Measure the training performance and effectiveness to establish an employee capability development system 	<ul style="list-style-type: none"> Implemented a new HR system Established a hybrid learning system (contactless learning environment) Continuously measured training performance and effectiveness 	40, 43-47
Employee health and safety improvement	<ul style="list-style-type: none"> Responsibilities for health and safety management strengthened according to the enforcement of the Serious Accidents Punishment Act Necessity of establishing a safe, healthy working environment 	<ul style="list-style-type: none"> Declare placing the top priority on health and safety in management Conduct activities to achieve zero accidents and disasters¹⁾ 1) Health and safety investment expansion, EHS system establishment, regular checkup, etc. 	<ul style="list-style-type: none"> Established the health and safety management policy and goals Organized a health and safety management system operation team Performed thematic inspection and regular audit activities 	40-42

Stakeholder Communication

Based on the corporate philosophy of “Social Contribution through Business Success,” KD Navien defines all targets directly and indirectly affecting—and affected by—management activities as stakeholders and strives to strengthen communication with them. We operate a range of communication channels targeting the stakeholders that directly and indirectly affect our business activities, such as customers, shareholders and investors, employees, suppliers, local communities, government, and academic circles. In 2022, we strengthened communication by conducting a questionnaire survey on our sustainability management. We will improve management transparency and build reliable relationships by encouraging stakeholders’ engagement in and communication for material issues surrounding us.

Category	Purpose	Communication Channels
Customers	<ul style="list-style-type: none"> · To introduce technologies · To provide brand experience · To understand customer needs · To fulfill responsibilities for products and services 	<ul style="list-style-type: none"> · Operating experience-type stores · Dankkum Store (Dankkum Experience Center, Dankkum Information Center, Kkuljam Store, Dankkum Playground) · Navien Newsroom · Customer service center, website
Shareholders and Investors	<ul style="list-style-type: none"> · To protect shareholder and investor rights · To disclose financial performance · To promote transparent governance disclosures · To strengthen the roles for ESG management 	<ul style="list-style-type: none"> · General shareholders’ meeting · Reports (Business Report, Audit Report, Governance Report, Sustainability Report) · Website
Employees	<ul style="list-style-type: none"> · To develop employees’ capabilities and guarantee diversity · To guarantee a safe, healthy working environment · To form a healthy labor-management relationship · To share management performance and information · To implement company-wide security and compliance pledge 	<ul style="list-style-type: none"> · Operating the communication channel “KyungDong in” · Grievance handling system, online whistleblowing center · Labor-management council, meetings by line position · Employee training and workshops · In-house clubs · Job-related education/training (KD Academy) · Health management and welfare programs · Company-wide security and compliance pledge
Suppliers	<ul style="list-style-type: none"> · To create shared growth value · To strengthen communication with and capabilities of suppliers 	<ul style="list-style-type: none"> · Programs to build supplier competitiveness (training, technical, safety support, etc.) · Supplier grievance handling channels (SRM, online whistleblowing center, etc.)
Local Communities	<ul style="list-style-type: none"> · To support local economy activation and culture · To support the improvement of residential environment and heating · To protect the environment of local communities 	<ul style="list-style-type: none"> · Supporting cultural organizations · Providing support in the form of boiler, heating mat, and other products to improve the residential environment and heating of the underprivileged · Raising and supporting the Condensing Environment Fund
Government	<ul style="list-style-type: none"> · To realize faithful tax payments · To comply with statutes and regulations · To respond to air pollutant discharge regulations · To promote anti-corruption and ethics management 	<ul style="list-style-type: none"> · Reports (Business Report, Audit Report, Governance Report, Sustainability Report) · Website · Ministry of Environment
Academic Circles	<ul style="list-style-type: none"> · To cooperate for R&D on eco-friendly and living environment products and technologies · To support scientific development 	<ul style="list-style-type: none"> · Industry-academia-research technology cooperation · Condensing Environment Fund, support for academic societies

2022 Stakeholder Communication Highlights

Customers

Dankkum Store, an Experience-type Boiler Store, Reopened



Creating a Healthy Childcare Environment



Local Communities

Business Agreement to Spread the Social Contribution Culture



Supporting Condensing Boiler Replacement for Low-income Residents

Expanding relationship-centered marketing such as supporting all costs exceeding the government subsidies for replacing old boilers used for over ten years

Academic Circles

Promoting Hydrogen Boiler Development through the Expansion of Domestic and International Industry-Academia Cooperation

- Developing condensing hydrogen boiler technologies through R&D cooperation with KAIST, etc.
- Passed the UK Hydrogen-blend Ready(H2 Ready) certification test

2022 Highlights

Expanding Business Areas

KD Navien expands business areas to advance from a boiler supplier to a living environment solution provider. We fundamentally changed the image of our products by adding the category “hot water home appliances” to the existing boiler product group. We also secure competitiveness through product diversification.

Sales Expansion



Annual sales exceeded KRW 1 trillion
(as of end of 2021)

Overseas Market Entry



First in the industry
Received the **Five**
Hundred Million
Dollar Export Tower
Award

Global sales
Approx. **70%**

Portfolio Diversification

Promoting a paradigm shift from heating facilities to appliances for the living environment, strengthening the heating mat and ventilation system product groups

Improving the Organizational Culture

KD Navien introduced a company-wide new human resources system in 2022, and has promoted organizational culture improvement. Moving forward, we will create a flexible organization based on the “fostering-oriented, performance-based, and horizontal organizational culture,” provide opportunities for growth to competent talents, and consequently advance as Korea’s leading living environment partner.



Fostering-oriented

- Upgrading the assessment/promotion process
- Strengthening feedback to focus on fostering



Performance-based

- Strengthening the organization-individual performance link (cascading)
- Strengthening compensation to be based on performance



Horizontal organizational culture

- Simplifying positions to be job-centered
- Integrating addressing terms

Responding to the Serious Accidents Punishment Act

KD Navien faithfully performs statutory activities to secure health and safety in order to prevent serious accidents. We are also dedicating utmost effort to fulfilling the duty of the management officer to secure a health and safety management system. In addition, by strengthening the EHS management system through the acquisition of ISO 45001 and ISO 14001 international standard certifications, we have established a basis for zero accidents and zero disasters.

Zero-Accident, Zero-Disaster

Establishment of a Dedicated Team under the CSO¹⁾

- Serving as a health and safety-related control tower
- Regular reporting to the CSO

Health and Safety Management Activities

- Established a preemptive crisis management response manual
- Established an EHS²⁾ system for health and safety investment expansion
- Conducting thematic inspections and regular audits

Workers' Health Promotion Programs

- Circuit training
- Musculoskeletal disease prevention program
- Walking contest
- Psychological counseling for job stress

1) Cheif Safety Officer

2) Environment, Health and Safety

Overview

Sustainability Strategy

03

Focus Area

Eco-friendly Product
Development

Securing Future
Competitiveness

Improvement of Product
and Service Quality

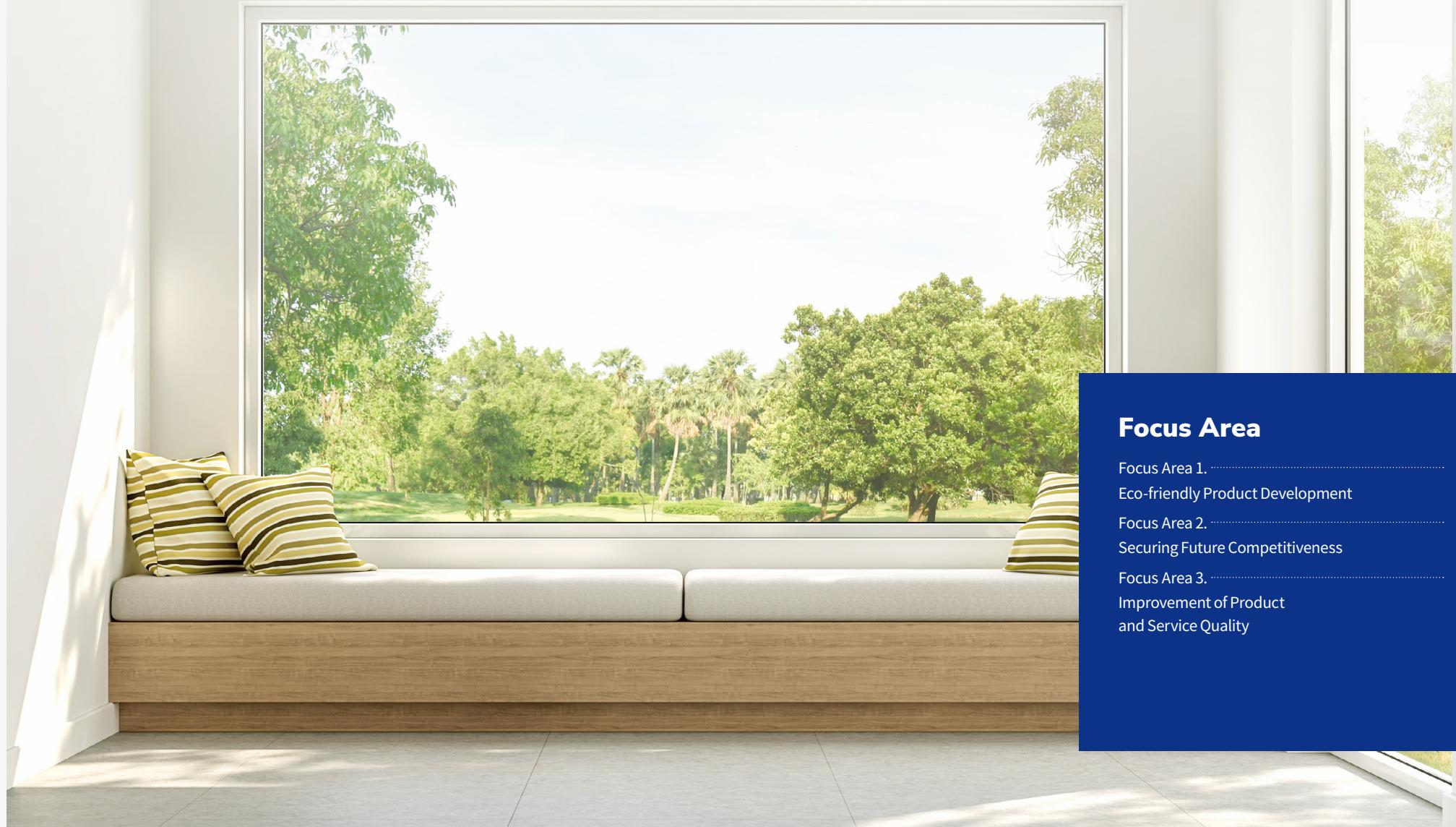
Environmental

Social

Governance

Appendix

SMARTER LIVING ENVIRONMENT PARTNER



Focus Area

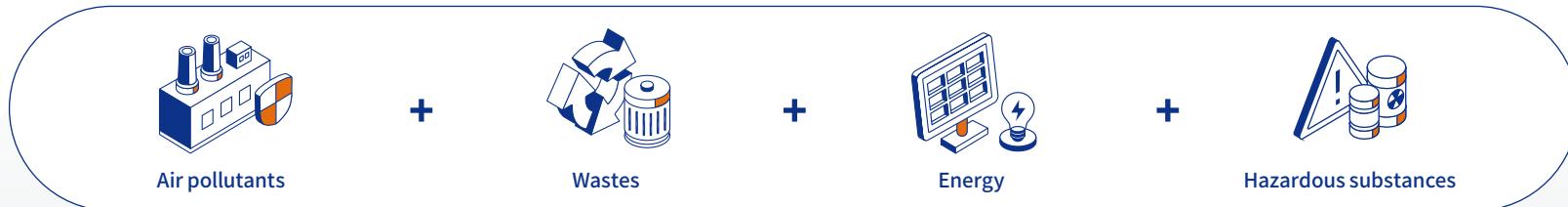
Focus Area 1.	20
Eco-friendly Product Development	
Focus Area 2.	24
Securing Future Competitiveness	
Focus Area 3.	26
Improvement of Product and Service Quality	

Focus Area 1. Eco-friendly Product Development



Eco-friendly Products

KD Navien Eco-friendly Products



Condensing Boilers/Water Heaters

- Reduced NOx emissions, the main cause of particulate matter generation, by 79%¹⁾
- Labeled efficiency of condensing water heater higher than that of general water heater by at least 14%p²⁾
- Reduced energy consumption by 6.2% through integrated piping system
- Improved recyclability through expansion of paper packaging material use

Key Products



Condensing Gas Boiler for Domestic Market (NCB753)



Condensing Water Heater for the U.S. Market (NPE)

Ventilation Systems

- Acquired Green Technology certification by saving energy and minimizing pollutant discharge
- Reduced energy consumption by at least 20%
- Reduced waste discharge by improving electronic dust collection filter replacement cycle

Key Products



EGI Ventilation System (TAC511/551)



ABS Ventilation System (TAC521/561)

Heating Mats

- Minimized inclusion of hazardous substances in product and components, such as mat and cover, and introduced internal management criteria
- Reduced energy consumption through operating efficiency improvement (88.2%)

Key Products



Hot Water Mat (The Care)



DC Heating Mat (Comfy)

1) National Institute of Environmental Research, National Air Pollutant Discharge in 2013/Seoul Institute, Study on Air Pollutant Management Plans for Combustion Devices Used in Building Heating in 2013

2) Comparison of efficiency labeled in the Energy Efficiency Report for KD Navien condensing water heaters (NPW-48KS, LN, FF) and general water heaters (NGW550-18L, LN, FF)

Focus Area 1. Eco-friendly Product Development



Eco-friendly Products

Condensing Boilers and Water Heaters

KD Navien has a condensing boiler product group consisting of 13 products that reduce gas consumption and air pollutant emissions, and it has acquired eco-friendly certification. In 2022, we released ON AI, a product that also saves water by reducing the waiting time for hot water use. Our condensing water heaters produce the highest labeled efficiency of at least 98%¹⁾. In North America, with our condensing technological power recognized, we have been ranked No. 1 in sales volume of the instantaneous gas water heater for 14 years in a row²⁾.

1) Comparison of labeled efficiency in the Energy Efficiency Report for KD Navien condensing water heaters (NPW-48KS, LN, FF) and general water heaters (NGW550-18L, LN, FF)

2) Total sales volume of instantaneous condensing gas water heaters in BRG US and BRG CA between 2009 and 2022

Reduction of Air Pollutant Discharge

KD Navien's condensing boilers and condensing water heaters use certified eco-friendly low-NOx burners to reduce the emissions of NOx—the main cause of particulate matter generation—by 79%. It produces the effect of reducing CO₂ emissions by 576kg each year—which is equivalent to planting 208 pine trees—and building green zones measuring seven times larger than that of Seoul Metropolitan City. In particular, the cascading condensing boiler and water heater using KD Navien's eco-friendly low-NOx burner meet the criteria as a model for the government's low-NOX burner installation support project; thus contributing to air quality improvement.



1) Annual gas consumptions and CO₂ emissions of general boiler and condensing boiler models of KD Navien calculated according to the test conditions specified in the Guidelines for Carbon Label Preparation and carbon emission formula of the Korea Energy Agency

2) "Standard carbon absorption of key forest plant species" for 20-year-old pine trees (mean) surveyed by the National Institute of Forest Science in 2013 reflected

Reduction of Energy Consumption

KD Navien's condensing boiler has acquired the highest energy rating of 1. Compared to general boilers, it can reduce gas expenses by up to 28.4%¹⁾. As for the condensing water heater, the labeled efficiency is higher by at least 14%²⁾ than that of general water heaters²⁾. In addition, the integrated piping system serves as a boiler heat exchanger in each household and saves energy by up to 6.2% as it uses only the necessary amount of energy for heating and hot water³⁾.

1) Korea Energy Agency (2011), Understanding the Energy Labeling System, Ministry of Knowledge Economy

2) Comparison of efficiency labeled in the Energy Efficiency Report for KD Navien condensing water heaters (NPW-48KS, LN, FF) and general water heaters (NGW550-18L, LN, FF)

3) Extract from the "Verification Study of Integrated Heating and Hot Water Pipeline System in Local Heating Buildings," a collection of papers from the Winter Academic Symposium of the Society of Air-conditioning and Refrigerating Engineers of Korea (Nov. 2022)

Reduction of Environmental Pollution Risk

KD Navien minimized the environmental pollution risk by changing the product packaging to paper packaging.

Before the Change

Urethane foam packaging material
Urethane foaming agent consisting of diphenylmethane diisocyanate¹⁾ approx. 2.1 tons of which is used per year

After the Change

Paper packaging material
Packaging material changed to corrugated cardboard to improve the working environment and achieve eco-friendly production

1) Diphenyl diisocyanate generates a large amount of waste salt water in the manufacturing process, and it can lead to the generation of hazardous substances such as formaldehyde as a thermal decomposition byproduct in the foaming process

CASE Introduction of Hydrogen Boiler and Heat Pump for Carbon Neutrality

To achieve carbon neutrality by 2050, decarbonization policy for energy use in buildings is being developed around the world especially in Europe. For example, transition to hybrid gas grid and electrical heat pump application are being reviewed. To this end, KD Navien has developed the H2 Ready boiler using 20% hydrogen, and released it in Europe. Based on our technological power, we are also participate in the government project in Korea, developing 100% hydrogen technology through industry-academia cooperation, and implementing the H2 Village project of the UK for 100% hydrogen use. Concurrently, as an effort for electrical heat pump distribution, we distribute the geothermal heat pump we have developed in Korea. Also being developed are the air-to-water heat pump that provides heating and cooling and hot water functions, air-to-air heat pump with heating and cooling functions, and heat pump water heater. Moreover, the development of a hybrid heat pump boiler offering the strengths of the hydrogen boiler and heat pump is being reviewed.

Focus Area 1. Eco-friendly Product Development



Eco-friendly Products

Ventilation Systems

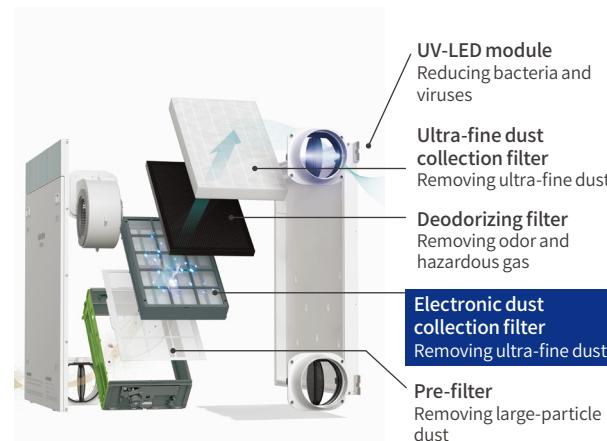
Based on the systematic ventilation system maintenance service and outstanding quality, KD Navien minimizes environmental pollution and contributing to the spread of green consumption among consumers.

Waste Reduction Effect through Filter Replacement

Minimization Technology

KD Navien's ventilation system is the only product in the industry that applies an electronic dust collection filter so ultra-fine particulate matter is removed dually and loss due to filter replacement is minimized as the filter performance is maintained for a long period¹⁾. In addition, by conducting regular checkups through the Care Service, we clean the electronic dust collection filters, extend the product lifespan, and ultimately prevent environmental pollution.

1) Recommended replacement cycle doubled from 6 months to 12 months through the electronic dust collection filter (Filter Saver) application

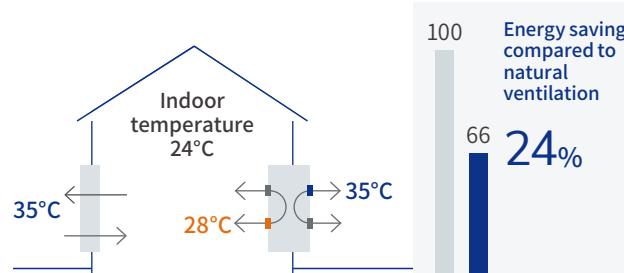


Cooling and Heating Energy Saving

When we open windows for natural ventilation, the cooled or heated indoor air is released, resulting in energy waste. KD Navien's ventilation system uses a total heat exchanger. Through indoor and outdoor heat exchange, energy emitted to the outside is reused, saving energy by more than 20% compared to natural ventilation.

Cooling Energy Saving in Summer

Product with heat exchange efficiency (76%) higher than the KS 6879 standard (70%), saving energy by 24% compared to natural ventilation¹⁾



1) Amount of energy saving calculated by comparing the calorific value at outdoor air inflow through the opening of windows in summer and that through total heat exchange of the ventilation system (TAC561-20S model) based on the effective electric heat efficiency values of the KS testing standard (subject to difference in actual use)

Green Certification

KD Navien's ventilation system and Navien Air One ventilation system acquired the Green Technology certification according to the Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis, minimizing GHG and pollutant emissions while contributing to energy and resource saving. In each zone, the ventilation system effectively draws in fresh air from outside and efficiently discharges or removes indoor air pollutants such as particulate matter. The zone control ventilation system garnered a rating of 1 for unit household ventilation performance in the category of technologies and products applied to buildings for energy saving and environmental pollution reduction as required by the Green Building certification, and it was officially released in 2023.

Focus Area 1. Eco-friendly Product Development



Eco-friendly Products

Heating Mats

As a leading B2C home appliance company, KD Navien develops products with high energy efficiency and eco-friendly values. In particular, we develop the high-quality hot water mat and DC heating mat by placing the highest importance on customers' health.

Energy Efficiency Improvement

KD Navien develops products with high energy efficiency and improved eco-friendly value. The adapter of the DC heating mat released in 2021 contributes to reducing energy consumption by producing an operating efficiency of 88.2%, which meets the minimum power consumption efficiency criterion. In addition, through a joint study with Dankook University, we verified the reduction of heating expenses by approximately 16% and improvement in the quality of sleep by approximately 7% when the hot water mat was operated at 35°C together with a boiler at 21°C compared to when only a boiler was operated at 23°C¹⁾.

1) A study on low-energy smart environment performance and sleep efficiency improvement of hot water mat used in combination with a boiler (2019, Dankook University) The study was conducted in a test environment, so there may be differences depending on the environment of actual use.



Hazardous Substance Management

Placing the highest priority on customer health, KD Navien strives to control components and products used in heating mats, and minimize the inclusion of hazardous substances. For preemptive response to hazardous substance-related regulations in each country, we have established and introduced the internal hazardous substance criteria¹⁾, and systematically manage the hazardous substance data across the production process including material and component manufacturing.

1) RoHS Directive, radon test reports, and hazardous substance management criteria for textile products for infants and toddlers applied to mats and covers



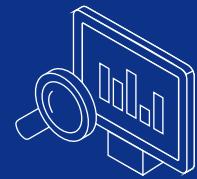
Effort to Secure Product Eco-friendliness

KD Navien strives to secure eco-friendliness in the manufacturing process, such as using fabric that has not been processed through dyeing in product manufacturing and reducing water and energy consumption and inclusion of chemicals by decreasing chemical processing.

We are also improve the recyclability of the product packaging by changing the box packaging material to traditional Korean paper.



Focus Area 2. Securing Future Competitiveness



Global Market Domination

Based on superior product quality, KD Navien has transformed the boilers and water heaters from products for domestic consumption to those for export. In addition, to achieve sustainable growth, we accelerate entry into new overseas markets.

Our global market influence was expanded through the sale of boilers and water heaters in approximately 40 countries by 2022. Likewise, starting with the One Hundred Million Dollars Export Tower Award in 2011, we received the Five Hundred Million Dollars Export Tower Award in 2022 by steadily increasing the export scale.

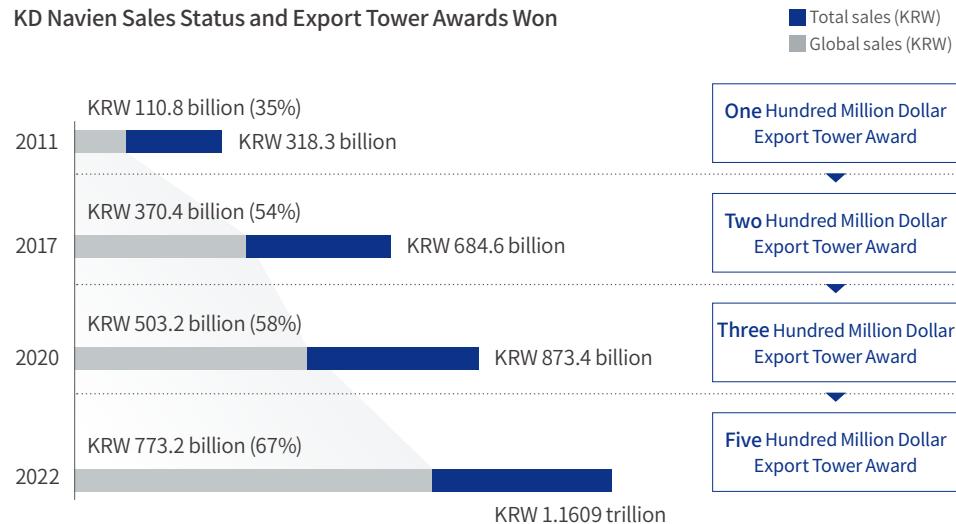
The condensing boiler developed by KD Navien for the first time in Asia is an ideal product for the current global market where a consensus for carbon neutrality has been formed. Therefore, with focus on the condensing products, we will strengthen overseas market entry and consequently grow into a “Smarter Living Environment Partner” together with our global consumers.

Localization Strategies

KD Navien develops and implements advanced localization strategies by thoroughly analyzing local markets and considering the heating infrastructures and cultures that vary by country.

In North America where the expansion of instantaneous water heater distribution is difficult and gas pressure is low due to differences in heating facilities, we released NPE, a condensing water heater requiring no gas pipe replacement, to meet the needs of local consumers and installation service providers. In Russia, the Deluxe Series, which operates successfully even under extreme conditions including temperature of 40 degrees Celsius below zero as well as low gas pressure and frequent voltage fluctuations, was released to secure a growth engine in the market.

Based on differentiated quality and technological power, we promote entry into the Chinese and European markets. Moving forward, we will present smarter living to our global consumers by supplying products customized to heating infrastructures in each region.

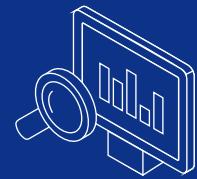


New Subsidiary Establishment

KD Navien promotes the establishment of new subsidiaries in a number of countries to communicate actively with local customers and develop localization strategies based on customer needs. In 2022, we established new subsidiaries in Uzbekistan, Canada, and Mexico in addition to the US, Russia, China, and UK. Through our global subsidiaries, we will collect local consumers' insights and provide customized products.

Overseas Worksites	Purpose
Uzbekistan	<ul style="list-style-type: none"> To secure a bridgehead for sales in the CIS region of Central Asia
Canada	<ul style="list-style-type: none"> To strengthen customer relations by expanding individually and regionally customized services
Mexico	<ul style="list-style-type: none"> To develop marketing routes for Central and South America

Focus Area 2. Securing Future Competitiveness



New Businesses

Premium Hot Water Mat

KD Navien defines the achievement of a “smarter, healthy life in the living environment” as a business task. We provide our customers with a smart, safe, and healthy environment for sleep by releasing hot water mats with individually customized temperature control function that also reduce unnecessary energy consumption for heating. With our technological power for boiler development built over 40 years, an accurate temperature is consistently kept throughout the mat. In addition, an optimal sleeping environment is provided thanks to a function of ensuring customers’ safety and health. In 2021, we released the DC heating mat and solidified our position in the heating mat business. Together with other product groups such as boilers and ventilation system, hot water mats contribute to creating a smarter living environment through heating customization based on connection to the home network system.



