

WE SUPPORT



Launched in New York, USA, in 2000, the United Nations Global Compact (UNGC) is the world's largest corporate sustainability initiative supported by 19,000 member companies from 165 countries worldwide. Korea Environment Corporation (K-eco) has been a UNGC member since 2010, and has implemented its principles in areas such as human rights, labor, environment, and anti-corruption.



### K-eco 2023~2024 Sustainability Report

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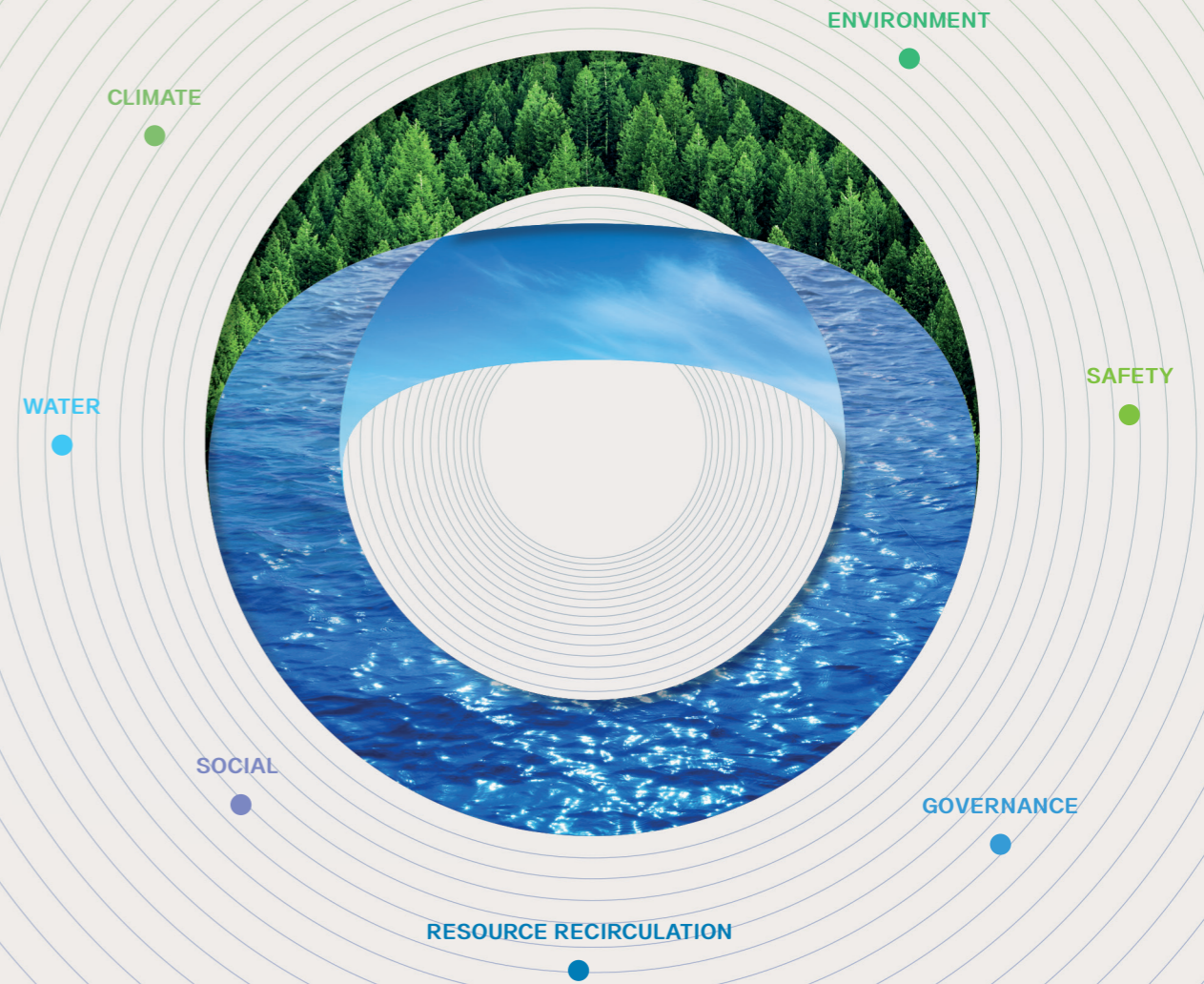
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K-eco 2023~2024 Sustainability Report

# K-eco 2023~2024 Sustainability Report



Korea Environment Corporation





# About This Report

## Report Overview

Korea Environment Corporation (K-eco\*) is a public institution that promotes the transition to a carbon-neutral society by preempting environmental pollution, safeguarding the environment, facilitating resource circulation, and reducing greenhouse gas (GHG) emissions to cope with the climate crisis.

K-eco has published the Sustainability Report so that its major ESG activities and outcomes are transparently disclosed and communicated to various stakeholders, with the aim of reviewing and improving its ESG performance as prescribed in regularly published reports.

*\*K-eco: It is the English abbreviation for Korea Environment Corporation.*

## Reporting Period & Scope

This report presents our activities and achievements from January 1 to December 31, 2023. Some qualitative performance results until April 2024 are also included.

The reporting scope entails the head office, eight local environmental headquarters, and business units.

## Reporting Criteria

This report was compiled in accordance with the requirement conditions of the GRI (Global Reporting Initiative) Standards 2021, a sustainability reporting standard, while also reflecting the TCFD (Task Force on Climate-Related Financial Disclosures) and UN SDGs (Sustainable Development Goals) indices. Moreover, the reporting standards and definitions of financial information adhere to the Korean International Financial Reporting Standards (K-IFRS).

## Verification Assurance

To enhance the credibility, quality, and accuracy of the contents of this report, we attained a verification assurance based on the Four Principles of AA1000AP from the Korean Foundation for Quality, an accredited certification agency. The details of the verification process can be found in the Appendix.

## Inquiries

Anyone can download this report in a PDF file format from K-eco's website. Please contact the following if you have any opinions or inquiries on K-eco's report and ESG management activities.

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### Interactive PDF

This report was published as an interactive PDF that features the shortcuts to access related pages within the report and links to related web pages.

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# K-eco for Protecting a Sustainable Future

As a global environmental professional institution at the vanguard of the carbon-neutral era, K-eco undertakes various projects geared to climate, air/water/soil, resource circulation, and the living environment to create a healthy and happy environment. We actively engage in stakeholder communication and cooperation in the pursuit of climate change response, environmental protection through sustainable management, social value creation, and public safety promotion.

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## CEO Message



We at K-eco promise to achieve national carbon neutrality and provide the best environmental services through transparent ESG management.



#### Dear esteemed citizens & stakeholders,

Advanced countries are making full-fledged attempts to incorporate climate regulation into trade regulation through ESG disclosure and the Carbon Border Adjustment System (CBAM).

At a critical time when climate crisis response can decide a country's future prosperity, K-eco is committed to achieving carbon neutrality in its corporate environment and improving environmental health and safety and national carbon neutrality in all facets of environmental policy, such as climate, air, water, resource circulation, and chemical safety.

#### We will actively support the private sector, municipalities, and citizens to implement carbon neutrality into practice.

In this context, we are overhauling the financial foundation and systems, such as the Climate Response Fund and the GHG reduction-based budget system and actively propelling carbon neutrality into practical implementation by social sector groups, such as improving the emission trading system (ETS), expanding green mobility infrastructure, responding to the CABM, supporting carbon reduction facilities, and operating the Carbon Neutral Point System.

#### Creating a clean, safe environment and achieving a circular economy.

To realize a "Korea for us to breathe easier", we will expand and install an air quality monitoring network and strengthen the monitoring system for air pollutants, such as fine dust and ozone-generating substances. Moreover, with the establishment of the Basin Sewage Support Center and the Integrated Water Pollution Control Center, the water quality management and monitoring system at the basin level will be strengthened to safeguard a clean and safe water environment. We will also install an ecosystem infrastructure for recycling waste solar panels and electric vehicle batteries, expand integrated production facilities of biogas, which are clean energy, and ensure the safety of chemical substances.

#### Striving to create a happy workplace and practicing win-win cooperation with the local communities and SMEs.

We will establish a company-wide safety and health management system (KOSHA-MS) and certify the human rights management system to align with strengthened safety and human rights management. We make efforts to increase employment diversity and internalize the values of community and shared growth in line with our heavier responsibilities in recognition of being an excellent organization for equal opportunity recruitment and shared growth for 2023, in addition to supporting environmental startups by youths and nurturing global environmental talents.

#### Strengthening ethical and transparent management with the public trust placed in K-eco.

As a professional environmental organization that takes leadership in ethical and transparent management by strengthening internal ethics, integrity, and anti-corruption controls and instituting a labor director system, we will lead the ESG disclosure of public institutions and actively promote the opening and disclosure of public data and environmental information. We will realign and enhance our ESG management strategy based on ESG management performance measurement results and apply "digital transformation," gaining traction as a megatrend, to institutional management to realize efficiency, integration, and globalization in environmental services.

#### Leadership in creating results that cater to the public and spreading ESG management.

K-eco has been the only public institution to receive a grade A for two consecutive years in the institutional management evaluation last year, with prestigious awards received in many fields, including government innovation, proactive administration, shared growth, knowledge management, labor-management cooperation, ESG innovation, and energy transition. Based on our growth and development, we aim to grow for a better future. By taking the lead in spreading ESG management, we are creating results that cater to the public by listening to stakeholders' opinions to actively reflect them in our work and strengthening cooperation with related organizations.

#### Esteemed citizens and stakeholders,

We hope you stay keenly aware of K-eco's change and innovation initiatives with the trust and support you place in us this year.

Thank you.

May 2024  
Ahn Byung-ok  
CEO, Korean Environment Corporation

이승영

# K-eco Profile

## K-eco status

K-eco is a public institution under the Ministry of Environment and was established through the merger of the Korea Environment Resources Corporation and Environmental Management Corporation in January 2010. We are committed to contributing to environment-friendly national development by effectively implementing the transition to a carbon-neutral society, including environmental pollution prevention, environmental improvement, resource circulation promotion, and GHG reduction projects to respond to the climate crisis in compliance with the Korea Environment Corporation Act.






### Major Status

\* As of the end of 2023

<b>Institution name</b>	Korea Environment Corporation (K-eco)
<b>Date of establishment</b>	January 1, 2010
<b>Ground for establishment</b>	Article 1 of the Korea Environment Corporation Act (Law No. 20172)
<b>Institution type</b>	Quasi-governmental agency/public corporation (outsourcing type)
<b>Head of the institution</b>	Ahn Byung-ok
<b>Employees</b>	3,446 members
<b>Main business</b>	<ul style="list-style-type: none"> <li>Implementation of policies related to carbon neutrality, such as responding to climate change and reducing GHG emissions</li> <li>Establishment and operation of environmental measurement, including air &amp; water quality, network &amp; control center</li> <li>Aquatic ecology restoration and soil &amp; groundwater environmental surveys, evaluation, &amp; purification</li> <li>Installation and operation of environmental facilities such as sewage &amp; wastewater treatment facilities &amp; waste-to-energy conversion facilities</li> <li>Waste generation suppression, circular use, &amp; eco-friendly processing projects</li> <li>Policy support for environmental pollution prevention, environmental improvement, &amp; resource circulation</li> <li>Chemical safety management &amp; environmental hazardous substance inspection &amp; analysis</li> </ul>
<b>Head office location</b>	Comprehensive Environmental Research Complex, 42, Hwangyeong-ro, Seo-gu, Incheon

### Main Financial Status for 2023

(unit: KRW million)

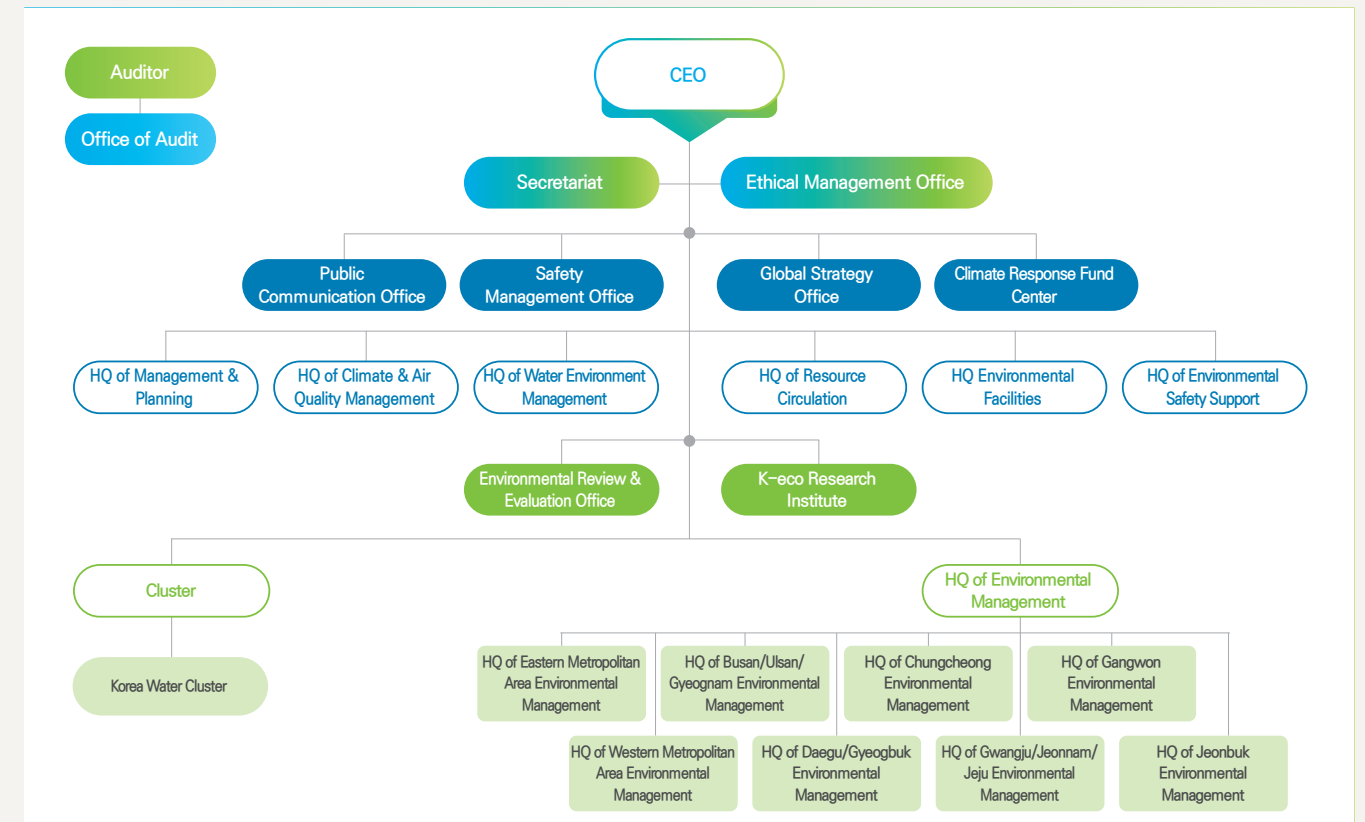
Total assets 	Total liabilities 	Income (Sales) 
176,141	166,297	1,973,078
Operating profit 	Net profit 	
12,746	24,404	



| Front view of K-eco head office |

## Organization

K-eco's organizational structure comprises the head office, eight regional environmental headquarters, and business units.



## Corporate History

- 1980.09. > Established Korea Resource Regeneration Corporation (Renamed to Korea Environmental Resources Corporation in July 2004)
- 1987.03. > Established Environmental Pollution Prevention Business Group (Renamed to Korea Environmental Management Corporation in November 1987)
- 2009.02. > Enacted the Korea Environmental Corporation Act
- 2010.01. > Established Korea Environment Corporation (Merged Korea Resource Regeneration Corporation and Korea Environmental Management Corporation)
- 2019.07. > Started the operation of a national water business cluster
- 2021.12. > Opened K-eco's HR Development Center

## K-eco Profile

### K-eco value system

K-eco has established the vision to achieve its mission of "Sustainable future, an environment we can enjoy together." It reflects our commitment to become a professional environmental organization to bring about carbon neutrality, cater to the demands of the times, and spread the environmental prowess accumulated worldwide. Accordingly, K-eco has determined the five key strategic goals and relevant strategic tasks, and undertook goal-oriented projects.

#### Mission



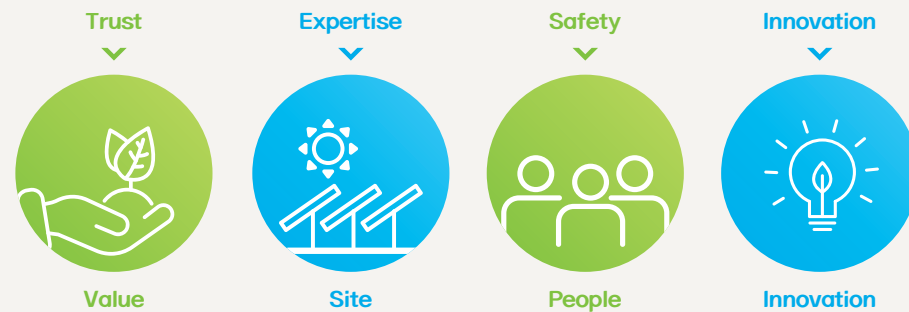
Sustainable future, an environment we can enjoy together

#### Vision



A global environmental institution leading the carbon-neutral era

#### Core values/Management policies



#### Strategic goals/tasks

##### Realization of carbon neutrality and clean air

- Creating a national carbon-neutral implementation ecosystem
- Strengthening state-of-the-art atmospheric environmental monitoring

##### Creating a safe & sustainable living environment

- Strengthening safe chemical & facility management
- Enhancing the quality of life by improving the living environment

##### Creating a healthy water environment

- Smart water management & the sound water industry
- Enhancing the sustainability of the water environment

##### Management innovation & ESG management practice

- Institutional innovation & management efficiency
- ESG management internalization & support for the growth in the private sector

##### Transition to a circular economic society

- Strengthening the life-cycle resource circulation management system
- Strengthening waste management

## Main Business Overview

### Realization of carbon neutrality and clean air

K-eco achieves carbon neutrality and creates clean and fresh air by operating a GHG reduction system to respond to rapid climate change and policies to improve the air we breathe every day.

#### Supporting GHG reduction policies

K-eco encourages GHG emission reductions at workplaces with high greenhouse gas levels through the GHG emissions trading scheme & the GHG target management system and builds a foundation for refrigerant management & treatment to reduce the leakage of refrigerants, which are substances causing global warming. Moreover, we operate a carbon neutrality point system that encourages people to practice carbon neutrality in their daily lives and support municipalities in preparing basic plans for carbon neutrality.

#### Building the national foundation for carbon neutrality

K-eco operates a GHG reduction-based budget system to internalize carbon neutrality in national finances & the climate response fund to secure the financial resources necessary for the transition into a carbon-neutral society & green growth.

#### Promotion of vehicle environment

We comprehensively manage vehicle emissions certification testing & vehicle telemetry data. Using big data, we install charging facilities that allow regular charging within the living area and contribute to the distribution of eco-friendly cars.



#### Air quality & environment management

K-eco measures the air quality we breathe every moment and provides the data to the public through AirKorea (a real-time air environment information disclosure system). We also assign the total allowable emissions per year to each business site and manage them to ensure compliance. We identify and manage air pollutants emitted from chimneys in business sites & re-suspended road dust.

#### Odor management

K-eco prevents health risks to residents caused by odors generated from public environmental facilities and provides technology to SMEs with difficulties managing odors free of charge to improve odor management capabilities and reduce odors. We support establishing odor reduction policies by providing analysis results of odor-causing substances.

### Creating a healthy water environment

In support of the water industry, K-eco creates a healthier environment to prevent and purify the pollution of water used by people and nature by implementing water management policies, and managing water, soil, and groundwater pollution.

#### Support of integrated water management

K-eco contributes to building a sustainable water cycle system by providing technical support throughout the entire water management policy process, such as the support for establishing national & basin plans to integrate all facets of water management, such as water quality & quantity, water disasters, & aquatic ecology, review of conformity between higher & lower water management plans, and establishing an evaluation system for national & basin water management implementation plans.

#### Soil and groundwater management

K-eco prevents the spread of contamination by detecting and purifying (curing) it early through soil & groundwater surveys in areas at contamination risk. Moreover, we preserve groundwater quality by installing and operating a national groundwater pollution measurement network in areas prone to contamination with high management priority.

#### Sewerage policy support

K-eco undertakes sewerage maintenance projects to create a safe urban environment and prevent urban flooding caused by heavy local rain. Moreover, we operate the national sewerage information system and provide accurate information & statistics on sewerage. By reviewing technical matters in the sewerage sector, we execute efficient sewerage projects and appropriate use of the national budget.

#### Water pollution & industrial wastewater management

K-eco has installed an automatic water quality measurement network in the four major rivers to measure and monitor water pollution, and remotely manages water pollutants discharged from business sites & public wastewater treatment facilities around the clock. In addition, we operate a water pollution control center to respond to water pollution accidents quickly.

#### Operation of National water industry cluster

K-eco operates a national water industry cluster to promote the water industry and strengthen the competitiveness of water companies. Through this, we have built and supported the full cycle infrastructure of water industry-related companies, from technology development to overseas market entry.

## Main Business Overview

### Transition to a circular economic society

K-eco creates a world where a clean environment is preserved by reducing waste generation and increasing recycling rates to promote the transition to a circular economic society.

#### Operation & management of the resource circulation system

K-eco operates and manages the resource circulation performance management system that sets and manages resource circulation goals for each city, province, & business entity that emits large amounts of waste and the producer-responsible recycling system. Through this, we minimize the final disposal of waste and increase the circulation utilization rate, contributing to a sustainable circular economy in which resources & energy circulate virtuously.

#### Resource recirculation program

K-eco provides basic data for policy establishment using Resource Circulation Maru (resource circulation information system) and generates and provides waste statistical information through the Waste Statistics Input Management System. Moreover, to suppress the generation of packaging waste and promote recycling, we are testing and inspecting product packaging methods and separate discharge labeling materials and structures.

#### Waste management

K-eco manages industrial waste throughout the entire process, from discharge & transportation to final treatment, using the Allbaro System (comprehensive waste management system). It also systematically manages food & medical wastes using RFID. Furthermore, we manage the safety of waste import & export through the import & export waste portal system, and ensure proper treatment of livestock & outsourced wastewater with the outsourced wastewater & electronic transfer management system.

#### Waste resource project management

K-eco tries to expand the supply of solid fuel products & eco-friendly fuels manufactured using combustible waste according to quality standards. In promoting the rational use of resources and advancing the resource circulation management system, we recycle confiscated items such as casino gaming machines into resources. We also collect and dispose of waste generated from agricultural activities, promoting rural environmental conservation & resource circulation.

### Management of the entire resource circulation process



### Creating a safe & sustainable living environment

K-eco promotes environmental health and safety by considering nature and the people's living environment through various life-friendly environmental services.

#### Public environmental services that are closely related to daily life

K-eco provides measures & technologies to reduce inconvenient factors in daily life, such as operating a neighbor center for inter-floor noise, operating a noise measurement network, and diagnosing light pollution by directly diagnosing and investigating them. Moreover, we spread awareness of environmental conservation to the public by operating seven environmental awareness education centers.

#### Hazardous Chemical Management

K-eco prevents chemical accidents by conducting periodic safety inspections & diagnoses at business sites that handle hazardous chemicals. Moreover, we have built an international-level inhalation toxicity testing facility to provide highly reliable chemical hazard test data.

#### Providing environmental health services

K-eco conducts asbestos investigations & diagnoses to ensure the safe management of asbestos used in public buildings & schools. We also help create safe living environments by providing free measurement & reduction consulting for houses vulnerable to radon exposure.

#### Establishment of optimal living environment infrastructure

Utilizing its accumulated technology & experience in environmental facility installation projects, K-eco contributes to improving citizens' safety & quality of life by supporting the installation of basic environmental facilities (sewage treatment facilities, flood prevention projects, ecological river restoration projects, etc.) of national & municipalities.

#### Realization of sustainable carbon neutrality

With its contribution to securing renewable energy and reducing GHG emissions, K-eco identifies low-carbon ideas, sets the foundation for a carbon-neutral society by operating the Net Zero VE Implementation Team, and installs waste-to-energy facilities that recover energy (fuel, heat, and electricity) from waste.

## ESG Management System

### ESG management vision and strategy

K-eco has realized social values surrounding various stakeholders, established ESG vision and goals for sustainable growth, and established three strategic directions. In advancing our ESG management system, we have established 12 strategic tasks and detailed performance indicators based on the three strategic directions of "Leading in the realization of carbon neutrality", "Performing social responsibility through professional environmental services", and "Strengthening trusted and transparent management".

<b>ESG Vision</b>	K-eco creates a clean earth, a happy society, and a sustainable future.		
<b>ESG Slogan</b>	Green future with K-eco		
<b>Goals</b>	Institutional Net Zero by 2040	Best in shared growth evaluation	Grade 1 in overall integrity
	Circulation utilization rate: 84%	Grade 1 in safety management	Best in comprehensive information disclosure evaluation
<b>Strategic direction</b>	Leading the way in achieving carbon neutrality	Fulfilling social responsibility through professional environmental services	Strengthening trusted & transparent management
	Achieving Net zero for K-eco by 2040	Strengthening the human rights management system	Strengthening the BOD governance
<b>Strategic tasks (12 EA)</b>	Support for national carbon neutrality implementation	Fair recruitment and creating a happy workplace	Strengthening ethical and compliance management and anti-corruption system
	Circular economy and waste-to-energy conversion	Advancement of safety management and information security	Information disclosure and communication revitalization
	Leading environmental services in response to the climate crisis	Customer satisfaction management and support for SMEs and local communities	Improving management efficiency and sustainability

### ESG governance

Starting in 2022, K-eco has organized and operated the ESG/Carbon Neutrality Committee made of 18 members, including the Chairman of the Board, internal members, and external experts.

The ESG/Carbon Neutrality Committee examines ESG management plans and performance management matters and advises on ESG management diagnosis and development measures. Moreover, to strengthen K-eco's ESG management execution capabilities, we have established and operate an ESG Management and Innovation Team as an executive organization of the committee.

In January 2024, we formed the ESG/Carbon Neutrality Committee integrated with the existing Carbon Neutrality Committee to propel efficiency and synergy within the organization.

\* In 2024, the ESG Committee and the Carbon Neutrality Committee under the Future Development Committee were integrated into the ESG/Carbon Neutrality Committee, and the Global Convergence Committee was newly established. ESG/Carbon Neutrality Committee

### ESG management system organization



| ESG/Carbon Neutrality Committee meeting in 2023 |

## ESG Management System

### Roadmap for ESG management

K-eco has drawn up 26 implementation tasks in the areas of environment, society, and governance according to its strategy to advance ESG management. Accordingly, we have established and implemented a step-by-step roadmap by prioritizing each task based on the urgency and feasibility of government policies.

#### ESG management execution programs & implementation roadmap

2023~2024	2023~2026	2023~2028
<b>Short-term execution programs</b> E3-3 Protecting public health from harmful environments S1-3 Establishing a work-family balance system and expanding socially equitable employment S2-3 Contributing to the local community through social contribution activities S3-1 Practicing safety management and internalizing safety culture S3-2 Strengthening human rights management system G1-1 Strengthening BOD functions G2-1 Strengthening the ethical management system G2-3 Creating a culture of integrity & ethics G3-1 Expanding stakeholder communication through various channels	<b>Mid-term execution programs</b> E1-1 Internalizing carbon neutrality for employees E1-2 Supporting national carbon neutrality implementation E2-1 Establishing resource circulation system E3-2 Reducing fine dust and improving air quality S1-1 Nurturing specialized environmental professionals S2-1 Supporting ESG management for SMEs S3-3 Strengthening information security & customer satisfaction management G1-2 Strengthening citizens' right to know on a digital basis G2-2 Strengthening anti-corruption policies & internal controls G3-2 Strengthening public communication & promotional activities	<b>Long-term execution programs</b> E1-3 Enhancing the environmental management system E2-2 Promoting recovery and recycling E2-3 Digital transformation of waste management and conversion of waste into energy E3-1 Creating a healthy water & soil environment S1-2 Support for job creation in the environmental field S2-2 Establishing a foundation for shared growth in connection with industries G3-3 Improving services to the public by establishing a culture of proactive administration

### Best practice contest for ESG management performance

To instill ESG management enterprise-wide, K-eco identifies excellent performance cases and shares them internally and externally. In December 2023, excellent cases in various fields were announced through the 2023 Best Practice Contest for ESG Management Performance. After evaluating 275 programs in nine sectors that reflected the government's major policies, 11 best cases were selected for the competition. The selection process underwent public deliberation, including collecting opinions from the public using K-eco's social media.

In this competition, the case of the "Drastic budget reduction through the development of the pipeline cleaning system for the automatic water quality measurement network" by the Environmental Service Department of the HQ of Chungcheong Environmental Management was awarded the Grand Prize. The competition also selected "Solving the illegal waste problems using AI" as an excellent case in the government innovation and proactive administration sector. Along these lines, we plan to continue discovering and sharing best practices to promote and instill ESG management performance internally and externally.



| 2023 Best Practice Contest for ESG Management |

## Stakeholder Communication

### Stakeholder classification & communication channels

K-eco's stakeholders are defined as individuals and organizations that can directly or indirectly affect K-eco's activities or services. The K-eco establishes customized communication strategies for each type of stakeholder through internal and external environmental analysis and integration with management strategies and operates various communication channels. Through this, we are expanding cooperation with stakeholders, incentivizing them to participate in policies, and growing together with the people.

#### Classification of stakeholders

Stakeholder group	Value-distribution type	Value-sharing type	Value-cooperation type	Value-creation type
	Groups that are vulnerable to environmental information	Suppliers & related organizations	Municipalities, environmental groups, & academic societies	MZ generation & the integrated labor union
Interests and issues	<ul style="list-style-type: none"> <li>Creating safe &amp; healthy living environments</li> <li>Providing environmental information services through open public data</li> </ul>	<ul style="list-style-type: none"> <li>Responding to international carbon trade policy (CBAM)</li> <li>Strengthening win-win cooperation through collaboration with related organizations</li> </ul>	<ul style="list-style-type: none"> <li>Policy consultation to implement national projects</li> <li>Establishing and implementing municipalities' basic plans for carbon neutrality</li> </ul>	<ul style="list-style-type: none"> <li>Sharing K-eco's vision and creating management results</li> <li>Spreading horizontal organizational culture through open communication between generations</li> </ul>

#### Communication channels for each stakeholder

Stakeholder	Value-distribution type	Value-sharing type	Value-cooperation type	Value-creation type
	Groups that are vulnerable to environmental information	Suppliers & related organizations	Municipalities, environmental groups, & academic societies	MZ generation & the integrated labor union
Communication Strategy	Guaranteeing the right to know Expanding public engagement through two-way communication	Win-win cooperation & technology sharing Strengthening win-win cooperation through technical & institutional support	Joint performance & value creation Expanding expertise and disseminating results through collaboration	Establishing horizontal culture Building intergenerational trust by establishing an internal communication system
Communication channel	<ul style="list-style-type: none"> <li>Media (TV and radio)</li> <li>New media (YouTube, social media, blogs, etc.)</li> <li>Customer Satisfaction Management Group</li> <li>Citizen Participation Innovation Group</li> <li>University student journalists</li> <li>Public contest</li> <li>Company newsletter &amp; public relations education center</li> <li>Open public data</li> <li>National survey</li> <li>Homepage/environmental information app</li> </ul>	<ul style="list-style-type: none"> <li>Corporate meeting</li> <li>Corporate consulting</li> <li>Public-private consultative body</li> <li>Platform to support social enterprises</li> <li>Performance cooperation profit sharing system</li> <li>Customer meeting</li> <li>Technical support</li> <li>Consortium</li> </ul>	<ul style="list-style-type: none"> <li>Policy meeting</li> <li>Future Development Committee</li> <li>Institutional meetings</li> <li>Reporting and compiling</li> <li>Interviews</li> <li>Expert Forum</li> <li>Consultative group</li> <li>MOU formation</li> </ul>	<ul style="list-style-type: none"> <li>Vision declaration ceremony</li> <li>Labor-Management Council</li> <li>K-eco Innovation Avengers</li> <li>Mentor system for generational gap empathy communication</li> <li>Communication Day</li> <li>K-eco Communication Camp</li> </ul>

※ Public website for K-eco CEO 

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>CEO's website</li> <li>Air pollution real-time disclosure system (AirKorea)</li> <li>Carbon neutral point system (Energy, automobile, &amp; green life practice) system</li> </ul> | <ul style="list-style-type: none"> <li>Allbaro System</li> <li>Integrated website for zero-emission vehicles</li> <li>Comprehensive information network for asbestos management</li> <li>Comprehensive information network for indoor air quality management</li> <li>Information System for National Water Industry Cluster</li> </ul> | <ul style="list-style-type: none"> <li>Refrigerant information management system</li> <li>Air pollutant management system at business sites</li> <li>Producer-responsible recycling system</li> <li>Electronic transfer management system of livestock manure information</li> </ul> |
|---|---|--|



## Stakeholder Communication

### Public communication through media

To increase public awareness and engagement in various environmental policies and changing systems, K-eco undertakes public relations and communication activities that reach the public through the media. We addressed topics garnering social attention, such as carbon neutrality and ESG, through approximately 140 press releases in 2023 and made efforts to inform the public about our environmental policies and core projects in tribute to environmental anniversaries such as Earth Day and Resource Circulation Day. We strive to provide interviews with and contributions to the media for active communication with the public.

