Heating, Ventilation, and Air Conditioning (HVAC) System

In response to global warming, advanced countries especially in Europe are promoting decarbonization policies to reduce the production and consumption of petroleum and gas and switch to eco-friendly energy sources. With the HVAC system that provides cooling and heating solutions in the residential environment, cooling and heating efficiency is improved through the reduction of energy consumption while transitioning from gas to electricity as energy source.

For the heating (boiler) business, KD Navien will respond to the market demand by starting the HVAC business and release condensing air conditioner, hydro-furnace, and heat pump, which are differentiated from the HVAC products, by considering not only high energy efficiency but also consumers’ safety.



Ventilation System

According to the Standard Regulations for Construction Facilities established in 2006, the installation of a ventilation system is mandatory in apartment housing¹⁾. Under this enforcement decree, the ventilation system is reflected in the design of new apartment buildings. However, the rate of system use is relatively lower because consumers have not been properly informed of the importance and roles of this system, and also due to the burden of electricity cost and consumers not being familiar with the directions for using the system.

KD Navien spreads the importance of this system by expanding the scope of business from B2B focusing on construction companies to B2C targeting consumers. To improve the usage, we also organize a campaign to promote the ventilation system use and explain the directions. We will lead the ventilation system market with differentiated products by setting as the key USPs the IFD filter reducing particulate matter and improving filter lifespan, air monitor visually expressing air quality data, and smart interface (app) enhancing convenience of product control and management.

1) As of 2020, ventilation system installation required in apartment housing with 30 households or more

Apr. 2021

Released Kitchen Plus to link the ventilation system with the kitchen exhaust hood

Oct. 2021

Released a mid- to large-scale ventilation system for commercial facilities

Nov. 2022

Launched Care Service to increase consumer convenience and improve usage

> CASE Care Service

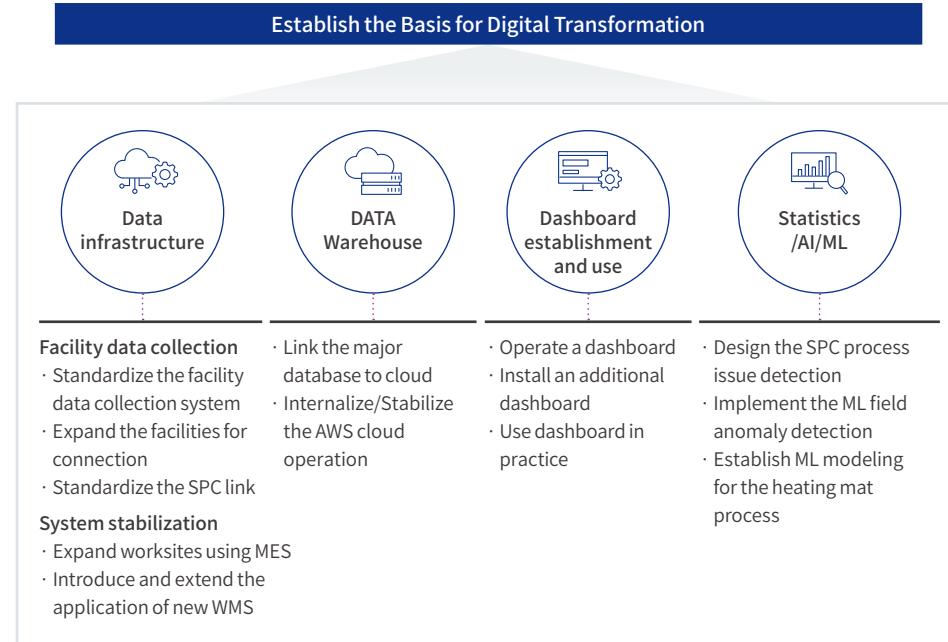
Proper product management and care are important because, without them, ventilation system performance deteriorates, resulting in the inflow of polluted air, energy wastage, and product failure. KD Navien launched “Care Service.” Through this systematic inspection service provided by visiting customers, we offer information to help customers care for the ventilation system properly, increase product lifespan, and enjoy a pleasant, hygienic indoor environment. Based on their understanding and technical capabilities for the product, expert technicians from service centers under the headquarters provide Care Service. To ensure that customers use KD Navien products safely and longer, we will expand the scope of professional inspection service to include boiler products.



Focus Area 3. Improvement of Product and Service Quality

Digital Transformation

Digital Internalization



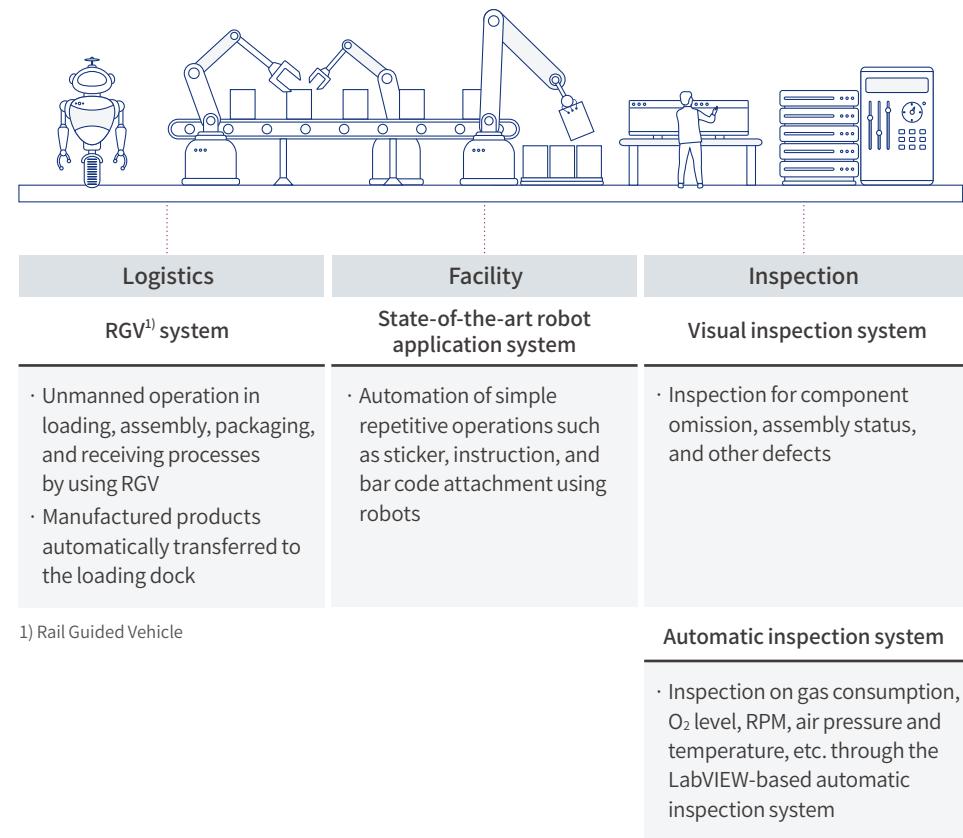
KD Navien establishes the basis for digital transformation to improve employees' work efficiency and prepare for the digital era. In 2021, as part of the effort for the "development of a new leap system based on communication and innovation," we set as a goal the completion of basis for digital transformation. We also standardized and condensed the facility data and visualized indicators using the data.

An accurate status analysis was conducted on the issues identified through the data visualization, and, using the result, a company-wide data management system was prepared. When an issue occurred, it was analyzed using tools such as Excel, and operation efficiency was improved by expanding the use of data-based analysis dashboard. In addition, we create a system that can be used continuously by updating the programmed screens on a regular basis and flexibly responding to user needs through the application of BI tools.

Smart Factory Establishment

To become the No. 1 living environment solution provider, KD Navien will provide customers with a smarter living environment by establishing smart factories and securing quality and manufacturing competitiveness.

To this end, we systematically manage inventories through logistics, facility, and inspection automation. Consistent and flawless performance and quality are also secured by preventing human errors.





Focus Area 3. Improvement of Product and Service Quality

Product Safety Reinforcement

Safety Certifications

To secure consumer safety, KD Navien undergoes product safety assessment by independent third-party testing and certification agencies in each continent such as America, Europe, Asia, and Oceania.

The products developed, manufactured, distributed, and serviced by KD Navien are tested and approved according to regulations and standards in each country. We also promote product manufacturing and quality control according to the respective standards in order to meet the safety and performance criteria specified in the national and international standards.

As of 2022, we maintain a total of 42 certifications we have acquired. Moving forward, we will strive to acquire domestic and international safety certifications to improve customer safety.

Major Certifications

Target Region	Certification	
America	· ASME	· FCC
	· CSA	· SEC
	· UL	· Energy Star
	· ETL	· NB
	· NSF	· AHRI
	· UPC	· AQMD
Europe	· CE	· EAC
	· UKCA	· UkrSEPRO
	· WRAS	· FC
	· FAC	
Asia, Oceania	· KC	· CQC
	· KS	· SRRC
	· CCC	· RCM



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Appendix

Environmental Key Performance

Category	Strategic Direction	Promotional Activities	2022 Performance	2023 Goals	Mid-to Long-term Goals
Greenhouse gas 	Expand the scope of GHG emission management	<ul style="list-style-type: none"> Established a GHG emissions inventory for Seotan Factory Performed voluntary third-party verification 	Established a GHG emissions inventory	<ul style="list-style-type: none"> Establish an inventory for domestic worksites Establish a carbon neutrality roadmap 	<ul style="list-style-type: none"> Implement carbon neutrality
Pollutants 	Air	Reduce pollutant emissions and hazard risks	<ul style="list-style-type: none"> Reviewed the target of change report for new emission facility (gas heat pump, GHP) installation 	Comparison of emissions from 2021 NOx increased by 3.7% , SOx decreased by 98% , Dust decreased by 58.6%	<ul style="list-style-type: none"> Reduced NOx, SOx, and dust emissions by 5% compared to 2022
			<ul style="list-style-type: none"> Reduced wastewater generation and emission concentration Improved the efficiency of internal sewage and wastewater treatment facilities 	Emitted by less than 25% of the acceptance criteria Decreased wastewater treatment volume by 41% compared to 2021	<ul style="list-style-type: none"> Emitted by less than 20% of the acceptance criteria Decreased wastewater treatment volume by 3% compared to 2022
			<ul style="list-style-type: none"> Completed the hazard reduction of chloroalkane Reviewed the substitute for MDI Conducted a reliability test on styrene substitute Checked new toxic substance designation targets such as zinc oxide and methanol 	Completed action to prohibit the handling of ONE substance	<ul style="list-style-type: none"> Alleviated and removed hazard in substance handling, such as MDI and styrene Zero hazardous chemicals
Water resources 	Minimize external sources and expand the water reuse rate	<ul style="list-style-type: none"> Tallied and analyzed water consumption by source Reported the performance to management monthly Identified the water resource risks and established response plans Saved and totaled the operating volume in worksites 	Achieved reuse rate of 58% (2022 Goal: 65%)	<ul style="list-style-type: none"> Achieved reuse rate of 67% 	<ul style="list-style-type: none"> Reusing process water by 100%
Wastes 	Reduce waste discharge from worksites and expand recycling	<ul style="list-style-type: none"> Converted into and expanded the recycling of wastes Improved waste properties management Improved recycling facilities Converted into recycling of wastewater and sludge 	Achieved waste-to-resource ratio of 94% (2022 Goal: To maintain 90%)	<ul style="list-style-type: none"> “Zero” landfill 	<ul style="list-style-type: none"> Zero landfill

Environmental Management

Environmental Management System

Environmental Management System

KD Navien's management goal is to create a smarter social environment and a healthy living environment for customers based on the Pursuit of Principle and mindset for people and society. In keeping with the management policy, we are committed to establishing a sound ESG management system by leading ESG management across corporate activities and product life cycle and providing value and happiness to customers.

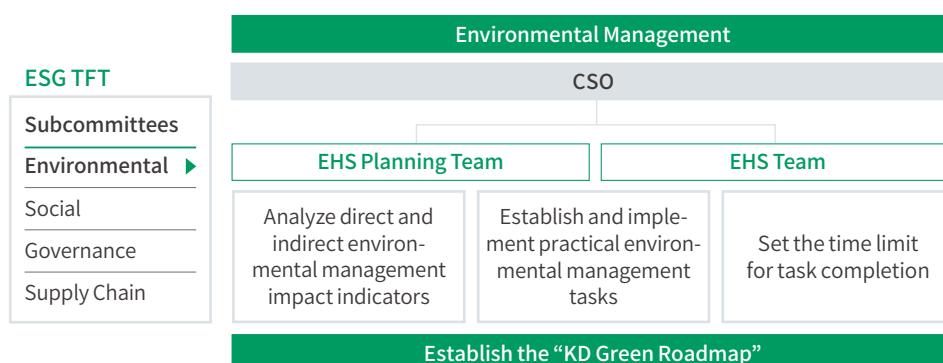
Environmental Management System

KD Navien regularly monitors product and service-related environmental impacts and takes the necessary improvement actions while systematically managing the environmental impacts by acquiring ISO 14001 certification.

From 2023, we plan to undergo voluntary third-party verifications on the GHG emissions inventory targeting all worksites that have acquired ISO 14001 certification and upgrade the emission volume management system. Through these efforts, we will operate an environmental management system conforming to the global standards.

Organization Dedicated to Environmental Management

KD Navien established the ESG promotion system led by an organization dedicated to ESG management. By dividing the organization into four subcommittees, we are implementing the ESG-related practical tasks we have established. The Environmental Subcommittee, centering on the EHS Planning Team and EHS Team under the supervision of the CSO, develops the KD Green Roadmap by analyzing indicators for direct and indirect impact on environmental management, developing tasks based on the results, and setting the time limits for fulfillment of the goals.



Environmental Training

KD Navien plans and operates environmental training programs to help employees create environmental values in everyday life and recognize the importance of practicing ESG. In particular, we encourage and remind our employees to continue learning about environmental management by participating in campaigns. The effort of all our employees to contribute to creating an eco-friendly society outside the worksites as well is bearing fruit.

To increase employees' understanding of the importance of environmental protection and ESG, KD Navien provides full-time online training through the cyber training center and offline training using experts. In January 2022, we organized the "Special Lecture on Zero Energy Building¹⁾" with the goal of helping our employees gain understanding of eco-friendly and zero energy building using eco-friendly construction materials in connection with climate change and energy issues. In addition, environmental operation managers were encouraged to complete the statutory training for environmental engineers²⁾ —which is required in performing their duties—so that they can carry out operations according to legal criteria.

1) Targeting 91 employees from related sectors such as R&D, marketing, and sales

2) Training of water quality, air quality, waste, and noise and vibration-related environmental engineers

Environmental Compliance

KD Navien voluntarily conducts quarterly special environmental inspections to prevent risks through preventive facility maintenance, review on the application of the enacted and amended statutes, and facility efficiency improvement. In 2022, we also underwent guidance inspection from the competent local government. No anomalies or violations of the environmental regulations were found based on the inspection.

Environmental Management

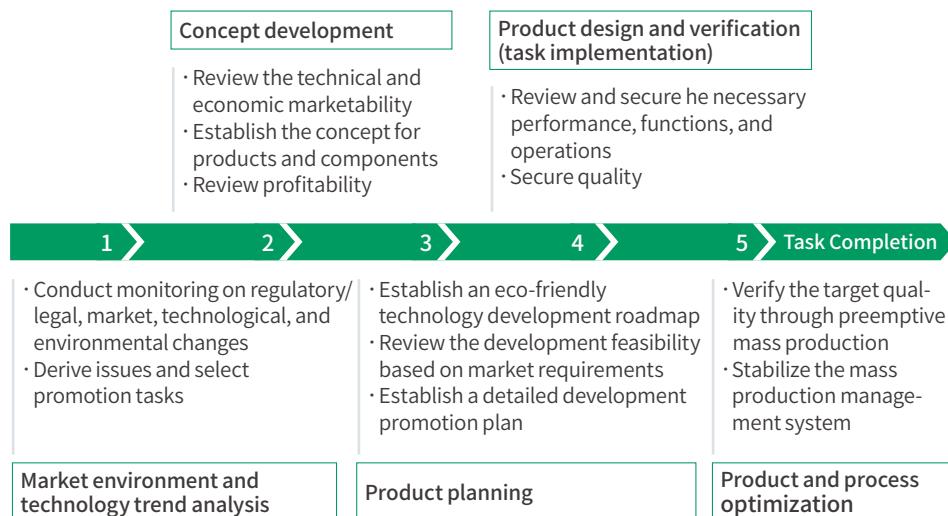
Environmental Management Activities

Eco-friendly R&D

As a “Living Environment Solution Provider,” KD Navien promotes the improvement of energy efficiency with focus on eco-friendly technologies. In addition, to provide our customers with a smarter living environment, we expand investment in R&D.

Based on the domestic status, we have entered the overseas markets, and we are promoting the excellence of Korean boiler and water heater products. Having recorded the highest sales performance abroad by releasing customized products according to local characteristics, we prepared a bridgehead for sustainable growth by developing heating mat and ventilation system products in addition to boilers and water heaters. Moving forward, we will accelerate the development of hydrogen boiler and heat pump to achieve carbon neutrality and lead the fast-changing ESG consumption trend.

Eco-friendly Product R&D Process



Environmental Certification

Through technology innovation, KD Navien continuously improves eco-friendly materials while increasing the energy efficiency of products. We strive to maintain the certifications we have acquired for products with improved energy efficiency and those with verified eco-friendliness in each country.

Major Eco-friendly Certifications

Title	No. of Certifications (Registered Models)	Applied Country	Product Group
Eco Label	10 (166 models)	Korea	Gas boiler
Environmental Product Declaration	10 (10 models)	Korea	Gas boiler
Green Technology	1 (16 models)	Korea	Ventilation system
Highly Energy-Efficient Appliance	16 (16 models)	Korea	Gas vacuum water heater
Energy Star	26 (26 models)	US	Gas boiler, gas water heater
CQC (environmental protection)	3 (6 models)	China	Gas boiler
CQC (energy saving)	3 (6 models)	China	Gas boiler

Eco-friendly Sales

KD Navien defined the internal eco-friendly product conformance criteria¹⁾ equivalent to the third-party certification for condensing boilers and condensing water heaters. The percentage of eco-friendly product sales in 2022 was 69%, representing approximately 2% increase year-on-year. Moving forward, we will continue supplying competitive, eco-friendly products to the market.

¹⁾ Type 1 certification under the Special Act on the Improvement of Air Quality in Air Control Zones in Korea, Energy Star certification in the US

Category	(Unit: KRW million)		
	2020	2021	2022
Eco-friendly Sales	519,949	740,836	802,678
Consolidated Sales	873,409	1,102,947	1,160,861
Percentage	59.5%	67.2%	69.1%

Environmental Management

Environmental Management Activities

Green Procurement

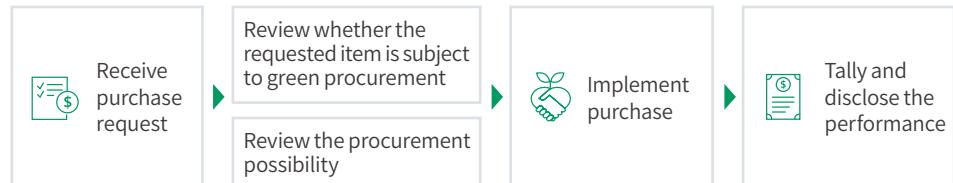
KD Navien established a green procurement-related policy in 2022 in order to minimize the negative impact on environment, increase resource efficiency, and foster a sustainable management culture. This policy includes the roles and responsibilities of each division such as EHS, procurement, and general affairs, definition and scope of green procurement, and details of the purchase process.

From 2023, we plan to improve our green procurement performance by promoting the MRO-type items and office supplies for which Eco Label certification has been acquired.

› CASE KD Navien Green Procurement Policy

- One.** We fulfill our social responsibilities and comply with the regulations for environmental preservation through green procurement activities.
- One.** We strive to secure a pool of suppliers continuously and establish organic relationships with them in order to perform stable green procurement activities.
- One.** We preferentially purchase green products, assuming the same quality and under the same conditions, in order to establish a green procurement culture except in unavoidable circumstances.
- One.** We continue making effort to discover eco-friendly products in order to expand green procurement.

Green Procurement Process



Endangered Plant Survey

James City County in the Eastern United States where the US subsidiary of KD Navien is located is a habitat of Small Whorled Pogonia. This orchid was designated by the Virginia state government as an endangered plant species.

We voluntarily surveyed the habitation of endangered plants in the area where our business is based. As a result of the survey, no Small Whorled Pogonia was found on the land in the southwestern part being used by KD Navien, and the possibility of the area being inhabited by the species was verified to be low.



Northern and Southeastern Views of the Survey Area

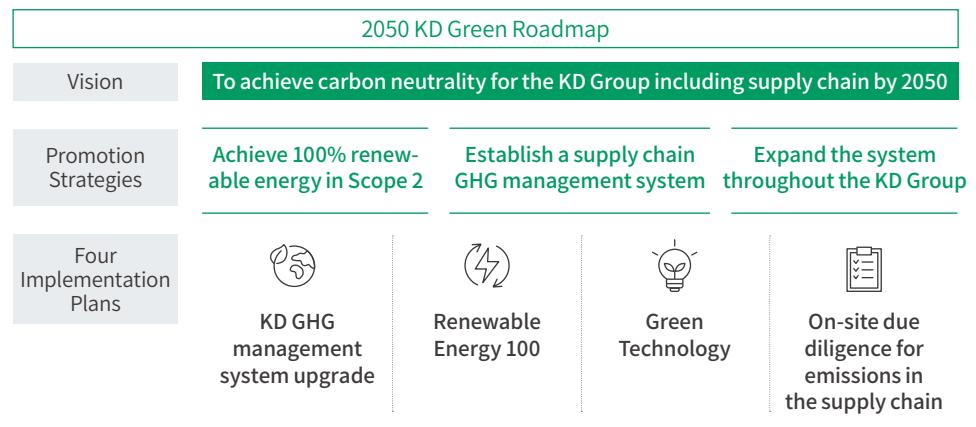
Climate Change Response

GHG Reduction

GHG Reduction Strategies

Carbon neutrality in response to climate change has become an unavoidable trend across the globe. In Korea, GHG reduction is promoted through the emissions trading system (ETS), etc. KD Navien is not categorized as a business subject to mandatory GHG reduction regulations under the ETS. As an eco-friendly company, however, we preemptively and voluntarily embarked on climate change response activities. As a result, in 2022, the GHG emissions inventory for Scopes 1, 2, and 3¹⁾ was established for Seotan Factory as the domestic production base. For continuous GHG emissions management and reduction activities, we are gradually upgrading the “2050 KD Green Roadmap” containing the directivity toward carbon neutrality that we have developed.

1) Targeting categories 1 and 5 for Scope 3



Four Implementation Plans

KD GHG Management System Upgrade

KD Navien has set four-step goals in a cycle of ten years to achieve Net Zero, and it is operating an advanced management system to promote GHG emissions management and energy efficiency improvement.

In the first half of 2023, we completed the GHG emissions inventory (Scopes 1, 2, 3) establishment and voluntary verification for domestic worksites. We plan to continue conducting GHG reduction activities including establishment of water reuse system, waste recycling, and reduction of wastewater generation.

Renewable Energy 100

KD Navien strives to switch to 100% renewable energy for power use and ultimately contribute to reducing carbon emissions. Currently, we promote investment in the photovoltaic power generation facility in the US subsidiary and plan to install the facility in Seotan Factory, our domestic production base. Self-generation and introduction of the PPA¹⁾ and REC²⁾ will also be reviewed.

1) Power Purchase Agreement

2) Renewable Portfolio Standard

Green Technology

KD Navien strives to contribute to reducing particulate matter and energy consumption by continuously developing eco-friendly products.

Currently, we promote product development to use clean fuel in order to practice carbon neutrality. As a result of our effort, we acquired the European hydrogen certification H2 READY. In addition, we will reduce carbon emissions from production processes by introducing eco-friendly technologies to our worksites and achieve sustainable management and environmental protection.

On-site Due Diligence for Emissions in the Supply Chain

KD Navien will achieve carbon neutrality by identifying GHG emissions from the supply chain and developing GHG reduction plans. In addition, we will improve our eco-friendly product and service selection as well as production and distribution processes by strengthening cooperative relationships with suppliers and actively provide eco-friendly products and services.

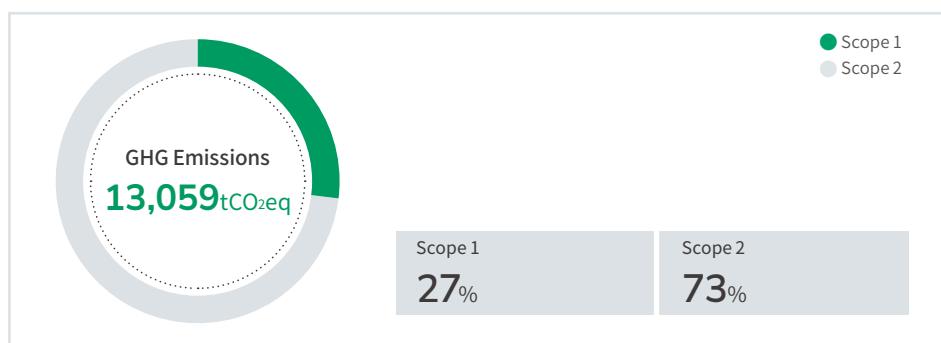
Climate Change Response

GHG Reduction

GHG Emissions Reduction Target

GHG Emissions Status

The total amount of Scope 1 and Scope 2 GHG emissions from the domestic worksites of KD Navien in 2022 is 13,059tCO₂eq. Scope 2 emissions caused by electric power use account for 73%, and Scope 1 emissions in the course of production and research activities account for approximately 27%.



Calculation of Estimated Emissions

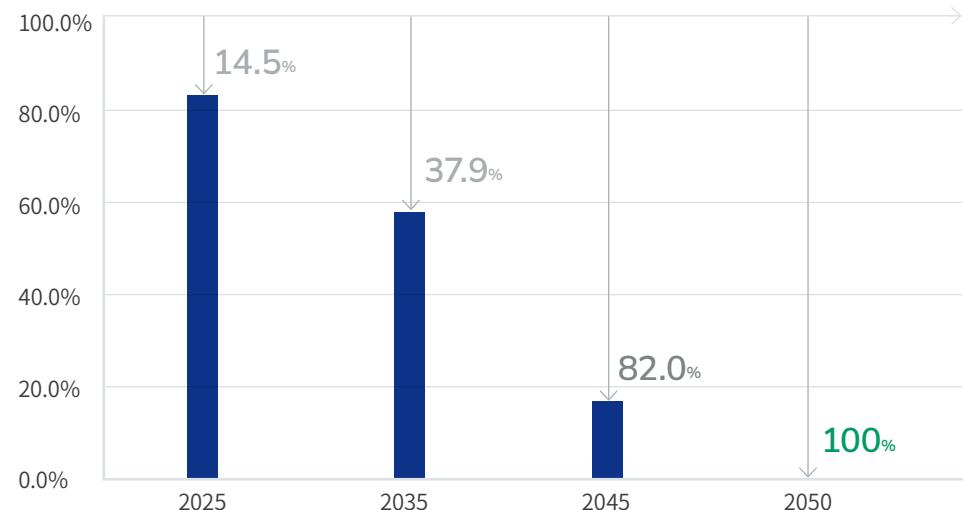
In line with the continuous growth of the market for boiler and water heater, which are KD Navien's key products, an increase in the amount of emissions is expected. The estimated emissions were calculated based on the sales growth rate.

Application of Reduction Plans

Over 70% of KD Navien's GHG emissions are indirect emissions caused by electric power use. Therefore, transition to renewable energy was set as the top priority for carbon neutrality. From the short-term perspective, KD Navien plans to reduce Scope 2 emissions by installing photovoltaic power generation facilities on an idle site of Seotan Factory, a domestic production base. For other emissions, we will implement alternative reduction measures such as direct PPA and REC purchase.