Moreover, we visually present our core projects and policies by producing promotional videos and actively using new media such as social media to communicate with the public, with the cumulative number of visitors to K-eco's blog reaching 18 million and the number of YouTube subscribers exceeding 20,000. In particular, we operate K-eco Studio by producing timely videos (Ask a Question to K-eco, K-eco's Digital Transformation Plan, etc.) to promote internal and external communication, while also operating the university student press corps (Purumi Phase 12) to further expand our contact points with the public by raising environmental awareness and encourage participation in sustainable development.




| K-eco's University Student Press Corp (Purumi Phase 12) |

### Online communication channel

K-eco operates various online communication channels to strengthen communication with stakeholders, quickly delivering news on environmental policies and programs through various channels, such as blogs, YouTube, and Instagram, and collecting stakeholder opinions.

	<a href="http://www.keco.or.kr">www.keco.or.kr</a>	Link 		<a href="https://story.kakao.com/ch/kecoprummy">story.kakao.com/ch/kecoprummy</a>	Link 
	<a href="https://blog.naver.com/kecoprummy">blog.naver.com/kecoprummy</a>	Link 		<a href="https://www.instagram.com/keco_puru">www.instagram.com/keco_puru</a>	Link 
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	<a href="https://www.youtube.com/kecopr">www.youtube.com/kecopr</a>	Link 			



## UN-SDGs

As a global environmental agency, K-eco implements ESG management through continuous management innovation and fulfills its social responsibility to achieve UN SDGs (UN Sustainable Development Goals). UN SDGs are 17 common goals for humanity set by the UN General Assembly to realize sustainable development by 2023. K-eco's main activities that consider the connection with each SDG are presented as follows:

SDGs	Indicator	Description	SDGs	Indicator	Description
	<b>Goal 1</b> End poverty in all its forms everywhere	<ul style="list-style-type: none"> <li>Selected as the highest-rated organization in the Local Community Contribution Recognition System (support for vulnerable groups)</li> <li>"Thousands &amp; Ten Thousands of Won" employee donation program</li> </ul>		<b>Goal 9</b> Industry, innovation, & infrastructure	<ul style="list-style-type: none"> <li>Expanding electric &amp; hydrogen vehicle charging infrastructure</li> <li>Building sewage &amp; wastewater supply chain</li> <li>Modernization of public sewage in Jeju</li> </ul>
	<b>Goal 2</b> End hunger	<ul style="list-style-type: none"> <li>Green ODA project (Improvement of water &amp; sanitation environment in Uganda &amp; Mongolia)</li> </ul>		<b>Goal 10</b> Reduced inequalities	<ul style="list-style-type: none"> <li>Socially equitable recruitment of personnel</li> <li>Support for social enterprises &amp; purchase of products</li> </ul>
	<b>Goal 3</b> Good health & well-being in life	<ul style="list-style-type: none"> <li>"Four Steps to Health" program</li> <li>Customized stress improvement programs &amp; professional psychological counseling services</li> <li>Asbestos investigation and follow-up control support (350 locations)</li> <li>Free radon measurement &amp; consultation (242 public facilities for residents, 1,807 homes)</li> <li>Indoor air quality diagnosis &amp; consultation (200 locations)</li> </ul>		<b>Goal 11</b> Sustainable cities & communities	<ul style="list-style-type: none"> <li>Public environmental information service (AirKorea)</li> <li>High-quality recycled product recovery compensation project</li> <li>Expansion of waste home appliance recovery channels (cooperation with large organizations &amp; municipalities)</li> </ul>
	<b>Goal 4</b> Ensuring inclusive & equitable quality education and promoting lifelong learning opportunities for all	<ul style="list-style-type: none"> <li>Customized educational curriculum for each group (124 courses)</li> <li>Digital competency development training program (16 courses)</li> <li>"Comeback Working," an education program for returning workers</li> <li>A program for young professionals in the environmental field</li> </ul>		<b>Goal 12</b> Responsible consumption & production	<ul style="list-style-type: none"> <li>Labeling system for the use of recycled raw materials</li> <li>Environment for producing the "best in recycling" packaging materials</li> <li>Operating Resource Circulation Practice Platform &amp; Resource Circulation Square system</li> </ul>
	<b>Goal 5</b> Gender equality & empowerment of all women & girls	<ul style="list-style-type: none"> <li>Establishing a competency-based promotion system</li> <li>Automatic parental leave system</li> <li>Shortened work hours &amp; flexible schedule (for employees in childbirth &amp; childcare period)</li> </ul>		<b>Goal 13</b> Climate action	<ul style="list-style-type: none"> <li>Operating the Climate Response Fund (KRW 2.5 trillion in 2023)</li> <li>Operating the GHG emissions trading system &amp; target management system</li> <li>Operating the Carbon Neutral Point System</li> <li>International GHG reduction projects (13 projects in 8 countries)</li> <li>Operating eco-friendly vehicles (244 units)</li> </ul>
	<b>Goal 6</b> Clean water & sanitation	<ul style="list-style-type: none"> <li>Automatic water quality measurement network and remote monitoring system</li> <li>Improvement of facilities in areas with poor water supply (1,250 locations)</li> <li>Drinking tube wells in areas with unavailable water service (4 locations in Hongcheong-gun, Gangwon Province &amp; Goheung-gun, Jeollanam Province)</li> </ul>		<b>Goal 14</b> Life below water	<ul style="list-style-type: none"> <li>Operating the Water Pollution Control Center</li> <li>Installing and operating the water quality &amp; boiling point measurement network</li> <li>Installing the nature-friendly fishway (Gapcheon in Daejeon)</li> </ul>
	<b>Goal 7</b> Ensuring access to sustainable energy sources	<ul style="list-style-type: none"> <li>Operating 43 solar power generation facilities (generation amount: 2,836 MWh)</li> </ul>		<b>Goal 15</b> Life on land	<ul style="list-style-type: none"> <li>Urban contaminated soil purification projects (approximately 1.08 million m<sup>2</sup>)</li> <li>Sky Patrol against illegal waste dumping</li> </ul>
	<b>Goal 8</b> Decent work & economic growth	<ul style="list-style-type: none"> <li>K-eco win-win cooperation system &amp; demonstration programs</li> <li>Funding for youth startups in the environmental field &amp; a startup contest for the water industry</li> <li>National water industry cluster</li> <li>Main activities for revitalizing the development of apps in the private sector by expanding public data disclosure</li> </ul>		<b>Goal 16</b> Peace, justice, & strong institutions	<ul style="list-style-type: none"> <li>Certification of the anti-corruption &amp; compliance management system (ISO 37001 &amp; 37301)</li> <li>Operating conflict of interest prevention system</li> <li>Operating the Human Rights Management Committee</li> </ul>
				<b>Goal 17</b> Partnerships for the goals	<ul style="list-style-type: none"> <li>Promotion of official development assistance (ODA) projects in the environmental field (ICT-based integrated air quality management in Mongolia in 2023)</li> </ul>

# Materiality Assessment

## Materiality assessment process

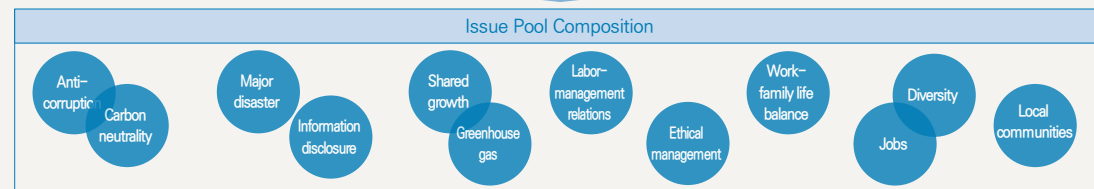
K-eco has conducted a materiality assessment through the three-stage process of issue identification, analysis, and prioritization to select material issues factors affecting the business and stakeholder interests. For the key issues to be identified, we have created an issue pool through global standard analysis, K-eco's ESG level diagnosis, and media research. A review of materiality to the ESG TF based on the issue pool and a stakeholder survey were conducted to select 32 issues and major ESG management issues with high business impact and social interest, along with 12 core issues derived through validation.

Stage 1

### Issue identification

Organizing activities in each ESG field through environmental analysis, such as global initiatives, benchmarking, and media analysis

Global standard analysis	Benchmarking of leading institutions	Sustainability management status	Media research
Analysis of main ESG initiatives such as GRI, SDGs, SASB, K-ESG, and KCGS	Identifying major issues in ESG strategies & sustainability reports of other public institutions	Diagnosing K-eco's ESG level and identifying key issues in current ESG strategy & sustainability management report	Analyzing news articles related to K-eco's ESG management & sustainability management from 2022 to 2023



Stage 2

### Issue analysis

Promoting issues that will be subject to a materiality assessment from a pool of hundreds of issues and then surveying stakeholders

Selecting issues subject to materiality assessment	Identifying and defining stakeholders	Stakeholder Survey
<ul style="list-style-type: none"> <li>Review of relevance to hundreds of pre-identified issues with the ESG TF</li> <li>Selecting 32 issues to be subject to materiality assessment</li> </ul>		<ul style="list-style-type: none"> <li>Survey target (Internal) K-eco employees/ (External) Citizens, suppliers, local communities, government, &amp; experts</li> <li>Survey method: Utilization of an online platform (Google Survey)</li> <li>Survey description: Measurement of the materiality of each issue classified into ESG (Environmental/Societal/Governance) categories &amp; evaluation of sustainable management awareness</li> </ul>

Stage 3

### Prioritization

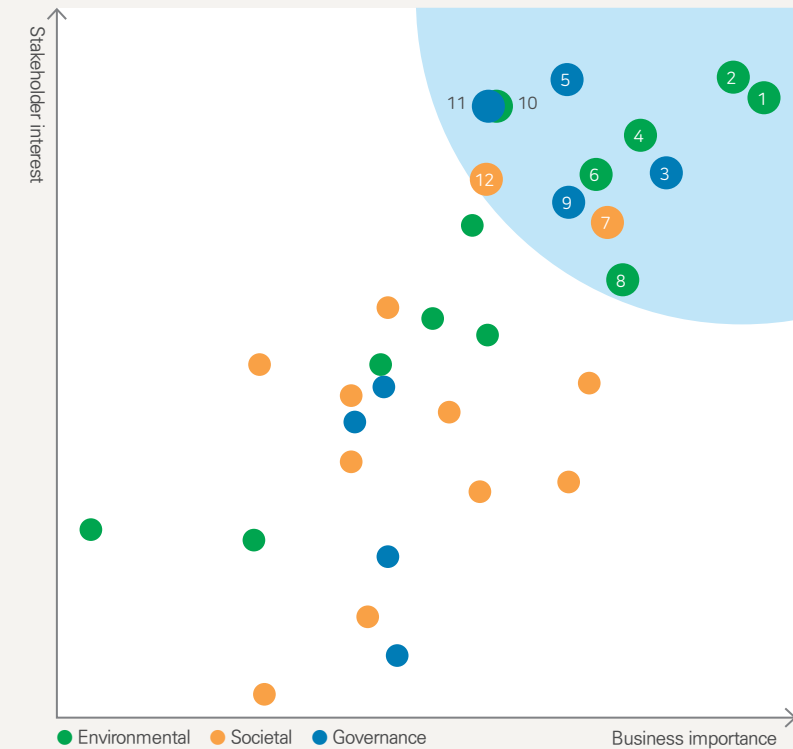
Deriving K-eco's ESG material issues by prioritizing issues with high business impact and social interest

Derivation of materiality matrix & major issues	Validation (focus groups)	Derivation of key ESG management core issues
	<ul style="list-style-type: none"> <li>(Internal) Heads of major departments and ESG committee/ (External) ESG experts</li> <li>Validation of major issues selected through a materiality assessment</li> </ul>	<p>Derivation of key ESG management core issues</p>

## Results of materiality assessment

K-eco has performed an internal and external validation for the 32 issues derived from the issue pool and then proceeded to diagram the materiality assessment results. Accordingly, the final 12 were selected as core issues, and the activities and performance of each issue can be checked in the corresponding section of this report.

### Matrix of materiality assessment results



### Twelve key issues

No.	Key Issues	Keywords	Corresponding Outcome
1	GHG reduction and energy saving	GHG/energy	Realization of carbon neutrality and clean air
2	Waste management and recycling expansion	Circular economy	Transition to a circular economic society
3	Strengthening ethical management & anti-corruption systems	Ethics/Integrity	Ethical management and anti-corruption
4	Reducing fine dust and improving air quality	Atmospheric environment	Realization of carbon neutrality and clean air
5	Strengthening sustainable management capabilities	ESG management implementation	ESG management system
6	Expanding policy support for climate crisis response	Environmental services	Realization of carbon neutrality and clean air
7	Practicing safety management and strengthening safety accident prevention activities	Disaster safety	Creating pleasant workplaces
8	Expanding citizen-participatory carbon neutrality practices	Carbon neutrality	Realization of carbon neutrality and clean air
9	Fair performance evaluation & rational compensation	Performance compensation	Human resource development and inclusive organizational culture
10	Noise, odor, & environmental pollutant management	Pollutant	Achieving a safe & sustainable living environment, carbon neutrality, and clean air
11	Expanding stakeholder communication through various channels	Information disclosure and participation	Stakeholder communication, transparent information disclosure, & public participation
12	Pursuing customer satisfaction management by collecting public opinion	Customer satisfaction	



# Responsibility for Earth's Environment & Healthy Future for Humanity

To bring about a better environment for future generations, K-eco conducts various environmental service projects by kickstarting carbon neutrality and energy conversion, making efforts for clean air, creating a healthy water environment, implementing a circular economy society, and creating a safe living environment through institutional support and management in various fields.

These play a major role in our efforts to respond to climate change and contribute to protecting the Earth's ecosystem.

- 022 Realization of Carbon Neutrality and Clean Air
- 032 Creating a Healthy Water Environment
- 038 Transition to a Circular Economic Society
- 044 Creating a Safe & Sustainable Living Environment



## Realization of Carbon Neutrality and Clean Air

Against the backdrop of efforts for carbon neutrality are actively underway worldwide, K-eco has also declared carbon neutrality by 2050 and always implements various systems and activities to achieve this goal. Accordingly, we operate a national GHG emission trading system and target management system, undertake related support projects, and strengthen fine dust reduction and monitoring of air pollutants. Moreover, we administer the national air pollution measurement network (AirKorea) and the chimney remote monitoring system (CleanSYS) and undertake various activities to protect public health and the environment by expanding eco-friendly vehicle charging infrastructure.

### Goals & implementation strategies

Applicable projects	Emission trading system, Carbon Neutral Point System, etc.	Air cap system, chimney remote monitoring system, etc.	Air quality measurement network, automobile environmental information database, etc.
<b>Performance goals</b>	Contributing to achieving national goals by enhancing national carbon neutrality implementation capabilities	Creating a safe air environment for the public by strengthening air quality management	Improving public information service by expanding the production, use, and provision of atmospheric information
<b>Implementation tasks</b>	<ul style="list-style-type: none"> <li>Supporting companies' implementation of carbon neutrality by improving the GHG reduction system</li> <li>Expanding carbon neutrality implementation by municipalities &amp; citizens</li> <li>Expanding distribution &amp; charging infrastructure of zero-emission vehicles</li> </ul>	<ul style="list-style-type: none"> <li>Reducing air pollutants by operating an emission management system customized for each business site</li> <li>Creating a safe atmosphere through intensive management of pollutants that threaten public health</li> <li>Creating a pleasant air environment by tackling complaints of odor</li> </ul>	<ul style="list-style-type: none"> <li>Expanding production of environmental information by strengthening air quality measurement infrastructure</li> <li>Strengthening the usability of atmospheric environment information by promoting public &amp; private information sharing</li> <li>Improving user convenience by improving public air quality information services</li> </ul>

### Award Highlights

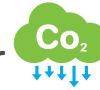
- Prime Minister Award at the 12th Korea Knowledge Awards (Contribution made in corporate support for management and leveraging expert knowledge in the air quality sector)
- Commendation from the Minister of Science & ICT (Contribution made in the spread of electronic receipts for the Carbon Neutral Point System)
- Commendation from the Prime Minister (for improving odor & air quality in traditional flea markets)
- Grand prize in the idea category of the big data contest hosted by the Ministry of Environment (Development and rollout of digital-based anti-odor technology such as odor forecast)



### Major outcomes

Subject	Strengthening the national capabilities of carbon neutrality implementation	Strengthening air quality management	Expanding production, utilization, & presentation of atmospheric information
<b>Implementation efforts</b>	<ul style="list-style-type: none"> <li>Improving the GHG reduction</li> <li>Support for industry implementation</li> <li>Expanding implementation by municipalities &amp; citizens</li> <li>Expanding distribution &amp; charging infrastructure of zero-emission vehicles</li> </ul>	<ul style="list-style-type: none"> <li>Reducing pollutant emissions from business sites</li> <li>Intensive management of pollutant substances such as ozone</li> <li>Strengthening pre- and post-management of odor</li> </ul>	<ul style="list-style-type: none"> <li>Improving consumer-oriented atmospheric information services</li> </ul>
<b>Performance in 2023</b>	<ul style="list-style-type: none"> <li>Contributed to the reduction of approximately 1.98 million tons of GHG through the rational operation of a national GHG reduction system</li> <li>Reduced approximately 15,000 tons of GHG by expanding financial support for reduction facilities for companies participating in the emissions trading system (KRW 105.5 billion, 94 companies)</li> <li>Supported establishment of basic plans for 137 municipalities by launching and operating a dedicated ACT Center</li> <li>Increased participation in the Carbon Neutral Point System by 3.28 million people (cumulative) by adding items that are closely related to daily life, such as using a tumbler</li> <li>Increased supply of electric vehicles by approximately 18,000 units by increasing subsidies, including revision of guidelines</li> </ul>	<ul style="list-style-type: none"> <li>Achieved a 9.6% reduction year on year through customized management of large/small business sites</li> <li>Reduced approximately 11,000 tons of ozone substances in living areas through onsite consultation</li> <li>Achieved 37.1% improvement in odor substances through collaboration with other organizations</li> </ul>	<ul style="list-style-type: none"> <li>Achieved first place in public institution information disclosure by providing 14,000 pieces of air quality information free of charge annually</li> </ul>

## Realization of Carbon Neutrality and Clean Air



### [National] Operation of the GHG reduction system

#### Operation of GHG emission trading system

K-eco is the public institution dedicated to operating the GHG emission trading system that manages the emission sources that account for more than 70% of the country's total GHG emissions, while actively providing policy support, such as allocation of emission rights to each company and certification of emissions, so that the government and municipalities can effectively achieve national greenhouse gas reduction goals. The emission trading system is a scheme that allocates emission permits to companies that emit large amounts of GHGs by requiring them to follow an allocated GHG emission quota, and allows them to purchase any shortfall in the emission trading market and sell the surplus. The scheme is participated by approximately 782 companies in 69 industries in six major fields, namely conversion, industry, buildings, transport, and waste. The GHG emission trading system allocates the emission amount that is stricter than each company's past emission performance\*, leading to a decrease in the average emissions\*\* by about 12%.

\* Allocation of 589 million tons in 2022, 8% stricter than past emissions of 639 million tons (2017-2019)

\*\* 990,000 tons/company in 2017-2019 and 870,000 tons/company in 2022

#### Operation of GHG target management system

K-eco implements the overall management of the GHG target management system\* and waste at business sites in response to the nation's medium- to long-term greenhouse gas reduction target. GHG target management system identifies companies that emit more than a certain amount of green gas each year, designates them as watch list companies and sets reduction targets for them. In 2023, we identified and designated 363 companies and inspected the performance of the GHG target management system of 319 companies. Moreover, we paid out subsidies for SMEs seeking help with GHG reduction as well as incentives for companies with outstanding performances. We have improved the convenience of management companies by supporting the improvement of the National Greenhouse Gas Management System (NGMS).

With the rollout of a public sector GHG target management system, we support the roadmap for carbon neutrality in the public sector that meets national goals and the international community's environmental pledges. In 2023, we reviewed the reduction performance of 789 public sectors and conducted onsite diagnoses and carbon neutrality consultations for 30 facilities targeting organizations with shortfalls in reduction.

\* GHG target management system: The GHG target management system is a scheme to set and manage GHG reduction goals by designating and managing companies and business sites with GHG emissions above a certain level to achieve the national greenhouse gas reduction goal in accordance with the Framework Act on Carbon Neutrality and Green Growth.



### Carbon-neutral financial operation

#### • Green budgeting for GHG reduction

The green budgeting for GHG reduction, being in effect since 2022, has been adopted to ensure that the national finance contributes to carbon neutrality. Through this system, state ministries prepare and submit a "green budget" that analyzes the impact of budgeted projects on GHG reduction. As an institution specializing in system operations, K-eco provides technical work to establish a system operation system, analyzes the impact of budgets and funds on national GHG reduction, and conducts training and consulting, so that each ministry and public institution can faithfully prepare a green budget. Along these lines, we plan to launch pilot projects to expand the scope of application to local finances and develop a feasibly realistic system that can contribute to carbon neutrality by 2050 through continuous performance management of budgeted projects supported by green budget and settlement.

## Realization of Carbon Neutrality and Clean Air



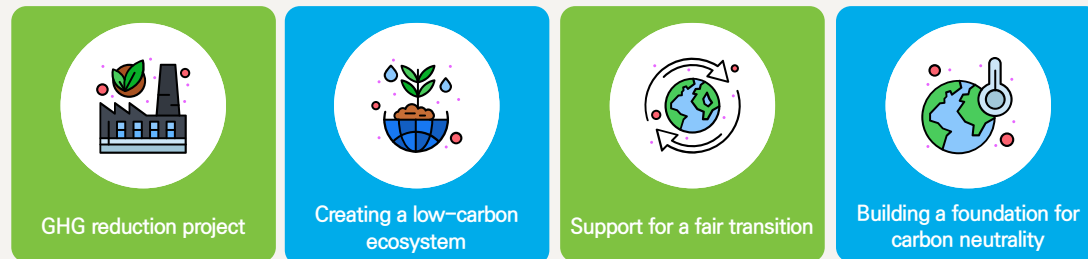
### [National] Operation of the GHG reduction system

#### • Climate Response Fund for effective response to climate change

K-eco has been designated as an institution to run the Climate Response Fund established in accordance with the Framework Act on Carbon Neutrality and Green Growth, and makes every effort to meet the 2030 National Greenhouse Gas Reduction Target (NDC) and 2050 Carbon Neutrality. The Climate Response Fund was established to raise the financial resources needed for effective climate crisis response, transition to a carbon-neutral society, and green growth promotion. K-eco's Climate Response Fund Center supports the Ministry of Economy and Finance in establishing the operational plan for the Climate Response Fund. Based on the Climate Response Fund's budget, we analyzed the GHG reduction effect by calculating and reviewing GHG emissions and strengthening financial soundness through efficient operation and monitoring of funds.

The fund scale is KRW 2.5 trillion as of 2023, and we manage the fund by dividing it into four core programs. Moreover, we support the Fund Management Council with its efficient management, while holding expert forums in each field (nine times in 2023), resulting in enhanced expertise and improved consistency with the National Master Plan, which accelerates neutrality by improving national carbon management.

#### Climate Response Fund's 4 core programs



### Creating an eco-friendly mobility ecosystem

#### • Distribution of zero-emission vehicles & expansion of charging infrastructure

K-eco is committed to accelerating the transition to zero-emission vehicles by constructing public sector-led electric vehicles and charging infrastructure. In 2023, we installed 410 electric vehicle fast chargers in public lands, rest areas, sleepy rest areas, and gas stations, and 200 of them were ultra-fast 200kW chargers (capable of charging approximately 80% in 30 minutes) that were installed at transportation hubs, government offices, and gas stations. Moreover, we supplied 210 units of 100kW chargers to high-demand locations, and installed 7,824 of a total of 32,169 fast chargers in 2023, contributing to the transition to zero-emission vehicles. Moreover, to expand the supply of electric vehicles, we provided KRW 130.5 billion in subsidies for electric vehicles (15,830 units) operated by companies and the rental/leasing industry. We also distributed KRW 81.1 billion in subsidies for slow-charging facilities (72,285 units) targeting living bases, such as apartment complexes.

#### • Expansion of electric & hydrogen vehicle charging infrastructure

K-eco has established public-private communication channels to expand the construction of hydrogen charging stations and undertakes activities like reviewing and identifying adequate hydrogen charging station sites. We have launched a Help Desk platform on our integrated website for emission-free vehicles to handle all inquiries on hydrogen charging stations in a one-stop approach, executing 56 projects through the site in 2023. We found possible sites nationwide to construct hydrogen charging stations, confirmed two projects (special and liquefied), and secured and distributed KRW 11.2 billion in government subsidies.

To support the hydrogen charging infrastructure policy in 2023, we conducted 35 technical reviews to approve hydrogen charging station installation plans, and in August, we formed an agreement for the construction and operation of hydrogen infrastructure geared to large-scale mobility. Moreover, we undertook a PR campaign on eco-friendly hydrogen mobility through the media, held an event called "Find a Hydrogen Bus" to pay tribute to Environment Day, and provided information on hydrogen mobility through a hydrogen newsletter.

### [Industry] Carbon neutral response and implementation support

#### Corporate technical support related to the EU CBAM

With the introduction of global carbon trade regulations such as the EU CBAM, the need for domestic export companies to calculate GHG emissions has emerged.

K-eco operates various systems that require the calculation of GHG emissions and manages each system's emission calculation, reporting, and verification regulations. Based on this experience, K-eco has operated the EU CBAM Help Desk since October 2023 to provide technical support for emissions calculations to exporting companies with difficulty calculating their products' emissions. Moreover, we published and distributed the "Easy-to-understand Emissions Calculation Guide" to help users easily understand the emission calculation process for products in six industries. We have also provided CBAM response training.

Responding to international carbon trade regulations begins with calculating related emissions. As an organization specializing in GHG emissions calculation, K-eco plans to continue to provide support to strengthen corporate capabilities through training, consulting, help desk operation, and publishing guidebooks so that export companies can calculate emissions.

#### Technical consulting support for carbon reduction facility installation

K-eco distributes subsidies to SMEs that have difficulties in GHG management and response when installing reduction facilities and incentivizes companies with excellent GHG reduction capabilities. Moreover, we have revised the guidelines to allow for sales of excess reduction performance in the emission trading market.

Along these lines, we have increased support through consultations, training programs, and onsite visits to strengthen corporate capabilities, expanded onsite training and consulting (18 companies in 2022 → 25 companies in 2023), and reduced the burden on company managers by streamlining documents to be submitted.



#### Carbon neutrality support for SMEs

<b>Subsidy for installation of reduction facilities</b> National subsidy (50%) when installing GHG reduction facilities such as fuel conversion & high-efficiency facilities (2021~) - KRW 1.3 billion for 15 projects	<b>Incentive for excellent performance</b> Differential incentives according to the amount of GHG reduction that exceeds targets by SMEs (2021~). - KRW 1.2 billion for 71 companies	<b>Trading of excess reduction allowed</b> Revision of guidelines to allow sales of reduction performance to exceed target in the emissions trading market (November) - (Existing) No sale in the emissions trading market
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#### Technical support using CCU and K-eco's patented technologies

K-eco has built a domestic carbon reduction (CCU) demonstration facility using microalgae for the first time in collaboration with the private sector. We have undertaken a CCU technology development project as an in-house venture project, and based on a free technology provision agreement with Philip Morris Korea (PMK), PMK invested the project cost and provided the site at its Yangsan factory for field demonstrations at the end of May 2023.

The facility operates on the principle of reducing carbon dioxide discharged from the factory by absorbing it with the photosynthetic action of microalgae cultured through K-eco's patented technology on a scale of 2,000 liters on a land area of 18 m<sup>2</sup>. It is planned to expand the development and distribution of carbon reduction (CCU) technology further using microalgae.

## Realization of Carbon Neutrality and Clean Air



### [Public] Support for carbon-neutral life practices

#### Operating the Carbon Neutral Point System (home, energy, and practice areas)

To reduce GHG emissions in the non-industrial sector, K-eco operates the Carbon Neutral Point System\* that prompts people to practice carbon neutrality daily. It is broadly divided into green life practice areas, energy areas, and automobile areas to incentivize public participation.

- In the field of green life practices, carbon neutrality action items were expanded and implemented, and the number of participants in 2023 was 1 million, an increase of 135% compared to 740,000 people last year. There were also 60 participating companies, 42 more than last year, and KRW 8.9 billion was paid out in incentives.
- In the energy field, 2.22 million people participated, up 100,000 from last year, reducing 662,000 tons of CO<sub>2</sub>eq. The participation rate increased through online and offline PR campaigns and collaboration with related organizations (Busan Bank and Korea Post provided 0.2~0.3% preferential interest rates.).
- In the automobile sector, 14,000 tons of CO<sub>2</sub>eq were reduced with 52,909 participants (up 9,751 people year on year). Through information linkage with the Ministry of Land, Infrastructure and Transport, the process of submitting supporting materials has been simplified, improving convenience for the participants.

K-eco won the "Minister of Science and ICT Award" for its contribution to developing and utilizing the electronic document industry, such as issuing electronic receipts through the Carbon Neutral Point System.

- Carbon Neutral Point System launched under the name "Carbon Point System" in the energy sector (in terms of electricity, water, and gas reduction) and broadened its scope to the automobile sector (mileage reduction) in 2020 and green living practices to grant points for practicing carbon neutral initiatives in 2022. In March 2023, the name was changed to the "Carbon Neutral Point System" by integrating the points of the systems in these areas.

Carbon Neutral Point  
Practicing green life



Carbon Neutral Point  
Energy



Reducing CO<sub>2</sub>  
emissions Carbon  
neutral point vehicles



#### Operating an integrated website for zero-emission vehicles

K-eco operates an integrated website for zero-emission vehicles. Visitors to the website can check the locations and operation information of electric vehicles and hydrogen charging stations nationwide. Moreover, information necessary for everyday life, such as the purchase subsidy for emission-free vehicles and charging fees, confirmation of emission-free vehicles, and vehicle management guidance, is also provided. Users can ask questions by participating in the forum, and the inconvenience complaint reporting center actively collects and responds to users' opinions and inconveniences.