Internal GHG Emissions Reduction Target

According to the GHG emissions reduction target, KD Navien has established internal direct and indirect GHG emissions reduction goals for domestic worksites. We will upgrade the GHG management system by including GHG emissions from all domestic and overseas worksites and external emissions.



Climate Change Response

GHG Reduction

Climate Change Risks and Opportunities

KD Navien preemptively reviews the plans of IPCC (Intergovernmental Panel on Climate Change) for addressing climate change issues and promotes management constitution change. We will effectively respond to climate change by identifying the climate change-related risks and opportunities, preparing the response plans, and developing related goals.

Risks/Opportunities	Management	Key Response Plans
<ul style="list-style-type: none">Temperature increase (+)Natural disaster (-)Climate change regulations (+/-)	<ul style="list-style-type: none">Raw and subsidiary material cost fluctuation, convenience of supplyPreparation for water quality and quantityProduct performance suitability and environmental charges	<ul style="list-style-type: none">Introduce renewable energy (photovoltaic)Strengthen resource circulation rates for water and waste, etc.Establish eco-friendly R&D goals

Response to Initiatives

To respond to climate crisis and create a sustainable future, KD Navien dedicates efforts and commits itself to improving execution power for addressing environmental issues by participating in environment-related initiatives.

First, we will submit and disclose the climate change response for the Carbon Disclosure Project (CDP) from 2023. We are also reviewing participation in various environmental initiatives including TCFD and RE100.

Energy Management Activities

Eco-friendly Energy Use

With the goal of carbon neutrality and clean renewable energy use, KD Navien actively reviews the installation of a photovoltaic power generation plant in Seotan Factory. For the new buildings, eco-friendly and energy-efficient designs are reflected. We will complete the review in 2023 and promote eco-friendly energy introduction in 2024.

Energy Efficiency Improvement

KD Navien dedicates utmost effort to increasing energy efficiency in worksites.

In 2020, we reduced electric power consumption by 670,758kWh through the conversion of 6,901 lightings¹⁾ in Seotan Factory and Songtan Factory (Plant 3)—our production bases—to LED lightings. In 2021, 335,508kWh of electric power was saved (13% per year) following the installation of an external compressor-type inverter in the 200HP heat exchanger building of Seotan Factory.

1) 6,751 in Seotan Factory, 150 in Songtan Factory

Environmental Impact Reduction

Pollutant Management System

Pollutant Management Policy

While complying with the internal pollutant management criteria, KD Navien, although not a mandatory target, plans to carry out pollutant management based on the total emissions including emission concentrations from 2024.

KD Navien Pollutant Emissions Acceptance Criteria

Air Pollutant Emissions Acceptance Criteria

- NOx: Less than 50%
- THC¹⁾: Less than 30%
- Dust: Less than 10%

Water Pollutant Emissions Acceptance Criteria

- Less than 50% of the statutory water pollutant emissions acceptance criteria

1) Total hydrocarbons

Pollutant Management Activities

Air pollutants

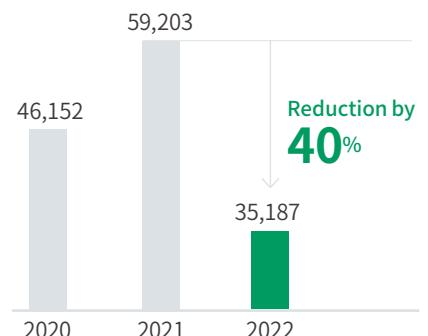
KD Navien promotes the minimization of air pollutant emissions by applying stricter internal criteria than the acceptance criteria under the Clean Air Conservation Act (by 10-50%). We also strive to reduce the amount of air pollutant emissions by changing the materials used and improving the efficiency of pollution prevention facilities.

Water Pollutants

For the management of wastewater generated from production activities, KD Navien applies tighter internal criteria than the acceptance criteria specified by the Water Environment Conservation Act (less than 50%). Through process improvement based on the tighter internal criteria as the means for total pollutant emission control by minimizing wastewater generation minimization, the amount of wastewater generation was reduced by approximately 40% in 2022.

Wastewater Discharges in the Past Three Years

(Unit: m³)



Hazardous Chemicals

KD Navien operates a health and environmental management system in the chemical substance management process. We also control the use of chemical products containing hazardous chemicals through a review of product use. In addition, for hazardous chemicals designated through the amendment of statutes and notifications, hazard reduction activities are carried out immediately to introduce substitutes preferentially, change the properties, and improve the process. During these activities, we protect workers and prevent chemical accidents by improving the chemical handling facilities and supplying protective equipment and items.

In 2023, KD Navien will develop and introduce CMS¹⁾—which includes a receipt and disbursements management function—to upgrade chemical substance management.

1) Chemical Management System

KD Navien Chemical Reduction

Chemical	MDI	Styrene	Chloroalkane	Methanol	Zinc oxide
Reduction Implementation	Jun. 2021	Jun. 2021	Jun. 2021	Dec. 2022	Dec. 2022
(Scheduled) Completion	Jun. 2023	Jun. 2023	Jun. 2023	In review	In review

Resource Management

Water Resource Management System

Water Resource Management Policy

KD Navien plans to minimize the external inflow of water used in the worksite operation and establish a system for “water neutrality” through rainwater or internal polluted water treatment. Each month, we tally and analyze the tap water, groundwater, and reused water consumptions and report the reused water consumption goal and monthly performance to improve the Company’s policy.

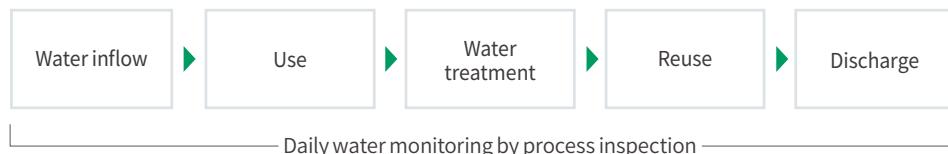
As of 2022, our water reuse rate is approximately 65%. We expand the effort with the primary goal of achieving 100% reuse of process water. In addition, for preparation against risks such as water source pollutions, water shortage, and natural disasters, we collect and store water in the amount necessary for worksite operation for at least one day.

Water Resource Management Activities

Water Consumption Measurement

KD Navien is equipped with a water resource management process for the Seotan Factory. Daily monitoring is conducted using the water meters installed to identify the water consumption status in each stage.

Water Management Process



Water Consumption Reduction Activities

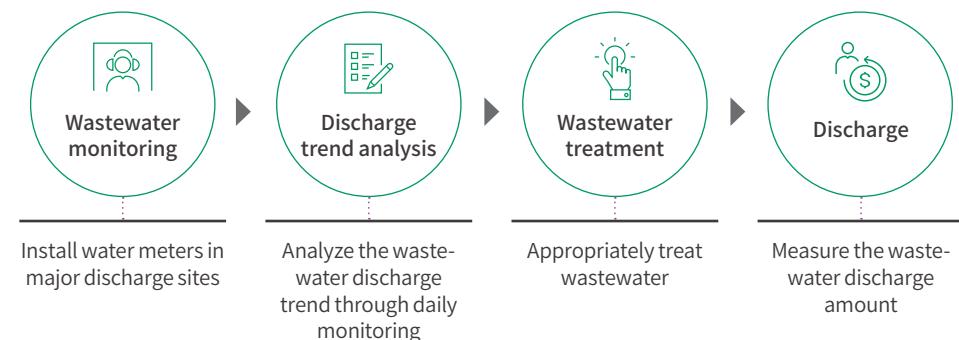
Through the wastewater reclamation and reusing system, KD Navien’s Seotan Factory treats over 1,500 tons of water on average per day and reuses the water in the process of inspection and product durability test.

As a result, the consumption amount of water from outside is reduced. We also review a plan to expand the application of reused water to production processes gradually with the exception of drinking water. All divisions including the EHS Team perform various tasks for water saving and product quality improvement.

Wastewater Discharge Measurement

KD Navien installs water meters at key discharge sites and analyzes the discharge trend through monitoring in order to identify the wastewater discharge status and establish reduction plans. In addition, wastewater is discharged after appropriate treatment. Upon wastewater discharge, the discharge of reused water is also measured to minimize the environmental impact.

Wastewater Management Process



Wastewater Discharge Reduction Activities

To reduce wastewater discharge, KD Navien completed pipe extension in 2021 to replace the entire volume of water used in the product durability test with reused water. As a result, the amount of our wastewater discharge decreased by 80 - 100m³ on average per day. In 2023, we plan to reduce the amount of wastewater discharge further by changing the production water supply method; thus lowering the amount of water input.

Resource Management

Waste Management System

Waste Management Policy

KD Navien keeps resource wastage to a minimum across the value chain from production and sale to consumption, disposal, and recycling and fulfills duties and responsibilities for recycling according to the extended producer responsibility (EPR) system, waste charges system, and eco-assurance system. Recycling over 90% of waste discharged from worksites, we actively communicate with the waste treatment company and intensively promote waste management improvement to increase the recycling rate effectively. In 2022, we entered into a contract with a recycling company to achieve zero waste-to-landfill. We are aiming for zero landfill by 2023 through the horizontal deployment of the system.

Waste Management Activities

Improvement of Waste Recycling Rate

KD Navien has steadily improved the recycling rate of wastes discharged from worksites by cooperating with a recycling company. In 2022, we improved the dehydration facility to recycle the wastewater treatment sludge. Likewise, by changing the storage container from bulk bag to arm-roll box, we were able to complete the two tasks of wastewater treatment sludge recycling and elimination of bulk bag use.

In addition, we promoted changing the 20-liter container storage for the recycling of waste refractories to using bulk bags, and we plan to introduce steel pallets for moisture removal in waste management.

Transition to Resource Circulation

To carry out various waste-to-resource activities, KD Navien reduces the amount of aluminum use by collecting and remelting those with defects occurring in the casting process. Various other activities, such as producing a grinding agent in the stage of injection molding and reducing the use of PPS and PA66 materials, are being conducted.

Consumption of Reused Items¹⁾

(Unit: kg)

Item	2020	2021	2022
Aluminum	74,028	79,388	58,563
Grinding Agent	109,720	146,659	125,516

1) Including the performance of subsidiaries such as KD Everon and KD Polym

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Social Key Performance

Health and Safety Management

HR Management

Human Rights Management

Customer Value

Quality Control

ESG Management in the Supply Chain (Partners and Suppliers)

Information Security

Contribution to Local Communities

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THINK PEOPLE FOR THE SUSTAINABILITY



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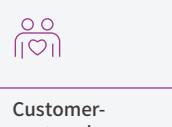
Contribution to Local Communities

Governance

Appendix

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Category	Strategic Direction	Promotional Activities	2022 Performance	2023 Goals	Mid- to Long-term Goals
		Zero Accidents	<ul style="list-style-type: none"> Upgraded manager and supervisor operation (establishment of consultative body, alarm bell, etc.) Implemented a prior safety assessment system Performed thematic inspections by quarter 	ZERO serious accidents	<ul style="list-style-type: none"> Increase the harmful/hazardous elements improvement rate to 95% or more 100% legal compliance rate
		Risk Management	<ul style="list-style-type: none"> Operation of upgraded intensive management system (facilities and processes subject to risk) Organized an internal supplier consultative body and operated a win-win cooperation program 	Decreased the accident rate of high-risk facilities by 62% and labor loss time by 41% Leveled up the win-win cooperation program to grade A and supplier assessment ratings (11 suppliers garnered a rating of S)	<ul style="list-style-type: none"> Internalize the operation of intensive management target process (revise checklist, test protective devices)
		Workers' Health Promotion Programs	<ul style="list-style-type: none"> Straight neck correction program Psychological support for workers Leadership training for division and part leaders Walking contest, circuit training program EX-BODY musculoskeletal diagnosis 	Improved cervical lordosis by 100% Lowered the accident rate of new workers by 54%	<ul style="list-style-type: none"> Conduct activities to prevent laceration and musculoskeletal diseases, implement EAP for new employees Conduct tracking management on high-risk groups
		HR Management	<ul style="list-style-type: none"> Operated a performance-based assessment system 	Operated a performance-based assessment system through multi-source evaluation, etc.	<ul style="list-style-type: none"> Strengthen and operate the performance-based assessment system
		Improve employees' work-life balance (WLB)	<ul style="list-style-type: none"> Operated and reviewed the system for working culture improvement 	Reviewed the working culture improvement system	<ul style="list-style-type: none"> Conduct activities to improve the working culture
		Upgrade the fostering system	<ul style="list-style-type: none"> Operated customized fostering programs considering the capabilities and working environments by class 	Operated programs with the prior leadership questionnaire survey results reflected (conducted follow-up questionnaire survey to measure the effectiveness)	<ul style="list-style-type: none"> Operated customized training programs (prior questionnaire survey, hybrid-learning, etc.)
		Customer-centered Management	<ul style="list-style-type: none"> Managed the indicator for service completion within one day 	Service completion within one day by 90.4%	<ul style="list-style-type: none"> Maintain the rate of service completion within one day at 90% or higher
		Provide service swiftly	<ul style="list-style-type: none"> Managed the re-failure rate indicator 	Re-failure rate 4.1%	<ul style="list-style-type: none"> Maintain the re-failure rate at 4% or lower
		Provide accurate after-sales service	<ul style="list-style-type: none"> Managed the VOC handling rate 	100% VOC handling rate	<ul style="list-style-type: none"> Maintain the VOC handling rate at 90% or higher
		Quality Management	<ul style="list-style-type: none"> Upgraded process 	Selected strategic quality tasks and activated reporting	<ul style="list-style-type: none"> Achieve 100% strategic task completion rate
		Upgrade and internalize the operating system	<ul style="list-style-type: none"> Promoted improvement activities to place the highest priority on quality 	Promote company-wide response activities for quality issues	<ul style="list-style-type: none"> Achieve customer satisfaction through quality improvement activities
		Improve organizational quality capabilities	<ul style="list-style-type: none"> Established a company-wide quality training system 	Provided online basic quality training	<ul style="list-style-type: none"> Provide KyungDong-customized quality training

Health and Safety Management

Workplace Safety Reinforcement

Working Environment Improvement

Safety Inspection

For accident prevention in worksites, KD Navien selects the processes for intensive management, conducts risk evaluation and analysis, identifies and addresses the risk factors. Through thematic quarterly inspections, we also check for, identify, and address risk factors and accidents by worksite. In addition, we make sure our worksites are safer through continuous monitoring.

Quarterly Thematic Inspection

Electric Fire

Prevent fire in worksites by checking for and addressing the risk of electric fire

Ten Chemicals of Very High Concern

Prevent acute poisoning and other serious health impairments by inspecting and improving processes where chemicals of very high concern are handled

Floor-to-floor Height Restriction

KD Navien's ventilation system is a ceiling-mounted type. To provide care service based on the health and safety criteria, we segmented the service criteria depending on floor-to-floor heights of customers' homes. In homes with floor-to-floor height exceeding 3m, service is provided by a team of two technicians. Safe service is also ensured by using a ladder measuring least 1.5m, and service provision is restricted for floor-to-floor height of over 3.5m. In addition, to provide a healthy, safe working environment, we investigate hazard factors on a regular basis and improve the working environment by collecting workers' opinions on an ongoing basis.

Health and Safety Training

KD Navien is committed to company-wide health and safety culture improvement. To upgrade field management, supervision, and operation, we establish and implement internal and external training plans on a regular basis. In addition, for response to emergency situations in closed space, a davit system is installed on the corners, and a specialized response team is trained to use the system at all times.



Closed Space Rescue Training Using the Davit System

Emergency Response System Operation and Training

KD Navien has developed preemptive crisis management manuals by situation as well as related training plans through the internalization of the response manual, and it is also operating regular training programs by worksite. In addition, we verify the effectiveness of the manuals and provide response training, thereby improving emergency response capabilities.

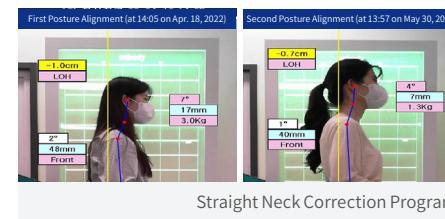
Employee Health Care

Health Care Programs

Occupational Disease Management

KD Navien conducts musculoskeletal disease prevention activities to prevent the worsening of symptoms and respond to the initial stage of the disease by continuously interviewing and tracking people subject to musculoskeletal disease management and operating physical therapy facilities.

In 2022, a musculoskeletal diagnosis system (EX-BODY) was introduced for the accurate disease diagnosis of workers. Accordingly, the straight neck correction program, cervical vertebra and correct posture program, and adjuvant treatment program were started.



Straight Neck Correction Program

Walking Contest

KD Navien holds a walking contest to raise employees' awareness of the importance of health and promote employees' participation.



KyungDong Hanmaeum Walking Contest

Psychological Counseling Center and Nurse's Office

KD Navien provides psychological support and meditation-related programs by operating the psychological counseling center to prevent job stress.

As part of the leadership training, workplace harassment prevention activities were performed. Also, through requests from the parts for communication, group programs to promote communication were operated.

To respond to accident upon occurrence, we secured regular vehicle service for emergency handling in order to prevent any setbacks in patient transport and treatment.



Group Program to Prevent Job Stress

Circuit Training Program

Together with physical therapists, KD Navien operates the regular circuit training program for cerebro-cardiovascular disease prevention. We also strive to improve employees' muscular, respiratory, and circulatory functions.



Circuit Training Program to Prevent Cerebro-cardiovascular Diseases

HR Management

KyungDong-in

Ideal Employee

KD Navien has established the detailed ideal employee types based on “KyungDong-in Marching Toward the World and the Future as One.”



Recruitment Process

Open Recruitment/Irregular Recruitment

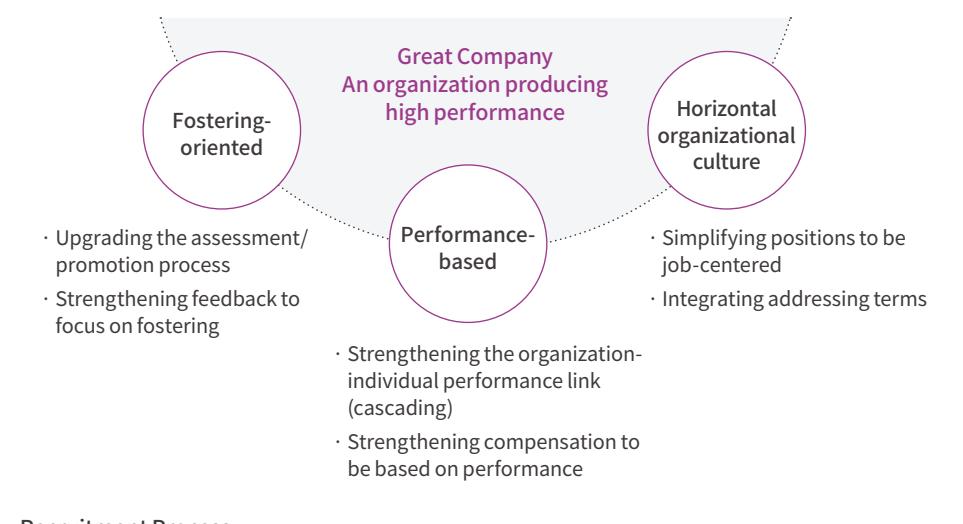
In addition to the annual open recruitment, KD Navien secures the necessary human resources for each division through irregular recruitment.

Year-round Recruitment

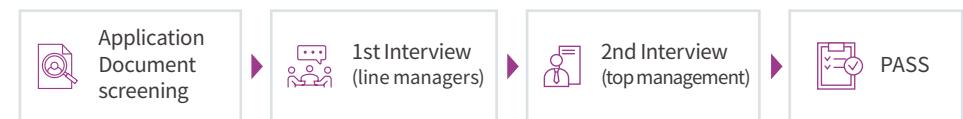
KD Navien also operates the human resources DB for year-round recruitment to employ highly qualified personnel earlier on. When recruitment is necessary, applications registered in the DB are preferentially reviewed and reflected in the recruitment.

HR Management Directivity

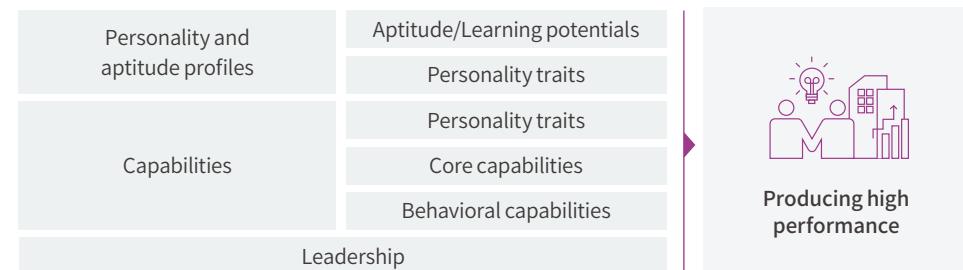
KD Navien has set fostering-oriented, performance-based, horizontal organizational culture as the directivity for the HR system. Evolving into a more flexible organization, KD Navien operates the HR system to provide more growth opportunities to employees through feedback based on fair assessment and in relation to promotion and fostering; thus nurturing competent talents.



Recruitment Process



Recruitment Points



HR Management

HR System and Welfare and Benefits

Assessment and Remuneration System

KD Navien improved the overall assessment and remuneration system by introducing the new PR system. Having set talent fostering and performance-based assessment and remuneration as the basic direction, we are fostering a flexible organizational culture of pursuing growth.

We strengthen the link between company-wide and individual employees' goals and support employees in setting clear goals and achieving them. Also in operation is an assessment system motivating individual employees to display their strengths fully through feedback.

We also refrain from unfair assessment, such as gender discrimination, and reward employees who strive to improve their capabilities and performances through fair and reasonable assessment.

Assessment Process



Talent Fostering System

KD Navien operates a competitive talent fostering system to help individual employees develop and display their full potentials based on change, innovation, creativity, and passion and for them to be reborn as the most competent talents.

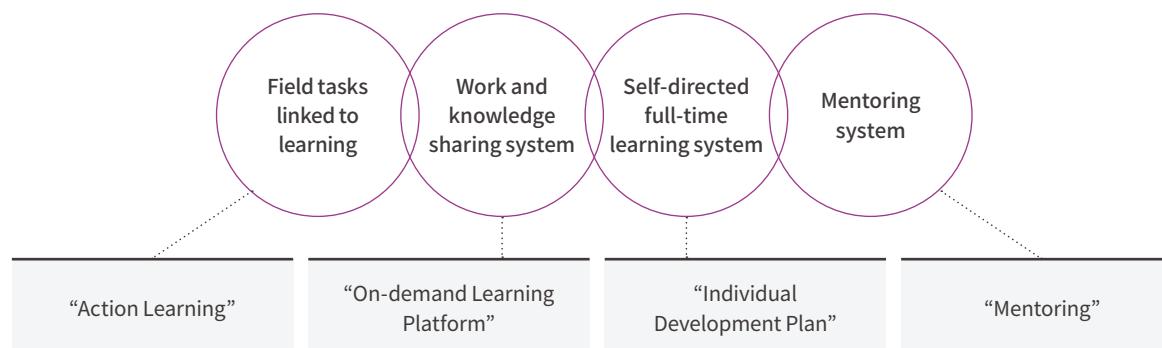
For systematic talent fostering, we provide new employees with the two-week "New Start" training and the three-month OJT (on the job training). The internally produced contents on field skills and knowledge are spread to increase the timeliness and effectiveness of the job training. In addition, we support all employees so that they grow into global leaders by operating active job training courses rather than standardized education.

GLOBAL	LEADERSHIP	Job capabilities	Product and technology
Secure global competitiveness Secure global-standard competitiveness through language education, etc.	Provide training to improve capabilities by class Provide training to improve capabilities by class based on core competency areas	Actively respond to environmental changes Strengthen field-oriented job expertise and analyze capabilities	Increase operational and technological understanding Provide systematic training for products and technologies

Direction of Talent Fostering Design

KD Navien designs the basic training programs in the form of an "action learning" curriculum so that the field applicability of the training content is increased and employees' learning can be linked to field operations. By establishing a full-time self-directed learning system, we help employees access external training content whenever they want to. We also produce various contents on working skills and knowledge, etc. and post them on the integrated learning platform for on-demand access.

In addition, the mentoring system assists new employees (mentees) in soft landing and helps mentors build their leadership capacities.



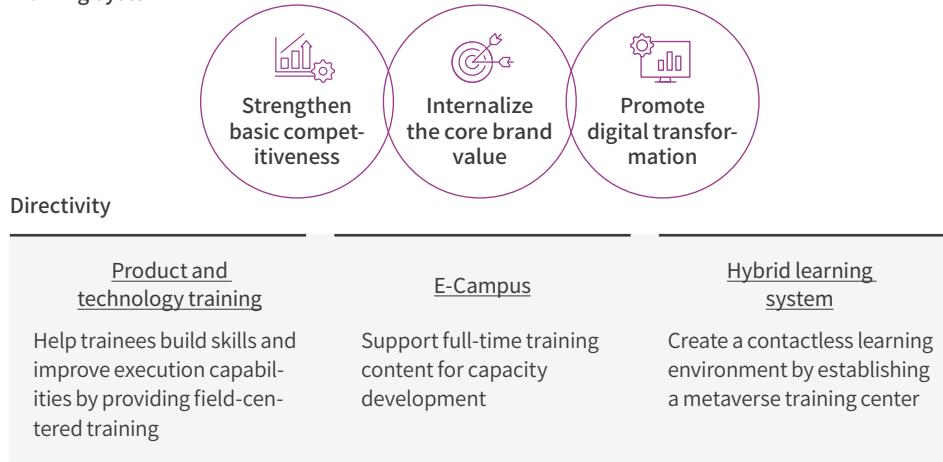
HR Management

HR System and Welfare and Benefits

Employee Training Programs

KD Navien fosters talents that “march toward the future” by creating a self-directed learning environment and providing field-oriented education and training programs that reflect the business characteristics.

Training System



Training Performance and Effectiveness Monitoring

In 2022, KD Navien provided key training by class to all employees. We also measured and managed the trainees' satisfaction with and achievements in the training programs, thereby promoting the qualitative improvement of employee training.

Training Satisfaction Survey

Training Satisfaction

- Overall satisfaction with training
- Appropriateness of content
- Satisfaction with instructor
- Stable operation of learning service and system

Academic Achievement

- Whether learning objectives were fulfilled
- Use in operation and positive improvement of organizational performance

Training Programs

Category	Course	
Company-wide compulsory training	<ul style="list-style-type: none"> Introductory training of new recruits (open/irregular recruitments) Retention course for employees in the first year (planned in 2023) 	<ul style="list-style-type: none"> Training for the promoted employees (new team managers, persons promoted to senior manager) Training by rank (manager, senior manager) Leader training (persons holding positions/executives)
Training by class Job capabilities	<ul style="list-style-type: none"> Quality mind training (basic/advanced) Cost mind training Product and technology (ES) training (compulsory for sales and marketing) 	<ul style="list-style-type: none"> In-house instructor fostering course (planned in 2023) DT training (basis of data analysis) (planned in 2023) Expatriate training
General capabilities	<ul style="list-style-type: none"> Ethics management training Statutory training 	Core value internalization training
Company-wide optional training	<ul style="list-style-type: none"> Foreign language (over-the-phone) Foreign language (cyber academy) 	In-house foreign language training
General capabilities	Cyber academy	
Job capabilities	<ul style="list-style-type: none"> Training by external agencies 	Training by sector (organization)
Others	<ul style="list-style-type: none"> Company-wide organizational activation course (planned in 2023) Training for retirees 	Workshop by division

CASE Retiree Support System

KD Navien operates a range of retiree support programs in order to support employees' life after retirement.