EV  
integrated website for  
emission-free vehicles



#### Website for vehicle exhaust fumes

K-eco operates the website for vehicle exhaust fumes (MECAR) and manages automobile emissions data at each stage of manufacturing, operation, and scrapping. We help establish preemptive policies using big data by converging and analyzing the data and have undertaken a project to build automobile environmental big data since 2021 to provide customized services for users (government, industry, and citizens). Currently, we operate 12 analysis tasks, especially providing information on automobile inspection stations concerned about insolvency by analyzing big data and establishing a two-wheeled vehicle management system. In 2023, we contributed to increasing public awareness by providing the "My Car EG Check" service for users to check the emission analysis information of their vehicles.

mecar



### [Municipalities] Support for establishing the master plan for carbon neutrality

#### Establishment and operation of a dedicated organization for the ACT Center

The Framework Act on Carbon Neutrality and Green Growth was enacted in March 2022, and the Master Plan for National Carbon Neutrality and Green Growth was established in April 2023. Accordingly, 243 metropolitan and municipal governments nationwide must establish the Master Plan for Carbon Neutrality by 2025 and check the implementation status yearly. To this end, K-eco opened the Municipality Carbon Neutral ACT Center\* in March 2023 and supports establishing municipalities' Master Plan for Carbon Neutrality.

In 2023, we reviewed and supported a Master Plan for Carbon Neutrality of 95 municipalities and conducted on-site training (6 times) and visit-based consultations (17 places) in each region. We supported the establishment and operation of municipality's carbon neutrality support centers (37 in total) and held conferences to strengthen cooperation between the central government and municipalities for implementing regionally led carbon neutrality.

\*ACT Center: ACT is an acronym using the first letters of "Assist", "Consulting", and "Together" and represents the center's role as a dedicated support organization for establishing and implementing the Master Plan for Carbon Neutrality for 243 metropolitan and municipal governments nationwide.



| 2023 Awarding ceremony for municipalities showing the best practices in carbon neutrality |

### [International] Efforts to support GHG reduction projects

#### International GHG international reduction project

K-eco undertakes international GHG reduction projects in which GHG reductions are made overseas, and the reduction performance is transferred to achieve the national GHG reduction goal. These projects are executed through domestic companies' participation, and with 13 projects currently underway in eight countries, we expect to reduce GHG emissions by 1,521,000 tons/year as a result.

K-eco designs and obtains permits for GHG reduction projects in Mongolia, seeking to reduce GHG emissions by 56,000 tons annually. Moreover, we concluded an MOU with Sri Lanka to issue reduction amounts for nine projects registered in the international reduction system and convert them to satisfy the Paris Agreement, with the resulting reduction amount at 64,000 tons per year.

We also pursue ways to improve the system to achieve international reduction goals through a public-private council and have signed an international GHG reduction project agreement with 26 companies (in nine business areas) through a public offering in the second half of 2023.

K-eco plans to secure practical international reduction results by supporting the expenses necessary for the feasibility studies of selected projects, and in the case of installation support, providing the investments for installing reduction facilities in target countries. Furthermore, we plan to discover high-quality international GHG reduction projects and expand verified projects through cooperation with the relevant countries' governments. Through these efforts, we will promote green industry exports and contribute to securing results that enable global reduction of greenhouse gas emissions.



## Realization of Carbon Neutrality and Clean Air



### K-eco's Net-Zero activities

As a specialized environmental management organization, K-eco has declared 2040 Organizational Net Zero to lead the government's implementation of 2050 Carbon Neutrality and is making efforts to disseminate and accelerate awareness of carbon neutrality.

#### Building energy savings

- Solar power generation facilities

K-eco has installed solar power generation facilities in governmental buildings and air and water quality measurement stations since 2019. In 2023, 12 additional solar power generation facilities (643 kW) were installed, and a total of 43 facilities are in operation as of the end of 2023. The total annual power generation is 2,836 MWh, which has the effect of reducing annual GHG emissions by 1,356 tCO<sub>2</sub>eq.

#### Solar Power Generation Facilities Status for 2023

No.	Facility Type	Facility Name	Date of Installation	Generator Capacity (kW)
1	Storage facility	Yangju storage facility	'23.3.31.	300.00
2	Air monitoring network	Pyeongsan-dong Atmospheric Monitoring Station	'23.2.22.	3.00
3	Air monitoring network	Yaeum-dong Atmospheric Monitoring Station	'23.3.20.	3.00
4	Air monitoring network	Sinpung-ri Atmospheric Monitoring Station	'23.7.17.	3.48
5	Water monitoring network	Naeseongcheon Water Quality Automatic Measuring Station	'23.8.25.	3.00
6	Water monitoring network	Hoesang Water Quality Automatic Measuring Station	'23.8.25.	3.00
7	Water monitoring network	Wicheon Water Quality Automatic Measuring Station	'23.8.25.	3.00
8	Air monitoring network	Jeungpyeong-gun Atmospheric Monitoring Station	'23.11.30.	3.00
9	Governmental building	Chungcheong Area Environmental Headquarters Building	'23.12.15.	30.25
10	Reserve storage facility	Anseong Recyclables Storage Base	'23.12.21.	275.55
11	Water monitoring network	Milyang Water Quality Monitoring Station	'23.12.26.	7.97
12	Water monitoring network	Sangdong Water Quality Monitoring Station	'23.12.26.	7.97

**Solar power generation equipment**



**Operation of 43 sites**  
(Power generation: 2,836MWh)



**Reduction of 1,356 tCO<sub>2</sub>eq annually**

- Energy efficiency improvement

In June 2023, K-eco performed the insulation waterproofing work on the roof of the headquarters' Green Building (waterproofing area: 2,077.5m<sup>2</sup>). It applied a composite waterproofing method to improve the self-sufficiency rate of building energy use, increase energy efficiency, and prevent flood damage.

We installed dustproof windows in September to improve indoor air quality and natural ventilation efficiency by blocking external fine dust and harmful substances.

In the second half of 2024, we plan to conduct an energy diagnosis on old governmental buildings to determine reasonable energy utilization plans and facility renovation and identify targets and methods to reduce GHG emissions in the building sector.

### Strengthening air quality management

#### Expansion of eco-friendly infrastructure

K-eco is procuring 100% eco-friendly vehicles (electric & hydrogen vehicles) for new business vehicles. As of the end of 2023, we are operating 244 eco-friendly vehicles, which has the effect of reducing 488 tCO<sub>2</sub>eq per year. We also contribute to reducing air pollution and GHG emissions more effectively by fully implementing the no-driving day system (last number day and selective day systems) for all employees.

Moreover, K-eco has rolled out a smart work reporting system and established a paperless reporting culture. These efforts have reduced 5,700 tCO<sub>2</sub>eq (approximately 2 million sheets of printing paper) every year. We also minimize power use by expanding cloud virtualization servers for our information system.

#### Eco-friendly life practice

K-eco incentivizes the participation of all employees by conducting the K-eco Green ESG Action Campaign, which includes 10 carbon-neutral activities that can be easily practiced at work. We undertake carbon reduction activities, such as issuing electronic receipts and using tumblers and prompt participation by visualizing the amount of carbon reduction attributed to individual activities (walking, zero leftovers, water conservation, etc.) through the mobile app Haenggarae (meaning "tossing"). As a result, 2,902 employees participated in 2023, resulting in a reduction of 48 tCO<sub>2</sub>eq. Moreover, we select employees showing excellent ESG practices through their monthly participation in the campaign and encourage them to undertake these activities.

In September 2023, as part of carbon reduction activities, we received 1,600 unused items from employees and held the Flea Market for Environmental Love. Through these activities, we have created an eco-friendly consumption culture and donated the proceeds (KRW 5 million) to Save the Children, a non-profit organization.

#### Reduction of air pollutants at business sites

Improving air quality requires managing business sites that emit a lot of pollutants. Moreover, it is necessary to attach TMS\* to chimneys in business sites to monitor whether pollutant standards are exceeded. Accordingly, K-eco conducts a process diagnosis of business sites showing high emissions, provides customized technical support considering the characteristics of new outlets and monitors sites at risk of exceeding emission standards.

We also support a crackdown on business sites with concerns or suspicions of illegal emissions and intensively monitor emissions from large-scale business sites, such as coal-fired power plants, to reduce air pollutant emissions during high fine dust concentration periods.

Moreover, we monitor facilities (942 sites) with TMS attached to the chimney in real time and respond to the forecast/warning alarm if emission standards are exceeded. We have disclosed chimney TMS concentrations in real time through the CleanSYS system since April 2020 and increased the data reliability through automatic screening and remote search for abnormal measurement data.

\* Chimney TMS (tele-monitoring system): This system measures air pollutants emitted from chimneys at business sites in real time using an automatic measuring device.



## Realization of Carbon Neutrality and Clean Air



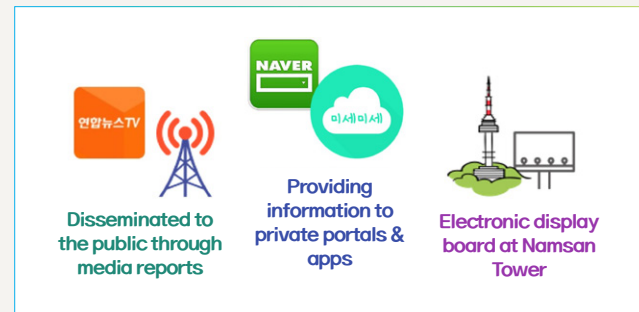
### Strengthening air quality management

#### Air environment information services

K-eco supports the government's reduction policy for the seasonal fine dust management system and emergency reduction measures to respond to high concentrations of fine dust and ozone. During the seasonal management system period (December to March), we undertake the role of a control tower by performing the preliminary inspection of the response system, reporting plan results, monitoring emergency issuance requirements, and disseminating the information to the public. We provide customized services through the Air Korea\* website and improved speed and convenience by enabling a widget service that presents real-time information on smartphones. Moreover, we minimize damage to the public and prompt environmental practices through education and PR activities using online and offline media. We provided environmental practice education targeting those sensitive to fine dust and ozone concentrations and built a public consensus by operating Air Korea's promotional booth for public participation at the International Climate Industry Expo.

*\*Air Korea: This public environmental information service system provides comprehensive information on the atmospheric environment, including real-time air pollution levels nationwide, forecasts and warnings, and public action tips.*

#### Air Korea information access through various media through OpenAPI



#### Resolving odor pollution in local communities

K-eco provides specialized technical support for odor reduction to resolve local complaints of odor. We conduct customized consulting for various sources of odor emissions to analyze the causes and propose reduction measures. Through these efforts, we have improved the odor control capabilities of 290 business sites in 2023. Moreover, we are strengthening the effectiveness of odor management and responding to current odor issues in local communities through collaboration with related organizations. For example, to resolve the livestock odor that had persisted for over 10 years in Gangwon Province, we worked with multiple organizations to devise a plan for overcoming the problem. In 2023, we conducted a detailed survey of six areas vulnerable to odor and increased the transparency and credibility of the survey results through resident participation and briefing sessions. Moreover, we have undertaken odor improvement projects for 164 public environmental facilities and laid the foundation for the digital management of odor information by launching a project for an integrated odor management system rollout.

### Revitalizing the Goheung Traditional Market by improving air quality

The Anti-Corruption and Civil Rights Commission's analysis of civil petitions of traditional markets over the past two years showed that the demands for environmental improvements, such as odor mitigation, had continuously increased with such environmental issues being a major obstacle to their economic revival.

In the case of Goheung Traditional Market, air quality control was more required than in other markets because its main selling product was grilled fish using charcoal. It meant that when cooking food using charcoal, merchants and visitors were exposed to atmospheric pollutants such as carbon monoxide (CO), fine dust (PM10), ultrafine dust (PM2.5), and hydrogen sulfide (H2S).

Accordingly, K-eco signed an MOU with Goheung-gun and the Small Enterprise and Marketing Service (SEMAS) in September 2023 and completed the Air Quality Improvement in Goheung Traditional Market project.



#### Establishment of a platform to improve air quality in Goheung Traditional Market

K-eco	Goheung-gun	SEMAS	Social enterprises
<p>Proposal for improvement of onsite measurement in traditional markets</p> <ul style="list-style-type: none"> <li>Installation of additional blowers to resolve insufficient airflow</li> <li>Adjustment of the appropriate distance between the kitchen counter &amp; the hood</li> <li>Installation of dampers in each shop to maximize blowing efficiency</li> </ul>	<p>Business consultation with Goheung-gun, which is responsible for managing the traditional market</p> <ul style="list-style-type: none"> <li>Assuming the burden of costs for improving ventilation facilities, such as adding blowers</li> <li>Management, supervision, &amp; maintenance of existing ventilation facilities</li> </ul>	<p>Cooperation with market merchant associations and sharing of status data</p> <ul style="list-style-type: none"> <li>Sharing information such as business interruption when ventilation facilities are improved</li> <li>Survey of the merchant association &amp; visitors</li> <li>Internal &amp; external PR when upgrading ventilation facilities</li> </ul>	<p>Consulting for ventilation facility construction companies</p> <ul style="list-style-type: none"> <li>Sharing improvement analyzed and proposed by K-eco</li> <li>Work exchange during construction, including construction supervision</li> </ul>

Given that the market status survey found that selling grilled fish may cause respiratory disorders in merchants and customers due to insufficient airflow and hood exhaust, we improved the hood exhausts by increasing the airflow. As a result, air pollutants such as nitrogen oxides and fine dust were reduced by about 60%.

▷ Improvement of the hood exhaust volume (0.109 → 0.5 m/s) by increasing air blowing (400 → 1,000 m<sup>3</sup>/min) in the market

#### Air quality data of the Goheung Traditional Market

Subject	NOx(ppm)	CO(ppm)	PM10(μg/m3)	PM2.5(μg/m3)	H <sub>2</sub> S(ppm)
Average before improvement	0.027	1.9	70.45	48.71	3.55
Average after improvement	0.011	0.76	28.18	19.48	1.42
Air quality standards	0.1 or less	25 or less	100 or less	35 or less	10 (TWA* basis)

[Realization of customized ESG management by improving air quality in traditional markets]

- Prime Minister's Award for Contribution to Reinivigation of Traditional Markets (October 2023)
- Minister of Environment Award for the Best Practices in Social Economic Support (December 2023)





## Creating a Healthy Water Environment

Contaminated water and soil can lead to environmental pollution and destruction of the ecosystem. K-eco strives to protect the health and safety of the people and maintain a sustainable environment by managing and conserving water and soil as resources.

We constantly prepare for climate change through efforts, such as urban flooding prevention and using recycled sewage water. We have strengthened the basin management system at the basin level by opening the Basin Sewerage Support Center, and are also establishing a support system to preserve and restore the health of the aquatic ecosystem through scientific water environment monitoring and rapid water pollution control. We have also strengthened monitoring by attaching 24-hour real-time pollutant measurement instruments to the discharge ports of public sewage and wastewater treatment plants and wastewater discharge plants nationwide and provided technical support for abnormal data. Moreover, we operate the National Water Industry Cluster to support the entire process for water companies to develop technologies and penetrate overseas markets.

### Goal & implementation strategy

Applicable projects	Operation of the Basin Sewerage Support Center, installation & operation of water quality & non-point measurement network, etc.	Soil & groundwater environmental survey, urban flooding prevention projects, water pollution accident prevention, etc.	Support for water sector startups, the development & commercialization of future water technologies, etc.
Performance goals	Reduction of river pollution & improvement of water quality by strengthening the water management system	Strengthening water safety through water pollution source prevention & response activities	Taking a leap toward a global water industry hub through water technology innovation & support and fostering of water companies
Implementation tasks	<ul style="list-style-type: none"> <li>Strengthening the basin-specific water management system according to the transition to basin-level water management</li> <li>Upgrading the water management system by securing and utilizing precise water data</li> <li>Preemptive removal of water pollution sources through continuous efforts to eliminate blind spots in water management</li> </ul>	<ul style="list-style-type: none"> <li>Creating a healthy water environment through careful management of groundwater &amp; soil contamination sources</li> <li>Establishing a water disaster prevention system to respond to the climate crisis</li> <li>Establishing a disaster control environment that provides public safety by strengthening water disaster infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Enhancing corporate support for the growth of water companies and reinvigorating green industry exports</li> <li>Promoting technology development using the national water industry cluster infrastructure</li> <li>Improving management systems to reinvigorate the domestic water industry</li> </ul>

### Major outcomes

Subject	Implementation	Performance in 2023
Reducing river pollution and improving water quality	Operation of Basin Sewerage Support Center	<ul style="list-style-type: none"> <li>Setting the foundation for ICT operation by launching the Han River Basin Sewerage Support Center and establishing an integrated control room</li> </ul>
	Increasing river tributary monitoring rate	<ul style="list-style-type: none"> <li>Annual systematic management of river tributary monitoring rates by establishing a mid- to long-term plan for installing an automatic water quality measurement network</li> <li>Strengthening water quality monitoring in the Chungcheong area with timely construction of a small-scale monitoring network for Geumgang tributaries (66.9% tributary monitoring rate)</li> </ul>
	Actively encourage treatment of sewage & wastewater effluent discharged from plants within water quality standards	<ul style="list-style-type: none"> <li>Achieved 97.7% of sewage and wastewater treated within legal water quality criteria by strengthening remote monitoring of sewage &amp; wastewater discharging business sites (Securing 8.3 billion tons/year of water resources treated within standards)</li> </ul>
Enhancing water safety	Establishing a water disaster response system	<ul style="list-style-type: none"> <li>Forming a water disaster response team and providing rapid support for recovery from damage to public sewage facilities (33 locations)</li> <li>Strengthening proactive response to heavy rainfall by designating priority management areas for sewage maintenance (21 locations) and inspecting rainwater drains, manholes, &amp; pipes in areas at risk of flooding (5 environmental offices and 9 municipalities)</li> </ul>
	Preventing the spread of water pollution accidents	<ul style="list-style-type: none"> <li>Achieved zero large-scale water pollution accidents</li> <li>Won an institutional commendation for hosting the Safe National Disaster Training (June)</li> <li>Began the preparation of the basic plan, land purchase, &amp; design for the Integrated Disaster Management Center, the national general control tower</li> </ul>
	Resolving water shortage by improving water circulation	<ul style="list-style-type: none"> <li>Securing 430,000 tons/day of new water resources by securing multiple supply sources through expansion and discovery of water reuse supply models to resolve industrial water shortages</li> <li>Contributing to improving people's water welfare by supporting safe groundwater in areas with weak water supply</li> </ul>
Taking a leap toward a global water industry hub	Preemptive removal of water pollution sources	<ul style="list-style-type: none"> <li>Environmental investigation of areas at risk of soil &amp; groundwater contamination nationwide (424 locations) and purification of 108,000 m<sup>3</sup> of contaminated soil</li> <li>Issuance of certificate for non-point pollution reduction facility performance (42 products) and increase in pollutant reduction efficiency of reduction facilities by 1.5%p (85.6 → 87.1%)</li> </ul>
	Development of future water technologies	<ul style="list-style-type: none"> <li>Acquisition of 47 intellectual property rights, etc., by developing future water technology through active digital &amp; carbon-neutral water technology verification support (24 companies)</li> </ul>
	Expanding support for overseas expansion of the water industry	<ul style="list-style-type: none"> <li>Achieved the overseas export target of KRW 109 billion for tenant companies by linking export support projects, such as local performance evaluations, overseas exhibitions, export consultations, and ODA projects</li> </ul>

### Awards



- Grand Prize in the 2023 Performance Sharing for Environmental Data Leader Training Analysis Club (hosted by the Ministry of Environment)
- Encouragement Award in the 2023 Data Analysis & Utilization Contest (hosted by the Ministry of the Interior & Safety)
- Grand Prize for establishing a sewage information service in neighborhoods (Government Innovation Best Practices Contest)
- Commendation for the water pollution control project to prevent the spread of pollution in public waters (Nakdong River Commissioner) and a commendation for contribution to the Safe National Disaster Training (Minister of Environment)

## Creating a Healthy Water Environment



### Reducing river pollution and improving Water quality by strengthening the water management system

### Basin-centered integrated water management

K-eco works to reduce river pollution and improve water quality by upgrading the water management system of municipalities to basin-level management, and provides technical support for compliance with national and basin water management plans to ensure that water management goals are consistent between the country, basin, and municipalities. We also support the efficient operation of the water management budget by checking the water management plans in advance and devising the Master Plan for Basin Water Management (Han River) for basin-level water management, so that the implementation plan and evaluation system are established to improve implementation capabilities.

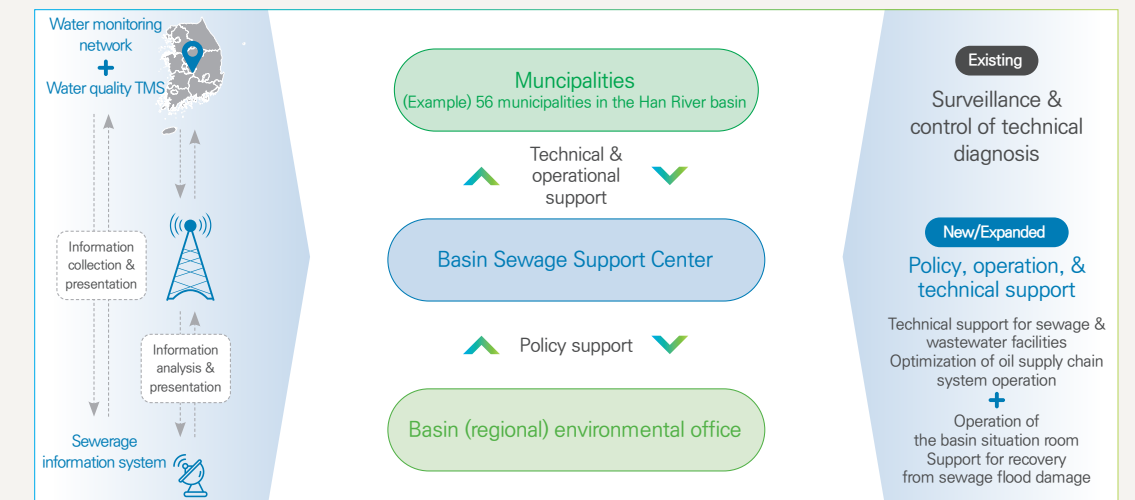
### Basin Sewerage Support Center

K-eco launched the Basic Sewerage Support Center to increase sewage operation and management efficiency, improve river water quality, and prevent urban flooding by reflecting the basin characteristics of sewage, efficiently managing costs, and providing data-based technical support as part of stronger basin management. We also constructed an integrated monitoring and control room (National Basin Sewerage Center) to provide technical support for optimal sewerage operations based on big data. The launch of the Han River Basin Sewerage Support Center has provided technical support for public sewage treatment facilities and rapid restoration and onsite inspections of facilities damaged by heavy rain (33 locations).



| Opening ceremony of the National Basin Sewerage Center (2023.11.2.) |

### Establishment of an integrated information system for basin sewage



### Strengthening automatic water quality measurement network

Data generated by the automatic water quality measurement network serves as a standard for issuing water pollution warnings and is used as a reference for environmental policies. Accordingly, K-eco participated in the international proficiency test for automatic water quality measurement data, with all 41 participating measuring stations attaining the highest grade in international recognition for data reliability. Moreover, we established a small-scale monitoring network to strengthen the monitoring of water quality for residential, industrial, and agricultural water in the Chungcheong region by monitoring water pollution in the river tributaries of the Geumgang River system.

### Strengthening the remote water quality monitoring system

K-eco monitors the discharge ports of public sewage and wastewater treatment plants and wastewater discharge facilities nationwide round the clock by attaching real-time pollutant measuring instruments. In 2022, an integrated business site control system was rolled out to automatically select abnormal data and conduct video surveillance of measurement stations. In 2023, the possibility of improper operations of business sites was blocked through facial recognition-based access management to measurement stations. Furthermore, we provided technical support for attaching water quality measurement instruments and identifying abnormal data, while also providing all-around support, such as recovery support for flood damage.

## Creating a Healthy Water Environment



### Strengthening water safety through water pollution source prevention & response activities

#### Preemptive flood damage prevention & management system

K-eco has strengthened urban flooding prevention by designating 21 sewerage maintenance areas in 2023. Since 2013, a total of 194 locations have been designated to prevent urban flooding due to heavy rainfall with stronger proactive responses by improving sewage pipelines, expanding pumping stations and storage facilities, and inspecting rainwater drains, manholes, and pipelines for maintenance in areas at risk of flooding (5 environmental offices and 9 municipalities).

#### Water Pollution Control Center

K-eco has established a water pollution control center to prepare for accidents that damage the water quality and ecosystem of public waters, and strives to create a safe water environment. We undertake prevention activities through joint training with related organizations, provide response support during accidents, and monitor water pollution levels through river patrols, etc. Moreover, we operate a disaster control information and situation room round the clock to report water pollution accidents, disseminate the situation, and provide water quality measurement data and accident-related information through the water pollution response information system.

During the Geumgang Tire Factory fire and the Soyang River green algae outbreak in 2023, K-eco worked with related organizations, such as Korea Water Resources Corporation, to prevent the spread of large-scale water pollution accidents.

#### Establishment of a smart & collaborative water pollution control system

It is essential to check the extent of contamination and collect measure samples during a water pollution accident, but excessive manpower is required for the efforts, and secondary casualties due to the source of contamination may occur. Accordingly, we have safely and effectively responded to water pollution accidents using unmanned/autonomous boats developed in collaboration with a company specializing in water drones for multiple purposes, such as water quality measurement, sample collection, and video recording.



Then, we have expanded the water pollution prevention storage center to ensure rapid response to water pollution accidents. Each disaster control stockpile center stores disaster control supplies and equipment, such as oil fences, adsorbents, and disaster control boats, to prepare for water pollution accidents, such as oil spills, fish deaths, and chemical accidents.

Starting with the Disaster Control Stockpile Center for mid- and upper-streams of the Nakdong River in 2015, we opened new centers for the Mangyeong and Dongjin Rivers at the end of 2023, bringing the total to seven centers. Through this, we have strengthened our capabilities to respond to water pollution accidents in Korea's four major rivers and throughout the main stream.

#### Establishing a sewage & industrial wastewater supply chain to resolve drought

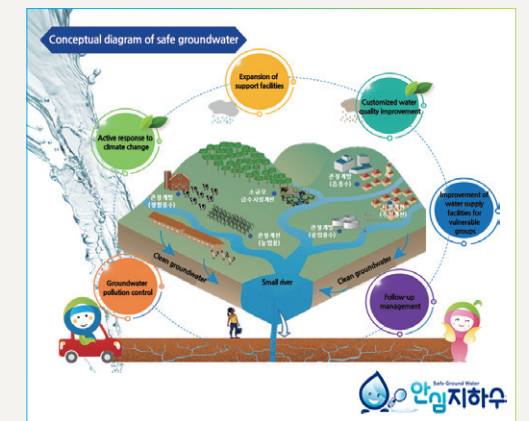
As droughts become more frequent due to climate change, water shortages pose a major risk for companies highly dependent on water use.

In response, we formed a consultative body with municipalities and established a supply chain using industrial water piping already being designed to supply recycled sewage water to Samsung Electronics. Moreover, to resolve the issue of industrial water shortages, such as plant shutdowns, due to extreme drought in the Yeosu Industrial Complex, we formed a public-private consultative body to establish a regional reused water supply model using internally generated wastewater. To solve the water shortage problem caused by climate change, we have identified a supply chain model using recycled water and secured new water resources that are not dependent on rainfall.

#### Support for safe groundwater in areas with poor water supply

As of the end of 2022, the nationwide water supply rate was 99.4%, but approximately 300,000 people remain in the blind spot as they lack enough access to water utility service (2022 Water Supply Statistics). To address this, K-eco has undertaken Safe Groundwater Support projects by improving old groundwater well environment and facilities and installing drinking water supply for areas with poor water service that are forced to use groundwater for drinking water (areas without tap water, areas vulnerable to drought, etc.) since 2022.

In 2023, we achieved a 100% water quality improvement rate by implementing environmental and facility improvements to 1,250 old groundwater wells in vulnerable areas. We also improved people's water utility welfare by installing four common drinking wells for vulnerable groups in water supply areas at Hongcheon-gun, Gangwon-do and Goheung-gun, Jeollanam-do. In July 2023, the Ministry of Environment, Hongcheon-gun municipality, and K-eco signed an MOU for Improving Water Welfare in Vulnerable Areas and conducted a pilot project to expand the safe groundwater support project (The Clear Groundwater Village).



#### Environmental improvement in areas vulnerable to soil contamination

Continuous management of potential pollutants that cause soil pollution is very important for preventing and managing soil and groundwater pollution. K-eco has performed a preemptive investigation of 424 locations at risk of contamination, such as industrial complexes, abandoned mines, and military facilities, and identified soil contamination (97 locations, 22.9%) that is likely to interfere with human health and property or the growth of animals and plants. We then reported the results to municipalities to bring about purification or restoration.

We added abandoned base metal mines, which were blind spots of pollution, to the survey target and expanded the budget (204%) and number of mines subject to survey (552%) through the revision of the 2nd abandoned mine survey plan. Moreover, we reduced the survey costs (20.5% per year) with improved investigation methods by grouping abandoned mines scattered nationwide around river basins and selecting survey priorities in the order of pollution level.

#### Contaminated soil purification projects

Contaminated soil and groundwater are risk factors that destroy public health and the natural ecosystem. K-eco undertook contaminated soil purification projects on urban sites the size of 150 soccer fields (approximately 1.08 million m<sup>2</sup>), including the Yongsan-gu area in Seoul (former U.S. military base & planned urban development area) and an apartment complex with 4,000 households in Bucheon, Gyeonggi Province to contribute to creating leisure and welfare spaces for the people and providing a safe living environment.

#### Management of non-point (unspecific) water pollutants

Managing non-point sources is critical since the water pollution load accounts for more than 70% of all pollution sources. In particular, K-eco has been operating a performance inspection system for non-point pollution reduction facilities since 2020 to prevent problems caused by the unchecked installation and distribution of non-point pollution reduction facilities whose performance has yet to be verified.

In 2023, we conducted performance tests on 42 products and issued relevant judgment letters, and also revised the performance test method and procedures to improve the system's effectiveness. As a result, the pollutant reduction efficiency of non-point pollution reduction facilities increased by 1.5%p (85.6% → 87.1%) year on year, and we are strengthening our inspection response to various technologies and eliminating barriers to market entry for technology-developed products.

## Creating a Healthy Water Environment



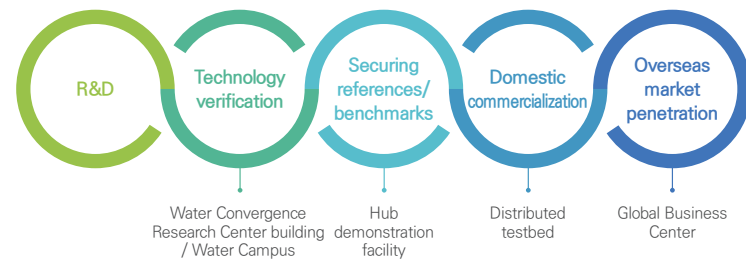
### Taking a leap toward a global water industry hub

#### National Water Industry Cluster

K-eco was selected as the operating agency of the National Water Industry Cluster (Guji-myeon, Dalseong-gun, Daegu) and has been operating it since 2019. We are responsible for developing innovative water industry technologies, strengthening international competitiveness, and serving as a key hub for the growth of the national water industry. This industrial cluster has established a full-cycle support infrastructure for water companies to develop technologies and penetrate overseas markets, supporting a one-stop support system to encompass the entire process for the water industry to secure footholds in the global market.