The retiree support system offers a career and life planning program that helps employees set their direction of life after retirement, including a reemployment or business establishment support program in group lecture and 1:1 consultation formats.



HR Management

HR System and Welfare and Benefits

Welfare System

KD Navien improves employees' life satisfaction by operating various welfare programs. We are committed to guaranteeing employees' work-life balance.

[Welfare System](#)

Refresh Leave

KD Navien operates the refresh leave system to help employees maintain or improve their health as well as work efficiency by completely getting out of work to relieve physical and mental fatigue. As free use of the refresh leave system is guaranteed, employees can take a leave for up to five consecutive days per year.

Condominium Membership

KD Navien holds a corporate condominium membership and provides employees with an opportunity to stay at the facility. By using the condominium membership, our employees can enjoy sufficient rest and relieve stress.

Employee Welfare Fund - In-house Loan System

Supporting individual employees' financial stability, KD Navien operates an in-house loan system to help employees enjoy stability in living and improve their residential environment.

Subsidies for In-house Clubs

KD Navien encourages in-house club activities by providing monthly, quarterly, and yearly subsidies based on the club performance.

Discount on Products

To support and improve employees' welfare, KD Navien provides employees with discounts on the Company's products such as boilers and hot water mats.

Family-friendly Welfare System

Program	Description
Family Day	<ul style="list-style-type: none"> No overtime work every Wednesday or Friday Casual day every Wednesday
Childbirth, Childcare, Family Care	<ul style="list-style-type: none"> Leave before/after childbirth and for miscarriage/stillbirth Parental leave and reduction of working hours during childcare period Family care leave
Employee Health Checkup	<ul style="list-style-type: none"> Supporting the semi-general health examination for employees aged 41 years and older Parental leave and reduction of working hours during childcare period Supporting the general health examination for executives, G4, senior engineers, and counselors
Others	<ul style="list-style-type: none"> Establishing/Operating a maternity center and an in-house cafe

Employee Satisfaction Survey

Following the HR system restructuring, KD Navien conducted a questionnaire survey on employees' awareness of the Company's organizational culture. The questions were divided into working culture, cooperation culture, communication culture, culture of respect, and feedback culture categories. Through the survey, employees' satisfaction with and requirements for the Company's organizational culture were reviewed. Moreover, to establish an ideal organizational culture, we continuously improve the internal policy.

Result of Employee Satisfaction Survey

KD Navien conducted an employee satisfaction survey to identify the level of mutual respect within the organization and examine the corporate organizational culture. The average score of the overall organizational culture awareness was 3.4 points (out of five points), which is rated "average" or higher. This indicates that we have established a medium-level organizational culture of mutual respect.

In the categories of culture of respect, communication culture, and cooperation culture, the scores were relatively higher, implying the employees' positive awareness. On the other hand, the score was relatively lower for working culture, and the awareness levels varied between organizations.

KD Navien promotes the establishment and implementation of policies, such as reduction of overtime work, to remedy the negative working culture identified through the satisfaction survey and improve employees' awareness across organizational culture areas further.

HR Management

Labor-Management Relations

Labor-Management Council

Regulations

KD Navien improves the labor-management joint benefits by establishing the Labor-Management Council Regulations and operates the Labor-Management Council with focus on employee engagement according to the Act on the Promotion of Employees' Participation and Cooperation.

We will achieve a cooperative labor-management relationship by operating the Labor-Management Council based on the principle of good faith and mutual respect.

Labor-Management Council

KD Navien's Labor-Management Council consists of ten members in all, five each from the labor and management.

In 2022, the Labor-Management Council deliberated on various items including wage increase rate and improvement of welfare standard. In particular, through deliberation on the Kyung-Dong Welfare Point Mall operation, quality improvement of employees' work uniforms and safety boots, and increase of meal allowance for employees, the Council contributed to creating a positive, sound labor-management culture.

The items deliberated on by the Council apply to all employees, and they are shared through the internal groupware.

Activities and Performance

Labor-Management Meeting

KD Navien regularly holds the Labor-Management Council and Labor-Management Meetings to establish a mutually beneficial labor-management relationship and conduct transparent and fair management activities. Through the meetings, opinions on wage negotiation and welfare standard as well as the Company's key management issues are freely exchanged.

Meeting by Field Position

KD Navien listens to employees' voices and difficulties by holding meetings for each field position on a regular basis. In 2022, we collected employees' opinions regarding difficulties in field work as well as suggestions for improvement, handling 30 items in all by holding four meetings.

Labor-Management Council Meetings in 2022

(Unit: Meetings, items)

Category	Meetings Held	Items Handled
Labor-Management Council/ Labor-Management Meeting	9	31
Meeting by Field Position	4	30
Total	13	61

Activities to Achieve Labor-Management Harmony

Led by the Labor-Management Council, a family invitation event is held once a year so that employees can introduce their workplace to their families. KD Navien also organizes Kimchi-making experience and various recreational programs to provide employees with enjoyable experiences and recognition of a proud workplace to their family. The semiannual sports day is an opportunity for employees to refresh and recharge themselves. We will continue planning a wide range of programs to promote labor-management harmony and instill Company pride among employees.



Family Invitation Event in 2022



Sports Day in the Second Half of 2022

Overview

Sustainability Strategy

Focus Area

Environmental

05

Social

Social Key Performance

Health and Safety Management

HR Management

Human Rights Management

Customer Value

Quality Control

ESG Management in the Supply Chain (Partners and Suppliers)

Information Security

Contribution to Local Communities

Governance

Appendix

Human Rights Management

Human Rights Management System

Human Rights Management Policy

KD Navien develops technologies that are helpful to society based on the corporate philosophy of "Social Contribution through Business Success". In addition, by following the corporate philosophy and pursuing the value of respect for human rights, we implement the human rights management policy that we have established and has been approved by top management. Furthermore, we established the Supplier Code of Conduct, and we strive to spread the value of respect for human rights throughout the Company and to external stakeholders as well.

[» Human Rights Management Policy](#)



Human Rights Impact Assessment

For systematic human rights risk management and human rights management practice, KD Navien will assess human rights impact at least once a year from 2023. The assessment will be in the form of an online questionnaire survey with questions based on the Human Rights Management Guidelines and Checklist of the National Human Rights Commission and the Kyung-Dong Human Rights Management Policy. In the mid-to long-term, the target of KD Navien human rights impact assessment, which will be internal employees in 2023, will be expanded to variety of stakeholders.

Human Rights Impact Assessment Plan

Cycle	Method	Scope	Assessment Items
Yearly	Self-examination questionnaire survey	Internal employees Persons Using Groupware: Electronic survey in groupware Persons Not Using Groupware (employees of production line, etc.): Form on Internet portal	Human rights management system, anti-discrimination, humane treatment, prohibition of forced labor, prohibition of child/minor labor, guarantee of occupational safety, information security

Human Rights Management Training

KD Navien provides human rights management training to enhance employees' human rights awareness and spread the culture of respect for human rights. Training for workplace harassment prevention, improvement of awareness of people with disabilities, and sexual harassment prevention is provided annually as compulsory training. Ethics management training is also provided for corporate ethics practice. We will further expand the training to contribute to establishing an organizational culture of respect for human rights.

Human Rights Management Training Curriculum

Category	Content	Target
Sexual harassment prevention	Sexual harassment prohibition guidelines	
Improvement of awareness of people with disabilities	Prohibition of discrimination against people with disabilities, elimination of preconceived notions	
Workplace harassment prevention training	Prevention of employee harassment	All employees
Information security training	Personal information protection guidelines	
Ethics management training	Ethics report, grievance handling	

Human Rights Management

Human Rights Risk Management

Grievance Handling System

Grievance Handling Channels

KD Navien collects the opinions of stakeholders including employees and suppliers with regard to human rights, working conditions, and working environment preservation via the Internet, Intranet, and labor-management representative bodies. The reports are handed over to and processed by divisions that communicate directly with the respective stakeholders. The whistleblower's identity and personal information are kept confidential. We also collect the grievances of employees in worksites where factories—the key manufacturing base—are located through the labor-management representative bodies, and prepare response plans at the Labor-Management Council meetings. Moving forward, we will respect the human rights of, and promote shared growth with all stakeholders.

Grievance Handling Channels

Channel	Worksites	Division in Charge
Online whistleblowing center	Company-wide	Management Improvement Office
Workplace harassment reporting	Yeouido/branch office/branch Guro Seotan, Pyeongtaek, Songtan, Gasan	HR Team Research Management Team Management Team
Workplace sexual harassment reporting	Yeouido/branch office/branch Guro Seotan, Pyeongtaek, Songtan, Gasan	Managers by worksite, HR Team
Labor-Management Council (Grievance Handling Committee)	Seotan, Pyeongtaek, Songtan, Gasan	Management Team

Grievance Reporting and Handling Status¹⁾

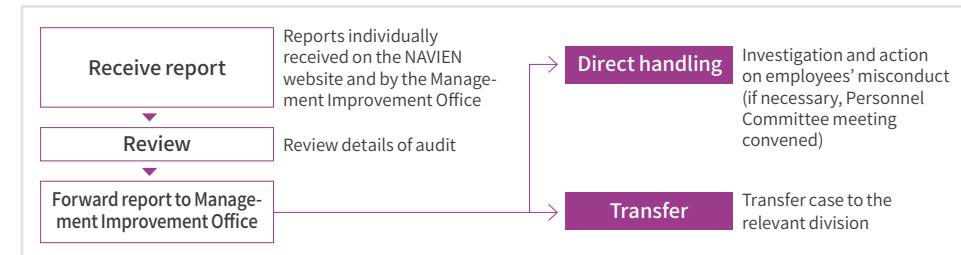
KD Navien receives and handles grievances officially or unofficially through grievance handling channels including the online whistleblowing center and over-the-phone contact to the persons in charge. In 2022, we received 14 grievance reports and handled them through transfer to the relevant divisions.

Category	(Unit: Reports)		
	2020	2021	2022
Reports Received	2	13	14
Reports Handled	2	13	14
Handling Rate	100%	100%	100%

1) Total number of officially and unofficially received reports, with unofficially received reports referring to reports individually received over the phone by the persons in charge rather than through official channels

Grievance Handling Process by Channel

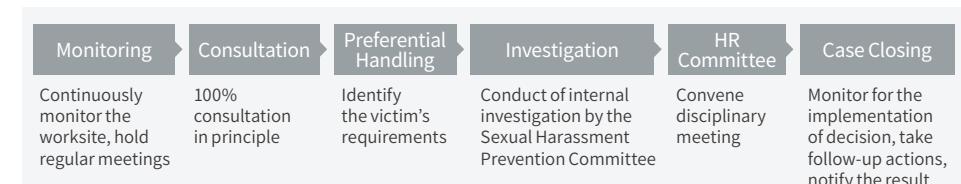
Online Whistleblowing Center



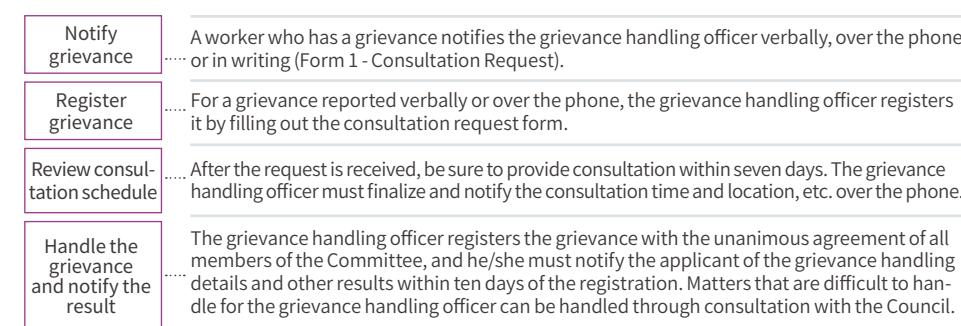
Workplace Harassment Response Process



Workplace Sexual Harassment Response Process



Grievance Handling by the Grievance Handling Officer of the Labor-Management Committee (Grievance Handling Committee Operating Rules)



Customer Value

Consumer-centered Management System

Consumer-centered Management Policy

Having established the consumer-centered management policy and Customer Service Charters approved by top management, KD Navien strives for all employees' engagement in the implementation and achievement of consumer-centered management.

To provide customers with swift, accurate, and friendly service, we continuously manage the service indicators we set, such as achieving appointment confirmation rate and VOC response rate of 95% and 90% or higher, respectively.

Moving forward, we will supply top-quality products as a "Smarter Living Environment Partner" by developing evolved technologies.

KD Navien's Consumer-centered Management

Consumer-centered Management Policy

To become the best in the genuine sense, we must gain customers' recognition.
Developing evolved technologies for a smarter living environment and providing customers with top-quality products constitute the consumer-centered management pursued by KD Navien.

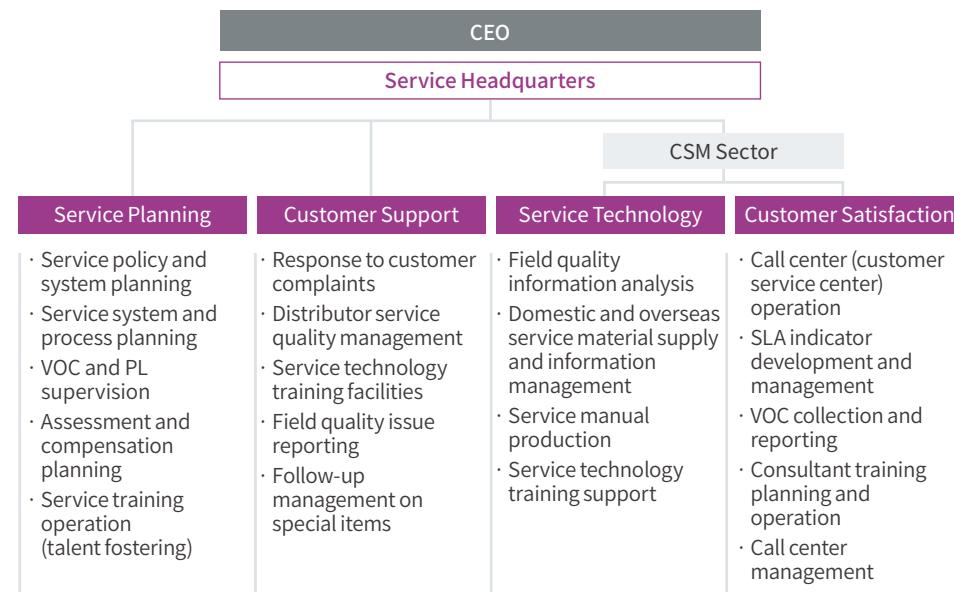
Customer Service Charters

01. We will make the best products to enrich customers' lives.
02. We will dedicate utmost effort to providing the best service to customers.
03. We will think from customers' points of view and swiftly and accurately handle all operations.
04. We will conduct customer management for the products sold with an attitude of taking responsibility until the end.
05. We will attentively listen to customers' voices and reflect them in our management activities as much as possible.

Dedicated Organization

KD Navien provides consumer-centered service through transparent communication with customers, strict service quality management, and customer-centered content provision.

KD Navien's Service Organization



Major Awards for Customer Satisfaction

KSQI (Service)

- Good Call Center in the call center category for 13 years in a row
- No. 1 home boiler service in the MOT category for four years in a row



KS-WEI (Quality)

- No. 1 in the condensing gas boiler category for 16 years in a row
- No. 1 in the hot water mat category for seven years in a row
- No. 1 in the ventilation system category for two years in a row



KS-WEI (Consumer Well-being Environment)

- No. 1 in the hot water mat category for four years in a row
- No. 1 in the ventilation system category for two years in a row



Customer Value

Consumer-centered Management System

CCM Certification

CCM System-based Consumer-centered Management

KD Navien strives to spread the customer-oriented management culture and promote consumers' rights and interests. Following the CCM declaration ceremony in January 2011, we developed the consumer-centered management (CCM)¹⁾ operation manual and established the CCM execution system. Thanks to such effort, we became the first in the industry to acquire CCM certification.

KD Navien collects consumers' opinions (VOCs) through various channels. We have also established a data system to analyze, handle, and prevent consumer complaints. In addition, we provide friendly and accurate service to consumers by conducting systematic training and assessment targeting service personnel in the field and service center staff who deal with consumers face to face. By operating the CCM system, KD Navien realizes customer satisfaction, establishes a strict preventive management culture, and fundamentally prevents consumer complaints and damages. We establish a consumer-centered management system to listen to customers' voice attentively and improve customers' trust through swift and accurate response and follow-up management activities.

1) Certification system assessing whether a business conducts all its activities centering on consumers and continuously improves related management activities

VOC Management

Complaint Handling Process

KD Navien operates a complaint handling process to listen attentively to and handle customers' complaints and inconveniences systematically. The VOCs collected are shared with all executives through monthly reports. In addition, videos containing various VOCs are produced and shared with employees. Moving forward, KD Navien will manufacture and supply top-quality products by actively reflecting customers' requirements and suggestions.

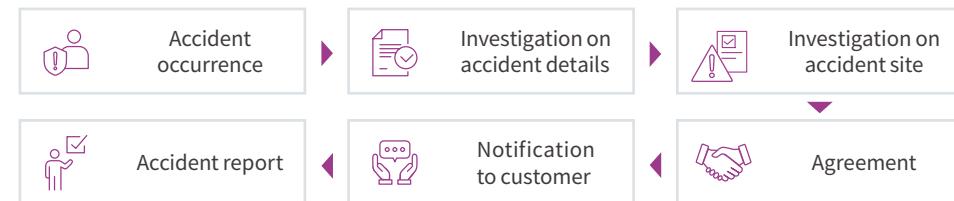
Complaint Handling Process



Customer Damage Response Process

For response to customer damages, KD Navien operates the swift and fair damage response process it developed. When an accident occurs, a team dedicated to PL in the customer service center investigates the accident. If additional investigation is necessary, a company-wide PL team is organized to conduct a field investigation. Then, the accident report is approved by the management, and damage compensation is provided based on an agreement with the customer concerned.

Damage Response Process



VOCs Received¹⁾

Category	2020	2021	2022
VOCs Received	3,928	3,112	2,606
VOCs Handled	3,928	3,112	2,606
Handling Rate	100%	100%	100%

1) Data collected based on complaint among VOC management types (complaint, suggestion, compliment)

CASE VOC Application

After receiving complaints for the wall pad call noise in the home network system, KD Navien achieved zero related complaints by adding the "bell muting" function. We promote continuous service improvement by collecting and analyzing consumer complaints.



Customer Value

Customer Satisfaction Improvement Activities

Customer Satisfaction Service

KD Navien conducts various activities to realize customer satisfaction.

Customer Satisfaction Service Programs

Program	Description
Dankkum Store	<ul style="list-style-type: none"> Provide direct and indirect product experience service as well as solutions for good sleep
Navien House (official store)	<ul style="list-style-type: none"> Provide benefits by planning events and promotions Answer consumers' questions by expanding communication channels including Navien LIVE
Curation Service	<ul style="list-style-type: none"> Recommend products according to consumers' lifestyles considering user environments and preferences
Air Change Service	<ul style="list-style-type: none"> Immediately provide replacement after receiving an after-sales service request and shorten the recall lead time
Trial Operation Center	<ul style="list-style-type: none"> Secure installation quality by operating a team dedicated to installation and supervision, and prevent issues that can arise during product use

Navien Dankkum Store, a Platform for Good Sleep

Navien Dankkum Store is an online “good sleep” platform. Dankkum Store provides people having difficulty sleeping with a range of solutions (expert counseling, items aiding in good sleep, free product experience service, etc.). The store is operated in Navien House, KD Navien's official shopping mall. Dankkum Store is expected to grow into a platform that constantly communicates with customers.

[Dankkum Store](#)

Protecting Customers' Rights and Interests

KD Navien makes its best effort to improve customers' access to products and information and protect individual customers' rights and interests.

Rights and Interest Protection Support Activities

Activity	Main Content
Support for people with visual impairments	<ul style="list-style-type: none"> Support temperature controller and interface for people with visual impairments
Consultation service	<ul style="list-style-type: none"> Diversify consulting services such as AI consulting, standardized 24-hour consulting, 1:1 consulting, video consulting, and real-time chat service
Mobile center operation	<ul style="list-style-type: none"> Improve regional and physical accessibility to service
Free warranty period extension	<ul style="list-style-type: none"> Extend the free warranty period from two to three years
Information on standard service rates	<ul style="list-style-type: none"> Provide standardized price information, and secure transparency of information

Interface for People with Visual Impairments

As the first in the boiler industry, KD Navien produced and distributed the room controller with audio guidance, Braille sticker to assist customers with visual impairments in checking the control functions, and Braille and audio manual to help customers understand how to use its products. We improve the product accessibility of various stakeholders by providing an interface to help customers with visual impairments use our boiler products conveniently. KD Navien will apply the interface for people with visual impairments to a wide range of product groups.



AI Technology Development and Application

In order to provide differentiated products, KD Navien expands investment in AI technology development and applies the technologies to Condensing ON AI Boiler.

Smart Operation

With functions to save water and time by learning customer behaviors, and preheat the water to their usage patterns, the condensing ON AI Boiler became the first in the boiler industry to acquire the Artificial Intelligence+ certification. Condensing ON AI Boiler also comes with the FOTA (firmware over the air) function, which enables real-time automatic update based on the best algorithm.



Customer Value

Customer Satisfaction Improvement Activities

Customer Satisfaction Service

KD Navien conducts various activities to realize customer satisfaction.

HEMS Monthly Report

To customers using AI boiler, KD Navien provides the monthly HEMS report and gas consumption analysis results to ensure efficient energy consumption and support correct boiler use.



Smart Checkup Service

KD Navien established a system to help customers directly inspect the AI boiler operation using the smart checkup service. For visible and accurate response service, we also provide an internal service tool kit for successful communication with customers in case of an issue.



Customer Safety

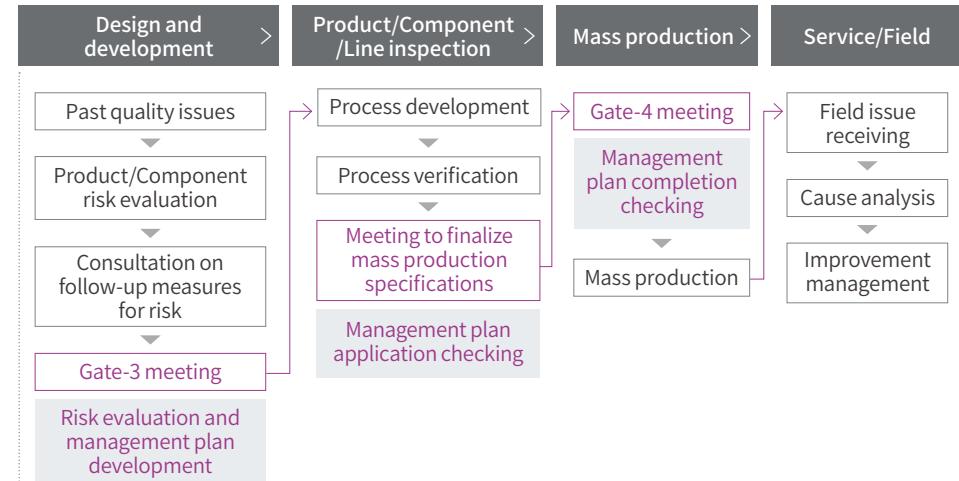
Health and Safety Impact Assessment

In line with the enforcement of the Serious Accidents Punishment Act in 2022, KD Navien expanded the quality management system from "quality-centered" to "consumer safety-centered" (PS QMS, product safety quality management system). When a new product is developed, risk evaluation is conducted to identify potential accidents in advance. We also secure customers' safety by strengthening the verification process.

Health and Safety Impact Assessment Process

KD Navien conducts risk evaluation based on past quality issues and establishes management plans through the GATE-3 meeting by discussing the evaluation results with related divisions. The application of management plans is confirmed at the mass production specification finalization meeting. In addition, through the GATE-4 meeting, actual application to processes and suppliers is checked in order to secure the effectiveness of the assessment process.

Health and Safety Impact Assessment Process



Impact Assessment Application

KD Navien conducts health and safety impact assessment in the course of product design and development to secure customers' safety. We have established approximately 40 supplementation plans including design and inspection plans and manuals by conducting impact assessment on each product and component according to their risk levels. For the products that pass the assessment, we will resume mass production and supply to customers in 2023.

Main Products	Improvement Details			
	Design supplementation	Inspection strengthening	Manual reinforcement	Others
High Recovery	●	●		
3D Air Hood 2nd	●	●	●	
Low-NOx Oil Condensing Boiler	●	●		●
Hydro Furnace	●	●		

Customer Value

Customer Safety

Activities to Secure Customer Safety

KD Navien secures customer safety by transparently disclosing information on substances that can cause environmental and social impact in the course of product installation, inspection, use, and disposal as well as the product disposal method, providing complete directions for product use, etc.

Product Labeling

KD Navien has made labeling in the product development process mandatory, thereby applying it to all products. Information on the country of origin, conditions of use, safety certification number, power consumption, capacity, etc. is transparently disclosed.

Information on Substances Wielding Environmental and Social Impact

KD Navien distributes a user manual and provides directions for using and storing corrosion inhibitors in order to raise customers' awareness of the condensate generated during boiler operation.

In addition, we use only chemicals in the ventilation system filter cleaning service that have passed the chemical safety test. Detailed information regarding chemicals can be found on the website.

[➤ Types of Chemicals Used and Safety Information](#)

Distribution of Precautions for Product Use and Disposal

To prevent accidents during product use and disposal, KD Navien distributes "Precautions for Safety" and labels precautions for each stage such as "danger", "warning", and "caution".

Precaution Labeling Method

Type	Description
Danger	Risk of fire or death in case of incorrect use
Warning	Risk of fire, serious injury, or death in case of incorrect use
Caution	Risk of user injury or physical damage in case of incorrect use

Providing Safe Care Service

KD Navien divides the ventilation system filter care process into eight stages and systematically provides care service by visiting customers' sites and inspecting user environment in addition to product hygiene control, filter replacement or cleaning and provision of correct direction for using product. Harmful substances that can be generated due to product contamination, such as bacteria, dust, and mold, are hygienically removed through UV sterilization and by using safe chemicals. Deodorizing service using phytoncide spray is also provided.