#### One-stop support system

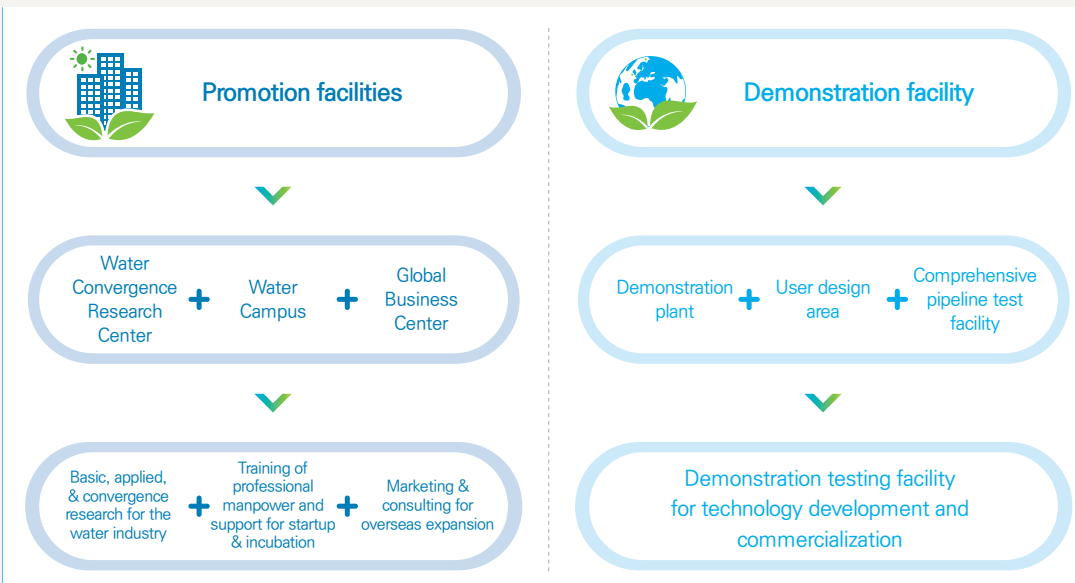
as the entire process for the domestic water industry to penetrate the global market



#### Water industry cluster facilities

The facilities of the water industry cluster are divided into promotion and demonstration facilities. The promotion facility consists of the Water Convergence Research Center, Global Business Center, and Water Campus, while the demonstration facility consists of a demonstration plant, a user design area, and a comprehensive pipeline test facility. The promotion facility trains research and professional manpower for water industry technology development, while the demonstration facility operates a demonstration plant (5,000 tons/day) round the clock for full-scale verification and performance testing of developed technologies and products. They provide the optimal environment for water management technology development verification by being designated as an inspection agency.

#### Major facilities & operations



#### Technical development & support outcomes

The corporate support project consists of 21 programs, including five business development projects (including Water Dream commercialization support), seven technology development projects (including carbon-neutral water technology verification support projects), three professional development projects (including a water industry-specialized graduate school), and six overseas expansion support projects (including overseas local performance evaluation). To develop future water technologies, we have developed demand-oriented water management technologies and supported programs that reflect industrial trends, such as digital and carbon neutrality, to support approximately 1,500 water companies over the past five years.

Companies can receive technical consulting and administrative support by participating in the water industry cluster's corporate support program and seeking strategic approaches to expand overseas beyond the domestic market.

##### Water Dream commercialization support project

- Consulting support for each stage of business startup for tenant companies and support for commercialization costs such as prototype production & patent application
- Support of up to KRW 10 million per company

##### Water Drea Sales Channel Support Project

- Support for excellent products from water industry ventures & startups to enter the public procurement market (Venture Nara)
- Selection and recommendation of excellent products twice a year

##### Water technology active digitalization project

- Support for technology development, demonstration, & commercialization costs for embedding smart functions in water technology products
- Support of up to KRW 600 million for 3 years per technology development case

##### Support for demonstration of carbon-neutral water technology

- Water technology products that realize carbon reduction
- Support for technology development, demonstration, & commercialization costs for high-efficiency & low-energy equipment

##### KWC Tech-Up Program

- Support for product development & technology enhancement for water companies by evaluating reliability and verifying performance of materials, parts, & equipment
- Selecting 10 companies each year for support for 1 year

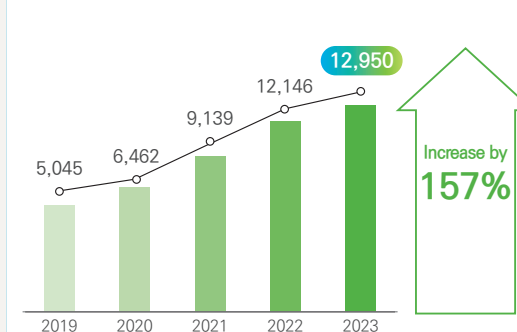
##### Support project lab for the growth of water companies

- Forming an industry-academia-research project lab to support technology development & commercialization costs in areas where technology development is difficult
- KRW 120 million to 180 million per team (support rate within 90%)

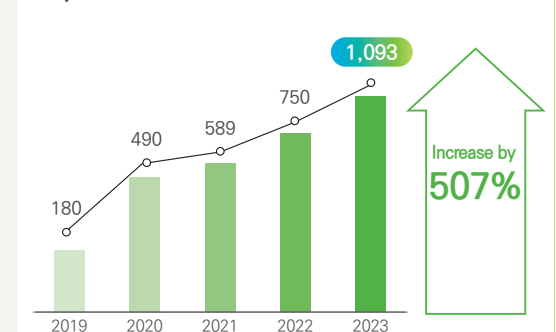
#### Regional win-win development

The National Water Industry Cluster has attracted 98% of the companies in the cluster through full-scale support, such as nurturing water business startups, research and development, commercialization, and overseas expansion over the past five years. The total sales of tenant companies are about KRW 4.5 trillion, and export figures are about KRW 300 billion. We have created tangible results, such as fostering approximately 3,500 water industry professionals through water management graduate schools and training for water industry employees, and created approximately 36,000 jobs by kickstarting the water industry cluster.

Sales status (KRW 100 million)



Export status (KRW 100 million)



## Transition to a Circular Economic Society

Transition to a circular economy through reduced waste generation and efficient use and recycling of resources is required. Accordingly, K-eco works to reduce waste generation and promote recycling by operating the Resource Circulation Maru (Resource Circulation Information System), EPR system, and waste charge system. Moreover, we have expanded support activities for recycling waste into energy and strengthening the management of industrial and medical wastes. Through this, we implement the transition to a sustainable circular economy by reducing resource waste and environmental pollution.



### Goal & implementation strategy

Applicable projects	Evaluation of packaging material & structure, recycling project for waste electric vehicle batteries, etc.	Recycling of household & business waste, waste plastic chemical recycling projects, etc.	Operation of waste information management system, illegal waste prevention projects, etc.
Performance goals	Revitalizing the K-circular economy by strengthening the resource virtuous cycle management system	Expanding resource use and reducing carbons by diversifying recycling methods	Strengthening the management system for proper waste treatment
Implementation tasks	<ul style="list-style-type: none"> <li>Minimizing waste in the design &amp; production stages and enhancing ease of circulation</li> <li>Driving the growth of the recycling industry by improving the waste resource recovery and recycling management system</li> </ul>	<ul style="list-style-type: none"> <li>Promoting new resources from discarded waste</li> <li>Improving systems and developing new technologies to create new markets</li> <li>Leading high-quality recycling by improving recycling quality</li> </ul>	<ul style="list-style-type: none"> <li>Establishing and operating a digital platform for national integrated waste management</li> <li>Creating a safe living environment for citizens free of inappropriate waste</li> </ul>

### Awards

- Using new digital technologies to block illegal waste preemptively
  - AI to solve illegal waste distribution (Ministry of Public Administration & Security) Prime Minister Award, Contest for Best Practice of Government Innovation
  - Automatic AI handover with CNN for loading and unloading (Ministry of Environment) Minister of Environment Award, Contest for Environmental Data Analysis & Utilization contest
  - Using medical waste big data to detect suspected illegal processing details at business sites (Ministry of Public Administration & Security) National Information Society Agency Award, Contest for Data Analysis & Utilization
- Recycling of new plastic quarantine screens for the D-19 pandemic (Ministry of Public Administration & Security) Minister of Public Administration & Security Award, Best Case of Government Innovation
- High-quality recycling recovery & compensation system (Korean Policy Society) 2023 12th Korea Policy Awards



### Major outcomes

Subject	Implementation	Performance in 2023
Reinvigorating the K-circular economy	Expanding the use of high-quality recycled raw materials	<ul style="list-style-type: none"> <li>Supporting domestic companies' entry into overseas markets by operating the labeling system for use of renewable raw materials</li> <li>Adding evaluation items for the ease of recycling packaging materials and preparing the expansion of types of packaging materials eligible for the "Best Recycling" award</li> </ul>
	Enhancing EV waste battery management system	<ul style="list-style-type: none"> <li>Setting the foundation for increasing the supply of waste batteries through prompt performance evaluation of waste batteries, supply diversification, and collaboration with the private sector</li> <li>Achieved 237 private supply units by diversifying supply methods other than sales</li> </ul>
Diversifying recycling methods	Discovering new recycling methods	<ul style="list-style-type: none"> <li>Commercialization of new recycling technologies, such as recycling waste tire cores as raw materials for steelmaking at steel mills and coffee grounds as raw materials for phone case manufacturing</li> <li>Establishing a foundation for new resources of discarded waste such as COVID-19 screens, waste elevator batteries, &amp; waste mattresses</li> </ul>
	Leading the thermal decomposition & chemical recycling of waste plastic	<ul style="list-style-type: none"> <li>Commencing facility construction &amp; stable business promotion (90% completion rate)</li> <li>Discovering innovative business (hybrid incineration)</li> <li>Reducing 21,000 tons of GHGs by developing a market for high-quality recycling of agricultural waste vinyl</li> </ul>
Strengthening the management system for appropriate waste treatment	Establishing a full-cycle management platform for workplace waste	<ul style="list-style-type: none"> <li>Introducing simple certification and redesigning digital license information</li> <li>Securing the 2024 budget of KRW 4.6 billion for Next-Generation Allbaro system</li> </ul>
	Enhancing automatic collection of municipal waste on-site information	<ul style="list-style-type: none"> <li>Securing the accuracy of collected information by switching the data transmission method (QR code → NFC tag) and developing verification tools</li> </ul>
	Utilizing cutting-edge technologies such as AI and drones	<ul style="list-style-type: none"> <li>Establishing a real-time surveillance system through the full-scale operation of the IoT-based visible 'field information system'</li> </ul>
	Strengthening management of inappropriate waste generation	<ul style="list-style-type: none"> <li>Reducing the patrol time by 7 times compared to walking (7 → 1 hour) and increasing the detection rate by 20%p (5% → 25%)</li> </ul>

## Transition to a Circular Economic Society



### Circular economy at the raw material & production stage

#### Labeling system for the use of recycled raw materials

As the recycled raw material labeling system is implemented from March 29, 2024, with the amendment of the Act on the Promotion of Saving and Recycling of Resources, K-eco operates the labeling system for using recycled raw materials to respond to regulations mandating the use of overseas recycled raw materials and support domestic companies' penetration into overseas markets. The labeling system for using recycled raw materials allows product and container manufacturers to use recycled raw materials produced from domestically generated waste plastics at a certain rate or higher to indicate the percentage of use on the products and containers. We will establish a Korean-style recycled raw material use management system to reinvigorate the market.

#### Mark for using recycled plastic raw materials



### Export of the EPR(Extended Producer responsibility) system to expand the global resource circulation system

K-eco works to spread the global resource circulation system by exporting the EPR system to developing countries. The EPR system imposes an obligation on producers to recycle their products. Since EPR was established as a core system in the UN Convention on Plastic Pollution Prevention, which is scheduled to be implemented in 2025 due to the current global demand for building a circular economy society, many developing countries are actively adopting the system for rollout. K-eco has continuously sought support for introducing the EPR system in developing countries, including Vietnam, since 2023, and in 2024, we will collaborate with the World Bank to launch the Philippine EPR Study Tour program to institute the EPR system in the Philippines. In doing so, we have set the foundation for exporting the K-EPR operational system to developing countries, including the current status of domestic EPR system operations and the rollout of the EPR computer system. In the future, K-eco plans to continue to expand the export of the EPR system by signing MOUs with developing countries to adopt the EPR system for rollout.



| Support for the Philippine EPR Study Tour program in the Philippines (April 2024) |

### Creating a production environment for the "Best in recycling" packaging materials

K-eco helps companies minimize domestic packaging waste and evaluates the materials and structures of packaging materials so that they can design, produce, and import products that are easy to recycle. In March 2023, we strengthened the standards by adding packaging material recyclability ratings to evaluation items\* with a focus on reducing plastic usage. Moreover, in November of the same year, we prepared a plan\*\* to expand the types of packaging materials eligible for the Best Recycling award to help consumers purchase eco-friendly products and encourage companies to voluntarily improve the materials and structures of packaging materials, setting the foundation for the production of high-quality recycled raw materials.

\* (Current) Material, color, ease of recycling → (Additional) weight

\*\* (Current) PET bottles, polystyrene paper (2 types) → (Additional) Glass bottles, synthetic resin containers/trays, & films/sheets (3 types)

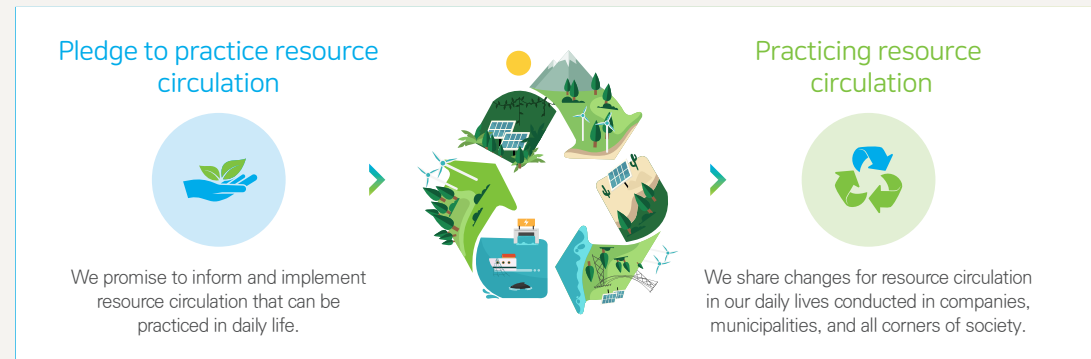
# Transition to a Circular Economic Society

## Circular economy at the consumption & distribution stages

### Resource circulation practice platform

Resource circulation refers to reducing waste generation as much as possible, reusing or recovering the generated waste, and disposing of the inevitably remaining waste with a minimal environmental impact. K-eco is building and operating a resource circulation platform to spread the public awareness of waste issues and encourage participation in resource circulation. As of the end of 2023, 172,000 resource circulation pledges and certifications were issued to participating citizens and companies, an increase of 10.5% from last year.

### Resource circulation practice platform



### Resource Circulation Maru (Resource Circulation Information System)

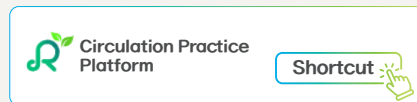
Resource Circulation Maru is a comprehensive system for systematically inputting waste statistics and managing national resource circulation goals. The name was changed from the Resource Circulation Information System to Resource Circulation Maru (meaning "platform" in Korean). K-eco provides integrated platform services for related systems and systems to increase accessibility to information in all areas of resource circulation. Before the resource circulation system, the focus was on how to dispose of generated waste, but the system focused on reducing waste generation. This approach pursues environmental protection and sustainable development by minimizing waste generation and utilizing resources more efficiently.

#### [Main functions of Resource Circulation Maru]

- **Waste statistics input management:** Input management of the statistics for waste generation and treatment for facilities & administrative agencies nationwide
- **Circular economic performance management:** Target management by calculating the circular economic performance indicator of municipalities & businesses and the collection, analysis, & management of reference data for calculating the performance indicator goals
- **Environment statistics information:** Presentation of seven types of nationally approved statistics information in various formats
- **Recycling startup & technical guidance:** Providing startup & technical guidance services for recycling companies

### Efforts to prevent excessive packaging

K-eco has provided consulting for proper packaging since 2022 to contribute to resolving resource waste and waste disposal problems caused by packaging waste. Consulting for proper packaging refers to providing relevant information, such as packaging standards, to companies vulnerable to legal and regulatory information and providing free consulting on improving packaging materials, so that overpackaged products can be converted to properly packaged ones. In 2023, consulting for proper packaging was implemented for 330 companies, reducing 97 tons of packaging waste. Moreover, we built a platform for the self-verification of overpackaging to enable companies to respond to overpackaging regulations on their own before a product launch. As a result, 583 companies used the platform to conduct 1,593 self-verification cases in 2023.



## Circular economy at the disposal & recycling stages

### Support for waste battery recycling

As more eco-friendly electric vehicles are distributed, recycling and management of used batteries have emerged as important issues. To support the recovery and recycling system for waste batteries, which are increasing due to the expansion of electric vehicle distribution, and to enable private companies to enter the waste battery business, K-eco operates waste resource collection centers in four regions nationwide. We plan to implement a pilot project for consumer-tailored electric vehicle waste battery support in February 2024, provide 36 waste batteries, and submit project results to use for future policy support and system improvement. K-eco also supports empirical research projects to develop an energy storage system (ESS) by reusing waste electric vehicle batteries, and provides free waste batteries to research institutes to develop new ESS models. The supported research institutes are responsible for transporting waste batteries, evaluating module performance, and developing, manufacturing, and installing reusable products. We will continue to support various research projects to kickstart the waste battery reuse industry.

### Expansion of channels for waste home appliance recovery

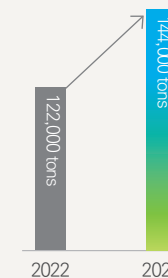
K-eco works to recover resources and prevent environmental pollution by recycling waste home appliances. To increase the number of waste home appliances collected, we expanded the collection channels from the existing home-centered free door-to-door collection and installed collection box stations at apartment complexes to expand them to business sites, where large quantities are generated, through cooperation with large organizations and municipalities with a nationwide network. As a result, the amount of waste home appliances recovered in 2023 was 144,000 tons, an 18% increase year on year.

### Expansion of waste home appliance recovery channels

Standard	Home-based emissions	Improvement	Expansion to business sites where large quantities are generated	Implementation performance	
	<ul style="list-style-type: none"> <li>• Reverse recovery collection through producers &amp; sellers</li> <li>• Free onsite collection of waste home appliances from home</li> <li>• Collection through collection boxes installed at apartment complexes</li> </ul>	+	<ul style="list-style-type: none"> <li><b>Retail</b> Collection of discarded home appliances from 16,000 GS Retail stores</li> <li><b>Finance</b> Collection of waste ATMs from over 700 Woori Bank branches nationwide</li> <li><b>Public sector</b> Collection of waste home appliances generated at 320,000 public housing units and LH housing site development project sites</li> <li><b>Manufacturing</b> Improvement of the collection management system, such as providing additional incentives when collecting waste air conditioners from manufacturers like LG Electronics</li> </ul>	➔	<ul style="list-style-type: none"> <li>• Waste home appliance recovery collaboration partner increased by 189% from last year. (64 locations in 2022 → 185 locations in 2023)</li> <li>• Recycled waste home appliances exceeded national recycling performance exceeded the target by 41,000 tons (462,000 tons).</li> <li>• With the improvement of the waste air conditioner collection management system, collection performance increased by 45% year on year (230,000 units in 2022 → 334,000 units in 2023).</li> </ul>

In addition, in collaboration with municipalities and housing management corporations, we expanded the installation of small and medium-sized waste home appliance collection boxes and provided collection box location information through the resource circulation practice platform. The number of waste home appliance collection boxes in apartment complexes was 9,245 in 2023 (up 32% from last year), improving the convenience and accessibility for citizens to dispose of small and medium-sized waste home appliances.

### Amount of recovered waste home appliances



### Circular economy of waste tires

K-eco contributed to recycling approximately 75,000 tons of iron core generated from waste tires annually as steel raw material for steel mills. After shredding the waste tires, the rubber attached to the selected iron cores was, on average, 17%, exceeding the recycling criterion of 2%, so the cores were discarded in a non-recyclable state. However, we conducted a recycling environmental evaluation to review the suitability of recycling and concluded that recycling was feasible possible even if the rubber content exceeded 2%. Accordingly, by recycling 74,970 tons of iron cores from waste tires, we reduced 300 tons of CO<sub>2</sub> emissions per year and created an economic effect of approximately KRW 58.9 billion.

## Transition to a Circular Economic Society



### Circular economy at the disposal & recycling stages

#### Recycling of waste soil into resources

K-eco undertakes an agricultural waste collection and processing project that collects and recycles agricultural waste vinyl and pesticide containers, which are considered major causes of environmental pollution in rural areas. Waste plastic and pesticide containers generated by farming are collected by region, and we pay compensation when collecting waste pesticide containers. Collected agricultural waste plastic is processed at our own recycling facility and supplied to domestic and overseas recycling companies.

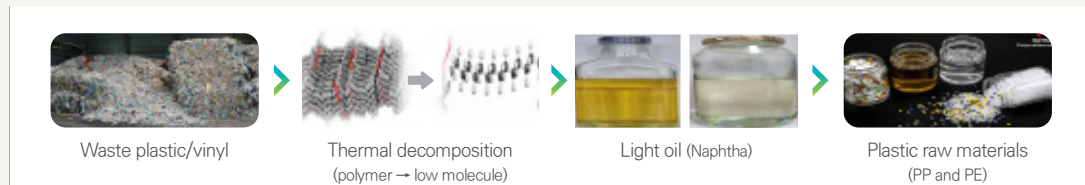
In December 2023, K-eco held a collection competition (with awards to four municipalities) in collaboration with agricultural organizations to improve the collection rate of agricultural waste, ramp up collection activities and conduct training on the appropriate disposal of agricultural waste. During the waste vinyl collection process, a large amount of soil is contained in the waste, resulting in approximately 60% of waste soil being generated during the recycling process compared to the throughput. Accordingly, we designed and developed high-quality sand recovery equipment through collaboration with an SME using the performance sharing system and sold five tons of recovered sand (natural aggregate) for a fee on a pilot basis. When about 70,000 tons of discarded soil (sand) is generated annually, we expect to recycle 7,000 tons, about 10%.



| Agricultural Waste Collection Competition in Yangju City (2023.12.6) |

#### Chemical recycling of agricultural waste vinyl: Converting waste plastic into new plastic

Chemical recycling of agricultural waste vinyl is intended to overcome the limitations of existing recycling methods, such as material recycling and incineration, and create higher added value. To achieve this objective, we pyrolyze agricultural waste vinyl, extract naphtha and use it as raw material for plastics (PP and PE). We then achieve carbon neutrality and transition to a circular economy by producing new plastic products through recycling.



#### Using new digital technologies to block illegal waste

K-eco relentlessly makes multifaceted efforts to prevent waste dumping and abandonment and promptly processes waste by utilizing new digital technologies, such as AI and big data analysis.

Firstly, we have developed an AI-based abnormal transaction detection model (6 types) that acquires field data in real time when handing over and receiving waste and analyzing abnormal transactions with an AI algorithm to predict illegal waste scientifically.

Secondly, we have established a visible on-site information management system that enables IoT-based information collection and real-time monitoring by mandating a system to transmit waste disposal site information\* for waste collectors, transporters, and processors.

Thirdly, administrative efficiency has been improved through automatic analysis of big data information, such as electronic transfers and performance reports from the Allbaro System to select seven types of suspicious business sites and conduct customized on-site inspections. As a result, we have achieved a detection rate (about 62%) that is three times higher than random inspection (about 20%).



| Drone patrol team, Sky Patrol Agreement & launching ceremony |

Fourthly, we have established an aerial surveillance system by operating the drone patrol, Sky Patrol. We signed agreements with 14 private drone organizations nationwide to identify and efficiently manage dumped and abandoned waste quickly. As a result, the inspection time was shortened to 1/7 compared to walking, resulting in an improved detection rate from 5% to 25%.

\* Waste disposal site information: Digital data that proves the contents when handing over or receiving waste includes measurement information, location information (GPS), and image information.

#### Municipal waste information management system

As the municipal waste information management system continues to cause social problems due to the absence of a response base according to the recycling market situation, such as the waste vinyl collection crisis in 2018, there is a need to establish an information base that can identify the processing flow of municipal waste in real time.

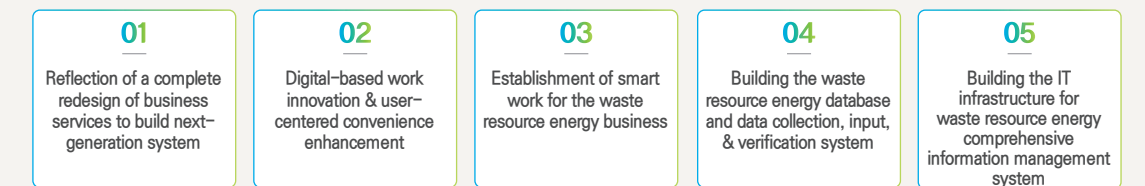
K-eco is building an integrated system to manage real-time information from municipal waste discharge to final disposal through automatic field data collection based on the latest ICT and interface to related systems as a phased project for five years from 2022 to 2026.

As of 2024, we have established a foundation for the automatic collection of municipal waste and processing information at public treatment facilities nationwide, and created a foundation for analysis of material flow for the entire process of municipal waste and recycling types for each recyclable product in connection with the resource circulation-related system. With this, we plan to contribute to creating an environmental ecosystem by expanding the scope of municipal waste management to include private treatment facilities, providing real-time comprehensive information on all areas of municipal waste for national mid- to long-term environmental policies to be established and managing the generation and treatment of waste in the region with efficient facility investments by each municipality.

#### Waste resource energy information management system

K-eco operates a comprehensive waste resource energy information management system to collect and manage information from the waste import stage to the production (recovery), use, and sale of waste resource energy. We integrate waste resource energy data and solid fuel product inspection and quality rating data to provide reference data for establishing waste resource energy policies. We have established an information strategy plan (ISP) for system enhancement in 2023 and are seeking the gradual and continuous development of next-generation systems to ensure the stable operation of waste resource energy information and promote waste-to-energy projects in 2024.

#### Next-generation waste resource energy comprehensive information management system



#### Circular economy of waste resources

#### Development of eco-friendly charcoal (K-CFC\*) using coffee grounds

The amount of coffee grounds (coffee waste) generation increases in proportion to domestic coffee consumption. Until now, coffee grounds have been mostly landfilled and incinerated as municipal waste. Accordingly, through collaboration with SMEs, K-eco is developing eco-friendly charcoal (K-CFC) made from recycled coffee grounds. K-eco conducts technical reviews and quality test analyses of K-CFC and provides institutional and technical advice. The development of K-CFC, which can replace oak charcoal, is expected to reduce the cost of processing coffee grounds, preserve trees, and reduce GHG emissions.



#### Eco-friendly effect

- ① Landfill cost savings of approximately KRW 34 million
  - A. Production target for molded charcoal from coffee grounds in 2024: 192 tons
  - B. Waste processing cost: KRW 176,000/ton
  - ※ Applicable to the unit price for processing vegetable residues in the "Processing Unit Price by Type of Waste for Calculating Performance Guarantee Insurance Payments for Neglected Waste Treatment, etc."
  - C. Landfill cost savings (KRW 34 million) = A (192 tons) × B (KRW 176,000/ton)
- ② Alternative energy effect: 170,000 20-year-old pine trees
  - A. Effect of replacing 20-year-old pine trees when generating wind power of 78,000 MWh by KOSPO: 11 million trees
  - B. Energy equivalent amount of eco-friendly charcoal (1,261.17 MWh): 192 tons × 6,568.6 kWh/ton (energy equivalent of charcoal calorific value)
  - C. Effect of replacing 20-year-old pine trees (170,000 trees): 11 million trees × 1,261.17 MWh/ton ÷ 78,000MWh

\* K-CFC (Korea coffee ground eco-friendly charcoal): K-CFC is an eco-friendly molded charcoal made using coffee grounds generated in Korea.

## Creating a Safe & Sustainable Living Environment



Potential risks from harmful effects and chemicals from the environment can pose a serious threat to our health and safety. Accordingly, K-eco is implementing institutional management and activities to cope with these threats. We create a safe workplace environment by preventing and managing potential risks in vulnerable facilities through robust secure management of hazardous chemical handling facilities. Moreover, we improve household noise and expand health services for vulnerable groups by measuring asbestos and radon, allowing more people to live in a safe and healthy environment.

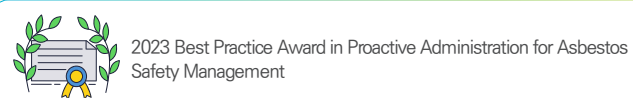
### Goal & implementation strategy

Applicable projects	Expansion of environmental infrastructure	Chemical management & chemical accident prevention projects	Noise, indoor air quality, & asbestos safety management projects
<b>Performance goals</b>	Improving safety & environment by expanding environmental facility infrastructure	Securing a chemical safety net by strengthening the life cycle management of chemical substances	Securing public safety & health by expanding environmental services closely linked with daily life
<b>Implementation tasks</b>	<ul style="list-style-type: none"> <li>Design with priority to carbon neutrality &amp; safety</li> <li>Establishment of digital spatial information for environmental impact assessment of business sites</li> <li>Turning waste into energy by installing environmental facilities</li> <li>Public sewage modernization &amp; urban flooding prevention</li> </ul>	<ul style="list-style-type: none"> <li>Blocking distribution of unchecked chemical substances by strengthening checking of hazards before distribution</li> <li>Preventing accidents by strengthening safety management when using chemicals</li> <li>Protecting the environment &amp; health by closely monitoring chemical emissions</li> </ul>	<ul style="list-style-type: none"> <li>Enhancing public safety through preemptive management to reduce environmental hazards</li> <li>Creating a healthy living environment for people by upgrading the noise management system</li> </ul>

### Major outcomes

Subject	Implementation	Performance in 2023
Expansion of environmental infrastructure	Carbon-neutral & safety-first design	Setting the foundation for low-carbon environmental infrastructure by operating the Net Zero VE Team and reflecting on the design of 143 safety VE ideas
	Digital transformation of environmental impact assessment	Digitalization of spatial information at 22 locations, including Cheongju City's 2nd landfill & quarry complex
	Modernizing public sewage	Introduced new & renewable energy at Jeju public sewage treatment facility (20,000 MWh/year)
Life cycle management of chemicals	Execution of urban flooding prevention projects	Completed 28 projects (cumulative), including Bucheon City
	Support for chemical management system response	Early registration of 411 types of substances with registration deferral and 1:1 consulting for 209 SMEs
	Ensuring prior safety of chemicals	71 technology transfer cases for hazard testing & support for facility infrastructure construction
Ensuring living environment safety & health	Chemical safety management at SMEs	1,340 technical support consultations & subsidies for improving old facilities
	Strengthening management of environmental hazards	Asbestos investigation focusing on vulnerable facilities and expansion of radon & indoor air quality measurement
	Enhancing noise management system	Efficient management of inter-floor noise service, tire noise, etc.

### Awards



## Creating a Safe & Sustainable Living Environment



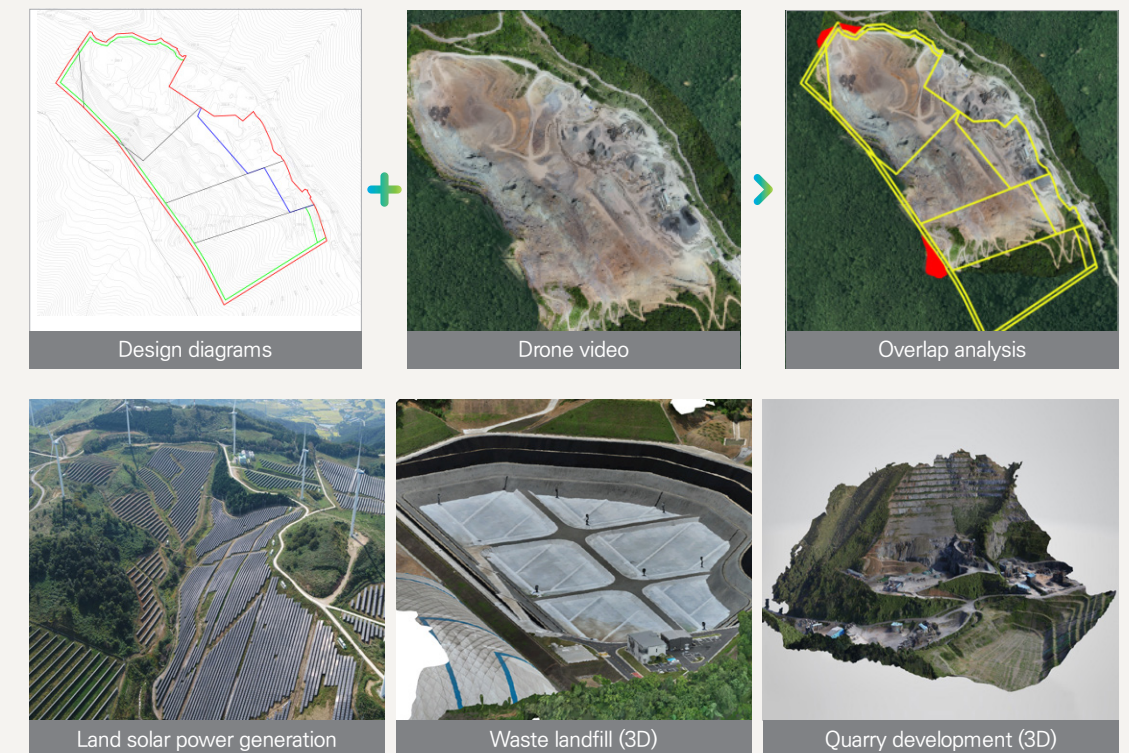
### Value-up by improving the environmental infrastructure

#### Carbon neutral & safety-first design VE

K-eco operates the Net-Zero VE Team to reduce GHG emissions from environmental infrastructure and achieve sustainable carbon neutrality. We implement a paradigm shift from existing economic feasibility studies to carbon-neutral VE (value engineering), identifying low-carbon ideas by utilizing high-efficiency construction and energy equipment when performing design VE and facilitating the transition to a carbon-neutral society. Moreover, we operate the Safety VE Team to respond to risk factors and strengthen safety prevention activities preemptively. We executed 143 VE ideas with a priority on safety for the design of 37 projects, including urban flood prevention for the Naeil drainage sector in Milyang City (construction cost increase of approximately KRW 5.3 billion) in 2023, to eliminate risk factors that may occur during construction and operations, as well as for safety accident prevention of environmental infrastructure by establishing a preemptive response system.

#### Digital transformation of environmental impact assessment (K-CDX)

K-eco has established digital spatial information on business sites subject to an environmental impact assessment to ensure efficient inspection and management to prevent safety accidents. We checked for damage to the original conservation area and whether there was any prior construction using drones, and also analyzed changes in land use and green space through a multi-spectral analysis. In 2023, we completed the third year of the environmental impact assessment post-monitoring project for large-scale onshore solar power complexes. Also, we collaborated with the Regional Offices of Environment to establish spatial information on Cheongju City's second landfill construction project and collaborated with the Ministry of Environment (Regional Environmental Office) and Jeju Special Self-Governing Province to inspect the damage to original conservation areas and slope safety at 22 locations, including quarry complexes and digitalized spatial information.



# Creating a Safe & Sustainable Living Environment

Value-up by improving the environmental infrastructure

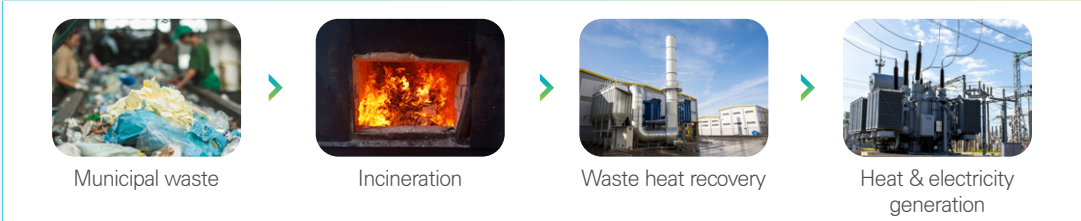
## Energy from waste

K-eco contributes to securing renewable energy and reducing GHG by installing waste-to-energy facilities that recover energy (fuel, heat, & electricity) from waste.

### • Energy from combustible waste

We convert municipal waste, such as volume-rate waste bag waste, from simple incineration and landfilling to energy recovery facilities. Conversion of combustible waste into energy can recover fuel and heat that can be used as an energy source and is poised to replace fossil fuels and reduce GHG emissions. K-eco has signed an energy facility installation agency agreement with municipalities and undertakes about 30 facility installation projects. In particular, as municipal waste is scheduled to be directly landfilled beginning in 2026, we are doing our best to promote recycling and energy recovery, such as supporting the installation of public pyrolysis recycling facilities.

### Energy from combustible waste

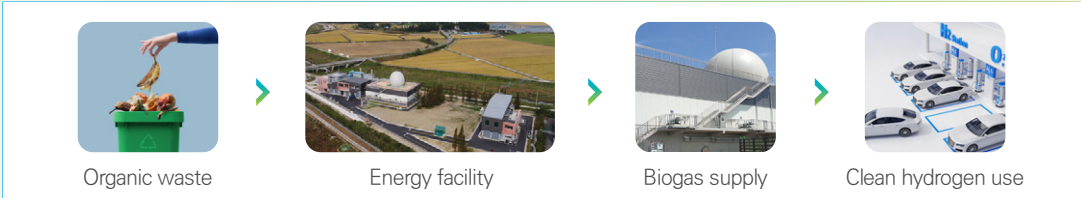


### • Biogasification & clean hydrogen production

K-eco is switching the conversion of organic waste, such as food, livestock waste, and sewage sludge from feed, and composting to biogas production facilities.

Conversion of these organic wastes into energy can produce biogas that is used as an energy source, replace fossil fuels, and reduce greenhouse gases. K-eco currently promotes a government-sponsored public offering project targeting municipalities nationwide to kickstart the biogasification business and currently promotes about 10 facility installation projects by signing energy conversion facility installation agreements with selected municipalities. We plan to keep expanding the biogasification business of organic waste, and especially lead the future resource circulation business by actively engaging in the clean hydrogen production business using biogas.

### Biogasification of organic waste



## Resident-friendly sewer modernization project

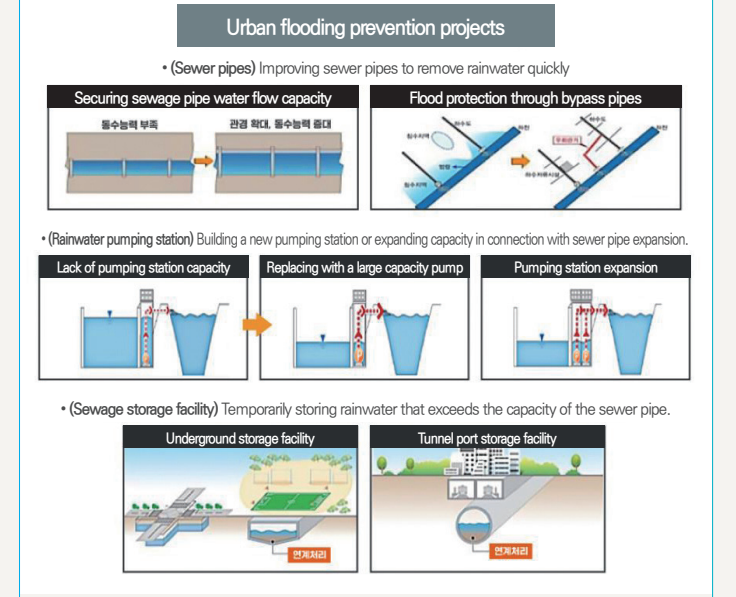
Based on its know-how in all areas of water service and sewerage (design-diagnosis-operation), K-eco is executing the Jeju public sewerage modernization project to create future value for sewerage. By introducing new and renewable energy using digestion gas and sewage heat from public sewage treatment facilities, we expect to recover annual power production of up to 20,000 MWh. As the facilities are installed underground below parks, they are expected to be used as a clean tourism resource (ecological park & cultural space). These efforts will create approximately 2,704 new jobs and are poised to contribute to balanced regional development.

## Urban flooding prevention

As floods in the summer cause human casualties and natural disasters, K-eco has implemented urban flooding prevention projects to prevent flood damage. The projects have storage tanks installed to temporarily store rainwater during heavy rain and discharge it later, with small, old pipes replaced with larger ones.

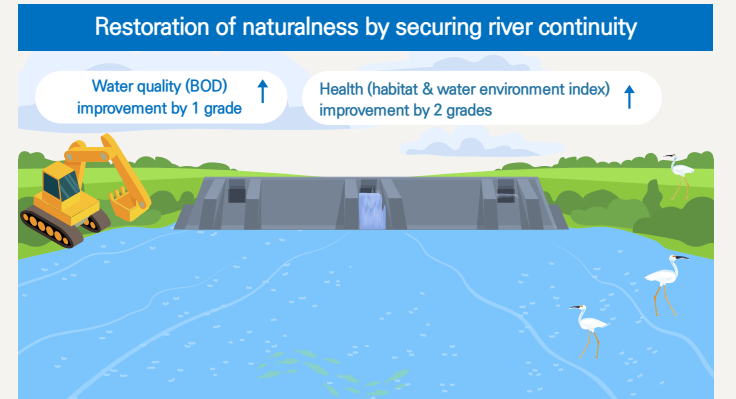
We selected the optimal drainage route through field surveys and 3D mapping of topography and structures, and completed 28 projects, including Bucheon City, by 2023. Moreover, we created a flood risk map through flood risk simulation analysis and provided it to municipalities to prevent water disasters in advance.

To prepare for heavy rainfall in each region, we address the causes of flooding by expanding sewer pipes, rainwater pumping stations, & storage facilities.



## Restoration of the health of the aquatic ecosystem

The installation of crossing structures within rivers has deteriorated the health of the aquatic ecosystem due to the restricted movement of organisms between the upper and lower streams of the river, and caused water pollution due to stagnant water. Securing the continuity of rivers is of utmost importance to restore the health of the deteriorating aquatic ecosystem. To this end, K-eco has secured the continuity of the river by not only demolishing the crossing structures within the river but also installing a nature-friendly fishway rather than a concrete one by developing an eco-friendly model. A resident survey showed that 82% of respondents said they could feel the tangible improvement in the river landscape and were satisfied. After the demolition of Taebong weir in Gapcheon, Daejeon, the BOD improved by 1 grade (1.95mg/L → 0.43mg/L), and the waterside habitat index also improved by 2 grades (bad → good).





# Creating a Safe & Sustainable Living Environment

## Chemical safety management

### Support for chemical management system

K-eco prevents chemical accidents and protects the lives and safety of the people through the full-cycle management of chemicals. We ensure safety in advance by checking the hazards of chemicals before using them and preventing accidents through safety management while using them. We also reduce environmental pollution by preventing residues after use. In particular, we opened the Industry Help Center to help companies register chemicals (100 to 1,000 tons, 3,100 reported types) under the Act on Registration and Evaluation of Chemicals (Chemical Evaluation Act). We sent official notices and leaflets informing the registration of existing chemical substances (2 times, 5,882 locations) and managed the status of registration implementation (15,883 cases) to allow 411 types to be registered early. Moreover, we conducted 1:1 preliminary consultations with SMEs (209 locations) to support a response to the Chemical Evaluation Act and prepared and distributed a collection of major inquiries and the latest trends in international chemical regulation.

### Ensuring the safety of chemicals in advance

To support industrial chemical registration, K-eco conducts tests on hazardous test items for which the domestic infrastructure is insufficient, and provides the produced test data to small and medium-sized businesses at a low price. Furthermore, we lead the domestic hazard testing industry by transferring technology related to the entire chemical hazard testing process to private testing bodies free of charge. In 2023, we gave support to providing information necessary for test facilities and developing customized standard work instructions by 71 technology transfer cases for the entire hazard testing process (36.5% ↑ year on year). Moreover, we provided support by securing KRW 1.5 billion in subsidies for eight companies to build facilities and infrastructure, including testing equipment and material costs. We also supported export companies in expanding their overseas sales channels by providing highly proficient English translation data for overseas chemical hazard test data distribution.

### Transfer of chemical hazard testing technology in 2023

Total	Facility operation & management	Environmental hazard test	Human inhalation toxicity test	Assurance of test reliability	Target organization
71	7	44	10	10	Four companies: H&H Bio, KCL, Central Bio, and Woojung Bio.

### Inspection & diagnosis of hazardous chemical handling facilities



Businesses with hazardous chemical handling facilities must properly install and manage the facilities in accordance with the Chemical Substances Control Act, and must periodically undergo inspection and safety diagnosis from K-eco, an inspection agency. In 2023, K-eco identified and eliminated potential chemical accident factors through 8,276 inspections of handling facilities and 12 safety diagnoses.

### Chemical safety management at SMEs

K-eco provides consulting on hazardous chemicals to SMEs that have difficulty responding to the Chemical Substances Control Act and supports the costs of improving harmful and risk factors in aging facilities. We conducted 1,340 technical support consultations in response to the 2023 Chemical Substances Control Act and provided KRW 6.324 billion in subsidies for upgrading old hazardous chemical handling facilities. Moreover, we provide school laboratory safety consultations to education offices and municipalities that need chemical safety management know-how to improve safety management capabilities and ensure facility safety.



## Living-oriented environmental services

### Strengthening safety management for asbestos blind spots



| Asbestos investigation site |

K-eco conducted an error check on asbestos maps to check the adequacy of asbestos surveys for 1,270 asbestos structures in the private sector in 2023, confirmed 109 non-conforming facilities, and strengthened management of hidden asbestos risk factors by notifying municipalities and target facilities. We also supported the asbestos investigation and follow-up management for social welfare, cultural, and sporting facilities (350 locations). In collaboration with the Community Chest of Korea (Fruit of Love), we distributed KRW 2.8 billion in lottery funds to support the removal of asbestos building materials from 76 local children's centers and mandated local children's centers as subjects for asbestos safety management to protect vulnerable groups from asbestos. Our example of strengthening asbestos safety management for vulnerable groups earned us the grand prize (Prime Minister's Award) at the 2023 Active Administration for Best Practice Contest.

### Radon reduction management

K-eco provides free indoor radon measurement for houses and public facilities vulnerable to radon exposure, a Group-1 carcinogen, and provides customized consultation for radon reduction to help people voluntarily reduce and manage indoor radon. In 2023, we conducted free measurements and consultations for 242 community facilities (such as senior centers) and 1,807 houses, protected public health and mitigated the risk from radon by distributing radon alarms to high-concentration facilities and supporting abatement work.

How can radon be reduced?



Video to communicate the harms of radon

### Inter-floor noise center

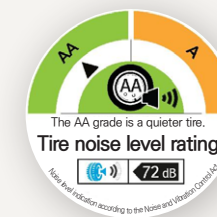
K-eco operates the Inter-floor Noise Center, a mediation counseling center that provides services necessary to alleviate conflicts concerning inter-floor disturbances between residents of apartment complexes. We provide telephone consultations (call center) on inter-floor noise disturbances and onsite diagnosis services (visit consultation & noise measurement) to residents of apartment complexes nationwide. In 2023, we expanded our counseling center locations near workplaces for the convenience of applicants and offered night counseling services to improve operational efficiency. Through this, we were able to shorten the inter-floor noise service waiting period by six days (28 days in 2022 → 22 days in 2023) and expand customized services for increased applicant satisfaction.



### Expanding indoor air quality monitoring & improvement

K-eco has strengthened indoor air quality monitoring in multi-use facilities and has prepared measures to improve air quality and systems for vulnerable facilities. In 2023, we expanded an automatic indoor air quality measurement network in target medical institutions and postpartum care centers (41 facilities in 2022 → 58 facilities in 2023), and diagnosed indoor air quality in 200 facilities used by vulnerable groups, such as daycare centers. For facilities that exceeded the standards, we provided education on indoor air quality management, such as ventilation methods, and facility improvement consulting, such as the replacement of eco-friendly teaching aids and air circulation devices. As a result of re-measurement, we achieved a zero excess rate at the facilities.

### Tire noise management



| Tire noise level rating |

As tire noise accounts for approximately 80% of road traffic noise, it is necessary to introduce and manage tire noise tolerance standards to solve the problem fundamentally. K-eco is the only institution that investigates tire noise in South Korea, and the Tire Noise Level Reporting and Grade Indication System was enacted to reduce road traffic noise by setting acceptable standards for the road noise of tires and encouraging the distribution of low-noise tires. It has been applied to new passenger car tires since 2020 and will be gradually expanded to apply to all car tires by 2029. In preparation for the expanded operation of the system, we devised a plan to make improvements to it through industry meetings and strengthened public relations using new media (apps, social media, etc.).



## Social & Organizational Environment of Cooperation & Coexistence

K-eco promotes sustainable management through communication and cooperation with various stakeholders. We keenly pursue shared growth with SMEs and suppliers, support the development of local communities, and strive to strengthen the employees' capabilities. We are also committed to creating an inclusive organizational culture as well as a safe workplace to protect the safety and health of all workers involved in K-eco's projects. Through these efforts, we have realized sustainable management and continue to create a better future.

052 Creating a Shared Growth Ecosystem

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064 Human Resource Development & Inclusive Organizational Culture

074 Creating a Safe Workplace



## Creating a Shared Growth Ecosystem

K-eco works to create a healthy environmental industry ecosystem based on shared growth partnerships with SMEs. We have strengthened our practical efforts through various systems and support projects to share growth with SMEs, such as performance sharing and cooperative profit sharing, support for building smart ecological factories, and support for sales channels.

### Goal & implementation strategy

**Vision for shared growth** A leading organization in the environmental industry ecosystem working with SMEs

**Strategic goals**

<p>Technology cooperation with SMEs</p>	<p>Creating a fair trade culture</p>	<p>Expanding sales channels for SMEs</p>	<p>Creating a culture of shared growth</p>
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- Implementation programs**
- Technology cooperation with SMEs**
    - Spread of performance sharing system
    - Technological innovation & technology protection
    - Contribution to the Win-Win Cooperation Fund
  - Creating a fair trade culture**
    - Reflection of the increase in the supply price
    - Blocking unfair trade practices
    - Promotion of win-win payment
  - Expanding sales channels for SMEs**
    - Support for overseas sales expansion
    - Expanding the use of shared growth malls
    - Expanding purchase of innovative products
  - Creating a culture of shared growth**
    - Welfare & education support for suppliers
    - Support for startup venture companies
    - Expanding the use of Win-Win Nuri

### Major outcomes

**Selected as 2023 Win-Win Honors (hosted by the Ministry of SMEs and Startups)**

**Proven technological excellence by winning four awards at domestic & international invention exhibitions**

- (International) Taiwan Innotech Expo Invention Exhibition (Bronze Award & Special Award) : Submitted Manhole Keeper (winner of the grand prize at the 2023 Excellent Project Contest)
- (Korea) Seoul International Invention Exhibition (Excellence Award & Special Award) & Invention Day (Citation from the Chairman of the Presidential Council on Intellectual Property)

**A driver of growth in the private sector by creating results through collaboration between K-eco and companies**

- 3 new registrations of industrial property rights (patents) (136 patents in management) & 2 patent applications
- Reviewed and registered 8 SME technology markets (7 cases recommended for designation as innovative products)
- Setting the foundation for sales channel support by providing 2 K-test beds (1 for water quality & 1 for air quality)

**Reinvigoration of the shared growth program, K-eco Collaborative Cooperation System, through joint R&D**

- Held onsite briefing sessions (5 times), employee contests to identify excellent programs, & employee job training

## Creating a Shared Growth Ecosystem



### Technology cooperation with SMEs

#### K-eco Collaborative Cooperation System

Based on the common goal of improving the environment between K-eco and SMEs, K-eco utilizes each other's infrastructure to strengthen mutual competitiveness and realize social value through shared growth by jointly developing new products and technologies and improving performance and processes. We have expanded the existing performance-sharing system and operated the K-eco Collaborative Cooperation System spanning from R&D to commercialization to provide systematic support and promotion for commercializing developed technologies and increasing sales. In April 2023, we held the K-eco Contest for Excellent Collaborative Cooperation Projects, awarding five excellent projects and supporting participation in various exhibitions. In 2023, the number of registrations and completions of collaborative cooperation projects increased by 25% from last year to 48, and registrations in the SME (social overhead capital) technology market also reached 17, a 70% increase from last year. Furthermore, the system already helped 21 companies generate sales of KRW 5.1 billion and eight companies create 20 jobs as of 2022.



| 2023 K-eco Contest for Excellent Collaborative Cooperation Projects |

### Technological Cooperation with SMEs

Subject		Yr. 2021	2022	2023
Performance sharing system	Registration	15 cases	13 cases	18 cases
	Completion	12 cases	8 cases	11 cases
Collaborative profit-sharing system	Registration	10 cases	6 cases	11 cases
	Completion	2 cases	-	2 cases
Joint technology development	Registration	8	4	5
	Completion	(4)	5	1(1)
Total		51(4)	36	48(1)

※ Parentheses: Number of overlapping cases of joint technology development & performance sharing system

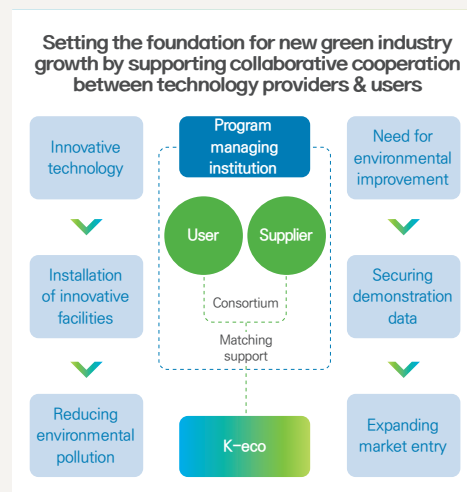
## Creating a Shared Growth Ecosystem



### Technology cooperation with SMEs

#### Collaborative cooperation demonstration program

SMEs generally have difficulties penetrating related markets and expanding sales channels due to a lack of full-scale empirical data after developing innovative green technologies. Accordingly, K-eco has operated a collaborative cooperation demonstration program to build the foundation for the growth of the environmental industry by linking technology providers with users. In June 2023, K-eco held an MOU signing ceremony for a collaborative cooperation demonstration program. The program matches suppliers (SMEs) and users (companies, municipalities, & quasi-governmental institutions requiring eco-friendly equipment) to form a consortium, and supports the installation costs of up to KRW 1 billion for demonstration. In 2023, we selected 14 out of 60 consortiums (projects) applying for the demonstration program and provided facility installation funds worth KRW 11.7 billion.



#### Smart ecological factory construction project

K-eco undertakes a project to build smart ecological factories that convert business sites that emit large amounts of pollutants into eco-friendly sites by reducing GHG emissions and pollutants and improving energy efficiency. We have signed agreements with 93 companies through an onsite survey evaluation for selection and provided about KRW 84 billion in government support. The analysis of the environmental impact of 99 companies that were supported for smart ecological factories over the past three years (2020 to 2022) have shown a GHG reduction of 27.7% and a pollutant reduction of 45.6%.



### Creating a fair trade culture

#### Creating a win-win fund

K-eco actively promotes new support projects such as innovation partnerships and smart factories through contributions to a shared growth fund, and has expanded the scope of support projects utilizing the fund by making an early contribution to the Large and Small Enterprise and Rural Community Coexistence Cooperation Fund in 2023. In 2023, the Large and Small Enterprise and Rural Community Coexistence Cooperation Fund was created with a capital of KRW 160 million to support the energy efficiency projects of SMEs. We also contributed KRW 30 million to the Rural and Fishery Collaborative Cooperation Fund to participate in the project to promote the consumption of agricultural and fishery products and provide free agricultural products to the underprivileged segment. Besides this, we are expanding support projects such as funding for startup venture companies and energy efficiency innovation support projects. In November 2023, we jointly created the Incheon ESG Win-Win Fund with the Sudokwon Landfill Site Management Corporation and delivered the funds to the relevant companies, selecting 15 excellent SMEs and social enterprises in Incheon that sought to practice ESG management and providing support of up to KRW 10 million per company.

#### Fund contribution & support in 2023

Subject	Contribution & support
Win-Win Cooperation Fund	<ul style="list-style-type: none"> <li>• KRW 160 million for the Large &amp; Small Enterprise Collaborative Cooperation Fund</li> <li>• KRW 30 million for the Rural &amp; Fishery Collaborative Cooperation Fund</li> </ul>
Startup & venture business support project	<ul style="list-style-type: none"> <li>• Supported KRW 120 million for 12 companies</li> <li>→ Commercialization funds &amp; product development support</li> </ul>
Energy efficiency innovation support	<ul style="list-style-type: none"> <li>• Supported KRW 100 million for 5 companies</li> <li>→ Support for high-efficiency energy equipment</li> </ul>

#### Price adjustment system for delivered goods

K-eco implements a delivery price linkage system to provide practical assistance to SMEs. The delivery price linkage system was introduced to create a transaction culture in which SMEs engage in fair price transactions. When a company outsources manufacturing, construction, processing, repair, etc. of goods, etc., details related to the delivery price linkage are entered into the agreement, and the price is adjusted and paid according to the contract details. It was implemented with 65 suppliers in 2023, and in recognition of our contribution to the spread of the linkage system, we were selected as the "Excellent Public Institution in the Linkage Delivery System" and received a commendation from the Minister of SMEs and Startups.

#### Win-win cooperation at all stages of the contract

K-eco provides administrative and economic support throughout all contract stages for SMEs that have recently come up against difficult headwinds due to the three high prices (high inflation, high interest rates, & high exchange rates). We rolled out an online system that allows non-face-to-face application and an evaluation of bids, discounted the contract deposit rate up to 10%p when signing a contract, and expanded the guarantee limit. Moreover, given the efforts to kickstart innovative procurement, the amount of innovative purchases in 2023 recorded KRW 13.4 billion, an increase of approximately 109% year on year. Furthermore, by implementing special provisions for contract work, we expanded the advance payment limit to 80% and helped SMEs overcome the economic crisis through early payment.

#### Creating a fair subcontracting culture

The Subcontract Keeper is a system in which the primary contractor electronically processes the signing of subcontracts, subcontract payments, and labor cost payments for facility construction and service contracts, and the ordering agency monitors them online. To protect subcontractor workers' rights and interests and ensure fairness and transparency in subcontract transactions, K-eco has expanded the Subcontract Keeper's subjects from the existing general/specialized construction work to all construction work to prevent delinquent payments and wages in advance. Moreover, as a result of leading the eradication of unpaid wages through joint inspections of construction sites with the Korea Specialty Construction Association, we achieved zero illegal subcontracting and unpaid wages in 2023.

### Expanding sales channels for SMEs

K-eco formed the K-eco Green Industry Export Support TF to strengthen support for exports of the green industry. National water industry K-eco supported the companies in the cluster through onsite support in developing overseas sales channels and assisting with export logistics and local pilot projects. Of the 57 companies in the National Water Industry Cluster, 56 of them achieved a total of USD 56 million (approximately KRW 74.3 billion) in overseas export performance, and we promoted cooperation between the public and private sectors through the operations of international exhibition PR booths and supported export consultations.

## Creating a Shared Growth Ecosystem



### Creating a culture of shared growth

#### K-eco ESG Supporters

K-eco ESG Supporters was launched in September 2023 to strengthen support for SMEs. The group was formed to comprehensively support SMEs that need more funding and technology under the rapidly changing internal and external business environment through funding support for eco-friendly equipment, technology consulting, and environmental information disclosure.

We plan to expand our efforts through supplier meetings, support project briefings to publish ESG corporate support guidebooks, and identify collaboration projects with SMEs.



| 2023 Launching of K-eco ESG Supporters |

#### ESG support for youth startups and SMEs

K-eco has supported startups by the younger generation in the environmental field since 2020 to foster future young leaders and support ESG initiatives for SMEs.

We have operated a three-way collaboration system in which we provide support funds jointly with NH Nonghyup Bank, and the Social Economic Support Center in Incheon manages the project since 2022. We increased the fund in 2023 and expanded the support area from Incheon to nationwide.

In July and August 2023, we selected 12 promising companies in the environmental field, such as digital transformation of sewage treatment and air pollution reduction upcycling, and distributed KRW 96 million in commercialization funds. In November, we held the Briefing on Youth Entrepreneurship Innovation Studio for the Environment to share the business status of each company and discuss the measures to expand its performance. K-eco supports the practical growth of the selected companies through managerial and technological consulting from the K-eco Environmental Mentor Group, composed of K-eco employees and the testbed.



| 2023 Ceremony for Signing of Business Agreement for Support of Environmental Youth Entrepreneurship and the Fund Award |



#### PR at environmental exhibitions

K-eco Corporation strengthened its win-win cooperation with SMEs by operating promotional booths at the International Environmental Industry Technology & Green Energy Exhibition and the ESG Eco-Friendly Exhibition in June and October 2023, respectively. At the International Environmental Industry Technology & Green Energy Exhibition, we staged the K-eco Pavilion as an exhibition space to promote the products and technologies of 18 SMEs and held purchasing counseling sessions to support sales channels. As a result, 64 counseling sessions were held, generating a purchase of about KRW 5.3 billion. At the ESG Eco-Friendly Exhibition, we staged an exhibition space to promote five startups by young entrepreneurs in the environmental field and supported sales channels by introducing the companies and promoting technologies on YouTube content.



| 2023 ESG Eco-Friendly Exhibition Booth |

#### Regulatory innovation for SMEs

K-eco has systematically innovated regulations to alleviate the administrative and economic burden on SMEs by circumventing inefficient and overly burdensome regulations on them. In April 2023, we launched the Regulation Innovation Review Committee to review and decide on regulatory improvements suggested by our employees. In 2023, we received 55 regulatory innovation ideas, and after the regulation operation and legal affairs departments reviewed the legality and suitability of the ideas, 15 innovations of internal regulations and guidelines were approved through a resolution by internal and external members of the Regulatory Innovation Review Committee. As a result, we improved the business environment for SMEs through eight cases of improving administrative inefficiencies, four cases of easing economic burden, and three cases of increasing business convenience.

##### STEP1

##### Motivation for regulatory innovation

Assignment of innovation mileage to departments that submit proposals for regulatory innovation, such as internal regulations and guidelines for K-eco

##### STEP2

##### Review of regulatory innovation idea

Review of legality and practical suitability of regulatory innovation proposals from each department, including violations of higher-level regulations

##### STEP3

##### Regulatory Innovation Review Committee

Establishment of the Regulatory Innovation Review Committee to alleviate the administrative and economic burden on SMEs through internal and external members reviewing regulatory innovation proposals and deciding on acceptance

### K-eco ESG corporate support projects

01. Carbon-neutral facility support project for companies participating in the emission trading system
02. Target management company GHG reduction equipment support project
03. Smart ecological factory construction project
04. Collaborative cooperation demonstration program
05. Project to support target implementation of circular economy performance management
06. Project to support improving hazardous chemical handling facilities for SMEs
07. Corporate support help desk for CBAM response
08. Performance sharing system and SOC technology market
09. Step-by-step customized corporate support through the National Water Industry Cluster
10. Resource recycling industry startup & technology guidance support project
11. ESG level-up support project through the Incheon-Sharing ESG Impact Fund (I-SEIF)
12. Youth entrepreneurship support project in the environmental field





## Creating Community Values



With the goal of creating a comfortable and safe living environment for all citizens, K-eco has implemented the three major strategies of linking environmental capabilities, contributing to economic revival, and resolving social problems. By strengthening cooperation with local communities, we actively promote support for vulnerable groups in environmental welfare blind spots and environmental education for children and youths. Moreover, K-eco's employees contribute to win-win management with underprivileged neighbors by actively participating in social contribution activities and spreading the culture of donation and sharing.