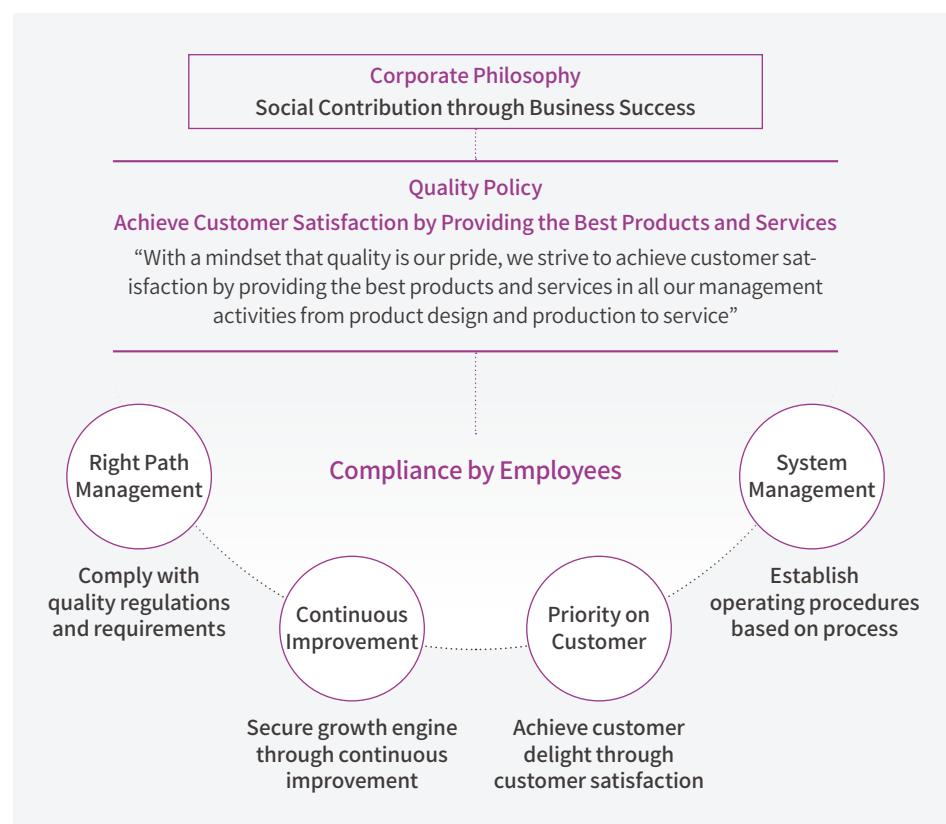
Care Service Process



Quality Control

Quality Management System

Quality Management Policy



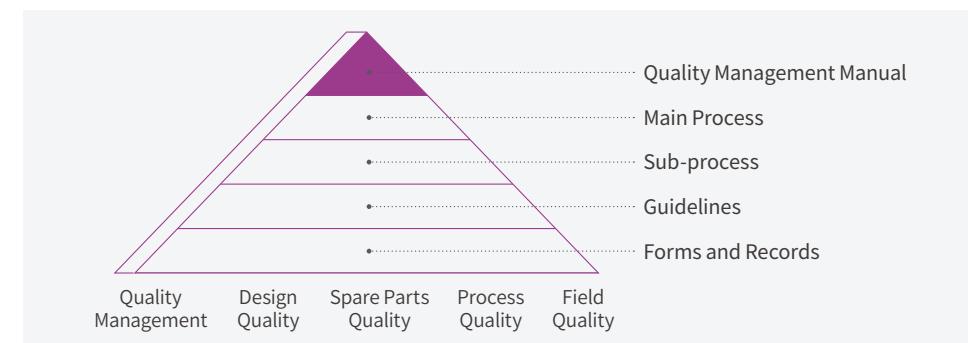
Based on the approval of the top management, KD Navien established a quality policy to achieve customer satisfaction by providing the best products and services. All employees dedicate the best effort to providing customers with the highest quality across the product design, production, and service processes.

For our quality management system, we established quality policy and goals based on ISO 9001, 14001, and 45001. We also prevent defects and nonconformities in each stage by prescribing the responsibilities and rights for key quality-related activities.

Quality Management System

Having established 217 quality management processes based on ISO, KD Navien conducts improvement activities in each area. Based on the processes, we secure consistent quality as well as our future growth engine.

The application of the quality management system is extended to overseas subsidiaries. We have also established the Global-QMS for monitoring and analyzing quality information real-time.



Integrated Quality Management System

KD Navien established an correlated information sharing system to strengthen integrated quality management for mass production items while keeping the core functions of the existing quality management system. In particular, we visualize potential quality risks in the process of product realization, link them to improvement activities, and consequently develop a quality management system of a virtuous cycle.

Key Functions of Integrated Quality Management



Overview

Sustainability Strategy

Focus Area

Environmental

05

Social

Social Key Performance

Health and Safety Management

HR Management

Human Rights Management

Customer Value

Quality Control

ESG Management in the Supply Chain (Partners and Suppliers)

Information Security

Contribution to Local Communities

Governance

Appendix

Quality Control

Quality Management Activities

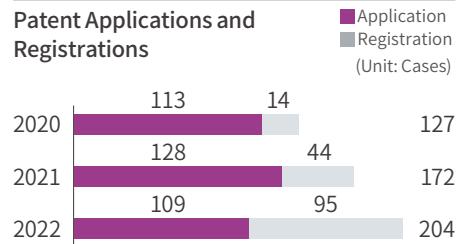
Quality Training

Based on the quality training system established in 2018, KD Navien provides quality training to all employees and field workers to increase their awareness of the importance of quality and understanding of the quality management system. Our training is provided especially to field workers and suppliers' employees from development and mass production processes to product and component quality management.

From 2023, we plan to provide the "mind-up" training to instill the sense of ownership along with our quality success and failure cases. We will also upgrade quality training by establishing a system for each rank covering various areas.

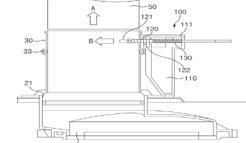
Patents

KD Navien continuously applies for and registers domestic and international intelligent property rights based on quality-oriented management. In 2022, the number of patents registered was more than double that in the previous year. All in all, we have applied for and registered over 200 patents.



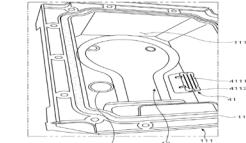
Boiler with Flue Pipe Deviation Detection System

KD Navien's boiler is equipped with a flue pipe deviation detection system to prevent exhaust gas leak accidents.



Hot Water Mat with Sterilization Module

KD Navien's hot water mat generates a sterilizing substance in the sterilization chamber installed in the water tank. Using this substance, water circulating in the mat is sterilized safely and conveniently. Likewise, the generation of foreign matter and odor during water circulation is prevented.



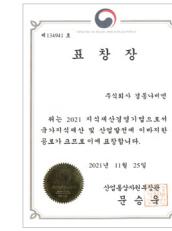
Decision Method and Notification of Ventilation System Filter Replacement

KD Navien provides ventilation system users with information on the appropriate filter replacement cycle. The lifespan of a filter is calculated by applying a weight according to the degree of indoor and outdoor air pollution. With the filter replacement time decided based on the calculation, we send a filter replacement notice to users.

Strengthening Intelligent Property Competitiveness

KD Navien dedicates utmost effort to creating intellectual property rights by applying for over 100 domestic and overseas patents each year and establishing a division dedicated to patent management.

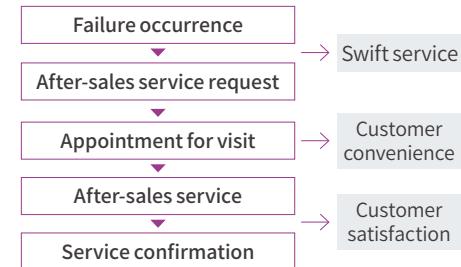
In addition, we continuously promote joint patent applications to strengthen our intellectual property competitiveness. We also strive for shared growth with our suppliers by fully covering the patent application expenses in order to protect the rights of suppliers that jointly developed technologies. In recognition of our effort, we were selected as an Intellectual Property Management Company in 2021.



Handling Quality Complaints

KD Navien operates the management system to handle customer's quality-related complaints based on "swift service," "customer convenience," and "customer satisfaction" as the core values. We will provide differentiated service by operating the 24-hour call center and 340 service centers, implementing the service reliability improvement policy, and strengthening the technical capabilities of our engineers.

Quality Complaint Handling System



KD Navien's Services

24/7 call center operation	Responding to service requests for all products 24/7 through call center, ARS (IVR), and chatbot
340 service centers nationwide	Swift and excellent service through the operation of a national service network
Policy to improve service reliability	Providing service trusted by customers (service engineer, spare parts and cost reliability)
Improvement of engineers' technical capabilities	Training to improve engineers' technical capabilities Establishing a service checkup support system

ESG Management in the Supply Chain(Partners and Suppliers)

Supply Chain Management System

Supply Chain Management Policy and Goals

Based on the internal R&D capabilities, KD Navien improves product quality, and develops and secures core components through subsidiaries. With raw materials for our key products stably supplied, we manufacture products by cooperating with suppliers stationed in our production factories. The products are delivered to customers through suppliers specializing in distribution and our distributors located nationwide. We also communicate with customers through online and offline channels for customer satisfaction. To create a good supply chain, and prevent ESG risks, we implement the supply chain management policy approved by our top management. In the global environment where the importance of ESG capabilities is emphasized, not only we, but also our suppliers are required to create a sustainable management environment. To this end, we emphasize the importance of building ESG capabilities by establishing a policy covering six areas to be observed by suppliers (labor and human rights, ethics management, health and safety, environment, management system), and have our suppliers sign the pledge of compliance with the Supplier Code of Contract. KD Navien also selects suppliers through a transparent and fair process. Companies that pass both the document screening to review industry relevance and financial safety, and on-site assessment to review quality management, procurement, purchase, and management capabilities are registered as new suppliers. The selected suppliers undergo regular assessments for capability inspection and risk management. Besides quality, procurement and purchase capabilities, other ESG assessment items will be added (ethics management, labor and human rights, environment, health and safety management), and suppliers that fail to obtain the standard ESG capability assessment score will be excluded from supplier selection. This way, KD Navien will continue creating a sustainable supplier pool.

[Supplier Code of Conduct](#)

Supplier Code of Conduct Details

Clause	Details
Ethics Management	Compliance with integrity, information disclosure, protection of intellectual property rights, responsible sourcing, fair trade, etc.
Labor and Human Rights Management	Working hours, wage and humane treatment, anti-discrimination, prohibition of child labor, etc.
Environment	Climate change response, air pollutant control, wastewater/waste management, etc.
Health and Safety	Occupational health and safety, management of and training for the safety of facilities/machinery/instruments, etc.
Management System Establishment	Response to legal requirements and external conditions, training and communication, risk management, etc.

Supply Chain Status

The status of KD Navien's supply chain is as follows:

KD Navien's Supply Chain Status¹⁾

Category	No. of Companies	Areas
Domestic	291	Steel plate, stainless steel pipe, heat exchanger, burner, room controller
Overseas	40	Electric parts, EMS ²⁾ , etc.

1) Based on domestic and overseas mass production suppliers

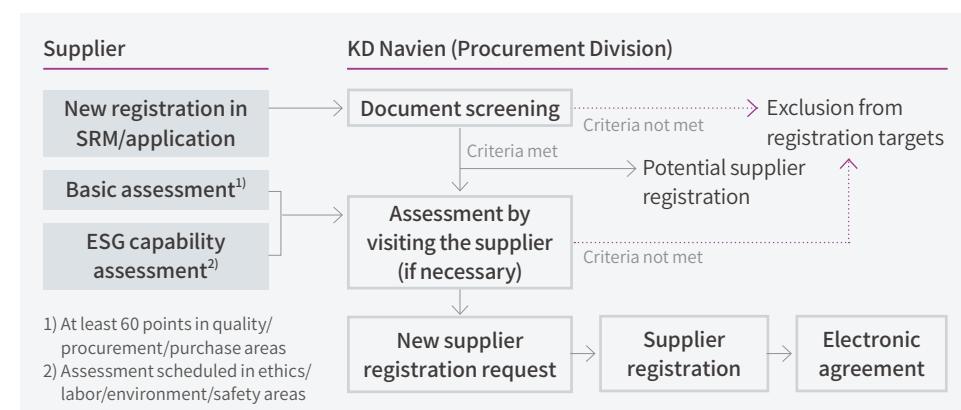
2) EMS: Electronics manufacturing service

KD Navien continuously increases the pool of competent suppliers with quality certifications and quality management systems (6 and 11 in 2021 and 2022, respectively, including potential suppliers) through annual recruitment announcements. We will not only provide our suppliers with an opportunity to expand marketing routes but also additionally introduce an open sourcing system (to be established in 2024) wherein we can freely suggest transaction to suppliers to discover goods suppliers and expand opportunities for cooperation with them.

Supplier Registration through Recruitment Announcement

Year	Registered Suppliers	Remarks
2021	6	Registration of Suppliers in Transaction: 2 Registration of Potential Suppliers: 4
2022	11	Registration of Suppliers in Transaction: 1 Registration of Potential Suppliers: 10

New Supplier Selection Process



ESG Management in the Supply Chain (Partners and Suppliers)

Supply Chain Management System

Supplier Assessment and Selection

Aside from preventing risks in the supply chain, KD Navien improves supplier standard by conducting regular assessment and providing feedback. We conduct a comprehensive supplier assessment annually, and the supplier rating is calculated by adding the points from the performance assessment (quarterly) and status assessment (semiannually).

Performance assessment is conducted on quality (quality system, receiving/process/field quality), procurement, and cost management, and status assessment is carried out in terms of quality (quality management and process management capabilities), procurement (supply and delivery management capabilities), and purchase (cooperation in purchase, financial stability, management capabilities).

Each year, an average of 30 suppliers- those ranked lower in the comprehensive assessment of the previous year, those with quality issues, those with other issues concerning key properties, etc.-are selected for status assessment. For a supplier failing to meet the status assessment criteria, an improvement plan is developed based on an agreement between the supplier and KD Navien, and a reassessment is conducted within three months to encourage the supplier's competency improvement.

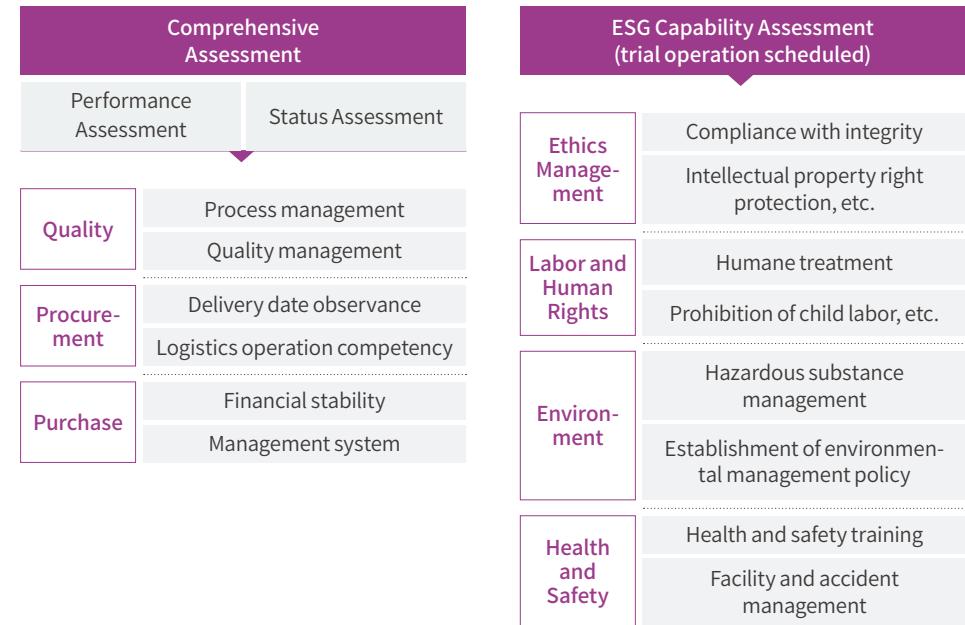
To suppliers that garnered high ratings (rating A, rating B), in the comprehensive assessment, incentives including expansion of transaction opportunities, supply volume increase, and Good Supply citation are provided, and, for those requiring improvement (rating C, rating D), penalties to decrease supply volume, etc. are imposed. We strive to create a pool of highly competent suppliers through follow-up management.

To improve suppliers' ESG capabilities, KD Navien plans the annual comprehensive assessment and suppliers' self-examination using questionnaires comprising ESG capability assessment items (ethics management, labor and human rights, environment, health and safety). Following a trial operation targeting 30 suppliers with the highest performance, we will expand the application of the ESG capability assessment to all suppliers in order to create a sustainable supply chain.

ESG Capability Assessment Process



Supplier Assessment System and Key Assessment Items



Follow-up Actions by Assessment Rating

Rating	Key Properties	General Properties	Follow-up Actions
Rating A	90 points and higher	95 points and higher	<ul style="list-style-type: none"> Provide an opportunity for preferential participation in new component development Preferentially apply volume upgrade when adjusting trading volumes in the industry Award the Good Supplier certification plaque
Rating B	80 - 89 points	90 - 94 points	<ul style="list-style-type: none"> Limit development participation Reduce volume Suspend transaction with a supplier whose assessment result is rating D for three consecutive times (three-strikes-out system)
Rating C	70 - 79 points	80 - 89 points	<ul style="list-style-type: none"> Limit development participation Reduce volume Suspend transaction with a supplier whose assessment result is rating D for three consecutive times (three-strikes-out system)
Rating D	Less than 70 points	Less than 80 points	<ul style="list-style-type: none"> Limit development participation Reduce volume Suspend transaction with a supplier whose assessment result is rating D for three consecutive times (three-strikes-out system)

ESG Management in the Supply Chain (Partners and Suppliers)

Supply Chain Management System

Supply Chain Communication

KD Navien continuously improves communication with suppliers by establishing various communication channels. Reports on employees' unethical conduct and violation of the Fair Transactions in Subcontracting Act are received through the online whistleblowing center. To protect whistleblowers, the reports are processed through a transparent process with anonymity guaranteed. We also receive grievances related to the purchase system, operating system, and other operations of external suppliers through the SRM system.

The Purchase Planning Division checks the details of a report within seven days, hands over the case to the relevant division immediately after identifying the content, and informs the improvement plan and result. We hold face-to-face quality improvement meetings with suppliers on a monthly basis and collect VOCs on quality-related difficulties and defect-related issues. Moving forward, we will diversify the supplier communication channels, such as holding online and offline meetings with suppliers, and collect VOCs through semiannual status surveys.

Supplier VOC Collection Channels

Channel	Description	2022 Performance
Online Whistleblowing Center	Receive reports on violations of the Fair Transactions in Subcontracting Act and employees' unethical conduct through the online whistleblowing center in the official KyungDong website	Operated full-time
SRM System	Receive complaints and improvement requests (VOCs) in relation to purchase system, operating system, health and safety, and other operations of external suppliers through the KyungDong SRM system	100% handling rate (Received and responded to 6 reports)
Questionnaire Survey	Receive complaints and improvement requests (VOCs) in relation to the purchase system, operating system, health and safety, and other operations of internal suppliers through a questionnaire survey	No VOC
Quality Improvement Meeting	Receive reports on defect-related issues and difficulties through the monthly face-to-face quality improvement meetings with suppliers	100% completion rate (Received and responded to 6 reports)

Win-win Cooperation Activities

Supplier and Supply Chain Support

KD Navien strives to improve product competitiveness and create a sustainable management environment by promoting win-win cooperation with suppliers. We implement various support policies in order to foster a cooperative culture where we can grow with our suppliers.

Supplier Support Activities

Category	Description of Activities	Performance in 2022
Financial Support	Operating an accounts receivable system	<ul style="list-style-type: none"> Minimize suppliers' burden of financial interest by providing credit, etc.
	Improving payment conditions	<ul style="list-style-type: none"> Pay the transaction amount in cash to help suppliers secure fund liquidity when requested
	Operating a paid subcontracting system	<ul style="list-style-type: none"> Prevent suppliers' issues in raw and subsidiary material supply by operating the paid subcontracting system for items with large price fluctuations
	Providing guidance for quality improvement	<ul style="list-style-type: none"> Support cause analysis and improvement plan development when quality issues arise Provide consulting support, such as sharing quality improvement success cases
Supplier Competency Development	Supporting inspection infrastructure	<ul style="list-style-type: none"> Support and provide training for suppliers' inspection and production infrastructure establishment
	Providing training and personnel support	<ul style="list-style-type: none"> Provide training to improve capabilities for environmental regulatory response
Other Welfare Supports	Selling heating mats at discounted prices	<ul style="list-style-type: none"> Sell products under the same conditions and at the same prices as those applied to employees
	Supporting the hazardous substance analysis cost	<ul style="list-style-type: none"> Provide discount on analysis cost when requested by KyungDong suppliers

ESG Management in the Supply Chain (Partners and Suppliers)

Win-win Cooperation Activities

Distributor Support and Protection

KD Navien carries out various supporting activities for distributors that provide differentiated services at the nearest customer contact points.

Distributor Support and Protection Activities

Category

Category	Description
Support for Sales	<ul style="list-style-type: none"> Sales strategy, training on new products, installation training
Expansion	<ul style="list-style-type: none"> Support for advertising expenses targeting apartment housing Support for remodeling expenses at new distributor opening or transfer Supporting products and sales promotional items for store display
Welfare Support	<ul style="list-style-type: none"> Gifts for holidays Support for uniform production Supporting various office supplies including organizer
Meetings and VOC Management	<ul style="list-style-type: none"> CRM (customer relationship management) system introduction 93¹⁾ VOCs received and handled

1) As of 2022

Responsible Supply Chain Management

Supply Chain Risk Evaluation



Financial Risk Management

Supplier credit assessment¹⁾

Through cooperation with credit rating agencies, KD Navien conducts credit assessment of suppliers on a regular basis to review their financial stability. Aside from reviewing suppliers' financial information including credit rating, cash flow rating, debt ratio and total borrowings, and bonds payable to total assets, we identify the insolvency signs, which are difficult to check with financial information, at the same time by receiving early warning data.

1) Credit Rating Agencies: KoDATA, ECREDIBLE, NICE Investors Service



Environmental, Health, and Safety Risk Management

Supplier safety and environmental assessment

KD Navien assesses occupational accident prevention capabilities and technological standards of new and existing suppliers at each contract renewal in order to minimize the occurrence of serious accidents in suppliers and review the safety-related status continuously. The assessment items include health and safety policy establishment and rationality of the content, training implementation, status of protective equipment supply and management, and facility stability. Suppliers that receive less than 60 points are categorized as companies that fail to meet the criteria and can be excluded from the transaction targets.

We also assess suppliers in terms of the acquisition of international standard certifications such as ISO 14001 and the operating status of organizations dedicated to environmental, safety, and health management and related personnel to monitor their environmental competencies continuously. From 2023, we will upgrade the supplier management and assessment system by supplementing the assessment items in the environmental area, such as environmental management policy establishment and hazardous substance management.



Response to Hazardous Substances

Hazardous substance-related assessment

KD Navien establishes material information management criteria according to the regulatory response guidelines and reviews compliance with the guidelines in the stage of development. When a substance is verified to be hazardous, a substitute material is identified to minimize the use of hazardous chemicals. For supplier safety management in relation to chemicals and biocides harmful to the human body, we continuously check for the inclusion of hazardous substances in the boiler and water heater components.

In 2022, we responded to RoHS, REACH, and other regulations by checking for the inclusion of hazardous substances based on the Material Safety Data Sheet (MSDS), guarantee for non-inclusion of hazardous substances, and RoHS reports received from 193 suppliers.

Information Security

Security Management System

Information Security and Privacy Policy

With the goal of realizing social responsibility management based on customers' trust and protecting the business strategies, core technologies, research information, and personal information as important assets, KD Navien has established an information security policy and a privacy policy approved by the top management, and operates the organization according to the policies. Our information security policy comprises enforcement rules and detailed manuals such as information security management regulations, information system security rules, and physical security rules. The policy applies to all persons visiting the company including customers and outsourcing companies as well as employees. For reinforcement of the information security system, we upgraded the information security management regulations and rules in 2022 by receiving consulting on the information security management system.

The privacy policy comprises enforcement rules and detailed manuals such as the personal information internal management plan, image information processing device operation and management rules, and personal information handling consignment and provision management rules that are disclosed for access by employees and suppliers. Also, to ensure that all data subjects can check the status of personal information management, the privacy policy is posted on the website and each system.

Dedicated Organization

Pursuant to the Act on the Promotion of Information and Communications Network Utilization and Information Protection, KD Navien designated the Chief Information Security Officer (CISO) and reported it to the Ministry of Science and ICT.

In 2022, an information protection team was established through separation from the information security organization to strengthen our expertise and responsibility for personal information protection. Together with security managers in each area and divisions in charge of security handling for domestic and overseas worksites, the team organically handles all information security-related operations.

The team assists the Chief Privacy Officer (CPO) designated according to the Personal Information Protection Act in inspecting personal information-related details across the Company, such as the personal information processing system, and consequently takes measures to secure administrative, technical, and physical safety in order to prevent loss, theft, leak, tampering, and damage of personal information.

Incident Response System

To minimize damage caused by personal information leak and other information security incidents, KD Navien establishes and operates incident response rules according to related statutes such as the Act on Promotion of Information and Communications Network Utilization and Information Protection and the Personal Information Protection Act. When an incident is reported and/or registered by employees and suppliers or through security monitoring, initial actions are taken for response. Then, an incident response team is organized to investigate the scale and details of the incident, analyze the cause, and promote recovery. After an incident case is closed, the fundamental cause is identified, and improvement measures are prepared based on a thorough follow-up analysis to prevent the occurrence of similar incidents.

Incident Response Process



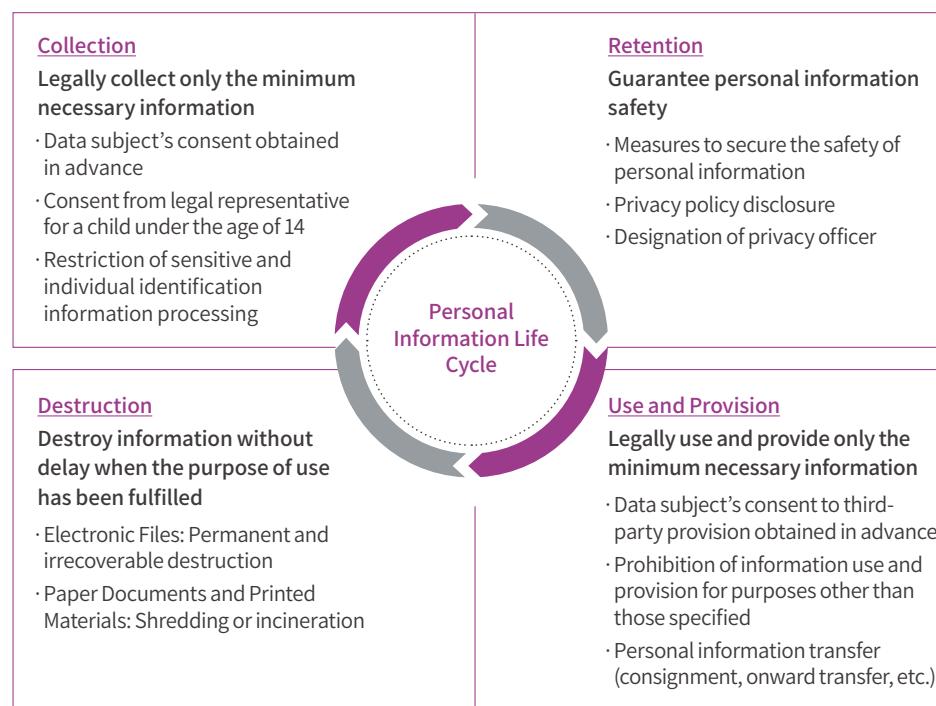
Information Security

Security Activities

Personal Information Life Cycle Management

KD Navien periodically manages the life cycle of personal information processed under the personal information processing system, such as from collection, retention, and use to provision and destruction. Through this process, we provide instructions to ensure that the status of personal information processing in each stage is clearly delivered and appropriate administrative, technical, and physical protective measures are implemented.

In addition, for the introduction of a new personal information processing system or change of an existing system, the use of a checklist to comply with personal information protection-related statutes has been made compulsory. With the result of an inspection using the checklist reflected in the personal information life cycle, continuous personal information protection is ensured through the personal information life cycle management.



Information Security Training and Campaigns

Information Security Training

KD Navien provides information security and personal information protection training at least once a year in order to strengthen employees' awareness.

For new employees, a compulsory course on information security is included in the training to inform them of the internal information protection-related compliances and roles. Information security-related risks are also prevented by assigning responsibilities to them.

To the divisions in charge of handling the personal information of employees and customers, personal information protection training customized to their respective areas is provided in order to prevent personal information leak and other incidents. For partners including service centers, activities to improve information security awareness are conducted in addition to training and implementation status inspection.

Information Security Campaign

KD Navien periodically holds information security and personal information protection campaigns. In 2022, we provided a phishing email simulation training targeting 450 key information handlers in all divisions. Activities to prevent information leak and other incidents that can occur in the course of email use, such as due to ransomware, were also conducted.

KD Navien will continue organizing training programs and campaigns to strengthen employees' information security awareness.

Information Security Monitoring Activities

KD Navien detects the occurrence of incidents including information leak in order to protect business strategies, key technologies, and personal information as the Company's important assets safely. To detect swiftly the occurrence of unexpected incidents and minimize the damage accordingly, we also conduct ongoing inspections and regularly analyze the status.

For the personal information processing system, access records of personal information handlers are inspected to check for personal information loss, theft, leak, tampering, and damage. Related results are reported to the Chief Privacy Officer on a monthly basis.

Contribution to Local Communities

Corporate Social Responsibility Programs

Nulpurun Foundation

The Nulpurun Foundation is a nonprofit public corporation established under the Ministry of Environment in April 2000 with private contribution by KD Navien CEO Sohn Yeon-ho. Nulpurun Foundation was established to promote technological innovation for coexistence between humans and by observing sustainability guidelines. The Nulpurun Foundation is engaged in various projects with the goal of becoming a partner for all those who are concerned with energy and environmental issues, and a leader that opens a creative future.

Contribution to the Condensing Environmental Fund

KD Navien supports the Nulpurun Foundation by donating a portion of our eco-friendly condensing boiler sales to the Condensing Environmental Fund. Over the past ten years, we have contributed KRW 1.4 billion¹⁾ to the Condensing Environmental Fund, and raise research funds to support the Nulpurun Foundation's environmental protection campaigns and environmental preservation activities.

Support and the Contribution to Environmental Fund in 2022		(Unit: KRW 1,000)
Category		Amount
Environmental Fund Support	SAREK	50,000
	KREA	30,000
	ISO	6,000
	KILA	30,000
	KIA	20,000
	GREENFUND	20,000
Environmental Fund Contribution ¹⁾		110,284

1) Total contributions by KD One and KD Navien

Support for Technological Improvement in the Energy Field

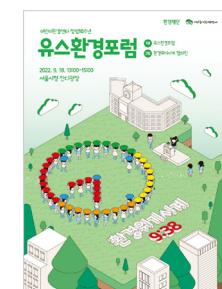
The Nulpurun Foundation sponsors a variety of organizations in support of technological development in the energy field and creation of a smarter living environment..

Sponsorship in the Energy Field

The Society of Air-Conditioning and Refrigerating Engineers of Korea (SAREK)	<ul style="list-style-type: none"> · Aiming to increase the efficiency of energy mechanical facilities and renewable energy use · HVAC Contest sponsorship
Korean Resource Economics Association (KREA)	<ul style="list-style-type: none"> · Support for the Nulpurun Academic Awards of KREA · Support for KREA University (Graduate School) Student Thesis Contest · Support for policy and issue-related experts' academic symposiums and discussions, etc.
International Society of Ondol (ISO)	<ul style="list-style-type: none"> · Traditional Ondol Engineer Training project sponsorship
The Korean Institute of Landscape Architecture (KILA)	<ul style="list-style-type: none"> · Korea Environmental Landscape Contest sponsorship >Re:Public Landscape contest host · Support for the discovery of talents who contributed to landscape industry development, and related studies
Korea Institute of Architects (KIA)	<ul style="list-style-type: none"> · Korea Architecture sponsorship

Support for Environmental Protection Activities

The Nulpurun Foundation supports GREENFUND, an environmental foundation established in 2002. In 2022, the Nulpurun Foundation sponsored the Youth Environment Forum, which was held in celebration of the tenth anniversary of the Eco Children's Center of Korea Green Foundation, raising awareness of the seriousness of climate crisis threatening the lives of children and teenagers.



Contribution to Local Communities

Corporate Social Responsibility Programs

Support to the Underprivileged

KD Navien strives to share warmth with the underprivileged by carrying out direct and indirect heating environment improvement activities. Committed to ensuring a warm winter to a greater number of people, we partner with various organizations to conduct an array of residential environment improvement projects.

Activity	Description	Performance in 2022
Habitat for Humanity Korea environmental improvement project sponsorship	Contributing to the independence of the low-income class and those who do not own homes by donating boilers and water heaters for housing construction and repair sites	Donated 41 boilers
KD Navien-POSCO Boiler Sharing project	In a joint project practicing ESG management and local outreach through carbon reduction, KD Navien and POSCO donated eco-friendly boilers to the low-income families in regions where their domestic worksites are located.	Provided 93 boilers
POSCO E&C Eco Dream project Sponsorship	Donation of eco-friendly condensing boilers resulting in reduced NOx emissions and lowered heating cost for the low-income class. The Eco Dream project improves the quality of life for the underprivileged by supporting senior citizens living alone, and providing shelters for female abuse victims.	Donated 13 boilers
KyungDong City Gas sponsoring the "Bring Warmth to Children's World" project sponsorship	Supported city gas supply and cost and improved the heating environment for the underprivileged and welfare facilities in the Ulsan region through the Ulsan branch of ChildFund Korea	Provided 10 boilers
Additionally supporting the low-income class for boiler replacement	Donated full amount of replacement and installation costs for basic living security recipients, second-lowest income bracket, and low-income class wishing to install eco-friendly condensing boilers or replace old boilers used for more than ten years with eco-friendly condensing boilers	Replaced 637 boilers and supported KRW 110 million of expenses
Donating eco-friendly boilers to the energy-vulnerable class in Seoul	Donate boilers to the energy-vulnerable class and flood victims in Seoul in cooperation with the Seoul Metropolitan City and Seoul Energy Welfare Citizens' Fund	Donated 39 boilers
ChildFund Korea sponsorship	Donated hot water mats to children from low-income families and households headed by adolescents	Donated 1,000 hot water mats
Sponsorship of Support Center for Senior Citizens Living Alone	Donated hot water mats to senior citizens living alone	Donated 1,500 hot water mats
Korea Fire Officials Credit Union sponsorship	Provide hot water mats to fallen and injured firefighters	Donated 430 hot water mats
Donation of ventilation facilities to small businesses	Participate in the Ventilation Facility Donation for COVID-19 Quarantine Support for Small Businesses organized by the Korea Association of Ventilation Industry Companies, Headquarters for Disease Prevention Campaign with Citizens' Participation and Korea Institute of Civil Engineering and Building Technology, and donate ventilation facilities to small businesses	Donated ventilation products and supported installation cost of KRW 9.31 million

CASE Business Agreement on Indoor Environmental Improvement for the Underprivileged

Since 2020, KD Navien has entered into social contribution agreements with the Ministry of Environment, Community Chest of Korea, and Korea Environmental Industry and Technology Institute to improve indoor environment and living spaces of the underprivileged. We strive to ensure the successful advancement of the projects by inspecting the indoor living environment of the underprivileged, and providing items necessary in the inspection and improvement¹⁾.

1) Donated two boilers for indoor environmental improvement in 2020 (KRW 1.01 million) and eight boilers together with Eunpyeong-gu Office, a local government for the region where KEITI is located, in 2021 (KRW 3.91 million)



Contribution to Local Communities

Corporate Social Responsibility Programs

Support for Cultural Development in Local Communities

KD Navien conducts support activities for cultural and art development in local communities.

Pyeongtaek Korean Music Festa Sponsorship

Since 2022, KD Navien has sponsored the Pyeongtaek City Cultural Foundation for the cultural development of Pyeongtaek City where Seotan Factory is located.

As the sole sponsor for Korean Music Festa in Pyeongtaek, a local festival held for the first time in October 2022, we contributed to cultural and art promotion for the citizens of Pyeongtaek. We supported the contemporary Gugak concert as well as various experience and exhibition programs. We provide support so that the event can develop into a representative local festival of Pyeongtaek City.

Messiah Philharmonic Orchestra Sponsorship

KD Navien sponsors the subscription concerts of the Messiah Philharmonic Orchestra, a non-profit private organization of instrumental artists.

The Messiah Philharmonic Orchestra holds subscription concerts to raise funds for the culturally underprivileged such as senior citizens living alone, children as heads of households, and people with intellectual disabilities. It also spreads hope and courage to neglected neighbors and publicizes Korean traditional music by playing contemporary Gugak pieces by Korean composers and classical Korean music.

CASE Restoration Activities in Flood-hit Region

In August 2022, the torrential rain in the capital region caused extensive damage in Gwanak-gu, Seoul, flooding houses and traditional market. KD Navien set up a base camp at an elementary school in the area and performed emergency flood damage recovery activities.

In the sites of flood damage, restoration activities were conducted swiftly in cooperation with household appliance makers including KD Navien and organizations under the supervision of the Ministry of Interior and Safety, such as military units.

In September 2022, after typhoon Hinnamnor hit Pohang, we again carried out restoration activities by installing a base camp at a social welfare center in Daesong-myeon, Pohang City. With an additional request for support received from Gyeongju City, we opened another base camp at the town hall of Jeonpo Village in Naenam-myeon and carried out emergency flood restoration activities.



Flood Restoration Requested and Handled (Unit: Case)

Support Period	Item	Damage Reported	Restoration Completed		
Sep. 7-30, 2022	Boiler	526	526		
	Water heater	24	24		
	Dryer	1	1		
	Hot water mat	1	1		
	Total	552	552		

Pohang
Hot water mats
800
(Worth KRW 130 million)

Gyeongju
Hot water mats
400
donated along with KRW 100 million in cash

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THINK TRUST FOR THE SUSTAINABILITY



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Governance

Board of Directors

BOD Composition

Understanding that governance transparency, expertise, and stability are indispensable elements for sustainable corporate growth, value increase and protection of the rights and interests of stakeholders, KD Navien strives to establish corporate governance reflecting the Company's growth path and organizational culture along with BOD-centered management.

We practice transparent governance by disclosing the full texts of our governance-related internal regulations, such as the BOD Operating Regulations, Subcommittee Regulations and details of activities conducted on the website. In compliance with BOD Operating Regulations, the Chairperson and CEO of KD Navien was appointed chairperson of the BOD. Likewise, To ensure proper checks and balances, three of the seven board members (42.9% of all members), are comprised of outside directors exceeding the one fourth minimum required by the Commercial Act.

Independence

KD Navien organized the BOD with members not representing any specific interests or occupational groups so that it can substantially exercise the function of keeping the management in check.

To achieve transparent governance, details of related operations, procedures, and results are disclosed. We strive for checks and balances among the BOD members, management, and outside directors by establishing internal regulations such as the Articles of Incorporation, the BOD Operating Regulations and other bylaws. The Chairperson and CEO of the Company was appointed chairperson of the BOD to increase the efficiency of the BOD operation. To ensure the BOD's independent supervision of the Company's management and to prevent conflicts of interest, the BOD Operating Regulations were amended (Nov. 10, 2022) to appoint outside directors as BOD members. Those with special interests in the BOD resolutions cannot exercise their voting rights and, for items subject to conflict of interest falling under Article 397-2 (Prohibition of Appropriation of Company's Opportunities and Assets) and Article 398 (Transactions Between Directors, etc. and Company) of the Commercial Act, the Articles of Incorporation stipulate that the BOD resolution be made with the approval of at least two thirds of the directors.

BOD Composition

Category	Name	Gender	Date of Birth	Year of Appointment	Duties	Experience	Subcommittee
Executive Director	Sohn Yeon-ho ¹⁾	Male	Jul. 1951	Mar. 2022 (reappointed)	In charge of overall management	(Current) Chairperson and Co-CEO of KD Navien	Management Committee (Chairperson)
Executive Director	Kim Jong-uk	Male	Sep. 1964	Mar. 2022 (reappointed)	In charge of production, quality, development, purchase, safety, and DT	(Current) Vice President and Co-CEO of KD Navien	Management Committee
Executive Director	Kim Yong-bum	Male	Apr. 1966	Mar. 2022 (reappointed)	In charge of sales and marketing	(Current) Vice President of KD Navien	Management Committee
Executive Director	Sohn Heung-rak	Male	Jun. 1981	Mar. 2022 (reappointed)	In charge of purchase, procurement, and service	(Current) Vice President of KD Navien	Management Committee
Outside Director	Sohn Yang-hoon	Male	Sep. 1958	Mar. 2022 (reappointed)	Overall management	(Former) President of the Korea Energy Economics Institute (Former) President of the Korean Resource Economics Association (Former) Audit Committee Member and Outside Director of E1 (Current) Professor, Dept. of Economics, Incheon National University (Current) Outside Director of KD Navien	-
	Yang Sung-moon	Male	Jan. 1953	Mar. 2022 (newly appointed)	Overall management	(Former) Non-executive Director of Nomura-Rifa Asset Management (Current) Adviser, Nomura Financial Investment (Current) Outside Director of KD Navien	-
	Hong Joon-kee	Male	Oct. 1958	Mar. 2022 (newly appointed)	Overall management	(Former) CEO of COWAY (Former) CEO of KD Navien (Current) Outside Director of SOLU-M (Current) Outside Director of KD Navien	-

1) Chairperson of the BOD

Governance

Board of Directors

Expertise

To improve the expertise of the BOD and ensure that the BOD members do not have any specific backgrounds or represent specific interests, those with professional knowledge and extensive experiences in the fields of economy, finance, and home appliances business are appointed outside directors. As experts in their respective fields, outside directors review and make decisions on management issues from objective and diverse viewpoints.

KD Navien's Board Skills Matrix (BSM)

Name	Executive Director				Outside Director			Definition
	Sohn Yeon-ho	Kim Jong-uk	Kim Yong-bum	Sohn Heung-rak	Sohn Yang-hoon	Yang Sung-moon	Hong Jun-kee	
Leadership	●	●	●	●	●	●	●	· Understanding of growth engine such as corporate strategy, human resource management, and risk management
CEO experience	●	●		●			●	
CFO experience	●					●		
Management	●	●	●	●			●	· Corporate management experience
Economy/ Finance					●	●		· Understanding and professional knowledge of domestic and international economic trends and financial market changes
Digital/IT		●						· Professional knowledge of digitalization of and IT application to business processes
Industry	●	●	●	●	●		●	· Industry-related expertise (major business experience)
R&D	●	●	●					· Experience in new product development through new technology research and management
Supply chain/ purchasing	●	●		●				· Experience in process efficiency improvement across the supply chain from production to procurement and distribution, etc.
Global business	●		●		●	●		· Global business experience based on global environmental, economic, and legal knowledge

Director Appointment Process

KD Navien operates a fair and transparent process to appoint directors who conform to the interest of shareholders and stakeholders. Through a reference check on outside director candidates representing stakeholder groups, their eligibility is verified against related statutes including the Commercial Act and the Public Service Ethics Act. BOD diversity and management environment as well as the expertise, faithfulness, and independence, etc. of the candidates are collectively considered in the director appointment. In 2023, we will establish a more systematic appointment process by organizing the Outside Director Candidate Recommendation Committee.

Subcommittees

For timely and efficient decision-making, the Management Committee consisting of executive directors was established under the BOD. Based on professional management knowledge and experiences, the Management Committee members conduct swift and in-depth deliberation and resolution on the Company's general management issues, financial issues, and other important matters entrusted by the BOD. According to Article 14 of the Management Committee Operating Regulations and Paragraph 4, Article 393-2 of the Commercial Act, the resolutions of the Management Committee are reported to each director. Upon receiving the report, directors can request a convocation of the BOD meeting, and the BOD can deliberate on the decision made by the Management Committee again. At the 50th general shareholders' meeting (Mar. 29, 2023), a basis for the establishment of subcommittees, such as the Outside Director Candidate Recommendation Committee, ESG Committee, Internal Transaction Committee, and Remuneration Committee, was prepared through the amendment of the Articles of Incorporation. In particular, the Outside Director Candidate Recommendation Committee will be introduced and put into operation in 2023.

Management Committee Agenda Items

Category	Item
General Management	<ul style="list-style-type: none"> · Mid- to long-term management goals and strategies · Business planning and business restructuring · New market entry, transfer, and withdrawal of overseas subsidiaries and branches · Establishment and abolition of important regulations · Mid- to long-term technology development planning · Mid- to long-term personnel management planning · Retirement allowance payout ratio for executives · Other important management issues
Finance	<ul style="list-style-type: none"> · Conclusion of contracts delegated by the BOD · Mid- to long-term budget and accounting, funding plan and financial practices, or financial transactions according to internal rules, etc. of external accounts (if proceedings equivalent to those of the BOD are required by external account regardless of scale) · Other important management issues and matters delegated by the BOD
Others	<ul style="list-style-type: none"> · Other important management issues and matters delegated by the BOD

Governance

Board of Directors

BOD Operation

The BOD, according to the BOD Operating Regulations, convenes regular (quarterly) and extraordinary meetings. The BOD members are notified of the schedule and agenda items seven days prior to the meeting¹⁾.

For faithful performance of duties, outside directors cannot concurrently hold positions as directors, executive officers, or auditor in two or more companies according to Subparagraph 3, Paragraph 5, Article 34 of the Enforcement Decree of the Commercial Act.

In principle, directors must attend the BOD meetings in person. When in-person attendance is not possible, participation in resolution through remote communication to transmit the voices of all directors concurrently is permitted²⁾.

According to Article 15 of the BOD Operating Regulations, BOD meeting notes (minutes), including agenda items, courses of action, results, opposing members, and reasons for opposition are recorded. The minutes are then initialed and sealed, or signed by the attending directors and auditor. In addition to the regular reports (annual, semiannual, quarterly), the details are posted on the website on a quarterly basis so that shareholders can review the details of the BOD resolutions through various methods. In 2022, six BOD meetings were held in all where nine reporting items including materiality analysis result were submitted. The BOD also deliberated on and passed 20 items concerning the BOD operation, such as appointment of the Management Committee members and establishment of an overseas subsidiary.

1) Convocation procedures can be omitted with the unanimous consent of the directors and auditor

2) The directors concerned are deemed to have attended the BOD meetings in person

BOD Activities

	Meetings Held	Items Deliberated/Reported	Average Attendance
2020	10	23/8 items	100%
2021	10	19/6 items	100%
2022	6	20/9 items	100%

BOD Training

KD Navien establishes a BOD training plan to support the BOD's faithful fulfillment of duties. In 2022, outside directors visited Seotan Factory, our production base, and underwent product training. In addition to matters concerning company management and status, training on ESG management is being planned. Through the training, we will support the BOD in making reasonable decisions for the Company's sustainable growth.

BOD and Director Assessment

In addition to assessment of overall BOD operation, directors conduct self-assessment annually. The results are reported to the BOD and used in the BOD operation improvement and decision for director reappointment. The BOD is operated rationally and efficiently based on the BOD and director assessment to ensure governance improvement and corporate growth.

BOD and Director Assessment Results in 2022

Category	Assessment Item	Score (out of 5.0 points)
BOD Assessment	Roles and responsibilities of the BOD	4.5 points
	BOD structure	3.5 points
	BOD operation	3.6 points
	Reflection of assessment results	3.1 points
Director Self-assessment	Engagement	4.0 points
	Experience and knowledge	4.3 points
	Contribution to BOD operation	3.5 points
	Reinforcement of BOD responsibilities	4.2 points

BOD Compensation System and Status

KD Navien provides directors with compensation within a limit approved at the general shareholders' meeting. Outside director compensation is paid in the form of fixed salary commensurate to responsibilities and risks associated with the performance of duties, and outside director compensation levels of other companies. The annual salary of executive directors is determined by comprehensively considering the directors' contribution to the Company. Bonus amounts are determined and paid according to the company-wide sales and organizational and individual performances in the respective year.

BOD Remuneration Status

(Unit: KRW million)

Year	Category	Number of Directors	Total Remuneration	Average Remuneration per Person
2020 ¹⁾	Executive Director	5	545	109
	Outside Director	3	81	27
2021	Executive Director	5	811	162
	Outside Director	2	84	42
2022 ²⁾	Executive Director	5	1,301	325
	Outside Director	4	116	39

1) Including 1 outside director who resigned in 2020

2) Including 1 executive director and 1 outside director who resigned in 2022

Governance

Shareholder Rights

Share and Shareholder Composition

The total number of shares to be issued by KD Navien, according to the Articles of Incorporation, is 30,000,000, and the par value is KRW 1,000. So far, 14,568,592 shares have been issued. The number of shares outstanding, excluding 115,660 treasury shares, is 14,452,932. As of December 31, 2022, KD One and National Pension Service (NPS) hold at least 5% of the shares.

Majority Shareholder and Affiliated Person		(Unit: Shares, %)
Name	Number of Shares Owned	Shareholding Ratio
KD One	8,263,287	56.72
Sohn Yeon-ho	129,262	0.89

Shareholders			(Unit: Shares, %)
Category	Number of Shares Owned	Shareholding Ratio	
Shareholders with Shareholding	KD One	8,263,287	56.72
Ratio of 5% or Higher	NPS	850,995	5.84
Minority Shareholders with Shareholding Ratio of Less than 1%		5,046,257	34.64

CASE Method of Resolution at the General Shareholders' Meeting

- KD Navien has employed the use of electronic voting and voting by proxy for seven years, up to and including the last general shareholders' meeting in 2023 to substantially improve shareholder value by bolstering shareholders' rights and interests.
- The details related to the exercise of voting rights by proxy and electronic voting are disclosed in the general shareholders' meeting notes using the Data Analysis, Retrieval, and Transfer (DART) system of the Financial Supervisory Service and documents for recommendation of the exercise of voting rights by proxy.

CASE KD Navien's Dividend Policy

- For future growth through sustainable profit realization, KD Navien distributes the profits by considering the balance between business investment and shareholder return. Stability and predictability are the criteria of our dividend policy.
- Refraining from the downgrading of dividend per share, we execute stable dividend payments with a slight increase, or at least in the same level as that of the previous year. For period 43 through 48, the amount of dividend per share was increased by KRW 50 each year. In period 49, the amount was increased by KRW 100 from that in period 48. It was again increased by KRW 50 in period 50 in comparison to the previous year. As such, we executed dividend payments for 29 consecutive fiscal years to ensure predictability for our shareholders.
- Moving forward, we will strive to maximize shareholder return, shareholder value and long-term corporate growth by reviewing our financial conditions, cash flow, and investment plans as well as changes in the business environment.

Investor Communication

KD Navien identifies the needs of various stakeholders and responds to their inquiries by continuously promoting communication with key investors.

Communication with Key Investors in 2022

- Responding to inquiry calls from investors (year-round) and making conference calls
- Holding quarterly meetings for investor response (four times a year)
- Sending shareholder letter to NPS (twice)

Risk Management

Risk Management System

Risk Management Governance

KD Navien is exposed to changes in the business landscape various environmental changes including rapid growth of overseas sales, tightening of environmental regulations in countries around the world, and subsequent legislation of eco-friendly product use, etc. Accordingly, we intend to expand our marketing and distribution channels to various B2C markets by introducing the hot water heating mat and rental business, etc.

Rapid changes in the business landscape and business expansion are an opportunity for us to advance into a global living environment leader. At the same time, however, we are also exposed to various risks caused by the environmental change and are consequently tasked with securing the response. The increased geopolitical risks such as the Russia-Ukraine War and aggravation of climate crisis in particular continuously amplify uncertainties that make it difficult for us to predict changes in the future management environment.

To this end, KD Navien builds swift response capabilities by establishing the Risk Management Committee, a response system led by the head of the Management Headquarters (CRO). Dedicated teams in each headquarters organized by product and business characteristics conduct their risk management operations. The heads of each of the headquarters and divisions are responsible for risk management for their respective sectors, and the Chairperson of the Risk Management Committee oversees the company-wide risk management.

Through monthly strategic meetings of each business division, the Management Committee meeting and the weekly executive meetings, etc, we preemptively identify and review financial and non-financial risk factors, such as key environmental statutes and regulations, and report the details. The consultative bodies also review and discuss Company-level response plans. The risks that need to be managed through corporate-wide collective efforts, all relevant business divisions will be involved.

Risk Management Governance



Key Functions of Each Organization

Organization	Function
BOD	<ul style="list-style-type: none"> Review and supervise risks, establish policies
Chairperson of the Risk Management Committee	<ul style="list-style-type: none"> Oversee risk management operations Support the BOD and report key issues
Key Consultative Bodies and Planning Organization by Headquarters	<ul style="list-style-type: none"> Identify, predict, prevent, monitor for, and respond to risks Manage the effective implementation of risk management plans

Risk Management

Risk Management System

Financial and Non-financial Risks

KD Navien manages risks by categorizing them into integrated, financial, and non-financial risks. To secure safety in business operation, we define the causes of risk occurrence and the impact, establish preemptive response plans, and conduct risk monitoring according to the plans.

Category	Risk	Definition	Impact on Business	Response
Integrated	Strategic/Operational	<ul style="list-style-type: none"> Integrated/Ongoing risk management 	<ul style="list-style-type: none"> Increase in risk complexity/link Increase in possibility of loss due to risk management failure 	<ul style="list-style-type: none"> Conduct company-wide review on economic, social, and environmental changes and financial/non-financial risks through weekly and monthly meetings of consultative bodies consisting of key executives
Non-financial	Environmental	<ul style="list-style-type: none"> Risk according to the violation of environment-related regulations Climate change-related supply chain risk 	<ul style="list-style-type: none"> Violation of environment-related regulations and lack of climate change response causing damage to eco-friendly corporate and brand image Production operation and raw material procurement risk due to abnormal climate 	<ul style="list-style-type: none"> Apply internal criteria stricter than those specified by the statutes, such as those for air- and water-polluting substances Respond to climate change risk by establishing an eco-friendly production base Establish a voluntary GHG emissions management system, and expand renewable energy use through photovoltaic power generation facility installation, etc.
	Health and Safety	<ul style="list-style-type: none"> Risk of loss due to occupational accidents, etc. Risk related to employee illness 	<ul style="list-style-type: none"> Overall management risk and damage to reputation according to the enforcement of the Serious Accidents Punishment Act Health-related productivity decline 	<ul style="list-style-type: none"> Strengthen response capabilities by appointing the CSO, a top decision maker for health and safety-related operations Improve health and safety-related internal regulations and preventive management system Apply greater weight to fire occurrence risk, and establish a cooperative system with local fire stations, etc. Prepare a COVID-19 response process, etc.
	Quality	<ul style="list-style-type: none"> Risk of product liability and infringement of consumer rights due to product defects 	<ul style="list-style-type: none"> Possibility of accident due to explosion and gas leak in key product groups Lower customer confidence and profitability due to product quality issues 	<ul style="list-style-type: none"> Establish and operate a quality management system with the highest priority on product safety (Operate a quality promotion team, monitor quality information in real time, operate an analysis system, etc.) Provide a user manual to consumers to minimize the occurrence of problems during product use
	Regulatory	<ul style="list-style-type: none"> Risk related to violation of domestic and international laws and regulations Risk of contract-related conflicts, etc. 	<ul style="list-style-type: none"> Disturbance to and negative impact on corporate sales activities Liability and cost for legal disputes due to violation of regulations 	<ul style="list-style-type: none"> Introduce the compliance officer system Establish a continuous monitoring system for statutes and regulations Make use of internal and external professional personnel and legal counsel
Financial	Foreign Exchange	<ul style="list-style-type: none"> Risk caused by rapid exchange rate fluctuations 	<ul style="list-style-type: none"> Increased exposure to foreign exchange risk due to exchange rate fluctuations caused by increased percentage of overseas sales 	<ul style="list-style-type: none"> Establish an exchange risk management system to unitize foreign currency funding schedules, etc. Continuously monitor exchange rates for key transaction currencies (USD, EUR, CNY, etc.)
	Interest Rate	<ul style="list-style-type: none"> Fluctuations in asset/liability values and profit/cash flow according to interest rate 	<ul style="list-style-type: none"> Impact on profit and cash flow according to interest rate change for borrowings on variable interest rate 	<ul style="list-style-type: none"> Carefully monitor interest rates and fluctuation forecasts Adjust the balance between borrowings on fixed and variable interest rates
	Tax	<ul style="list-style-type: none"> Risk related to changes in tax-related regulations and policies 	<ul style="list-style-type: none"> Ensure strict compliance with tax policy, and maintain a transparent relationship with tax authorities 	<ul style="list-style-type: none"> Strict Compliance with Tax Policy: To comply with tax regulations and faithfully complete tax returns/payments in all business activities Evaluate tax risks in advance and implement follow-up management using the internal financial team advice from external experts, etc.