### Goal & implementation strategy

Goals for Social Contribution

Creating a comfortable & safe living environment for all citizens

Strategy

 Linkage to environmental competency	 Contribution to economic revival	 Solving social problems
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Implementation programs

Customized social contribution in connection with vulnerable groups	Donations to children & youth education & youth employment support	Improvement of the local environment & sharing activities for local residents	Creating favorable conditions for entering the global overseas environmental industry
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### Major outcomes

Designated as an Agency Recognized for Local Community Contribution  
(2023, hosted by the Ministry of Health & Welfare and the Korea Council for Social Welfare)

Commendation from the Incheon Metropolitan City Mayor on the Volunteer Day  
(2023, hosted by Incheon Metropolitan City Volunteer Center)

Commendation from the Minister of Health & Welfare on the World Blood Donor Day  
(2023, hosted by the Korean Industrial Health Association and Hanmaeum Blood Center)

## Creating Community Values



### Revitalizing local economy

#### Job creation & coffee ground recycling

In March 2023, K-eco signed a business agreement with Starbucks Korea and Incheon Seo-gu Self-Reliance Center to promote the recycling of coffee grounds and create jobs for vulnerable groups in the community, and then opened a coffee ground recycling pilot store (called Cafe Earth Star (zero waste cafe), Starbucks' talent donation cafe) on the first basement level of the Water Environment Center at the K-eco head office. Cafe Earth Star is expected to help kickstart the local economy by hiring unemployed youths and young adults from vulnerable groups in the community, creating gainful employment, and using the profits from the cafe operations to empower vulnerable groups to become self-reliant. As a result of creating this social value, we received the Minister's Award for Best Practices in Shared Growth hosted by the Ministry of SMEs and Startups in 2023. We launched a campaign, "Cafe Earth Star". Voluntary donations raised by K-eco employees will be collected on an annual basis and used to empower the socially vulnerable.

### Eco-friendly zero waste 'Cafe Earth Star'

Received the Minister's Award for "Excellent Shared Growth Practice" (Hosted by the Ministry of SMEs and Startups, 2023)

- Production of interior products such as tables, flower pots, & lampshades made by recycling coffee grounds (coffee grounds)\*, a by-product of coffee extraction.  
*\* 56.73 kg of coffee grounds = 3,782 cups of coffee*
- All coffee grounds generated at the store are collected and recycled in connection with the public-private cooperation recycling project.\*  
*\* Coffee grounds → Collection/transportation (Incheon Seo-gu Self-Reliance Center) → Transfer site (Incheon Seo-gu) → Recycling company*
- The store operates without disposable products and uses reusable cups\* to reduce carbon emissions.  
*\* Reduction of 2,366 kg of carbon dioxide by using the Happy Habit app & reusable cups (1,000 cups used 70 times/EA)*



| Café Earth Star on the 1st basement floor of the Water Environment Center at K-eco's head office |



## Creating Community Values

### Revitalizing local economy

#### Training young professionals in the environmental field

K-eco operates five environmental professional development projects to nurture young talents who can contribute to tackling environmental issues such as climate change response and the circular economy. They are largely divided into three specialized graduate schools (climate change, waste-to-energy, & integrated environmental management) and two manpower training courses (training of international environmental experts & training of GHG experts). We are fostering young professionals with environmental expertise and knowledge by collaborating with leading domestic universities, enlisting excellent faculty members, and providing follow-up support to help graduates succeed in securing employment, such as holding special employment lectures, internships, and employment information sessions. As a result of these efforts, 385 people were trained in 2023, and 141 people had success in finding employment.

#### Performance of environmental professional development manpower program

Program	Description	Yr. 2022		2023	
		Trained	Employed	Trained	Employed
Operating graduate schools specializing in climate change	Employment support through training of professionals in climate change response policies by operating specialized graduate schools such as Kyunghee University, Sejong University, Ajou University, & Pusan National University	35	29	51	34
Operating graduate schools specializing in waste-to-energy	Employment support through the training of professionals in waste-to-energy through specialized graduate schools such as Pohang University of Science and Technology, Hallym University, University of Seoul, Chungnam National University, & Chungbuk National University	102	9	93	10
Operating graduate schools in Integrated environmental management	Employment support through training of professionals in integrated environmental management systems by operating specialized graduate schools such as Konkuk University, Kwangwoon University, Yonsei University, Dankook University, & Ewha Womans University	78	7	99	2
Training of international environmental professionals	Supporting young professionals to find overseas jobs by dispatching them to international organizations after operating a specialized internship training course for recruitment at international organizations	24	13	40	27
Training GHG experts	Employment support through training of professionals in GHG emission management, etc., in preparation for the burden of reducing GHG under the new climate system	120	78	102	68
<b>Total for 5 projects</b>		<b>359</b>	<b>136</b>	<b>385</b>	<b>141</b>

#### Contribution to job creation in the private sector through support for growth of the environmental sector

K-eco pursues the practical growth of companies by implementing startup, funding, and technical support, and collaboration projects tailored to each growth cycle of environmental companies.

We have supported startup successes through customized financial support, consultation for entrepreneurs in training or the early-stage of startup in the environmental field, and youth startup and water industry startup contests, and also prompted the sustainable growth of companies in the growth phase by securing business safety and expanding sales channels through the technology development and overseas expansion of water companies and the K-eco collaborative cooperation system. Moreover, we helped IT companies develop and commercialize 87 apps by promoting app development in the private sector with expanded public data openness. Sales growth and expansion of the employment capacity of these companies led to the creation of 748 new jobs.



### Community contribution activities

#### Chenmi – Manmi

K-eco has helped underprivileged neighbors in the local community through the “Chenmi – Manmi” donation program run by its employees since 2010. The Thousand and Ten Thousand Won program is a system, in which K-eco employees donate less than KRW 1,000 or less than KRW 10,000 from their monthly salary to the social contribution fund. The donations are used to operate social welfare facilities during the Lunar New Year and Chuseok and support coexistence with the socially vulnerable and local communities each year.

#### Support for recovery from flood damage

K-eco’s employees conducted recovery support activities and delivered donations to help with flood damage caused by heavy rain in August 2023. K-eco organized an emergency recovery support team (onsite volunteer group) of about 110 people and undertook flood recovery activities in Yecheon-gun, Gyeongsangbuk-do and Cheongyang-gun, South Chungcheong Province, which suffered significant damage from this torrential rain, for two days from August 1 to 2. In particular, we conducted intensive onsite inspections of areas that threatened residents’ health and provided technical support for sewage and livestock waste facilities in flood-damaged areas, having concerns about secondary environmental pollution damage.

The Thousand and Ten Thousand Won program also donated KRW 40 million to the National Disaster Relief Association to provide relief supplies to residents in areas affected by heavy rain for speedy restoration of facilities and livelihood support.



| Activities to support recovery in flood-damaged areas |

#### Neighborhoodly love for vulnerable groups

In February 2024, K-eco visited a welfare facility for people with disabilities in Incheon and delivered daily necessities and donations (equivalent to KRW 28 million) for the vulnerable group. Our eight regional environmental headquarters also expand their support activities for vulnerable groups in local communities across the company each year.

In particular, we undertake activities for the local community by purchasing and delivering donated goods for this Lunar New Year holiday at local traditional markets to reinvigorate traditional markets.

K-eco continues to practice neighborhoodly love and was selected as the highest-rated organization in the 2023 Community Contribution Recognition System\*.



| Delivery of donated goods for the Lunar New Year holiday (January 2024) |

\* Community contribution recognition system: This system recognizes quasi-governmental institutions’ activities that contribute to reinvigorating local communities and promoting welfare by utilizing resources. (hosted by the Ministry of Health & Welfare and the Korea Council on Social Welfare).

# Creating Community Values



## Community contribution activities

### Blood donation service & certificate

We undertake company-wide blood donation drives and blood donation certification donation activities to resolve the domestic blood supply shortage problem and support the treatment of children with leukemia and childhood cancer. The blood donation volunteer service is conducted company-wide quarterly, and 205 people participated in 2023. In the same year, K-eco donated 400 blood donation certificates to the Childhood Cancer Korea for a cumulative total of 3,272 blood donation certificates since 2013, receiving a commendation for its contribution to the spread of blood donation culture from the Minister of Health and Welfare at the 2023 World Blood Donor Day event.

### Community eco-friendly campaign

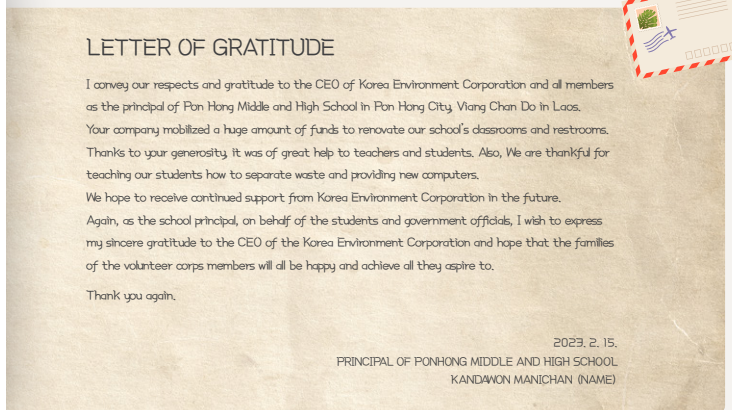
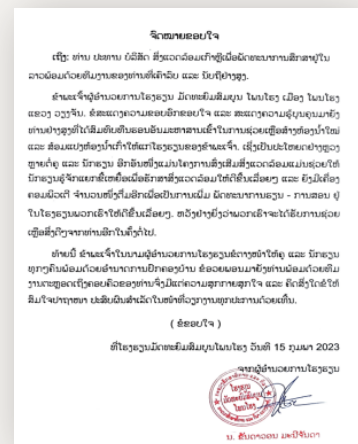
In August 2023, we conducted an eco-friendly campaign with local residents in Songnim Forest near the old Janghang smelter in Seocheon-gun, Chungcheongnam Province. K-eco applied Korea's first eco-friendly soil purification methods to Songnim Forest as part of a project to purify soil polluted by heavy metals from the old Janghang smelter and transform it into a forest where nature can flourish. We conducted various programs with citizens, such as introducing the results of the Janghang soil purification project, safety education, and an environmental quiz contest. Meanwhile, plants planted to preserve the natural environment in Songnim Forest are stably settling and restoring the surrounding environment.

### Global social contribution activities

We have continuously undertaken various global volunteer activities since 2012. We installed a computer lab at Pon Hong Middle and High School in Laos for four days from February 14, 2023, to support a digital environmental education system, and undertook global social contribution activities at Kampung Public Elementary School in connection with K-eco Malaysia and the Malaysian Green Technology and Climate Change Corporation (MGTC) for four days from October 30. We provided climate change and carbon neutrality education and built a smart learning environment for students in public elementary, middle and high schools in Laos and Malaysia. We also painted the interior and exterior of classrooms using eco-friendly functional paint to conserve energy, installed smart TVs, and provided new scientific equipment and necessary supplies to create a digital learning environment.



| 2023 Global social contribution activities in Malaysia |



| 2023 letter of gratitude from LaOS FOR Global Social Contribution activities |

### Earthquake Damage Relief in Turkiye

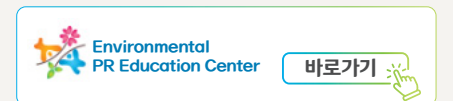
In February 2023, K-eco prepared and delivered earthquake relief supplies to help areas affected by the large-scale earthquake in Turkiye. We delivered 1,550 items, including winter clothing, daily necessities, and food, through the Embassy of Turkiye in South Korea and a logistics company partner. K-eco employees also raised funds for prompt damage recovery and delivered KRW 40 million through the Korean Red Cross.



| Event to donate relief goods for earthquake victims in Turkiye |

### Environmental PR Center

To convey knowledge and information about the environment and ramp up the practice of caring for the environment, K-eco operates Environmental PR Education Centers in seven regions nationwide. The PR Education Center is an open experiential learning space designed to allow students to tangibly learn the importance of the environment. Applications for viewing PR materials can be made through the online website, and the centers are operated free of charge with no separate admission fee.



## Support for the environmental sector in developing countries

K-eco has been designated as an international environmental cooperation center in accordance with the Framework Act on Environmental Policy in 2022 and continues to undertake green ODA\* projects. Green ODA plays a key role in overcoming the climate crisis and achieving carbon neutrality in developing countries. Given the demand for cooperation in the environmental field from aid recipient countries, we are significantly expanding the scale of ODA projects in the environmental field as well as projects from the existing water management focus to various environmental fields, such as air and waste. Through this, we have improved water, sanitation, and air quality in developing countries. Starting with excrement recycling and sanitary environment improvement projects in Uganda and Mongolia in 2022, we have pursued a project to improve air quality management through stronger air monitoring in Mongolia in 2023, so overseas private-sector opportunities should expand based on the trust in overseas environmental markets built up through ODA projects in developing countries.

### K-eco's green ODA projects

Project category	Recipient country	Project name (year of start)	Implementation details
Improvement of water & sanitation environment	Uganda	Sewage recycling in the Busukuma region (2022)	<ul style="list-style-type: none"> <li>Design of excreta recycling facility (60m<sup>3</sup>/day)</li> <li>Environmental impact assessment &amp; facility-related permits completed</li> </ul>
	Mongolia	Sanitation improvement in Ger areas in Ulaanbaatar (2022)	<ul style="list-style-type: none"> <li>Design of excrement pretreatment facility (250 m<sup>3</sup>/day) &amp; sanitary toilets (746 locations)</li> <li>Environmental impact assessment &amp; facility-related permits completed</li> </ul>
Improving air quality	Mongolia	Smart air quality management (2022)	<ul style="list-style-type: none"> <li>Completed installation of one air quality measurement station</li> </ul>
		ICT-based integrated air management (2023)	<ul style="list-style-type: none"> <li>Establishing the implementation plan for constructing air quality measurement stations &amp; integrated air management systems in 21 provinces (Aimags) and completing the invitational training</li> </ul>

\*ODA (official development assistance): ODA refers to assistance provided by quasi-governmental institutions, including governments, with the goal of promoting economic development and social welfare in developing countries. It includes financial support and technical cooperation provided to governments, regions, or international organizations of developing countries.





## Human Resource Development & healthy Organizational Culture

K-eco grooms and fosters professionals through unbiased and socially equitable recruitment and customized education, with an emphasis on work-family balance and a win-win labor-management culture. We secure competitiveness by creating an organizational culture in which all employees can demonstrate their capabilities to the fullest.



### Goal & implementation strategy

#### HRD vision

Grooming and fostering “environmental professionals” to lead the future environment

#### Image for ideal K-eco professionals

K-eco professionals espousing participation & passion, creativity & convergence, responsibility & respect

#### Competency system



#### HRD implementation strategy

- |   |  |   |
|---|--|---|
| <p>1. Nurturing future key talent that will lead to carbon neutrality</p> <p>1-1 Intensive training to become a leading digital innovation institution</p> <p>1-2 Job training that enhances policy expertise &amp; practical use</p> | <p>2. Customized education for each class linked to the “K-eco competency model”</p> <p>2-1 Improvement of education by class based on competency modeling</p> <p>2-2 Self-development &amp; family-friendly education to improve organizational culture</p> | <p>3. Expanding the smart learning platform and diversifying the HRD system</p> <p>3-1 Strengthening edutech-based “K-eco’s smart learning”</p> <p>3-2 Creating an employee-participatory learning ecosystem and diversifying systems</p> |
|---|--|---|

### Major outcomes

<p>Received the Deputy Prime Minister and Minister of Strategy &amp; Finance Award at the Government Contest for Best Practices in Fair Recruitment</p>	<p>Designated as a Trusted Company for Employment of the Disabled (True Company) and received the Minister of Employment &amp; Labor Award</p>	<p>Designated as an Excellent Work-Life Balance Practice Company by the Ministry of Employment &amp; Labor and received the Minister of Employment &amp; Labor Award</p>	<p>Received the Excellence Award at the 35th Korea Labor-Management Cooperation Awards hosted by the Korea Enterprises Federation</p>	<p>Certified as a family-friendly company for the 11th consecutive time</p>
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## Human Resource Development & healthy Organizational Culture



### Recruitment

#### Fair hiring

K-eco has established an unbiased and equitable recruitment culture by adhering to the blind principle throughout the entire hiring process and using a structured interview method. To provide fair opportunities during the recruitment stage, we have ramped up the provision of information and promoted active communication by providing detailed job notices and operating a dedicated call center and open chat room. Moreover, we have improved fairness and transparency by providing a written score analysis table to all applicants for the written test and expanding the interview time for applicants. As a result, satisfaction with the hiring process has increased for the past three consecutive years, and there have been zero wrongful hiring cases.



#### Socially equitable recruitment

K-eco implements socially equitable recruitment to employ people with disabilities, high school graduates, and low-income people. We develop suitable jobs for the underemployed and systematically manage them through separate recruitment and job placement. If necessary, we conduct a limited competition to expand recruitment and actively support onboarding to ensure the stable settlement of new employees. We also run an internship program for people with disabilities and require all employees to receive training to better develop an awareness of people with disabilities. Accordingly, the employment rate for them in 2023 was 4.5%, meeting the mandatory disabled employment rate for four consecutive years.



### 2023 socially equitable recruitment goals & performance

Subject	Goals		Performance
	Number of employees	Criteria	
Youth	78 people	3% of quota	81 people
People with disabilities	155 people	4.32% of full-time workers	161 people
High school graduates	8 people	8% of hired people	23 people
Veterans	135 people	4% of full-time workers	147 people
Local talents in non-capital regions	33 people	35% of hired people	65 people



# Human Resource Development & healthy Organizational Culture

## Human resources development

### K-eco's ideal person

K-eco strives to strengthen institutional capabilities and realize social value as a quasi-governmental institution by nurturing talent with the expertise to lead environmental policies and projects.



**Image for Ideal K-eco professionals**

**K-eco professionals espousing participation & passion, creativity & convergence, responsibility & respect**

Talents who lead participation with passion for building a healthy organizational culture, have creativity & convergence ability to lead the future environment and realize social value while respecting stakeholders

### Professional development strategy

K-eco has established a field-centered, growth-oriented job training system and significantly expanded the training curriculum. We have ramped up leadership and job competency courses to implement policies and secure future growth engines, and also established a talent development system to lead digital innovation, diversified leadership training, and established a basic job training policy course. In 2023, K-eco's HR Development Center operated 124 collective training courses, with 7,198 people completing the training.

### Strengthening customized education in 2023

<b>1 Cultivating thorough leadership</b> Establishment of 6th-year course & 10th-year education for Grades 4 and 5	<b>2 Policy/business build-up</b> Establishment of new policy basic courses (5) Expansion of job-specialized courses (99)	<b>3 Internalization and practice of ESG management</b> Establishment of new visiting programs, such as local traditional markets	<b>4 Strengthening global capabilities</b> Establishment of a new short-term dispatch to international organization program
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### Training courses & number of participants by field in 2022-2023

Subject	Number of courses (EA)		Number of trainees (persons)	
	Yr. 2022	2023	Yr. 2022	2023
Common capabilities (self-innovation)	4	9	150	1,445
Hierarchical leadership	20	21	1,875	1,482
Job training	65	104	2,952	4,354
Total	89	134	4,977	7,281

Employee satisfaction with training

**4.73 points**  
(3.7% ↑ year on year, out of 5 points)

Education time per person

**20.8 hours**  
(18.6% ↑ year on year)

### Job competency & leadership training

K-eco nurtures convergent talent with policy and field understanding skills by strengthening customized job training to respond to each business's policy changes and major environmental issues. As a common job course, we continue to operate an official document/report and OA utilization program to cultivate employees' basic skills and have expanded and operated programs geared to policies and environmental issues, such as carbon neutrality. Furthermore, we support re-employment and entrepreneurship education and training costs for those scheduled to retire.

### Main contents of job training in 2023

Subject	Common to all jobs	Job required	Job specialty
<b>Implementation Direction</b>	Enhancing case-based training & practical skills	Policy & field-oriented capacity improvement	Customized improvement of professional competency for each medium
<b>Description</b>	<ul style="list-style-type: none"> <li>Collaborative operation of "Official document writing course" by internal &amp; external instructors</li> <li>Operation of case-study OA process (Excel, etc.) through preliminary survey</li> </ul>	<ul style="list-style-type: none"> <li>Creation of mandatory policy basics courses for each of 5 media, including climate &amp; atmosphere</li> <li>Creation of professional training on construction safety</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of the number of job-specific courses reflecting policy issues (49 → 75)</li> <li>Difficulty level set for each course considering work skills (34 beginner courses &amp; 41 intermediate courses)</li> </ul>
<b>Performance year on year</b>	6% improvement in practical application of 4 courses	7% improvement in the practical application of 13 courses	6% increase in practical application of 75 courses

K-eco has diversified the leadership curriculum and created the basic policy course for each environmental field. We operate promotion training, competency improvement courses (3 years), level-up courses (6 years) for the step-by-step growth of middle managers and leadership education that reflects ESG management, institutional innovation, integrity, and performance management instilled in managers. Moreover, we provide basic training on policies and laws in the relevant field and onsite practical skills training for new transfers and employees.

### Developing digital innovation-leading talent

K-eco operates programs at each level to foster talents who lead digital innovation, and organize them by field, such as digital transformation, data utilization, and 4th industrial technology. They are classified into basic and advanced courses to provide customized training that strengthens digital utilization capabilities, based on the level of each employee. Moreover, we established a new intensive training course for analysis experts of K-eco data in 2023, training 16 experts through big data utilization, analysis technology, and practical project training.

### Training programs for digital competency development

Field	Course	Fundamental/Advanced
Digital Transformation	Digital innovation capabilities	Fundamental
	Training of digital planning & execution experts	Advanced
	Digital literacy (First/Second Half)	Fundamental
Data utilization	Diagnosis & improvement of public data quality level	Fundamental
	Opening and utilizing public data	Advanced
	Improved statistical data visualization expertise	Advanced
	Training data analysis experts	Advanced
4th industrial technology	Big data project planning process	Advanced
	Case-based RPA planning process	Advanced
	Drone use practice	Fundamental
IT core technology	Specialization in drone use	Advanced
	Database fundamental	Fundamental
	Database advanced	Advanced
Information security	Strengthening the expertise of information security managers	Fundamental
	Response to public institution information security assessment	Advanced
	Response to public institution personal information evaluation	Advanced

# Human Resource Development & healthy Organizational Culture

## Human resources development

### Training global environmental experts

K-eco is proceeding to become a global organization that nurtures environmental experts to tackle environmental issues in the international community while dispatching our experts to selected organizations by analyzing internal and external conditions, and establishing short- and long-term dispatch processes for four international organizations, including UNESCO, with the number of dispatched personnel expanded from 2 to 4.

### Communication education for each generation and class

We provide training to facilitate communication between different generations in the organization and different classes in and around the organization and operate "Generation Empathy Communication Training," in which all classes participate, and "Mentoring Skill Up" for new employee mentors, promoting common grounds and empathy. Moreover, we prioritize majors, experience, and job value when assigning executive positions and ensure non-discriminatory growth opportunities through a competency-based promotion system.

### Female professional development

K-eco is making efforts to utilize female personnel and advocate gender equality. We continuously select women talents through transparent and equitable recruitment. Moreover, when assigning executive positions, we prioritize certain academic majors, experience, and job value and provide non-discriminatory growth opportunities through a competency-based promotion system. We also establish a culture of work-family balance through a progressive workplace culture (flexible work system, early work leave system, etc.). As of 2023, the ratio of female employees is 35.5%, and the ratio of female managers is 10.9%, an increase of 9% from last year.

## HR system based on communication & empathy

K-eco provides HR system guidance and grievance counseling catering to the needs of employees. We produced a video guiding the evaluation, promotion, and transfer system and posted it on the K-eco Tube, reaching 1,000 views as of August 2023. We also provided a "visit-based HR service" for training and counseling at the head office and local organizations once a year. We have also set up an FAQ bulletin board for the HR system and a private HR counseling window to address personnel questions. As a result, employee satisfaction with the HR system and operations increased by 8% from last year.

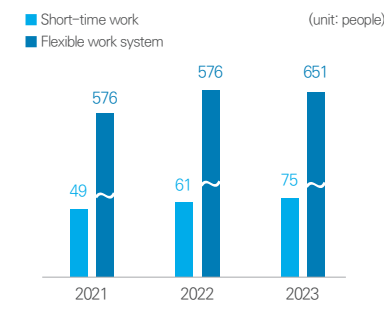
## Work-Family balance culture

### Practicing work-life balance

K-eco facilitates work-life balance by adopting a progressive work culture and establishes a culture of work-family balance, while taking the lead in overcoming the era of low birth rates through policies that consider childbirth and childcare. We actively encourage flexible work routines, such as a staggered work schedule, and review various systems to allow employees to work autonomously and flexibly. Moreover, we have introduced an automatic childcare leave system for employees during childbirth and childcare and implemented short-time work hours and flexible work systems. We also established a new education program, "Comeback Walking" and "Working Mom/Daddy" courses, to support career stability for reinstated workers.



Status of users of the childbirth/childcare care system (unit: people)



## Win-Win labor-management culture

### Welfare benefits

K-eco operates a non-discriminatory welfare benefits system for all employees for each generation and life cycle. In 2023, we improved the accessibility of the welfare benefits system by jointly producing the "Welfare Guidebook" with the labor union, and held a briefing session. In particular, we reflected on the welfare needs of employees, such as financial lectures for the MZ generation, psychological counseling programs, and retirement planning for middle-aged people.

### Major welfare benefit systems

Subject	Description
Self-development	<ul style="list-style-type: none"> <li>Providing equal educational opportunities, language education, &amp; test-taking support</li> <li>Support for capacity building &amp; healing education for emotional workers</li> </ul>
Health promotion	<ul style="list-style-type: none"> <li>Checkup and accident insurance support with the same items &amp; coverages</li> <li>Psychological counseling support through job stress analysis &amp; customized follow-up management</li> </ul>
Culture leisure	<ul style="list-style-type: none"> <li>Support for club activity expenses &amp; discounts on recreational &amp; cultural facilities</li> <li>Retirement pension, cultural &amp; financial support, and opportunities to participate in events given to all employees</li> </ul>
Childcare support system	<ul style="list-style-type: none"> <li>Maternity leave (90 days), guaranteed childcare time, childcare leave, etc.</li> <li>Resolve female employees' grievances on HR, such as marriage/childbirth/childcare &amp; placement in a relative place</li> </ul>

### Labor-management culture strategy for win-win cooperation

K-eco has embodied its labor-management vision with "Building a future-oriented labor-management partnership based on fairness and principles", and has established and operated a cooperation system between labor and management by preparing four major strategies and performance indicators.

Labor-management vision	Establishing a future-oriented labor-management partnership based on processes & principles			
2023 Strategy direction	Establishing rational labor-management relations that comply with laws & principles	Strengthening labor-management collaborative cooperation by activating horizontal communication	Preventing labor-management conflicts in advance by strengthening labor-management capabilities	Realizing a future-oriented partnership by creating joint results between labor & management
Strategic Tasks	<ul style="list-style-type: none"> <li>Strengthening implementation of government policies</li> <li>Conclusion of rational collective agreement</li> </ul>	<ul style="list-style-type: none"> <li>Activating labor-management communication channels</li> <li>Substantial communication for the MZ generation</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening HRD-related education</li> <li>Expanding customized education on labor relations</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening ESG strategy implementation capabilities</li> <li>Creating a good workplace environment</li> </ul>
Labor-Management Council Meeting	<ul style="list-style-type: none"> <li>Labor-Management Working-Level Council (permanent)</li> <li>Collective agreement negotiations (year-round)</li> </ul>	<ul style="list-style-type: none"> <li>Grievance Resolution Committee (semi-annually)</li> <li>Youth Committee (as needed)</li> </ul>	<ul style="list-style-type: none"> <li>Education and Training Review Committee (year-round)</li> <li>Labor-Management Working-Level Council (permanent)</li> </ul>	<ul style="list-style-type: none"> <li>Future Development Committee (year-round)</li> <li>Labor-management consultation (quarterly)</li> </ul>
Major outcomes	<b>Legitimate labor union activities</b> Labor inspection results of the Ministry of Employment & Labor → "Zero" violations of law due to the operation of legal exemption from working hours, etc.	<b>Organizational Culture Diagnosis Index</b> 83.3 points in 2022 → 84.8 points in 2023	<b>Satisfaction with labor education</b> 79.7 points in 2022 → 80.8 points in 2023	<b>Labor-Management Cooperation Level Diagnosis Index</b> 80.0 points in 2022 → 81.3 points in 2023

## Human Resource Development & healthy Organizational Culture

### Win-Win labor-management culture

#### Labor-management consultation system based on participation & communication

K-eco operates various consultation bodies for labor-management joint participation and communication to make management decisions and resolve issues by collecting opinions from inside and outside the organization to reach common grounds through a consultative body in which management, labor representatives, and field departments participate and strive to make efficient and transparent decisions based on it.

We held discussions and joint labor-management workshops to resolve management issues, such as the adoption of the wage system based on job function, strengthened labor-management contact, and reached a dispute-free wage agreement based on mutual concessions and common grounds.

The 35th Korea Labor-Management Cooperation Award Excellence Award

(Hosted by the Korea Enterprises Federation, 2023) 

#### Communication channels & customized labor training

K-eco is making efforts to improve communication and organizational culture between labor and management by utilizing various communication channels. Through this, we have improved work cooperation and efficiency, contributing to K-eco's performance and employees' personal growth and satisfaction.

We also operate customized labor training programs, taking into account the diversity of generations and jobs. Through this, we have delivered necessary labor knowledge effectively, alleviating labor conflicts and contributing to improving overall organizational performance.



| K-eco Communication Camp |



#### Employee communication channels & performance

Communication direction	Internalization of communication channel operation for labor-management partnership of collaborative cooperation		
Communicative type	Onsite communication between labor & management representatives	Communication specific for the MZ generation	Two-way communication involving employee participation
<b>Main Communication Channel</b>	<ul style="list-style-type: none"> <li>Head office/regional Labor-Management Council (quarterly)</li> <li>Occupational Safety &amp; Health Committee (quarterly)</li> <li>CEO onsite management (101 times)/message (26 times)</li> <li>CEO Ethics School (201 people)</li> </ul>	<ul style="list-style-type: none"> <li>Youth Committee (3 times)</li> <li>Communication Camp (29 people)/Communication Mentor System (36 times)</li> <li>Communication training for generational empathy (42 people)</li> <li>Culture x communication program (4 times)</li> </ul>	<ul style="list-style-type: none"> <li>Social media such as YouTube (permanent)</li> <li>K-eco Bamboo Forest (permanent)</li> <li>Right&amp;Wrong Counseling Center (as needed)</li> <li>Integrity/ethics forecasting system (biweekly)</li> </ul>

### Smart work

K-eco improves the efficiency of management activities by introducing the RPA (robotic process automation) system. It automates simple and repetitive tasks, significantly shortening work times and improving efficiency. This system has been introduced and utilized for seven tasks, including welfare payment settlement and education completion. Moreover, we resolve public inconvenience by automating civil petition-related tasks from reception to processing and notification, reducing the civil petition processing time. We also rolled out an E-cloud system to strengthen business continuity without system interruption.

To innovate K-eco's digital-based business, we relaunched the business portal to guide online executive schedules and changed simple and repetitive collection tasks to be simpler and faster. We also developed the next-generation management information system consulting on a fast track to raise K-eco's smart work to the next level. Through this, we have established a data-based scientific and administrative system, integrating dispersed and scattered management information databases and improving inefficient work through business process redesign (BPR). Moreover, we have established and implemented three major human rights management strategies and conducted human rights impact assessments annually to identify and improve human rights risk factors.

### Human rights management

#### Human rights management system

K-eco aims to "realize a fair society without discrimination" and practice human rights management that prioritizes humans." Accordingly, to protect and promote the human rights of all stakeholders, including employees, we mandate employees to declare the Human Rights Management Charter, and have established human rights management implementation guidelines, formulated and implemented three major human rights management strategies, and conducted human rights impact assessments annually to identify and improve human rights risk factors. As a result of these efforts, we have obtained human rights management system certification for four consecutive years.

#### Three major strategies for human rights management

- 01 Self-promotion of human rights ;**  
Enhancing human rights management process
- 02 More widely protected human rights ;**  
Strengthening stakeholder protection
- 03 Human rights for everyone ;**  
Spreading a culture of respect for human rights



Human rights management system certification  
Achieved the target for 4 consecutive years  
(KMR)

#### Human Rights Management Committee

The Human Rights Management Committee is the highest decision-making body to implement K-eco's human rights management and mainly deals with matters related to human rights policies and measures to remedy human rights violations.