*Information security, human rights, supply chain, liquidity, and funding risks also recognized

Compliance

Compliance Management System

Principle of Fair Trade

KD Navien's management activities are founded on the philosophy of "Social Contribution through Business Success". The Code of Ethics and Code of Ethics Practice Guidelines outline the values observed by KyungDong-in for the Company, employees, customers, and other stakeholders. We also require strict compliance with fair trade-related statutes.

In addition, in striving to achieve the Company's sound development and secure customers' trust, we promote fair and transparent operation by establishing and implementing compliance control criteria through resolution by the BOD.

Compliance Officer Appointment

According to Article 542-13 (Compliance Guidelines and Compliance Officers) of the Commercial Act, KD Navien appointed the compliance officer at the BOD meeting held on March 24, 2021.

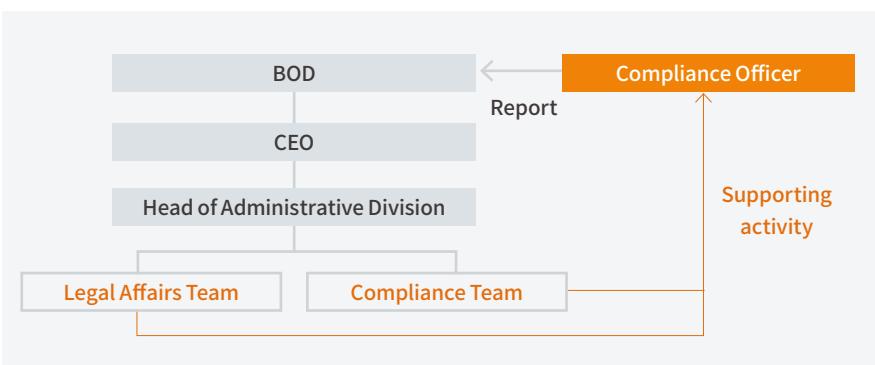
The Legal Affairs Team and the Compliance Team assist in the compliance support activities of the compliance officer, who performs compliance inspections on the Company operations and employees, conducts improvement activities for all acts with risk of violation, and reports the results to the BOD.

Internal Control Policy

KD Navien operates the internal accounting management system to prevent errors and distortions in and ensure preparation and disclosure of reliable financial statements. Based on the amendment of the Act on External Audit of Stock Companies, we introduced the internal accounting management and operating system conforming to the new Code of Best Practices in 2021. We also organized a team dedicated to internal accounting management to assess the design and operational effectiveness of the system, and secure independence. In addition, performance assessment criteria were prepared in relation to the internal accounting management system, with the operating status reflected in employees' goals to ensure more responsible system operation. The CEO and the internal accounting manager review the effectiveness of the system design and operation each fiscal year. In particular, the CEO reports the internal accounting management system operating status to the auditor and the BOD and at the general shareholders' meeting in person. The appropriateness of the internal accounting management system operation is assured by an independent external auditor.

For preemptive response to the consolidated internal accounting management system to be introduced in 2024, KD Navien implements a project of establishing a consolidated internal accounting management system with an external agency. We dedicate the best effort to securing accounting transparency and further strengthening reliability based on the improvement of the internal control system.

Compliance Officer Operating System



Compliance Management Activities

Unfair Competition Risk Evaluation

Based on the results of inspections performed using checklists in each of the four transaction areas, which are ①general unfair transactions, ②subcontracting transactions, ③distributor transactions, and ④consignment transactions, KD Navien derives compliance issues related to each area. For the identified issues, the status and implementation are monitored by the relevant divisions. In 2022, we supported the relevant divisions' internal inspections on compliance issues by developing and distributing checklists related to copyright, labeling, and advertising. We also held meetings with the Copyright Act and distributor transactions as agenda to identify and review the status of the identified issues.

Compliance Training

KD Navien establishes and operates and operating compliance training programs differentiated by job group to prevent legal risks and improve work efficiency. In 2022, three internal compliance training sessions were held in addition to the statutory training.

Compliance Training in 2022

Time	Content	Trainees
Feb. 2022	Training on the amended Fair Transactions in Subcontracting Act and the Act on the Promotion of Mutually Beneficial Cooperation Between Large Enterprises and Small and Medium Enterprises	50 persons (Purchase/Quality)
Dec. 2022	Training on the Monopoly Regulation and Fair Trade Act in relation to distributor transactions	47 persons (Sales/Marketing)
Dec. 2022	Training for compliance with the Copyright Act	15 persons (Marketing)

Ethics Management

Ethics Management System

Ethics Regulations

KD Navien's ethics management is aimed at instilling ethical awareness among individual employees and maintaining relationships of trust with customers by defining the basic mindset for rational and incorruptible management and the duties to be fulfilled by all employees.

To this end, we established and declared the Code of Ethics approved by the top management in 2004. We strive to enhance employees' ethical awareness by clearly disclosing detailed content and handling procedures related to the practice of workplace ethics in the Code of Ethics Practice Guidelines, and promote the meaningful application of the guidelines to the Company's development.

Code of Ethics

Following the founding philosophy of "Social Contribution through Business Success," KD Navien established the Code of Ethics to grow into a transparent company trusted by all stakeholders. The Code of Ethics presents the Code of Conduct and value judgment criteria to be observed by KyungDong-in for customers, society, suppliers, employees, Company, and shareholders. All employees have the duty of observing the Code of Ethics, and stakeholders in various relationships with KyungDong are also strongly recommended to comply with the Code of Ethics.

[KyungDong Code of Ethics](#)

Code of Ethics Practice Guidelines

Established with the goal of improving employees' ethical awareness, the Code of Ethics Practice Guidelines prescribes the behavioral principles and matters necessary for handling ethical issues employees can face in everyday life. The guidelines contain behavioral principles in relation to unfair trade, such as corruption, bribery, conflict of interest, antitrust and collusion, and unethical conduct such as money laundering.

[Code of Ethics Practice Guidelines](#)

Anti-corruption Policy

KD Navien's Code of Ethics and Code of Ethics Practice Guidelines have been established with the goal of increasing the trust of various stakeholders, improving partnerships, and instilling anti-corruption awareness in employees and suppliers. Our anti-corruption policy sets forth ethical and moral criteria to prevent corruption and bribery risks and comply with related statutes and regulations. All employees have the duty of complying with related statutes and regulations. In addition, our overseas subsidiaries are guided to perform operations transparently and fairly by following local anti-corruption laws.

Dedicated Organization

KD Navien operates the Management Improvement Office as an organization dedicated to internal audit. The Management Improvement Office conducts objective and transparent audits on the Company's accounting and business operations and secures corporate value by improving fairness. Members of the audit division including the statutory auditor contribute to the improvement of operating procedures and cost reduction for ethics management based on in-depth understanding and extensive experiences in the processes. They also require implementation of the audit recommendations. In addition, by operating an independent and objective audit team, we implement an exemplary corporate governance audit system that conforms to Right Path Management based on transparent cost execution and audit performance centering on operational improvement.



Ethics Management

Ethics Management Activities

Ethics Risk Monitoring

KD Navien's Audit Office establishes annual audit plans and conducts regular audits to examine and assess the Company's overall management status. It also suggests improvement for any inefficiencies and other issues identified. In addition, the Audit Office checks and manages the status of follow-up actions through implementation audits. The Audit Office also conducts irregular audits for investigation on employees' practice of the Code of Ethics and takes appropriate actions including disciplinary measures according to the results.

Ethics Management Whistleblowing Process

KD Navien operates a website-based online whistleblowing tool to facilitate free reporting by internal and external stakeholders including employees and suppliers. Other whistleblowing channels include phone and post. Using the whistleblowing channels, we take appropriate corrective measures on cases of employee corruption and irregularities, unfair conduct to suppliers, conflicts of interest, violation of regulations, obstruction of sound organizational culture, and other conducts against the Code of Ethics.

According to the principle of whistleblower protection, the whistleblowers' identity and content of reports are kept strictly confidential. We also ban any acts of discrimination, penalization, and retaliation against whistleblowers. Any violation of the principle of whistleblower protection is punished according to internal rules.

Ethics Management Whistleblowing

Reportable Items <ul style="list-style-type: none"> · Unethical conducts of employees · Unfair conduct to suppliers · Conflict of interest, such as transactions with interested persons and loaning of money between employees · Other violations of ethics management
Method <ul style="list-style-type: none"> · Online report >Online report · Post: Management Improvement Office, 22 Gukhoe-daero 76-gil, Yeongdeungpo-gu, Seoul, Korea · Tel.: 02)3489-2444, 02)559-8213

Ethics Management Whistleblowing and Handling Status

In 2022, KD Navien received and handled 79 reports in all.

In particular, 19 reports on unethical conduct such as bribery, unfair conduct to suppliers, illegal use of corporate assets, violation of customer information protection and poor attendance, etc. were handled through internal investigation and imposition of warning or disciplinary measures. In addition, 60 reports on customer complaints and after-sales service requests, etc. were handed over to the responsible divisions, and the handling results were checked by the Audit Office.

Ethics Training

KD Navien provides ethics training to all employees on a regular basis to secure organizational integrity through the establishment of ethics management. In addition to compulsory training targeting all employees, introductory training for new and experienced employees who have joined the Company and professional training for position holders are provided. By segmenting the training curriculum, we aim to improve individual employees' ethics awareness.

In 2022, introductory training for new and experienced employees was provided as contactless training through the production of video materials on the basics of ethics management, Kyung-Dong Code of Ethics, and Code of Ethics Practice Guidelines, and compulsory training for all employees was provided online (e-Learning). In addition, as professional training for position holders, ethics leadership training was provided to the team managers in all worksites.

Ethics Training in 2022

Category	2022			(Unit: Persons)
	Participation	Completion	Completion Rate	
Introductory training for new/experienced employees	140	140	100%	
Ethics management training for all employees	2,134	2,134	100%	
Ethics leadership training for team managers	127	127	100%	

*Performance of subsidiaries included

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Summarized Consolidated Statement of Financial Position

(Unit: KRW million)

Particulars	2020	2021	2022
Current Assets	360,419	475,582	523,038
Non-current Assets	374,270	458,303	494,982
Total Assets	734,689	933,885	1,018,019
Current Liabilities	337,977	434,731	423,564
Non-current Liabilities	48,548	48,738	76,751
Total Liabilities	386,525	483,469	500,315
Equity Attributable to Owners of Parent	348,164	450,415	517,705
Non-controlling Interests	0	0	0
Total Equity	348,164	450,415	517,705
Sales	873,409	1,102,947	1,160,861
Operating Income	67,099	64,296	59,771
Net Income	41,637	80,658	53,582
Owners of Parent	41,637	80,658	53,582
Non-controlling Interests	0	0	0
Earnings per Share (Unit: KRW)	3,261	5,898	3,707
Number of Consolidated Companies	8	9	11

Consolidated Statement of Income

(Unit: KRW million)

Particulars	2020	2021	2022
Sales	873,409	1,102,947	1,160,861
Cost of Sales	536,330	683,829	692,953
Gross Profit	337,079	419,118	467,908
Selling, General, and Administrative Expenses	269,980	354,822	408,137
Operating Income (Loss)	67,099	64,296	59,771
Other Operating Revenues	23,688	56,678	56,648
Other Operating Expenses	35,033	16,675	38,238
Financial Revenues	575	1,087	1,880
Financial Expenses	3,954	3,334	7,336
Income (Loss) Before Income Tax Expenses	52,375	102,051	72,724
Income Tax Expenses	10,737	21,393	19,142
Net Income (Loss)	41,637	80,658	53,582

Consolidated Cash Flow Statement

(Unit: KRW million)

Particulars	2020	2021	2022
Cash Flow from Operations	57,625	80,669	9,346
Cash Flow from Investment Activities	(58,865)	(12,550)	(56,546)
Cash Flow from Financial Activities	18,661	(63,079)	79,209
Cash Fluctuation from Foreign Exchange Translation	(1,408)	2,126	1,285
Net Increase (Decrease) of Cash and Cash Equivalents	16,013	7,166	33,294
Cash and Cash Equivalents at the Beginning	21,217	37,230	44,396
Cash and Cash Equivalents at the End	37,230	44,396	77,689

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Eco-friendly Business

Item	Unit	2020	2021	2022
Eco-friendly Products and Services				
Sales from Eco-friendly Products and Services	KRW million	519,949	740,836	802,678
Sales Ratio	%	59.53	67.17	69.15

Greenhouse Gas

Item	Unit	2020	2021	2022
Emissions				
Total GHG Emissions	Ton CO ₂ e	11,986	13,276	13,163
Scope 1	Subtotal	Ton CO ₂ e	3,504	3,973
	By Source	CO ₂	3,494	3,963
		CH ₄	3	3
		N ₂ O	8	7
Scope 2	Subtotal	Ton CO ₂ e	8,240	9,135
	By Source	CO ₂	8,192	9,082
		CH ₄	1	1
		N ₂ O	47	52
	By Type	Electricity	8,240	9,135
Scope 3	Subtotal	Ton CO ₂ e	241	168
	By Source	CO ₂	241	168
	By Category	Category 1 ¹⁾	25	41
		Category 5 ²⁾	216	127
		Ton CO ₂ e		68

1) Purchased products and services

2) Wastes generated from operation

Greenhouse Gas

Item	Unit	2020	2021	2022
Intensity¹⁾				
Scope 1	Ton CO ₂ e/KRW 100 million	0.470	0.418	0.366
Scope 2	Ton CO ₂ e/KRW 100 million	1.104	0.960	0.968

Reduction²⁾

Item	Unit	2020	2021	2022
Total GHG Reduction	Ton CO ₂ e	N/A	(1,364)	49
Scope 1	Ton CO ₂ e	N/A	(469)	391
Scope 2	Ton CO ₂ e	N/A	(895)	(342)

1) Based on separate sales

2) Scope 1 and Scope 2 reductions from the previous year

Energy

Item	Unit	2020	2021	2022
Consumption				
Total Energy Consumption	TJ	239.36	266.83	266.01
Direct	Gasoline	TJ	1.47	1.21
	Diesel	TJ	4.58	2.91
	Kerosene	TJ	1.69	2.97
	LNG	TJ	59.2	68.44
	LPG	TJ	0.20	0.37
Indirect	Electric Power Purchase	TJ	172	191
Intensity¹⁾				
Energy Consumption Intensity	KRW 100 million	0.032	0.028	0.027
Reduction²⁾				
Total Energy Reduction	TJ	N/A	(27.47)	0.82

1) Based on separate sales

2) Energy reduction from the previous year

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Water

Item	Unit	2020	2021	2022
Withdrawn				
Total Water Withdrawn	m ³	224,270	298,092	270,259
By Type ¹⁾				
Groundwater	m ³	41,832	96,275	99,429
Tap Water	m ³	182,438	201,817	170,830
Discharge				
Total Discharge	m ³	93,677	101,345	86,628
By Discharge Site ¹⁾				
Surface Water	m ³	93,677	101,345	86,628
Consumption				
Total Consumption	m ³	130,593	196,747	183,631
By Worksite				
Seotan Factory	m ³	12,419	55,630	59,980
Pyeongtaek Factory	m ³	46,552	18,108	15,524
Songtan Factory	m ³	4,589	7,802	6,278
Gasan Factory	m ³	0	0	905
Guro Research Institute	m ³	67,033	115,207	100,944
Yeouido Office	m ³	0	0	0
Reuse				
Total Reuse Amount	m ³	189,946	177,439	197,455
Reuse Rate	%	145	90	108
Intensity				
Water Consumption Intensity	m ³ /KRW 100 million	17.499	20.686	18.747

1) Based on freshwater

Air Pollutants

Item	Unit	2020	2021	2022
NOx				
Emissions	kg	171.55	1,498	1,554
Emission Concentration	PPM	35.84	14.99	28.7
SOx				
Emissions	kg	0.0	61.0	1.2
Emission Concentration	PPM	0.0	7.7	2.5
Dust				
Emissions	kg	427	186	77
Emission Concentration	PPM	1.67	0.73	0.80
Water Pollutants				
Name	Unit	2020	2021	2022
Chemical Oxygen Demand¹⁾				
Emissions	Ton	1.14	0.27	N/A
Emission Concentration	mg/L	11.7	5.4	N/A
Total Organic Carbon¹⁾				
Emissions	Ton	N/A	N/A	0.37
Emission Concentration	mg/L	N/A	N/A	7.1
Biological Oxygen Demand				
Emissions	Ton	0.90	0.51	0.28
Emission Concentration	mg/L	10.4	3.0	4.8
Suspended Solid				
Emissions	Ton	0.15	0.06	0.04
Emission Concentration	mg/L	0.9	0.6	0.4

1) Disclosure based on TOC since 2022 according to the change of legal measuring criteria

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Waste

Item	Unit	2020	2021	2022
Waste Generation				
Total Waste Generation	Ton	811	950	897
Waste Treatment				
Subtotal	Ton	148	115	53
Designated Waste	By Type	Landfill	Ton	0 0 0
		Incineration	Ton	3 32 31
	By Method	Internal Treatment	Ton	0 0 0
		Consignment	Ton	3 32 31
General Waste	By Type	Landfill	Ton	57 83 23
		Incineration	Ton	87 0 0
	By Method	Internal Treatment	Ton	0 0 0
		Consignment	Ton	144 83 23
Amount Recycled				
Subtotal	Ton	663	835	844
Waste-to-Resource Ratio				
Designated Waste	%	82	88	94
Designated Waste	By Type	Pretreatment for Reuse	Ton	0 0 0
		Recycle	Ton	4 9 6.81
	By Method	Internal Treatment	Ton	0 0 0
		Consignment	Ton	4 9 6.81
General Waste	By Type	Pretreatment for Reuse	Ton	88 142 278
		Recycle	Ton	571 685 560
	By Method	Internal Treatment	Ton	0 0 0
		Consignment	Ton	659 827 837
Intensity				
Waste Generation Intensity	Ton/KRW 100 million	0.109	0.100	0.092

Chemicals

Item	Unit	2020	2021	2022
Consumption				
Total Hazardous Chemical Consumption	Ton	3	4	0
Discharge				
Total Hazardous Chemical Discharge	Ton	5.0	21.0	2.5

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Employees¹⁾

Item	Unit	2020	2021	2022			
Employee Status							
Number of Employees							
	Persons	1,385	1,501	1,500			
Registered Executives²⁾							
Subtotal		Persons	8	8			
By Gender	Male	Persons	8	8			
	Female	Persons	0	0			
By Age	Under 30 Years of Age	Persons	0	0			
	30 Years of Age and Older -	Persons	1	1			
	Under 50 Years of Age	Persons					
	50 Years of Age and Older	Persons	7	7			
Workers							
Subtotal		Persons	1,377	1,493			
Employ- ment with Type	Workers Unfixed Term	By Gender	Male	Persons	1,068	1,108	1,163
			Female	Persons	143	136	151
	Workers Fixed-term	By Nationality	Korea	Persons	1,211	1,244	1,314
			By Age	Persons	216	194	231
		By Age	Under 30 Years of Age	Persons	848	889	919
			30 Years of Age and Older -	Persons	147	161	164
			Under 50 Years of Age	Persons	158	219	158
	Workers	By Gender	Male	Persons	8	30	20
			Female	Persons	166	249	178

1) Number of incumbent employees as of the end of the year

2) Including 1 statutory auditor

Employees¹⁾

Item	Unit	2020	2021	2022
Employee Status				
Title Team Manager and Higher ²⁾				
By Gender	Male	Persons	111	124
	Female	Persons	3	4
By Age	Under 30 Years of Age	Persons	0	0
	30 Years of Age and Older	Persons	67	69
	- Under 50 Years of Age	Persons		
	50 Years of Age and Older	Persons	47	59
Staff ³⁾	By Gender	Male	1,115	1,203
	Female	Persons	148	162
By Age	Under 30 Years of Age	Persons	305	333
	30 Years of Age and Older	Persons	849	919
	- Under 50 Years of Age	Persons		
	50 Years of Age and Older	Persons	109	113
Roles & Responsibilities	Planning and Support	Male	91	107
	Female	Persons	31	26
By Age	Under 30 Years of Age	Persons	26	21
	30 Years of Age and Older	Persons	78	91
	- Under 50 Years of Age	Persons		
	50 Years of Age and Older	Persons	18	21
Sales, Marketing, and Service	By Gender	Male	195	191
	Female	Persons	36	41
By Age	Under 30 Years of Age	Persons	49	42
	30 Years of Age and Older	Persons	162	164
	- Under 50 Years of Age	Persons		
	50 Years of Age and Older	Persons	20	26

1) Number of incumbent employees as of the end of the year

2) Team managers and higher, registered executives excluded

3) Team managers and higher excluded

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Employees¹⁾

Item				Unit	2020	2021	2022
Roles & Responsibilities	Production and Quality	By Gender	Male	Persons	645	736	675
			Female	Persons	53	69	49
		By Age	Under 30 Years of Age	Persons	166	213	169
			30 Years of Age and Older -	Persons	429	486	452
			Under 50 Years of Age	Persons	103	106	103
	R&D	By Gender	Male	Persons	295	293	296
			Female	Persons	31	30	34
		By Age	Under 30 Years of Age	Persons	64	57	61
			30 Years of Age and Older -	Persons	247	247	244
			Under 50 Years of Age	Persons	15	19	25

1) Number of incumbent employees as of the end of the year

Diversity

Item	Unit	2020	2021	2022
People with Disabilities				
Employees with Disabilities	Persons	10	7	7
Employment Rate of People with Disabilities	%	0.74	0.55	0.49
Veterans and Patriots				
Veterans and Patriots Employed	Persons	10	11	10
Employment Rate of Veterans and Patriots	%	0.72	0.74	0.67
Female Employees				
Number of Female Employees ¹⁾	Persons	143	136	151
Percentage of Female Employees ¹⁾	%	10.38	9.11	10.12
Number of Female Managers	Persons	3	4	4
Number of Female Executives ²⁾	Persons	0	2	2
Ratio of Unregistered Female Executives	%	0.00	9.09	8.00

1) Based on workers with unfixed term

2) Registered female executive and unregistered executives included

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Recruitment

Item	Unit	2020	2021	2022
New Recruitment¹⁾				
Total Number of New Recruits	Persons	270	226	384
New Recruitment Ratio	%	22.3	18.17	29.22
By Gender	Male	Persons	252	196
	Female	Persons	18	30
By Age	Under 30 Years of Age	Persons	128	105
	30 Years of Age and Older -	Persons	138	116
	Under 50 Years of Age	Persons		
	50 Years of Age and Older	Persons	4	5
By Region	Korea	Persons	270	226

1) Based on workers with unfixed term

Number of Years of Continuous Service¹⁾

Item	Unit	2020	2021	2022
Average Number of Years of Continuous Service				
Subtotal	Years	7.24	7.09	7.26
By Gender	Male	Years	7.27	7.20
	Female	Years	7.03	6.18
				5.70

1) Based on workers with unfixed term

Turnover

Item	Unit	2020	2021	2022
Employee Turnover				
Total Employee Turnover	Persons	76	148	199
By Gender	Male	Persons	66	115
	Female	Persons	10	33
By Age	Under 30 Years of Age	Persons	7	27
	30 Years of Age and Older -	Persons	51	112
	Under 50 Years of Age	Persons		
	50 Years of Age and Older	Persons	18	9
By Region	Korea	Persons	76	148
Turnover Rate				
Total Turnover Rate	%	5.52	9.91	13.34
Voluntary Turnover Rate	%	4.58	9.24	12.06

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Parental Leave

Item	Unit	2020	2021	2022
Employees Taking Parental Leave¹⁾				
Subtotal	Persons	16	8	23
Male	Persons	11	6	14
Female	Persons	5	2	9
Employees Who Returned to Work After Parental Leave				
Subtotal	Persons	11	4	14
Male	Persons	5	3	9
Female	Persons	6	1	5
Employees Scheduled for Return to Work After Parental Leave				
Subtotal	Persons	12	5	15
Male	Persons	6	4	10
Female	Persons	6	1	5
Employees Who Continued Working for at Least One Year Following Parental Leave				
Subtotal	Persons	12	10	4
Male	Persons	8	4	3
Female	Persons	4	6	1
Rate of Return to Work After Parental Leave				
Subtotal	%	91.67	80	93.33
Male	%	83.33	75	90
Female	%	100	100	100
Percentage of Employees Who Continued Working for at Least One Year Following Parental Leave				
Subtotal	%	100	90.91	100
Male	%	100	80	100
Female	%	100	100	100

1) Based on start of parental leave use

Equal Opportunities

Item	Unit	2020	2021	2022
Female Wage Ratio¹⁾				
to Male ²⁾	G1	%	N/A	N/A
	G2	%	N/A	N/A
	G3	%	N/A	N/A
	G4	%	N/A	N/A
Average Wage per Person				
By Gender	Male	KRW million	58	55
	Female	KRW million	46	41
			53	

1) Data on female wage ratio to male by rank in 2020 and 2021 not available due to position system restructuring

2) Ratio based on job group G of full-time workers, positions listed from G1 to G4

Anti-discrimination

Item	Unit	2020	2021	2022
Discrimination Case¹⁾				
Occurrence of Discrimination Cases	Case	0	0	0
Discrimination Handling				
Under Investigation	Case	0	0	0
Action/Alleviation Plan Established	Case	0	0	0
Action Completed	Case	0	0	0

1) Number of reports related to human rights issues

Labor-Management Relations

Item	Unit	2020	2021	2022
Labor-Management Council				
Labor-Management Council Meetings Held	Meetings	4	5	9 ¹⁾

1) Calculated by adding the number of Labor-Management Meetings convened (Labor-Management meetings held since 2022 due to change in the Council operation method)

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Health and Safety Management System¹⁾

Item	Unit	2020	2021	2022
Health and Safety Certification				
Percentage of Worksites with Health and Safety Certification	%	100	100	100
Percentage of Workers Covered by Health and Safety Certification	%	100	100	100
1) All employees and workers who are not employees				
Occupational Accidents				
Item	Unit	2020	2021	2022
Workers				
Number of Occupational Accidents	Accidents	0	3	1
Occupational Accident Rate	%	0.00	0.20	0.07
Lost Work Days	Days	0	0	0
Lost Time Incidents	Incidents	0	3	1
Lost Time Incident Rate ¹⁾	-	0.00	0.17	0.05
Recorded Accidents	Accidents	0	3	2
Total Recorded Accident Rate ¹⁾	-	0.00	0.17	0.11
Serious Injuries Sustained During Work	Injuries	0	0	0
Rate of Serious Injuries Sustained During Work	-	0	0	0
Fatalities	Cases	0	0	0
Mortality Rate ¹⁾	-	0	0	0
Total Work Hours	Hours	3,016,998	3,489,378	3,703,881

1) Occurrence per 200,000 hours

Occupational Accidents

Item	Unit	2020	2021	2022
Workers Who are Not Employees				
Recorded Accidents	Cases	0	0	1
Total Recorded Accident Rate ¹⁾	-	0.00	0.00	0.16
Serious Injuries Sustained During Work	Cases	0	0	0
Rate of Serious Injuries Sustained During Work	-	0	0	0
Fatalities	Cases	0	0	0
Mortality Rate	-	0	0	0
Total Work Hours	Hours	1,005,666	1,163,126	1,234,627

1) Occurrence per 200,000 hours

Occupational Diseases

Item	Unit	2020	2021	2022
Workers				
Number of Deaths Caused by Occupational Diseases	Cases	0	0	0
Number of Occupational Diseases	Cases	0	0	1
External Workers				
Number of Deaths Caused by Occupational Diseases	Cases	0	0	0
Number of Occupational Diseases	Cases	0	0	1

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Employee Training and Regular Performance Assessment

Item		Unit	2020	2021	2022		
Training Completion¹⁾							
Total Number of Employees Who Completed Training	Persons	1,341	1,400	1,524			
Training Completion Rate	%	97.39	93.77	102.14			
Total Employee Training Hours	Hours	28,167	22,257	37,289			
Average Employee Training Hours	Hours/person	20.46	14.91	24.99			
Average Training Hours per Person	By Gender	Male	Hours/person	19.80	14.63	24.23	
	Female	Hours/person	25.78	17.13	30.87		
	By Rank	Manager	Hours/person	25.52	13.02	20.74	
		Staff	Hours/person	20.00	15.08	25.45	
Training Investment							
Total Training Expenses	KRW million	323	310	598			
Average Employee Training Expenses	KRW million/person	0.23	0.21	0.40			
Regular Performance Assessment²⁾							
Percentage of Employees Who Underwent Regular Performance Assessment	Subtotal	%	81.83	90.11	90.26		
	By Gender	Male	%	81.37	91.06	90.97	
		Female	%	85.31	82.35	84.77	
	By Rank	Manager	%	71.05	71.09	73.79	
		Staff	%	82.95	92.29	92.30	

1) Training performance for all employees (including unregistered executives), data collected based on internal and external company-wide training hours

2) Based on full-time workers

Marketing and Labeling

Item	Unit	2020	2021	2022
Product Information Labeling				
Labeling Compliance Procedure Application	%	100	100	100
Violation of Product Information and Advertising-related Laws and Regulations				
Penalties	Cases	0	0	0
Warnings	Cases	0	0	0
Violation of Internal Regulations	Cases	0	0	0
Product Health and Safety Impact				
Item	Unit	2020	2021	2022
Key Product Health and Safety Impact Assessment				
Percentage of Key Product Groups for Which Health and Safety Impact Assessment was Conducted	%	100	100	100
Violation of Product Health and Safety-related Laws and Regulations				
Penalties	Cases	0	0	0
Warnings	Cases	0	0	0
Violation of Internal Regulations	Cases	0	0	3
Recall¹⁾				
Total Number of Recalls	Cases	0	0	0

1) Domestic (excluding voluntary recall)

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BOD and Subcommittees

Item		Unit	2020	2021	2022
BOD					
Meetings Held					
		Meetings	10	10	6
Composition	Subtotal	Persons	7	7	7
	Executive Director	Number of Executive Directors	Persons	5	5
	Outside Director	Number of Outside Directors	Persons	2	2
		Percentage of Outside Directors	%	28.57	28.57
	Female Directors	Number of Female Directors	Persons	0	0
		Percentage of Female Directors	%	0	0
Attendance	Subtotal	%	100	100	100
	Executive Director	%	100	100	100
	Outside Director	%	100	100	100
Agenda Items ¹⁾	Number of Items	Items	23	19	20
	Percentage of Opinions for Modification/ Supplementation and Objections	%	0	0	0
Subcommittees					
Management Committee	Subtotal	Persons	4	4	4
	Number of Executive Directors	Persons	4	4	4
	Number of Outside Directors	Persons	0	0	0
	Meetings Held	Meetings	16	11	22
	Number of Items	Items	17	13	25
Auditor	Subtotal	Persons	1	1	1
	Statutory Auditor	Persons	1	1	1
	Non-statutory Auditor	Persons	0	0	0
	Long-term Service	Persons	0	0	0
	Auditor Training Completion Rate	%	0	100	100

1) Based on agenda items (excluding reports)

Expertise of Outside Directors

Item		Unit	2020	2021	2022
Industry					
Number of Outside Directors with Industrial Expertise					
		Persons	0	0	1
	Rate of Outside Directors with Industrial Expertise	%	0	0	33.33
Compliance					
Name		Unit	2020	2021	2022
Legal and Regulatory Violations¹⁾					
	Monetary Sanctions ²⁾	Cases	0	1 ²⁾	1 ²⁾
	Non-monetary Sanctions ³⁾	Cases	0	0	0
Total Amount Paid					
	Amount Incurred During the Current Period ⁴⁾	KRW million	0	8	0
	Amount Incurred During the Previous Period ⁵⁾	KRW million	0	0	1,245

1) Based on violation of statutes and regulations under the jurisdiction of the Fair Trade Commission

2) Based on monetary sanctions, such as fine and penalties, imposed in relation to anti-competition cases closed during the reporting period

- Notification of administrative fine imposition by the Fair Trade Commission in Dec. 2021

- Notification of penalty surcharge imposition by the Fair Trade Commission in Jul. 2022

3) Based on non-monetary sanctions of warning or higher imposed in relation to anti-competition cases closed during the reporting period (excluded if imposed concurrently with monetary sanction)

4) Based on amount paid in relation to anti-competition cases that occurred and which were closed during the reporting period

5) Based on amount paid in relation to anti-competition cases that occurred in the previous reporting period and which were closed during the current reporting period

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Ethics and Fair Trade

Item		Unit	2020	2021	2022
Ethics					
Ethics Training	Number of Executives Who Completed Ethics Training	Persons	N/A	5	5
	Rate of Executives Who Completed Ethics Training	%	N/A	62.5	62.5
	Number of Employees Who Completed Ethics Training ¹⁾	Persons	N/A	1,395	1,428
	Rate of Employees Who Completed Ethics Training	%	N/A	100	100
Violation of the Code of Ethics	Violation of the Code of Ethics	Cases	7	6	20
	Number of Employees Who Violated the Code of Ethics	Persons	26	21	43
Anti-corruption					
Anti-corruption Training	Number of Executives Who Completed Anti-corruption Training	Persons	N/A	5	5
	Rate of Executives Who Completed Ethics Training	%	N/A	62.5	62.5
	Number of Employees Who Completed Anti-corruption Training ¹⁾	Persons	N/A	1,395	1,428
	Rate of Employees Who Completed Anti-corruption Training	%	N/A	100	100
Integrity Agreement/ Supplier Code of Conduct Implementation Pledge	Number of Suppliers and Partners That Signed the Pledge ²⁾	Companies	N/A	255	279
	Rate of Suppliers and Partners That Signed the Pledge	%	N/A	84	96
Corruption Case	Corruption Case	Cases	4	1	5
	Punishment Due to Corruption Case	Disciplinary Measure	Cases	7	4
		Dismissal from Office	Cases	5	2
	Partner Contract Termination Due to Corruption Case	Cases	0	0	0
	Corruption-related Legal Measures	Cases	0	0	1 ³⁾

1) Based on employees subject to ethics training

2) Based on domestic suppliers and partners that signed the Integrity Agreement and Supplier Code of Conduct Implementation Pledge (Supplier Code of Conduct Regulations established in the fourth quarter of 2022)

3) Legal measures taken against suppliers, not employees, in relation to corruption cases in 2022

Ethics and Fair Trade

Item	Unit	2020	2021	2022
Anti-competitive Behavior¹⁾				
Legal Cases in Progress	Cases	2	6	2
Closed Legal Cases	Cases	0	1	3

1) Based on sanctions imposed by administrative agencies and appeal procedures (administrative litigation) due to violation of key statutes under the jurisdiction of the Fair Trade Commission (Monopoly Regulation and Fair Trade Act, Fair Transactions in Subcontracting Act, Fair Agency Transactions Act, Act on Fair Labeling and Advertising)

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Stakeholder Value Creation and Distribution

Item		Unit	2020	2021	2022
Government					
Income Tax	Income Before Tax	KRW million	52,375	102,051	72,724
	Income Tax Expenses	KRW million	10,737	21,393	19,142
	Effective Tax Rate	%	20.50	20.96	26.32
	Income Tax Paid	KRW million	20,058	19,812	45,468
	Rate of Tax Paid	%	38.30	19.41	62.52
Shareholders and Investors					
Dividend		KRW million	4,721	6,504	7,226
Local Communities					
Donation		KRW million	738	359	1,112
Employees					
Pay	Subtotal	KRW million	78,494	79,822	97,967
	Male	Total Pay	KRW million	71,492	73,080
		Ratio to Statutory Minimum Wage	%	159.11	163.54
	Female	Total Pay	KRW million	7,002	6,742
		Ratio to Statutory Minimum Wage	%	159.11	163.54
					157.92
Welfare Benefits	Welfare Expenses	KRW million	10,613	13,102	16,420
	Welfare Expenses per Person	KRW million/person	7.71	8.78	11.01

Subsidies

Item		Unit	2020	2021	2022
Government					
R&D Subsidies		KRW million	415	391	279
Retirement Pension					
Item		Unit	2020	2021	2022
Amount of Retirement Pension in Management					
Subtotal		KRW million	49,818	59,744	63,772
Defined Retirement Pension		KRW million	3,923	4,489	4,357
Defined Benefits Retirement Pension		KRW million	45,895	55,255	59,415
Procurement Practice					
Item		Unit	2020	2021	2022
Local Suppliers					
Percentage of Expenditure		%	47	59	58

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Item	Content
Statement of Use	[KD Navien] reported non-financial performance during the period [Jan. 1 - Dec. 31, 2022] according to the GRI Standards.
GRI 1	GRI 1: Foundation 2021
GRI Sector Standard	N/A

Indicator	Description	Page	Remarks
GRI 2	General Disclosures 2021		
2-1	Organizational details	5, 10	
2-2	Entities included in the organization's sustainability reporting	2	
2-3	Reporting period, frequency, and contact point	2	
2-4	Effect of the restatement and reasons for restatement	-	Not applicable as this is the first report
2-5	External assurance	97-99	
2-6	Activities, value chain, and other business relationships	11, 58	
2-7	Employees	82-83	Annual Report p.256
2-8	Workers who are not employees	Confidential	Externally undisclosed
2-9	Governance structure and composition	68-69, 88	
2-10	Nomination and selection of the highest governance body	69	
2-11	Chair of the highest governance body	68	
2-12	Role of the highest governance body	13	
2-13	Delegation of responsibility for managing impacts	13	
2-14	Role of the highest governance body in sustainability reporting	13, 70	
2-15	Conflicts of interest	68	

Indicator	Description	Page	Remarks
2-16	Communication of critical concerns	70	
2-17	Collective knowledge of the highest governance body	69, 70	
2-18	Evaluation of performance of the highest governance body	70	
2-19	Remuneration policies	70	
2-20	Process to determine remuneration	70	
2-21	Annual total compensation ratio	Confidential	Externally undisclosed Information
2-22	Statement on sustainable development strategy	4	
2-23	Policy commitments	41, 48, 50, 55, 58, 62, 74, 75	
2-24	Embedding policy commitments	41, 48, 50, 55, 58, 62, 74, 75	
2-25	Processes to remediate negative impacts	49, 51, 57	
2-26	Mechanisms for seeking advice and raising concerns	17, 60, 76	
2-27	Compliance with laws and regulations	88	
2-28	Memberships in associations	96	
2-29	Approach to stakeholder engagement	17	
2-30	Collective bargaining agreements	47	
GRI 3	Material Topics 2021		
3-1	Process to determine material topics	14	
3-2	List of material topics	15	

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Material Topic	Indicator	Description	Page	Remarks
Eco-friendly product, content and service development	GRI 3 3-3	Material Topics 2021 Management of material topics	16, 30-35	
	GRI 302	Energy 2016		
	302-5	Reductions in energy requirements of products and services	20-23	
Securing future competitiveness	GRI 3 3-3	Material Topics 2021 Management of material topics	16, 24-25	
	GRI 201	Economic Performance 2016		
	201-1	Direct economic value generated and distributed	11, 78, 90	
Product and service quality improvement	GRI 3 3-3	Material Topics 2021 Management of material topics	16, 26-27, 40, 53-57	
	GRI 416	Customer Health and Safety 2016		
	416-1	Assessment of the health and safety impacts of product and service categories	53, 87	
	416-2	Incidents of noncompliance concerning the health and safety impacts of products and services	87	
	GRI 417	Marketing and Labeling 2016		
	417-1	Requirements for product and service information and labeling	Non-integrity of data	Management scheduled
	417-2	Incidents of noncompliance concerning product and service information and labeling	87	
	417-3	Incidents of noncompliance concerning marketing communications	87	

Material Topic	Indicator	Description	Page	Remarks
Human rights protection and promotion	GRI 3 3-3	Material Topics 2021 Management of material topics	16, 48-49	
	GRI 405	Diversity and Equal Opportunity 2016		
	405-1	Diversity of governance bodies and employees	82-83, 88	
	405-2	Ratio of basic salary and remuneration of women to men	85	
	GRI 406	Non-discrimination 2016		
	406-1	Incidents of discrimination and corrective actions taken	85	
Climate change response and management of GHG emissions	GRI 3 3-3	Material Topics 2021 Management of material topics	16, 30-35	
	GRI 305	Emissions 2016		
	305-1	Direct (Scope 1) GHG emissions	79, 97	
	305-2	Energy indirect (Scope 2) GHG Emissions	79, 97	
	305-3	Other indirect (Scope 3) GHG Emissions	79, 97	
	305-4	GHG emissions intensity	79	
ESG management in the supply chain (partners and suppliers)	GRI 3 3-3	Material Topics 2021 Management of material topics	16, 58-61	
	GRI 308	Supplier Environmental Assessment 2016		
	308-1	New suppliers that were screened using environmental criteria	61	
	GRI 414	Supplier Social Assessment 2016		
	414-1	New suppliers that were screened using social criteria	61	

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Material Topic	Indicator	Description	Page	Remarks
HR	GRI 3	Material Topics 2021		
management and development	3-3	Management of material topics	16, 40, 43-47	
	GRI 401	Employment 2016		
	401-1	New employees hired and employee turnover	84	
	GRI 404	Training and Education 2016		
	404-1	Average hours of training per year per employee	87	
	404-3	Percentage of employees undergoing regular performance and career development reviews	87	
	GRI 3	Material Topics 2021		
Employee health and safety improvement	3-3	Management of material topics	16, 40-42	
	GRI 403	Occupational Health and Safety 2018		
	403-8	Workers covered by an occupational health and safety management system	86	
	403-9	Work-related injuries	86	
	403-10	Work-related ill health	86	

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Sustainability Disclosure Topics & Accounting Metrics

Category	Topic	Unit	2020	2021	2022	Remarks
Energy Management						
RT-EE-130a.1	(1) Total energy consumed	GJ	239,356	266,830	266,006	
	(2) Percentage grid electricity	%	100	100	100	
	(3) Percentage renewable	%	0	0	0	
Hazardous Waste Management						
RT-EE-150a.1	Amount of hazardous waste generated	Ton	7.26	40.34	37.37	
	Percentage of hazardous waste recycled	%	54	21	18	
RT-EE-150a.2	Number of hazardous substance spills	Cases	0	0	0	
	Aggregate quantity of hazardous substance spills	kg	0	0	0	
	Hazardous substance spills recovered	kg	0	0	0	No hazardous substance spills
Product Safety						
RT-EE-250a.1	Number of recalls issued	Recalls	0	0	0	
	Total units recalled	Products	0	0	0	(Voluntary recalls excluded)
	Percentage of units recalled	%	0	0	0	
RT-EE-250a.2	Total amount of monetary losses as a result of legal proceedings associated with product safety	KRW million	0	0	0	Based on Annual Report
Product Life Cycle Management						
RT-EE-410a.1	Percentage of products containing IEC 62474 declarable substances by revenue	%	-	-	-	Not applicable
RT-EE-410a.2	Percentage of eligible products meeting the ENERGY STAR® criteria by revenue	KRW million	380,916	557,902	633,054	Internal eco-friendly sales criteria (U.S.) applied
RT-EE-410a.3	Revenue from renewable energy and energy efficiency-related products	KRW million	-	-	-	Refer to p. 31
Materials Sourcing						
RT-EE-440a.1	Description of management of risks associated with the use of critical materials	N/A	-	-	-	Not applicable

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Sustainability Disclosure Topics & Accounting Metrics

Category	Topic	Unit	2020	2021	2022	Remarks
Business Ethics						
RT-EE-510a.1	Description of policies and practices for the prevention of: (1) corruption and bribery and (2) anti-competitive behavior	N/A	-	-	-	Refer to p. 58, 74-75
RT-EE-510a.2	Total amount of monetary losses as a result of legal proceedings associated with incidents related to bribery or corruption	KRW million	0	0	0	Based on Annual Report
RT-EE-510a.3	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	KRW million	0	8	1,245	Internal cost before incident/legal proceedings, commissions paid to appraiser/representative and cost for post-decision or verdict implementation excluded
Activity Metrics						
Category	Metric	Unit	2020	2021	2022	Remarks
RT-EE-000. A	Number of units produced by product category	Units	1,276,997	1,488,665	1,332,007	
RT-EE-000. B	Number of employees	Persons	1,385	1,501	1,500	Including registered executives

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Memberships in Associations

Association	Purpose of Membership
Korea Association of Machinery Industry	Support R&D of members and foster mechanical industry service areas
Korea Listed Companies Association	Obtain information on enactment and amendment of related statutes and effectively respond to policies
Korea World Class Enterprise Association	Promote exchange and cooperation among businesses and share management-related information and strategies
Korea Management Association	Identify HRD-related trend
Fair Competition Federation	Collect information of the Fair Trade Commission trend and related data, submit opinions about amendment of statutes and administrative rules
Digital Broadcasting and Advertising Forum	Secure information on advertising and promotional trend, and use network of advertisers
Korea Advertisers Association	Share new media trend and build relationship with expert groups
Korea International Trade Association	Check trade-related issues, such as about export and tariff, and propose policies
Korea Energy Appliances Industry Association	Promote joint benefits and development among energy appliance manufacturers
Korean Society for Indoor Environment	Identify indoor air quality-related information
Korea Mechanical Construction Contractors Association	Update construction capability assessment through professional construction business performance report, and performance report upon license change
Korea Association of Ventilation Industry Companies	Prevent indoor air pollution through ventilation and collect air purification-related information
The Society of Air-conditioning and Refrigerating Engineers of Korea	Attend various seminars, and share information on academic symposiums, lectures and meetings, etc.
Korean Association of Air Conditioning, Refrigerating, and Sanitary Engineers	Support research tasks for smart zone control integrated piping system
The Korean Society of Combustion	Identify information on academic papers and technology-related theses
Korea Industrial Technology Association	Maintain technology lab certifications (heating, TAC, system, SH)
ASHRAE	Identify information on overseas research papers
The Korean Society of Mechanical Engineers	Identify information on academic papers and technology-related theses
Korea Intellectual Property Association	Strengthen IP competitiveness, and share information and expertise for IP management and patent dispute response plans
The Organization of Consumer Affairs Professionals in Business	Promote the ideal relationship between consumers and enterprises
Korea Products Safety Association	Obtain product safety technology information, and handle product safety certification-related difficulties
Korean Standards Association	Obtain information on KS and international standards (ISO, etc.), and manage statutory KS training completion
Korean Association of AI Smart Home	Promote home network business and projects for power generation and smart home link
Korea Information and Communication Contractors Association	Maintain on-site bidding qualification for projects of public organizations, and provide technological support for information and communication construction projects
Korean Association of Occupational Health Nurses	Develop health care provider capabilities, and identify areas requiring improvement
Korea Environmental Preservation Association	Develop environmental engineer capabilities, and identify environmental policy information

Awards

	First in the industry to win the Five Hundred Million Dollar Tower of Export Won the Five Hundred Million Dollar Tower of Export on the 59th Trade Day	Dec. 2022
	No. 1 in Korean Standard-Quality Excellence Index (KS-QEI) No. 1 in the condensing gas boiler category for 13 years in a row No. 1 in the hot water mat category for 7 years in a row No. 1 in the ventilation system category for 2 years in a row	Oct. 2022
	No. 1 in the gas boiler and hot water mat categories of the Korean Standard-Premium Brand Index (KS-PBJ) No. 1 in the hot water mat category for 7 years in a row No. 1 in the gas boiler category for 4 years in a row	Jul. 2022
	No. 1 in the MOT category of the Korean Service Quality Index (KSQI) No. 1 in after-sales service for gas boiler for household in the MOT category for 4 years in a row	Jul. 2022
	No. 1 in the hot water mat and ventilator categories of the Korean Standard-Premium Brand Index (KS-WEI) No. 1 in the hot water mat category for 4 years in a row No. 1 in the ventilator category for 2 years in a row	Jun. 2022
	No. 1 in the gas boiler category of the National Brand Competitiveness Index (NBCI) No. 1 in the gas boiler category for 3 years in a row	May 2022
	Won award in the call center category of the Korean Service Quality Index (KSQI) for 13 years in a row Won award as Good Call Center in the call center category	May 2022
	No. 1 in Korea-Brand Power Index (K-BPI) No. 1 in the ventilation system category	Mar. 2022
	Designated as World-Class Product for 3 years in a row Won designation in the wall-mounted gas boiler category for 3 years in a row as the first in the industry	Jan. 2022

GHG Verification Statement

Verification Scope

Korean Standards Association has conducted verification for GHG emissions under limited assurance level, based on GHG report provided by KD Navien which includes 2022's Scope1, Scope2 and Scope3(Purchased goods&service, Waste generated in operation) emissions.

Verification Standards and Guidelines

guidelines. The standards and guidelines are as follows.

- Verification guideline for management of GHG Emissions Trading Scheme provided by Ministry of Environment, Republic of Korea
- Guideline for reporting and certification of GHG Emissions Trading Scheme provided by Ministry of Environment, Republic of Korea
- KSA ISO 14064-1:2006 · WRI GHG Protocol
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories

Verification Conclusion

As a result of verification activities, verification team has found no significant errors, omissions, and misstatements. Therefore, Korean Standards Association confirms that following emissions data are adequately quantified.

2022 GHG Emissions

Category	Scope1	Scope2	Scope3	Total
Factory in Seotan	2,395	6,210	78	8,683
Factory in Pyeongtaek	637	1,487	2	2,126
Factory in Gasan	4	294	-	298
Factory in Songtan	42	328	1	371
Research Institute in Guro	458	1,126	23	1,607
Yeouido Office	46	32	-	78
Total				13,163

※ Decimal place is not considered when calculating the emission of each workplace.



GHG Verification Statement

KD Navien

✓ Verification Scope

Korean Standards Association has conducted verification for GHG emissions under limited assurance level, based on GHG report provided by KD Navien which includes 2022's Scope1, Scope2 and Scope3(Purchased goods&service, Waste generated in operation) emissions.

✓ Verification Standards and Guidelines

To conduct verification activities, verification team applied verification standards and guidelines. The standards and guidelines are as follows.

- Verification guideline for management of GHG Emissions Trading Scheme provided by Ministry of Environment, Republic of Korea
- Guideline for reporting and certification of GHG Emissions Trading Scheme provided by Ministry of Environment, Republic of Korea
- KSA ISO 14064-1 : 2006 · WRI GHG Protocol
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories

✓ Verification Conclusion

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•2022 GHG Emissions

구 분	Scope1	Scope2	Scope3	Total
Factory in Seotan	2,395	6,210	78	8,683
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Total				13,163

* Decimal place is not considered when calculating the emission of each workplace.

March 21, 2023

KOREAN STANDARDS ASSOCIATION

LRQA Independent Assurance Statement

Relating to Kyung Dong Navien Co., Ltd.'s Sustainability Report for the calendar year 2020-2022

This Assurance Statement has been prepared for Kyung Dong Navien Co., Ltd. in accordance with our contract but is intended for the readers of this Report.

Terms of engagement

LRQA was commissioned by Kyung Dong Navien Co., Ltd. (KD Navien) to provide independent assurance on its 'KD Navien Sustainability Report 2022' ("the report") against the assurance criteria below to a "moderate level of assurance and materiality of professional judgement" using "Accountability's AA1000AS v3", where the scope was a Type 2 engagement.

Our assurance engagement covered KD Navien's operations and activities in domestic and specifically the following requirements:

- Evaluating adherence to the AA1000 AccountAbility Principles¹⁾ of Inclusivity, Materiality, Responsiveness and Impact
- Confirming that the report is in accordance with GRI Standards 2021²⁾
- Evaluating the accuracy and reliability of data and information related to performance indicators on material topics listed in the GRI Content Index.

Our assurance engagement excluded the data and information of KD Navien's suppliers, contractors and any third-parties mentioned in the report.

LRQA's responsibility is only to KD Navien. LRQA disclaims any liability or responsibility to others as explained in the end footnote. KD Navien's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of KD Navien.

1) <https://www.accountability.org>

2) <https://www.globalreporting.org>

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that KD Navien has not, in all material respects:

- Met the requirements above
- Disclosed accurate and reliable performance data and information as all errors or omissions identified during the assurance engagement were corrected
- Covered all the issues that are important to the stakeholders and readers of this report.

The opinion expressed is formed on the basis of a moderate level of assurance and at the materiality of the professional judgement of the verifier.

Note: The extent of evidence-gathering for a moderate assurance engagement is less than for a high assurance engagement. Moderate assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a moderate assurance engagement is substantially lower than the assurance that would have been obtained had a high assurance engagement been performed.

LRQA's approach

LRQA's assurance engagements are carried out in accordance with our verification procedure. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Assessing KD Navien's approach to stakeholder engagement to confirm that issues raised by stakeholders were captured correctly. We did this through reviewing documents and associated records.
- Reviewing KD Navien's process for identifying and determining material issues to confirm that the right issues were included in their Report. We did this by benchmarking reports written by KD Navien and its peers to ensure that sector specific issues were included for comparability. We also tested the filters used in determining material issues to evaluate whether KD Navien makes informed business decisions that may create opportunities that contribute towards sustainable development.
- Auditing KD Navien's data management systems to confirm that there were no significant errors, omissions or mis-statements in the report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal verification. We also spoke with those key people responsible for compiling the data and drafting the report.

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- Checking whether greenhouse gas (GHG) emissions were transposed correctly from the GHG inventory which was verified by the third-party assurance provider.
- Checking that the GRI Content Index allows stakeholders to access sustainability indicators.
- Reviewing additional evidence made available by KD Navien at its office in Seoul.

Observations

Further observations and findings, made during the assurance engagement, are:

- Inclusivity: We are not aware of any key stakeholder groups that have been excluded from KD Navien's stakeholder engagement process.
- Materiality: We are not aware of any material issues concerning KD Navien's sustainability performance that have been excluded from the report. It should be noted that KD Navien has established extensive criteria for determining which issue/aspect is material and that these criteria are not biased to the company's management.
- Responsiveness: KD Navien has established its GHG inventory and declared its commitment to achieving carbon neutrality by 2050. KD Navien should improve its process to determine significant GHG emissions and manage its GHG inventory, including the derived significant GHG emissions including indirect GHG emissions from use of boilers sold.
- Impact: To more effectively identify and measure impacts, KD Navien should consider various metrics in the fields of science, ethics, laws, regulations, and environmental or social contexts.
- Reliability: KD Navien's data management system for the selected indicators is well defined.

LRQA's standards, competence and independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition and ISO/IEC 17021 Conformity assessment – Requirements for bodies providing audit and certification of management systems that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

This verification engagement is the only work undertaken by LRQA for KD Navien and as such does not compromise our independence or impartiality.

26 June 2023

Tae-Kyoung Kim

LRQA Lead Verifier On behalf of LRQA

2nd Floor, T Tower, 30, Sowol-ro 2-gil, Jung-gu,
Seoul, Republic of Korea



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