The Committee operates independently, with more than half of the committee members made up of outside members to incorporate external perspectives faithfully. It is responsible for continuously evaluating and improving the human rights management system by holding meetings on a semi-annual basis.



| K-eco's Human Rights Management Committee meeting (September 2023) |

## Human Resource Development & healthy Organizational Culture

### Human rights management

#### Human rights impact assessment

K-eco conducts human rights impact assessments annually to proactively identify and prevent major human rights issues that may arise in the course of business dealings. We conduct joint investigations with an external professional organization to derive objective and independent human rights impact assessment results and disclose the human rights impact assessment report to the public through our website.

The human rights impact assessment is divided into institutional operation (overall institutional management) and five major businesses, with the impacts checked according to a checklist of detailed indicators, and is reviewed through the Human Rights Management Committee.

Afterward, we identify areas that need improvement and implement human rights management activities. The 2023 assessment highlighted "Prompt provision of relief procedure results to stakeholders" and "Prevention of infringement of employees' human rights by external stakeholders and human rights protection" as key human rights issues, and we are preparing response measures.



#### Protection of stakeholders' human rights

With efforts to improve accessibility and ease of relief procedures for stakeholders, K-eco produces an integrated guidance manual on relief procedures for human rights violations and gives guidance on them to external stakeholders. Moreover, we have established a new Human Rights Violation Reporting Center to provide relief for other human rights violations that are not covered by the operation reporting center for sexual misconduct, workplace harassment, and abuse of power that are already in operation. To strengthen remedies for sexual misconduct and workplace bullying, the grounds for disqualification of appointment (including distribution of pornography, etc.) were expanded to deter sexual misconduct and revised the workplace bullying guidelines to focus on preventing secondary damage.

Furthermore, we are strengthening our efforts to protect the human rights of our stakeholders by mandating guidance on the objection process for companies participating in bidding, providing onsite guidance on relief procedures for human rights infringement and monitoring the human rights management of our suppliers.

#### Education on human rights

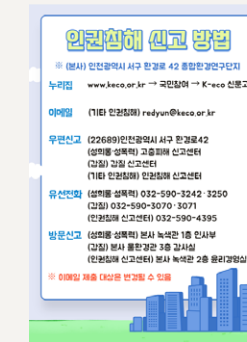
K-eco operates various programs to improve employees' awareness of human rights. We provide essential human rights training for all employees. We also share various content to improve expertise in human rights management and rights relief.

Moreover, to increase the efficiency of human rights policies, we provide stakeholder education to field personnel related to human rights management and conduct group training twice a year to maintain human rights awareness among managers. Through this, we have improved employees' common grounds and awareness of human rights and created an atmosphere that more actively respects and protects human rights within the organization.



#### Creation of a healthy culture of reporting

K-eco operates a human rights violation reporting center in accordance with its human rights management implementation guidelines to protect the human rights of stakeholders. - We ensure the anonymity and identity of reporters by enlisting an independent external professional company (K Whistle) to manage K-eco's Human Rights Violation Reporting Center, providing prompt and appropriate remedies for human rights violations in our business activities.



Moreover, we guarantee conditions for participating in the "Forest of Healing" program to support victims' mental stability and recovery from damage, such as depression, anxiety, and stress caused by incidents of abuse and bullying in the organization.

#### Report processing procedure

- 01 Applicant reporting & counseling
- 02 Investigation and processing of reported cases
- 03 Decisions by the Human Rights Management Committee
- 04 Notification of case processing results

### Tour of local win-win ecological culture



K-eco has kickstarted the organization by creating a culture that enables work-family life balance through education provided to employees and their families. The educational program is configured to realize mutual development between K-eco and the local community, and includes a "Local Ecology Tour" process. Participants in the program visit local traditional markets to promote local tourism. In particular, we provide an exploration course led by a professional guide associated with Jecheon City's "Love Tour" program, and have also produced and distributed our travel materials with guidance provided on local tourism products. A total of 2,250 people participated in the regional win-win ecological and cultural tours in 2023, which created an economic effect of approximately KRW 135 million. Moreover, K-eco actively participated in Jecheon City's Love Tour and received the Jecheon Mayor's Appreciation Plaque in November 2023 for its contribution to kickstarting the local economy.

#### Local win-win exploration program

Subject	Linked educational curriculum	Participation performance
Trainee-led exploration education	Creation of quarterly education on eco-cultural exploration for employees & families - Reflection of the educational module for Jecheon City collaborative "Traditional Market Love Tour"	981 people in 17 sessions
Environmental Safety Camp	Expansion of the Family Environment/Safety Experience Camp (3 → 6 times) - Exploring nearby areas such as Jecheon & Danyang and experiencing activities	204 people in 6 sessions
Leadership Connection	Linking of the 3-day, 2-night leadership course for promotion candidates and local tours - Expanding the Traditional Market Love Tour & visits to nearby areas such as Danyang	1,019 people in 18 sessions
Process for employees scheduled to retire	Local exploratory tours linked to the curriculum for employees scheduled to retire - Expanding exploratory tours to nearby areas such as Yeongwol	46 people in 3 sessions



## Creating a Safe Workplace

Safety is the primary core value in all management activities. K-eco is making concerted efforts to create safe and healthy workplaces. Under the principle that "There is no compromise with safety," we keep practicing field-centered safety management, have strengthened our disaster and cyber security systems, and take the lead in establishing a culture of safety in daily practices to become a trusted corporation.

### Goal & implementation strategy

**Vision**

Creating a healthy, safe & happy workplace

**Goals**

Achieving zero serious accidents in 2023 /  
Reducing industrial accidents by 60% by 2024 (compared to 2019)

**Implementation strategy**

To create safety-prioritized workplaces by strengthening safety & health management and internalizing a safety culture

### Major outcomes



Achieved zero serious disaster in 2023



Best practice of proactive government administration Received Excellence Award (Manhole Keeper)



Won the Minister of the Interior & Safety Award for contribution to the development of the safety industry



Achieved "No. 1 Public Institution" in the evaluation of information security management status by the National Intelligence Service in 2023

## Creating a Safe Workplace



### Safety & health management system

#### Safety & health management implementation system

K-eco has embodied its vision for safety and health management with "To realize healthy, safe and happy workplaces", and undertakes safety and health management, making it a top priority. We implement rapid and systematic safety management by establishing the Safety Management Department directly under the CEO and a safety and health management promotion system. The Safety Management Office is comprised of 18 people from three departments, including the Safety Management Department, Construction Safety Department, and Emergency Planning Department, and manages the safety of employees, including suppliers. Moreover, each of K-eco's 21 organizations operates a safety and health management implementation system that covers everything from safety managers to executive directors to ensure execution capabilities. We also operate internal and external safety communication channels, including those of external experts, to reflect their opinions in management activities. The Safety Management Committee, comprised of 18 members, including the CEO, employees, and external members, holds semi-annual meetings to deliberate on important safety-related matters. Moreover, each organization operates the Occupational Safety and Health Committee and the Safety Workplace Council to determine important matters related to safety and health and address obstacles faced by suppliers. We also operate various communication channels, such as discussing inspection results with the major disaster prevention inspection team through Safety Communication Channel meetings and reflecting experts' suggestions in management activities.

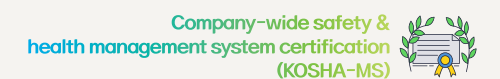
#### K-eco's safety & health management policy

K-eco recognizes safety and health management as the primary core value of all management activities and proactively implements the following safety and health management policy to create safety-prioritized workplaces.

- 01 We prioritize safety and health activities and strive to protect the lives and safety of the people, including our suppliers' employees.
- 02 We set safety and health management goals, prepare plans to achieve them, and operate an optimal safety and health management system through periodic monitoring and upgrading.
- 03 We take the lead in establishing policies to create a safety culture that can make safety a part of daily life within the organization through continuous customized training for employees and the operation of various communication channels.
- 04 We comply with safety and health laws and safety rules and create a safe and comfortable workplace environment through thorough assessment and improvement of harmful and risk factors.

#### Advancement of safety & health management system

All organizations (15 units), including K-eco's regional units, have established a safety and health management system (KOSHA-MS). Moreover, we continuously inspect and upgrade it according to PDCA procedures to ensure the system can be firmly instilled even among field workers. In 2023, we enacted and revised 39 types of safety and health management system manuals, procedures, and guidelines and 31 articles of K-eco's Industrial Safety and Health Management Regulations to meet our business characteristics. We have also strengthened our execution capabilities through internal auditor training (20 people) and KOSHA-MS training (127 people) for safety managers in each organization.



#### Providing internal & external company-wide joint consulting

K-eco's inspection team, comprised of internal and external experts visited 21 organizations and conducted onsite consulting on the Serious Accident Punishment Act. We prepared an improvement plan to respond to the Severe Accident Punishment Act through customized consulting for each organization and improved the autonomous safety capabilities of local units accordingly. Moreover, we provided monthly safety management services to all organizations by enlisting an external safety professional organization (Korea Industrial Safety Association) to provide safety management expertise at least once a month, and strengthened onsite operability through various supports, including identifying workplace hazards, guidance on legal compliance, and special lectures.

#### Major inspection items for onsite consulting

Subject	Major inspection items
Current Status	<ul style="list-style-type: none"> <li>Identifying the status of facilities subject to safety management &amp; hazardous/dangerous machinery in connection with risk assessment and checking missing facilities</li> </ul>
Safety & health management plan	<ul style="list-style-type: none"> <li>Reviewing whether the safety &amp; health management plan has been appropriately prepared by reflecting on the implementation of the Severe Accident Punishment Act</li> <li>Inspecting and checking the adequacy of each organization's legal register, law list, compliance evaluation table, etc.</li> <li>Explaining future plans related to the operation of a safety &amp; health management system that reflects the Severe Accident Punishment Act and discussing the operational measures</li> </ul>
Other consulting	<ul style="list-style-type: none"> <li>Consulting, including Q&amp;A on implementation of the Severe Accident Punishment Act and operation of the safety &amp; health management system</li> </ul>

## Creating a Safe Workplace

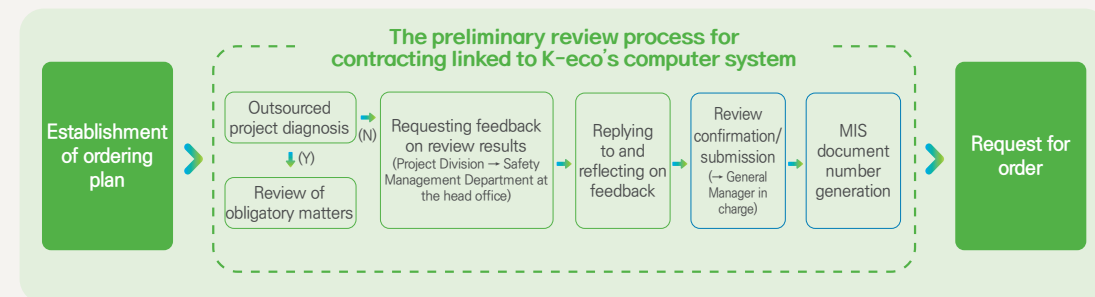


### Safety & health management system

#### Establishment of MIS (Management Information System) for safety management

K-eco established a safety management computer system in 2023 to prevent the omission of safety essentials and systematically manage all documents to improve safety regulatory compliance and work efficiency. In particular, we have computerized the eligibility diagnosis for contract-based projects and reviewed the legal obligations before ordering such projects. We aim to reduce the legal risks resulting from non-compliance with regulations and make efforts to ensure the safety of our suppliers.

#### Preliminary review process for outsourcing projects



### Field-centered safety management

#### Internalization of risk assessment

K-eco has established a training system for managers and workers on risk assessment and improved the level of the assessment system through an adequacy review by external experts. With this, we have conducted training for safety and risk assessment personnel in April 2023, identified 908 harmful risk factors (351 office tasks & 557 frequency intensity methods), and completed improvements on all of them. Moreover, we have conducted an adequacy review by external experts on the risk assessment results and established a risk assessment plan for the next year.

#### Operating a tight safety inspection network

K-eco operates a tight safety inspection network, including regular, as-needed, and special inspections, including the 4-4-4 inspection. Moreover, we operate an inspection team to prevent serious disasters and limit safety blind spots. In 2023, the number of external experts, including industrial safety and legal experts, was expanded to 15, and 25 hazardous workplace sites\* in all were inspected for compliance with laws such as the Occupational Safety and Health Act and onsite risk factors. The effort allowed 145 risk factors to be identified and improved, and the results of major disaster prevention inspections were shared with the management and expert suggestions were collected through safety communication channel meetings and special safety lectures.

\* 25 sites: Laboratories (19) and construction sites (6)



| Safety inspection of the Ulijn sewer pipe maintenance project site in Ulijn-gun (April 2023) |

### Spread & education of safety culture

#### Creating a culture of safety as a daily life

K-eco designates the 27th day of every month as the Safety CCA Day with management participation. CCA on this safety-assured day is an abbreviation for communication, confirmation, and action, and various participatory activities such as communication, inspection, education, and experience are undertaken under the theme of safety once a month. With this, we evaluated the activities and awarded the best operating headquarters at the end of the year. In addition, the second week of November every year is designated as "K-eco Occupational Safety and Health Week," and various programs are implemented. Firstly, we ran a contest to showcase the best cases of disaster and safety activities, in which our suppliers participated. Through this, we selected the 13 best cases and awarded additional points in internal management evaluation. Secondly, we held a contest for safety slogans that reflected K-eco's business characteristics and selected the top 5 of 367 submissions and shared them through our computer network. Our programs focus on spreading a safety culture, such as holding safety quiz competitions to strengthen the safety capabilities of employees.

#### Strengthening employees' safety capabilities

In 2023, 168 K-eco employees acquired new safety certifications, which is the result of operating programs to support safety certification acquisition under the special instructions of the CEO. A meeting was held between the CEO and the certification holders, and a reward was awarded to the Acquisition Department.



| 2024 Meeting with safety field qualification holders |

Moreover, various customized programs are operated to strengthen the safety capabilities of employees. Firstly, we conducted intensive and customized safety practical training for three days for 127 safety managers. We also held the "Safety Manager Leadership Camp" for senior safety managers to provide a venue for exchanging safety know-how and information. Secondly, we selected five in-house safety and health technicians to support professional training at safety and health training institutes to improve the training effectiveness for each department. Thirdly, we conducted specialized education for each safety management theme through outsourcing project manager education and construction safety expert education. Moreover, an experiential education program that transcends simple rote learning education is operated. In particular, we conducted onsite participatory training, including VR experiences and first aid training for 841 employees, through the Safety Experience Center at the head office.

Workers who acquired new safety certification  
168 people (2023)



## Creating a Safe Workplace



### Construction safety management

#### Establishment of a safety management system for each construction stage

K-eco has established an effective safety management and prevention system for each stage of the construction work for the environmental facility installation project. Our construction projects are classified as complex projects in accordance with the Construction Technology Promotion Act, and all sites are selected as high-risk ones with a high risk of accidents and are systematically managed.

Firstly, we compiled the Plan to Establish a Safety-Prioritized Culture for the ordering stage in 2023 to install a site-centered safety management implementation system through parallel promotion of consulting and regulation. In the site manual, we specified the construction work to be ordered. Secondly, we expanded the safety management of small-scale construction projects beyond legal standards for the design stage, and designed smart safety equipment to be incorporated into even non-mandatory construction projects. We also placed safety managers at all sites regardless of the construction amount. Moreover, during the design economic feasibility review (VE) stage, we considered safety over economic feasibility and took preemptive measures by reflecting the savings in safety-related construction costs.

Thirdly, at the construction stage, we established standards for evaluation, consulting, and safety management to raise the level of safety management for each site.

We provided safety activity evaluations and consultations through a safety professional organization and rewarded excellent headquarters and excellent sites accordingly. We are resolving the difficulties faced by field supervisors in fully grasping complex safety tasks by publishing and distributing the Field Worker's Guide for Construction Safety.

Publication and distribution of the Field Worker's Guide for Construction Safety Participant safety management evaluation of construction projects by the Ministry of Land, Infrastructure & Transport Achieved a 'Very Good' rating



(2023)

#### Expansion of smart safety equipment in construction work

K-eco has prepared a standard model for smart safety equipment that reflects K-eco's characteristics to eliminate safety blind spots by establishing a tight safety management network. In December 2022, we established a policy to strengthen K-eco's standards for safety design for small-scale construction projects, ensuring a safe environment that exceeds legal standards. Afterward, we reflected on the expanded deployment of smart safety equipment for construction work to prepare an appropriate equipment configuration plan, and then specified the mandatory application and usage standards of smart safety equipment in the site manual.

#### Smart safety equipment for construction work

Construction type	Basic equipment	Additional optional features
Duct		Prevention of construction machine collision, earth retaining collapse warning, etc.
Processing yard	Intelligent CCTV	Oxygen/harmful gas measuring equipment, seat belt hook fastening detection, etc.
Architecture		Tower crane collision prevention, etc.

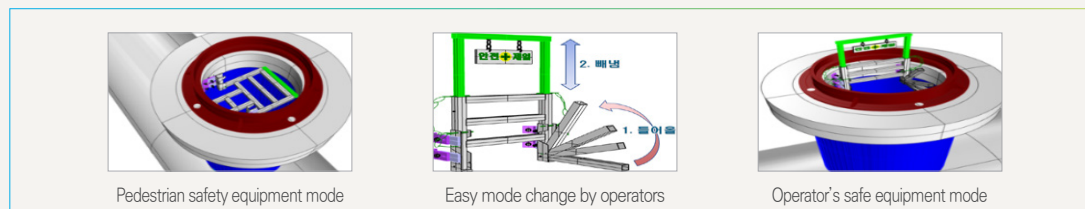
#### Development of "Manhole Keeper"

K-eco developed a safety device called Manhole Keeper to prevent pedestrians and workers from falling due to the loss of manhole covers during heavy rain. We performed a structural design using 3D modeling to prevent complex accidents and established and verified standards to prove the main performance. Afterward, we worked with the Manhole Keeper's manufacturer to improve and supplement its functions. The fully developed Manhole Keeper has been installed at 10 sites, including Cheongju City, and we plan to expand its rollout to construction sites in the future.

Received Excellence Award for Manhole Keeper in Best Practice in Administration Contest (Co-hosted by the Ministry of Public Administration & Security, 2023)



#### Manhole Keeper development case

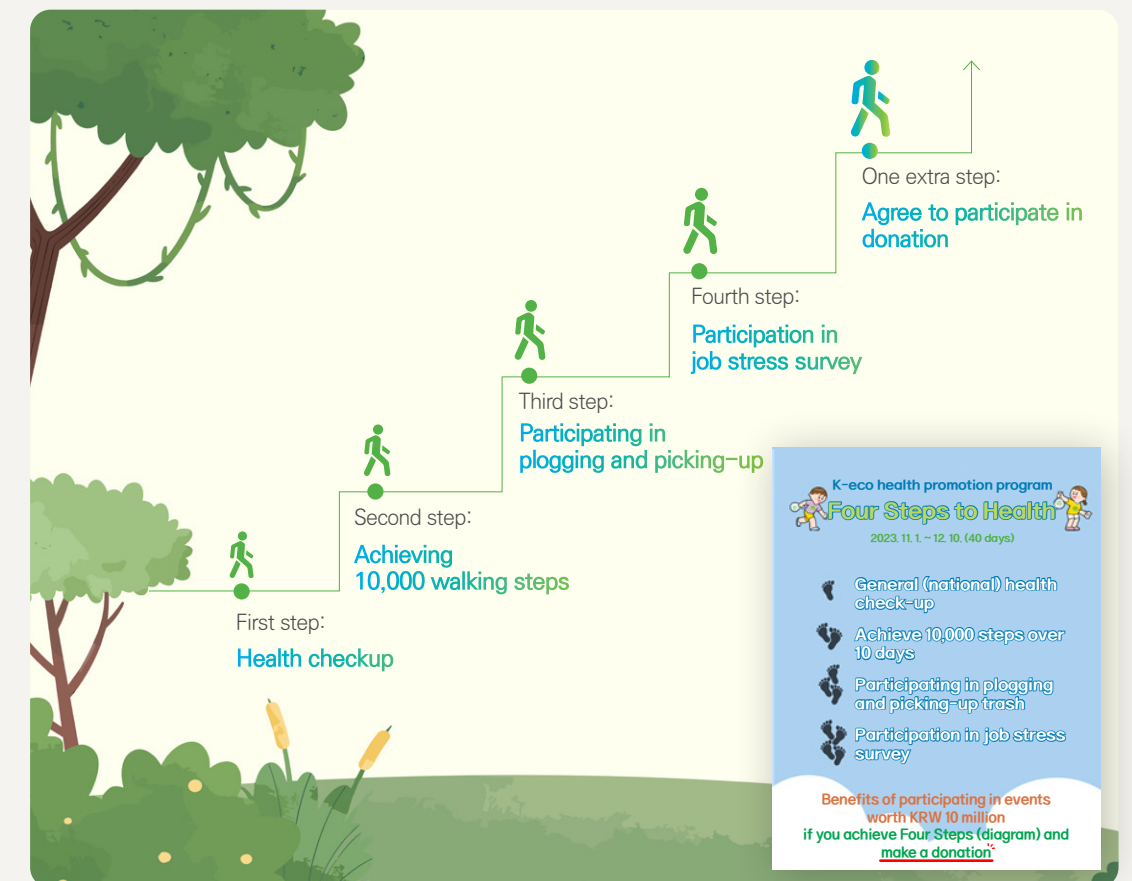


### Healthcare activities

#### Strengthening customized health promotion activities

K-eco has implemented a healthy work-life balance through customized health management programs for employees. We increased the screening rate through periodic health check-ups (4 times) and "Four Steps to Health" health promotion program operation. Moreover, we promote customized follow-up management, such as tracking observation and health consultations for those with medical issues, and implement follow-up measures by department according to the results of special health examinations and work environment measurements. We also investigate harmful work factors that burden the musculoskeletal system to prevent musculoskeletal diseases and improve the workplace environment.

#### "Four Steps to Health" program



#### Improvement of job stress

In 2023, K-eco conducted a job stress survey to prevent employee health disorders and improve the workplace environment. We checked stress levels by comparing company-wide, departmental, and individual survey results and implemented a customized stress improvement program (one-stop psychological counseling service & department-specific EAP). In addition, we expanded the professional psychological counseling service (217 cases in 2022 → 315 cases in 2023) and launched the "Peace of Mind Bus for Visit-Based Psychological Support" (7 times, 250 people).



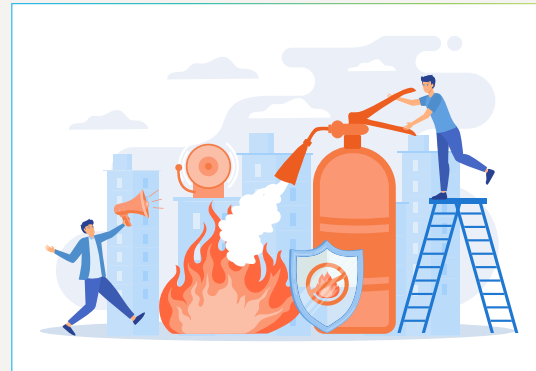
## Creating a Safe Workplace



### Disaster management system

#### Improving disaster response capabilities

K-eco selects facilities subject to fire safety management, establishes a firefighting plan, and conducts safety inspections in the first and second half of the year to prevent and improve response to fire safety accidents. In November 2023, we revised each project's safety management prevention plan, expanded disaster types and target projects, and conducted the Safe Korea Training to improve response capabilities for each disaster type. Furthermore, we introduced two disaster and safety communication networks (PS-LTE) and constructed a video conference system for the flood control network between the Ministry of Environment and K-eco to strengthen the foundation for rapid communication with related organizations.



#### Securing initial response capabilities during chemical spills

K-eco establishes a prompt initial response system by conducting simulation training in preparation for chemical safety accidents that may occur in laboratories, etc., and creates a safe workplace environment by preventing secondary accidents. In 2023, we conducted 10 simulation training for chemical safety education and leak accident response at the HQ in Busan/Ulsan/Gyeongnam and the HQ of Eastern Metropolitan Area. Furthermore, we diagnosed risk factors at 67 business sites handling hazardous chemicals and implemented customized safety management on site, such as labeling onsite risk points. We also registered each business site's risk factor discovery points on a diagram and provided it to the business site. Through this, we were able to visually identify and manage risk factors within the business site, preventing unexpected safety accidents in advance.



| Simulation training for chemical spill accident |

### Cyber security system

K-eco operates a response system to prevent environmental computer service failures and interruptions. In preparation for computer system failures, we have signed an agreement on response goals and activities with our integrated maintenance vendor to control the system and computer equipment round the clock, all year round and operate a joint response team. Moreover, we have established a disaster recovery plan B operational system and set priorities for disaster recovery and response systems through business impact analysis. We have doubled the network speed to prepare for failures and reinforced the power supply to increase response capabilities, while operating the disaster recovery center equipped with a triple backup system for key information assets. K-eco revised its cyber crisis response manual and formed a public-private joint emergency response team. To prevent system security incidents, a preemptive defense system has been set up to prevent hacking through real-time monitoring and immediately block malicious code upon detection with the support of a stronger defense system through external cooperation, such as mock hacking and vulnerability improvements provided by professional organizations.

Evaluation of information security management status  
Achieved "No. 1 quasi-governmental institution"  
(National Intelligence Service, 2023)

Achieved "S Grade" in personal information  
management level diagnosis  
(Personal Information Protection Commission, 2023)





# Transparent & Trusted Governance

K-eco pursues transparent and professional management based on the trust and confidence of the people. To this end, we have strengthened ethical management and anti-corruption, focusing on human rights management and enhanced expertise through the BOD and the K-eco Future Development Committee. We also thoroughly manage risk to ensure the stability of our business and organization with the aim of increasing trust with the public and stakeholders and realizing sustainable management through these efforts.

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## Ethical Management & Anti-Corruption

K-eco's philosophy of integrity, ethics, and human rights management is "To promote ethical values to emphasize the preciousness of existence and protect it with integrity." Here, "preciousness of existence" refers to the essential values of citizens, employees, and natural resources, "ethical values" represent virtuous morals and principles, and "integrity" refers to credible and corruption-free actions. Based on this philosophy, K-eco strives to secure compliance, anti-corruption, and transparency to create a clean and ethical culture in all management areas, including customer service activities, social contribution activities, and human rights management.



### Goal & implementation strategy

Integrity, ethics, & human rights management philosophy

K-eco promotes ethical values to emphasize the preciousness of existence and protects it with acts of integrity.

Implementation goals

Clean K-eco trusted by the public with fair & transparent ethical management

Implementation strategy

- 01** Strengthening the ethical management system
- 02** Preemptive management of ethical risks
- 03** Internalization and adoption of ethical culture

Implementation projects

- ① Strengthening ethical leadership by example in high-level positions
- ② Creating and operating the Integrity & Ethics Committee at each HQ
- ③ Establishment of a foundation for ethical management
- ④ Identification/assessment of ethical risks appropriate to K-eco's characteristics
- ⑤ Establishment of preventive ethical risk control activities
- ⑥ Establishment of a new anti-corruption & compliance management system (ISO 37001&37301)
- ⑦ Internalization of an ethical culture based on internal communication
- ⑧ Spreading a culture of integrity & ethics among stakeholders
- ⑨ Operation of a transparent & open reporting system

### Major outcomes

Obtained human rights management system certification for four consecutive years



Acquired certification of the anti-corruption & compliance management system (ISO 37001 & 37301)



No violations of the Act on the Prevention of Conflict of Interest Related to Duties of Public Servants for two consecutive years



## Ethical Management & Anti-Corruption



### Ethical management system

#### Ethical management organization

K-eco's ethical management is centered around the Integrity and Ethics Committee, the highest decision-making body for efficient implementation. The Integrity and Ethics Committee discusses major policy decisions and pending issues in ethical management, and the Ethical Management Office and Audit Office, which are dedicated organizations, establish and monitor company-wide ethical management tasks and perform anti-corruption work. Moreover, the Integrity and Ethics Implementation Committee at each HQ under the Integrity and Ethics Committee diagnoses the areas of integrity and ethics vulnerabilities, develops integrity and ethics programs catering to the characteristics of the HQ, and inspects the progress of the implementation. Through this systematic structure, K-eco has established a transparent and inclusive organizational culture and realized ethical management.

#### Declaration of STEP-UP for integrity, ethics, & human rights management

K-eco has strengthened its ethical management system and internalized an ethical culture to create a "Clean K-eco trusted by the public through credible and transparent ethical management." In March 2023, K-eco declared 2023 as the first year to grow into the top tier in integrity, ethics, and human rights management, and embodied the institution's integrity, ethics, and human rights management philosophy with "We promote ethical values to emphasize the preciousness of existence and protect it with integrity." In March 2024, we held the STEP-UP for integrity, ethics, and human rights management declaration ceremony and announced a comprehensive integrity innovation plan for 2024 to create an inclusive and equitable organizational culture and grow into an organization trusted by the public. We have set the three major strategic goals for integrity innovation of creating an integrity ecosystem without blind spots, promoting integrity policies centered on sites and departments, and improving intimacy with integrity through trust and communication, and implemented detailed programs.



Declaration ceremony of STEP-UP for integrity, ethical, & human rights management (March 2024)

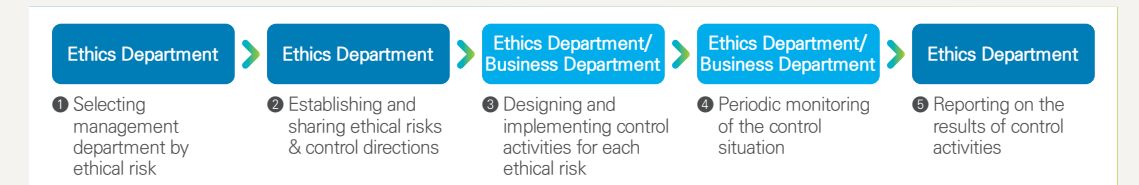
### Identifying and preventing ethical risks

K-eco has minimized blind spots of ethical risks by thoroughly identifying ethical risks and customizing control management. After assessing them for materiality, we have identified and deduced 11 common/general ethical risks and 11 unique/core ethical risks, as well as 103 ethical risks through a comprehensive ethical risk identification activity that took into account environmental changes from last year, and categorized them into 22 ethical risks in eight areas. Afterward, we determined the risk levels and priorities depending on the impact and probability of occurrence of the identified risks. We have improved the effectiveness of ethical risk control by designating the managing department for each risk factor and designing and improving control activities centered on each risk factor. Furthermore, the rollout of an anti-corruption and compliance management system (ISO 37001 & 37301) has enhanced risk management by field departments.

Anti-corruption & compliance with regulations  
Acquiring the management system certification (ISO 37001 & 37301)



### Customized ethics control activity process



# Ethical Management & Anti-Corruption



## Diffusion of ethical management culture

### Ethics & anti-corruption education

K-eco has conducted customized ethical management education to increase employees' participation and commitment to ethical management and to internalize it. Firstly, we conduct the "Senior Course for Ethical Management" (hosted by the Anti-Corruption & Civil Rights Commission) for high-ranking executives and ethical job education directly led by the CEO twice a year to strengthen ethical leadership capabilities. In addition, we provide essential education to all employees, including the CEO Ethics School, improvement of awareness for the disabled, child abuse, workplace bullying, sexual harassment prevention, and ethical and human rights implementation measures. Moreover, we provide customized education on ESG, ethics, and human rights through group education for promoted employees and managers at each level. We also further spread the culture of integrity and anti-corruption by conducting a "Visit-Based Anti-Corruption and Integrity Concert" that visits the HQ of an area's environmental office and sites.

### CEO Ethics School

In May and September 2023, K-eco conducted a CEO Ethics School, including the CEO's special lecture on ethics and human rights, to strengthen ethical management leadership. The CEO Ethics School, at which the K-eco CEO personally lectures, was implemented to meet public/quasi-governmental institutions' expectations of stricter compliance and ethical management standards, including ESG initiatives, and to create a credible and ethical management culture where managers lead by example. Moreover, it shared K-eco's integrity, ethics, and human rights management plan for 2023 and discussed the role of managers and action plans necessary to increase the implementation.



| CEO Ethics School (September 2023) |

### Anti-corruption efforts

K-eco has strengthened its preventive efforts and employees' anti-corruption awareness in corruption-susceptible tasks with autonomous discretion over business and a relatively high frequency of contact with industry insiders and public officials.

In 2023, we prepared a standard construction period estimation guide to prevent and manage corruption in supervision and inspection work in the environmental field. Moreover, we registered the assets of those in charge of development information (25 cases) and checked for asset increases using business information.

We also toured construction and outsourced sites to provide integrity training and consultations and conducted satisfaction surveys (114 locations) to increase transparency in our work performance. We evaluated the recycling performance and grade of recycling vendors through cross-examination between environmental HQs. We also verified the test inspection results of environmental measuring devices in four stages (3,700 cases) and established a travel policy requiring two or more people to inspect measuring devices.

In addition, we conducted various anti-corruption education and simulation training and collected employees' pledges to comply with norms and practice ethical rules.

### Strengthening employees' anti-corruption capabilities



Subject	Description
Anti-corruption education and training	<ul style="list-style-type: none"> <li>Special lectures on integrity &amp; ethics led by the CEO for all employees &amp; education on disseminating the code of conduct led by the head of each department</li> <li>Simulation training in which employees directly judged and reported hypothetical corruption scenarios (2 times)</li> </ul>
Cultivating anti-corruption awareness	<ul style="list-style-type: none"> <li>Establishment of anti-corruption &amp; compliance policies &amp; pledge to comply with norms and practice ethical rules (3,531 people)</li> <li>Integrity message by the CEO (7 times, including "we are all duty-bound to integrity &amp; ethics") and establishment of anti-corruption &amp; integrity slogans</li> </ul>

## Efforts to prevent conflict of interest

### Operating the conflict-of-interest prevention system

K-eco has established operational regulations to prevent conflicts of interest and is actively implementing a mid- to long-term roadmap to prevent conflicts of interest and corruption and the risk of conflicts of interest within an organization or company and maintain transparency.

Vision			
K-eco, free from conflicts of interest & vested interests			
Roadmap	<b>Introduction phase (~ 2022)</b> <ul style="list-style-type: none"> <li>Establishment of the Master Plan to Prevent Conflicts of Interest</li> <li>Setting the foundation for operating a conflict-of-interest prevention system</li> </ul>	<b>Stabilization phase (2023 - 2024)</b> <ul style="list-style-type: none"> <li>Internalization of the conflict-of-interest prevention system</li> <li>Establishment of a preemptive prevention system to eradicate vested privileges and practices</li> </ul>	<b>Advancement phase (2025 - 2026)</b> <ul style="list-style-type: none"> <li>Leading the conflict-of-interest prevention system</li> <li>Spreading a culture of eradicating vested privileges &amp; practices</li> </ul>
Strategic goals	Tight operation of conflict-of-interest prevention system	Early establishment of conflict-of-interest prevention culture	Eradication of vested privileges & practices
Strategic programs	Five programs, including conflict-of-interest prevention and specialized internal control operation	Five programs, including spreading the culture of voluntarily complying with the conflict-of-interest prevention system	Five programs, including on-site monitoring of risks of preferential treatment & practices

### Establishment of conflict-of-interest prevention culture

K-eco operates [Step 1] individual self-inspection of conflict-of-interest risks, [Step 2] departmental conflict-of-interest risk assessments and control activities, and [Step 3] company-wide control activities and an inspection system to operate the conflict-of-interest prevention system seamlessly. Moreover, we strive to establish a culture of preventing conflicts of interest by educating all employees, collecting anti-corruption and compliance pledges, and conducting conflict-of-interest scenario response training.

### Conflict-of-interest risk management for retirees

K-eco has overhauled related systems by conducting education to prevent preferential treatment or corruption of retirees and those scheduled to retire and operating a specialized anti-corruption education program for those scheduled to retire and regularly providing guidance on the application of anti-corruption laws and penalties to those who have retired within the past three years. Furthermore, we continue to operate a mandatory reporting of employment history, etc., for retirees scheduled to be employed, and expanded the procedure introduced in 2022 to confirm access to the head office building for retirees nationwide in 2023.

K-eco has strengthened its internal control execution ability by preemptively establishing an internal control reinforcement plan and a company-wide risk management plan. In 2023, we created the Ethical Management Office, a department in charge of establishing and operating the company-wide internal control system. We designated the head of the Ethical Management Office as the internal control officer and assigned him the control tower role. Moreover, we have systematized a three-line internal control system consisting of the field department, internal control department, and audit office.

#### (Three-line system for Internal control)

- (1st-line internal control activities) Internal control self-assessment (CSA) and risk management & control activities (all departments)
- (2nd-line internal control management) Support & supervision of internal control activities & internal control monitoring (Ethical Management Office)
- (3rd-line internal control audit) Diagnosis, audit, and improvement of internal control functions such as organizational governance & risk management (Audit Office)

To establish an internal control system, we identified and evaluated 1,345 risks through risk control activities across all departments in 2023 and undertook improvement activities to reduce risks through well-established management strategies and plans for risks related business and management activities. We operate the Risk Management Committee to review overall company-wide risk management and internal control.

Inspection of internal audits  
"Grade A"  
(Hosted by the Board of Audit & Inspection, 2022)

## Internal control management

# Governance

To lead ESG management, K-eco operates the Board of Directors (BOD) and K-eco Future Development Committee based on expertise and transparency. We also have established a company-wide risk management system and operate a risk management committee to prevent and manage risks across management and business.



## Governance



### BOD composition

K-eco's Board of Directors (BOD) is the highest decision-making body that deliberates and decides on the company's important policies and decisions. As of the end of April 2024, the BOD, chaired by the CEO, is comprised of 13 directors, including six executive directors and seven non-executive directors who are experts in their respective fields of the environment, administration, and economics. The Minister of Environment appoints K-eco's non-executive directors on the recommendation of the Executive Recommendation Committee after public recruitment announcements.

#### BOD Status

\*As of the end of April 2024

Status	Position/Title	Name	Gender	Expertise	Professional Experience	Tenure Held
Executive directors	CEO	Ahn Byung-ok	Male	Environment	- Vice Minister of Environment - Chairman of the Steering Committee of the Presidential National Council for Curriculum & Assessment - Director of the Climate Change Policy Research Institute under the National Assembly Forum on Climate Change - Chairman of the Environmental Preservation Association	'21.12.31 ~ '24.12.30
	Management Planning Director	Cha Kwang-myung	Male	Management planning	- Advisory member of the 20th Presidential Transition Committee - Advisor to the UN World Food Program - Secretary General of the National Assembly Parliamentary Alliance for Children, Population, & Environment	'23.8.1 ~ '25.7.31
	Director of Climate & Air	Yu Seung-do	Male	Environment	- Director of Environmental Health Research Division, National Institute of Environmental Research - Head of Environmental Health Research Department, Environmental Health Research Division, National Institute of Environmental Research - Researcher, Atmospheric Research Department, National Institute of Environmental Research	'21.3.22 ~ '24.3.21
	Water Environment Director	Baik Seon-jae	Male	Environment	- General Director of HQ of Gangwon Environmental Management, K-eco - Director of Water Management Advancement Department, K-eco - Director of Waterworks Department, K-eco	'22.8.30 ~ '24.8.29
	Resource Circulation Director	Jeong Jae-woong	Male	Economy and environment	- General Director of HQ of Jeonbuk Environmental Management, K-eco - Director of Resource Recycling Department, K-eco - Director of Resource Circulation Department, HQ of Western Metropolitan Area Environmental Management, K-eco	'22.8.30 ~ '24.8.29
	Director of Environmental Facilities	Choi Cheol-sik	Male	Civil engineering and environment	- Director of Environmental Safety Diagnosis Department, HQ of Eastern Metropolitan Area Environmental Management, K-eco - Director of Aquatic Ecological Facilities, K-eco - Director of Waterworks and Sewage Business Department, K-eco	'21.9.27 ~ '24.9.26
Non-executive directors	Senior Non-Executive Director	Ahn Yeon-soon	Male	Environment	- Invited professor at Mokpo National University (Department of Environmental Engineering) - President of Jeollanam-do Environmental Industries Promotion Institute - Director General of HQ of Climate & Air Quality Management, K-eco - Director of the National Institute of Biological Resources	'23.1.4 ~ '25.1.3
	Non-Executive Director	Gong Sung-yong	Male	Environment	- Honorary Research Fellow, Division for Air Quality Research, Korea Environmental Institute (current) - Director of Climate and Air Safety Research Division, Korea Environmental Institute - Chief Researcher, Atmospheric Environment Research Team, Research Institute of Industrial Science and Technology - Senior Researcher, CFC Alternative Technology Center, Korea Institute of Science and Technology	'24.4.15 ~ '26.4.14
	Non-executive Director	Rhee Seung-whee	Male	Environment	- Professor of Department of Convergence Energy Systems Engineering, Kyonggi University - CEO, Korea Basel Forum - Senior researcher at Korea Environment Institute - Researcher at Korea Institute of Science & Technology (KIST)	'23.1.4 ~ '25.1.3
	Non-executive Director	Oh Hee-kyong	Female	Environment	- Associate Professor at the Department of Environmental Engineering, University of Seoul - Energy and environment advisory member, National Science & Technology Advisory Council - Chief researcher, Daewoo Institute of Construction Technology	'23.1.4 ~ '25.1.3
	Non-Executive Director	Baik Sung-ok	Male	Environment	- Vice President for Academic Affairs, Yeungnam University - 15th President of the Korean Society of Atmospheric Environment - Chairman of Climate & Air Subcommittee, Central Environmental Policy Committee, Ministry of Environment	'23.12.29 ~ '25.12.28
	Non-executive directors	Lee Chang-heum	Male	Environment	- President of the National Institute of Environmental Human Resources Development - Director of Wonju Regional Environmental Office - Policy Planning Director, Ministry of Environment	Period of appointment ('23.8.28-)
	Non-Executive Director	Cho Yong-beom	Male	Administration	- Spokesperson of the Ministry of Economy & Finance - Senior Administrator, Economic Policy Secretary, Office of the President - Chief Advisor, Asian Development Bank Institute (ADBI), Japan	Period of appointment ('23.8.3-)

## Governance



### BOD operation

Generally, BOD meetings are held regularly once a month, and additional meetings are held when the CEO deems it necessary or when one-third or more of registered directors request it. A total of 17 board meetings were held in 2023, and the attendance rate for board meetings was 80.8%.

In 2023, we strengthened the preliminary briefing process by requiring executives to attend and expanding the cycle of receiving prior questionnaires from non-executive directors on a regular to frequent basis so as to improve the BOD operation. As a result, the number of preliminary inquiries increased by 13 to 40 from last year, and a better understanding of the agenda increased the number of management suggestions to 34 compared to 32 in 2022.

Moreover, we actively leverage the expertise of non-executive directors by expanding their management participation channels beyond the BOD, such as sharing the results of the K-eco Future Development Committee meeting with the BOD to prompt questions and suggestions from non-executive directors who are not members of the Committee and establishing the collaboration window between the BOD and field departments, such as participation of non-executive directors in the head office workshops and special lectures for new employees. The BOD meeting minutes are regularly disclosed through Alio, and the board operation status data for 2023 is shown as follows.

#### BOD Status

Status	Unit	2023
Overall attendance rate		80.8
Attendance rate of non-executive directors	%	95.3
Management suggestions	Cases	34
Suggestion reflection rate	%	100
Preliminary questions	times	40

### Labor director system

K-eco held four Labor-Management Council meetings for the labor director in 2023 and discussed general matters regarding his/her role, including duties, activity support, and education/evaluation to introduce the labor director system, which includes one worker among the non-executive directors.

The labor director system is different from the worker observation system, which allows for only observing the board meetings, given that worker representatives participate in the BOD meetings and have voting rights. We plan to further strengthen the transparency of the BOD by adopting the system.

### Worker observation system

K-eco has operated a worker observation system to enhance the transparency and accountability of the BOD's decision-making process and to create opportunities for employees to participate in management. Observers appointed by the labor union shared and explained the agenda in advance. The observers attend board meetings, monitor the decision-making process, and, when necessary, participate by obtaining the right to speak from the CEO. In 2023, we reflected the management suggestions of employee representatives and switched to the "paperless BOD" (using tablets) from the start of the year to express our commitment to achieve carbon neutrality (an estimated 7,500 sheets of A4 paper saved for every 10 face-to-face board meetings per year). With the higher effectiveness of BOD meetings by immediately reflecting the proposals of workers' representatives, the attendance rate of worker observers at BOD meetings in 2023 was 76.5% (13 times), a 26.5%p increase year on year.

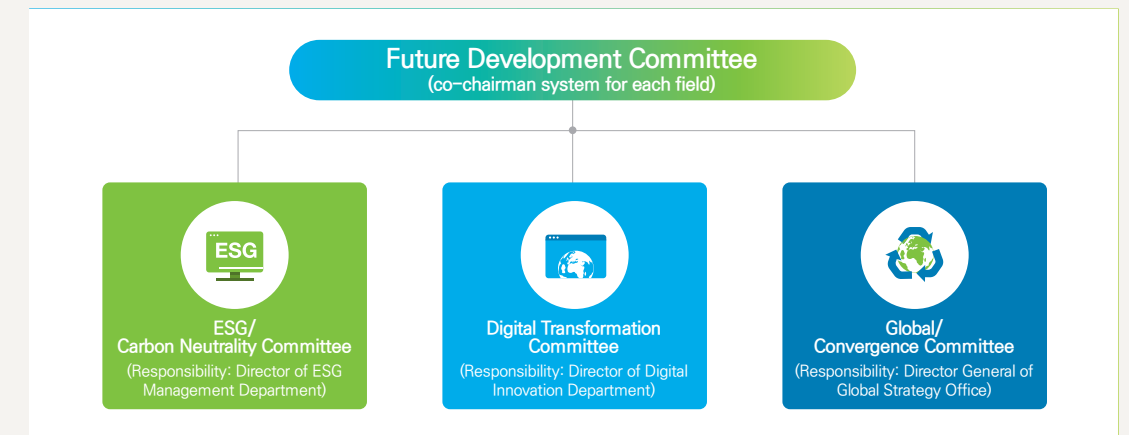


### K-eco future development committee

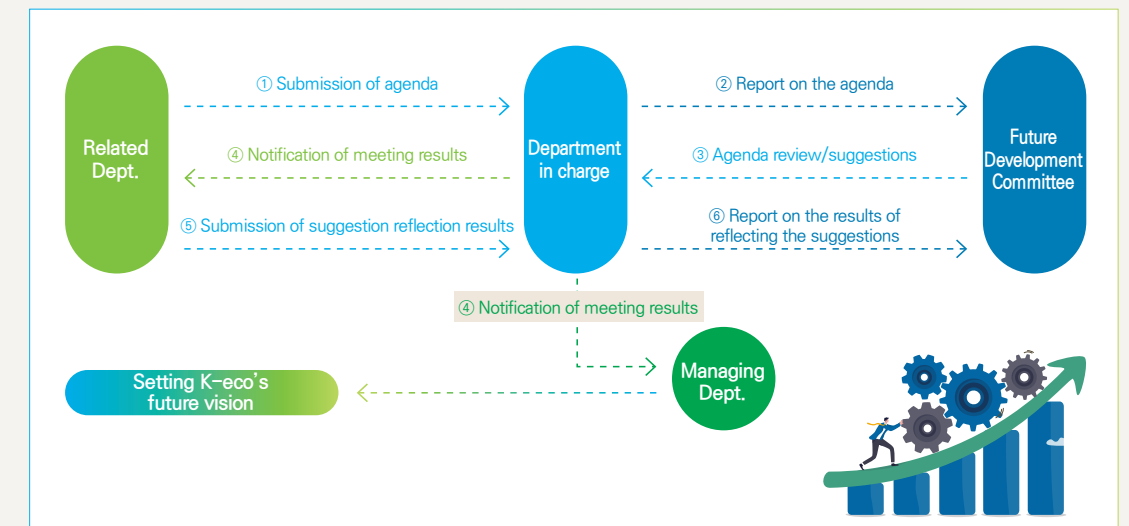
In May 2022, K-eco established "K-eco's Committee Operation Guidelines for Future Development" and formed three committees for ESG, carbon neutrality, and digital transformation to develop K-eco and improve management efficiency. In January 2024, we established a new Global and Convergence Committee to provide specialized advice on globalization and convergence, and integrated the ESG Committee and Carbon Neutrality Committee, which have overlapping discussion areas.

The committees in each field are composed of inside and outside experts, approximately 10 outside and eight inside, under the co-chair system, to reflect diverse perspectives and expertise. Each committee meets regularly six times a year (including 2 times for the integrated committee), and all meetings proceed in a paperless format. The committees report their discussions to the BOD, share meeting videos, and disseminate them internally and externally through employee observation and distribution of press releases.

#### K-eco Future Development Committee Organizational Chart



#### Operation process of the Future Development Committee



Governance



K-eco future development committee

▶ ESG/Carbon Neutrality Committee

K-eco's ESG Committee is operated to lead and internalize ESG management, including strengthening our sustainable & transparent management and realizing social value.

[Main discussion points]

- Review of ESG management & major project performances and improvement plans for mid- to long-term strategies
- Measures to strengthen international standard certification & global competitiveness
- Monitoring and improvement measures for implementing major ESG management strategic tasks

▶ Digital Transformation Committee

The Digital Transformation Committee serves as an advisory body for substantial improvements, such as strengthening competitiveness and innovating work processes through the digital transformation of K-eco's business and project management.

[Main discussion matters]

- Establishment of a mid- to long-term digital transformation plan
- Measures to build major digital infrastructure such as digital executive office
- Measures to introduce new digital technologies, such as digital twins, within each project

▶ Global and Convergence Committee

The Global and Convergence Committee serves as an advisory body on current issues and solutions for convergence and globalization and specific future development plans

[Main discussion matters]

- Discussion of global/convergence promotion strategies & global/convergence tasks
- Current status of export of K-eco green industry & system
- Identification of key suggestions from the Global & Convergence Committee



| Launch of the 2nd K-eco Future Development Committee (February 2023) |

Risk management

K-eco has established a company-wide risk management system to prevent and manage risks across its businesses and projects and holds regular risk management committee meetings. In a normal management system with risk monitoring and preventive activities acting in harmony, we have improved the risk management efficiency by including the existing sector-specific management system in the company-wide management system.

We implement risk management in the order of "Identification (recognition) → Analysis/evaluation → Response → Monitoring/reporting", and manage it by dividing it into the business risk and project risk, considering K-eco's characteristics that implement various projects. Moreover, considering social issues, etc., we have selected and managed seven key management risks, including information security and safety.

We also implement crisis management in accordance with the response system in the order of "Catching crisis signs → Setting crisis level → Crisis response → Follow-up management" as stipulated in the manual. Through the enterprise-wide risk management system, we effectively continue to manage various risks that may arise during business operations and promote safety and efficiency throughout the organization.



| K-eco Risk Management Committee (December 2023) |

## Open Information Disclosure & Public Participation

With a focus on increasing accessibility and understanding of environmental information, K-eco discloses environmental data and improves information transparency. Moreover, we emphasize public participation and communication and strive to allow citizens to participate and directly present their opinions in environmental-related decisions.

To this end, we operate the K-eco Future Development Committee and Citizen Participation Innovation Group to collect diverse opinions from the public, and reflect them in environmental policies.



## Open Information Disclosure & Public Participation



### Information disclosure

#### Disclosing and utilizing environmental data

To support the creation of new data value in the public and private sectors, K-eco discloses and provides environmental data that we hold and manage in various forms to enable the general public to use them freely. We operate the "Digital Innovation Office," a dedicated organization for this purpose, and work to discover and expand new open data by forming a public-private consultative body.

In 2023, we held two meetings of the public-private consultative body to collect a wide range of opinions from non-startups, companies using the technology, and experts in the field and expanded data openness and public-private cooperation to meet the needs of companies and the public. In particular, the principles of environmental data disclosure were re-established with improved private use and preferred methods for the private sector, so that the openness of public data was expanded in the areas of climate, air, and waste posing significant social issues and industrial ripple effects. As a result, we attained an "Excellent" rating in the Ministry of Public Administration and Security's "Evaluation of Public Data Provision Status" in 2023.

#### Improvements to environmental data disclosure & sharing system

Subject	Existing	Improvement
Preliminary review	Internal review	Establishment of disclosure strategy & utilization model
Opinion collection	Survey	Public-private council operation (44 people, including lawyers)
Open method	Excel CSV	Open API* expansion (12 → 30 types, 2.5 times ↑)

\*Open API: Open API (Application Programming Interface) standardizes program data, helping software developers or users. It is an open interface that can be used by applications.



| 2023 Public-private consultative body for disclosing and utilizing environmental data |

#### Enhancing information transparency

K-eco respects the public's right to know and has expanded the scope of information disclosure to provide more information. To this end, the information we hold is disclosed to the public through the information disclosure portal (<https://www.open.go.kr>), and in particular, we increased the raw data disclosure rate to 82.6% (compared to the average for quasi-governmental institutions 69.1%) in 2023, and these efforts of ours have increased the transparency and reliability of the company and promoted common grounds and participation with public.





## Open Information Disclosure & Public Participation



### Information disclosure

#### Expansion of ESG disclosure

The importance of transparent and accurate ESG disclosure to the public is emphasized due to the expansion of global ESG management disclosure requirements and the announcement of joint government ESG guidelines. Accordingly, K-eco has changed its self-disclosure classification system to ESG management disclosure starting in 2022 and is expanding the disclosure items.

In 2023, we disclosed 27 items, including being the only quasi-governmental organization to disclose Scope 3\* through an external verification to contribute to ramped up GHG reduction efforts in the public sector and providing accurate environmental information.

To ensure accurate and reliable management disclosure, we inspected management disclosure items, such as recruitment information, in real time through RPA (robotic process automation) to minimize disclosure errors and save approximately 4,000 hours of work time.

\* GHG Scope-3 emissions: It refers to GHG emissions occurring in areas other than those directly owned or controlled by a company or institution.

**Selected as the excellent proposal for revision of integrated disclosure standards by the Ministry of Economy & Finance (2022 and 2023 consecutively)**

### Public Participation & Communication

#### Citizen-Participatory Innovation Group

The Citizen-Participatory Innovation Group, which started in 2019, focuses on creating innovative results that the public can tangibly derive together with the public in the process of promoting ESG management, social responsibility, and management innovation. Comprised of approximately 30 citizens, taking into account gender, regional balance, and understanding of K-eco, it proposes ideas related to K-eco innovation, proactive administration, ESG management, and environmental services, monitors the process of identifying and executing K-eco's tasks, and presents evaluation opinions.



| Citizen-Participatory Innovation Group meeting to establish the 2023 K-eco Innovation Plan |

#### 2023 Activities of the Citizen-Participatory Innovation Group

Participation & communication	Participation tasks (cases)
2023 1st Citizen-Participatory Innovation Group Meeting	6
4th public evaluation in the analysis of "Public Contest for Environmental Data Utilization & Analysis"	9
Survey to collect opinions to improve management strategy system	2
First Public-Private Council meeting for disclosure and utilization of environmental data	3
Second Public-Private Council meeting for disclosure and utilization of environmental data	3
Onsite inspections of the Environmental Promotion Center and survey of opinions for improvement	1
Onsite safety inspections with the Citizen-Participatory Innovation Group to collect public opinions in 2023	3
Meeting to execute the public sewage & sewage pipe maintenance project in Hupo, Uljin-gun	1
Technical review of the vinyl resource conversion facility installation project for farming in the Gangwon region	1
On-site meeting with local citizens/students at the HQ of Eastern Metropolitan Area Environmental Management	2
2023 Citizen-Participatory Innovation Group meeting & innovation site visit	1
Meeting before visiting the resource circulation system PR and implementation company & field surveys	3
Evaluation after surveying the resource circulation system implementation company	1
Briefing session for support of National Water Industry Cluster demonstration company	2
Finals for 2023 Contest of Best Practice for ESG Management B (Finding Empathy Concert)	11
Field survey to check the adequacy of facility improvement costs of the Project for the Chemical Safety Workplace Creation Support	2
2023 Customer Suggestion Review Committee	2
<b>Total</b>	<b>53</b>

#### Love for the Environment Contest

K-eco has held the K-eco Environment Love Contest every year since 2013 to raise an awareness of environmental protection and promote social contribution and volunteerism in environmental issues.

It is the largest environmental contest in Korea (total prize money of KRW 57.4 million in 2023) and is divided into the three categories of photography, junk art, and illustration. In 2023, 60 works were selected in each category, and exhibitions of the selected works were held at the National Assembly Library, the National Institute of Biological Resources, and municipalities, such as Yongin City and Geumcheon-gu Offices, to instill the message of love for the environment and environmental action.



| Bandujabi, the Grand Prize winner in the Photograph category in the 2023 Love for the Environment Contest |



# Appendix

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## Main Financial Information



### Financial information

#### Summarized Financial Statements

(Unit: KRW mill)

Subject	As of calendar year-end 2021	As of year-end 2022	As of year-end 2023
Current assets	100,323	112,340	123,074
Fixed assets	62,131	55,257	53,067
<b>Total Assets</b>	<b>162,454</b>	<b>167,597</b>	<b>176,141</b>
Current liabilities	187,488	151,574	146,201
Fixed liabilities	53,446	23,119	20,096
<b>Total Liabilities</b>	<b>240,934</b>	<b>174,693</b>	<b>166,297</b>
Owner's equity	78,719	78,719	78,719
Retained earnings (loss)	(157,198)	(85,814)	(68,875)
<b>Total Stockholders' Equity</b>	<b>(78,479)</b>	<b>(7,095)</b>	<b>9,844</b>

#### Summary of Profit & Loss Statement

(Unit: KRW mill)

Subject	Fiscal Yr. 2021	2022	2023
Income (Sales)	1,335,535	1,612,598	1,973,078
Net sales	1,335,535	1,612,598	1,973,078
Cost of sales	1,305,375	1,587,972	1,941,606
Selling & general administrative cost	17,932	16,337	18,726
Operating profit	12,228	8,289	12,746
Other income	3,498	21,814	1,289
Other expenses	11,885	28,836	38,678
Other profits	315	1,001	78
Financial return	8,455	30,627	46,629
Financial cost	899	1,577	2,853
Net Profit Before Income Taxes	11,712	31,318	19,211
Corporate tax	4,000	(17,171)	(5,193)
Net profit	7,712	48,489	24,404
Other comprehensive income	9,838	22,895	(7,465)
Total comprehensive income	17,550	71,384	16,939

## ESG Data



### Environment

#### GHG & Energy Management

Subject	Unit	Yr. 2021	2022	2023	
<b>Total GHG emissions</b>		<b>13,178.1</b>	<b>13,795.1</b>	<b>13,719.0</b>	
GHG emission	tCO <sub>2</sub> eq	Scope-1 emissions	2,242.7	2,256.3	2,008.0
		Scope-2 emissions	10,935.4	11,538.8	11,711.0
		Scope-3 emissions	200.0	492.0	In calculation
GHG emissions intensity	tCO <sub>2</sub> eq/KRW 100 mill	0.987	0.855	0.695	
<b>Total energy usage</b>		<b>264.7</b>	<b>277.9</b>	<b>275.5</b>	
Energy usage	TJ	Electricity usage	228.5	241.1	244.7
		City gas (LNG)	13.6	14.6	13.6
		CNG (vehicle)	0.1	0.1	0.1
		LPG (vehicle)	0.1	0.2	0.2
		Gasoline	12.1	11.5	10.1
		Diesel	10.3	10.3	6.7
Energy intensity		TJ/KRW 100 mill	0.020	0.017	0.014

\* Scope 3 was excluded from the total emissions data calculation.

#### Water Usage

Subject	Unit	Yr. 2021	2022	2023
Water usage	Amount	41,055.0	59,745.0	67,480.0
	Base unit usage	3.1	3.7	3.4

\* Based on head office data.

#### Waste Generation

Subject	Unit	2021	2022	2023
Waste discharge	Waste generation	128.81	362.73	363.22
	Amount generated per unit	0.01	0.02	0.02

\* Based on head office data, the amount of waste generated and processed is the same.

#### Low-Emission Vehicle Status

Subject	Unit	Yr. 2021	2022	2023
Low-emission vehicle ownership status	Type 1 (electric/hydrogen)	205	240	244
	Class 2 (Hybrid)	124	134	135
	<b>Total</b>	<b>329</b>	<b>374</b>	<b>379</b>
Low-emission vehicle purchase/lease status	Type 1 (electric/hydrogen)	92	70	85
	Class 2 (Hybrid)	-	-	-
	<b>Total</b>	<b>92</b>	<b>70</b>	<b>85</b>

#### Green Product Purchase Performance

Subject	Unit	Yr. 2021	2022	2023
Total purchase amount		36,703	106,032	67,059
Purchase of green products	KRW million	31,226	30,906	26,980
Green product purchasing ratio	%	85.1	29.1	40.2

#### Compliance with Environmental Regulation

Subject	Unit	Yr. 2021	2022	2023
Violation of environmental laws & regulations	cases	0	0	0
Non-monetary sanctions	cases	0	0	0

ESG Data 

Safety/Health

Safety & Health Management

Subject	Unit	Yr. 2021	2022	2023
Industrial accident rate	%	0.11	0.09	0.08
Industrial safety & health education	Educated Personnel	3,519	3,319	3,469

Social area

No. of Employees

Subject	Unit	Yr. 2021	2022	2023
Total number of employees	Total	3,431	3,498	3,446
By employment type	Executive	7	7	7
	Regular full-time	2,527	2,603	2,569
	Indefinite contract	593	581	529
	Fixed-term workers	304	307	341
Gender	Male	2,243	2,214	2,174
	Female	1,188	1,284	1,272
By age	Younger than 30 years	783	789	663
	30 to 50 years old	1,937	2,013	2,067
	Older than 50 years	711	696	716
Class 1	Total	45	40	39
	Male	45	40	38
Class 2	Total	160	160	155
	Male	155	153	147
Class 3	Total	375	397	391
	Male	332	345	335
Class 4	Total	560	587	586
	Male	429	431	425
Class 5	Total	743	777	794
	Male	419	434	447
Class 6	Total	463	451	419
	Male	236	212	188
Class 7	Total	44	44	48
	Male	29	28	30
Class 8	Total	52	63	52
	Male	32	36	30
Civil service	Total	593	581	529
	Male	343	312	285
	Female	250	269	244

Social area

Subject	Unit	Yr. 2021	2022	2023	
Fixed term	Total	304	307	341	
	Male	133	133	159	
	Female	171	174	182	
Executive	Total	7	7	7	
	Male	6	7	7	
	Female	1	0	0	
Specialized position	Total	48	40	53	
	Male	48	39	51	
	Female	0	1	2	
Professional (Separate quota)	Total	37	44	32	
	Male	36	44	32	
	Female	1	0	0	
Rate of regular full-time positions	Total	%	73.9	74.6	74.8
Employment of the disabled	Employees	Persons	211	269	161
	Employment rate	%	5.8	7.2	4.5

\* The data for 2021 has been partially revised due to changes in the data calculation method.

Salary Status for Men & Women

Subject	Unit	Yr. 2021	2022	2023	
Average salary per employee	Male	KRW 1,000	64,231	65,753	67,602
	Female		48,009	49,404	51,351
Average salary ratio for women compared to men	%		74.7	75.1	76.0

\* Based on regular full-time positions

Hiring & Turnover

Subject	Unit	Yr. 2021	2022	2023	
Number of new hires	Total	Persons	223	185	94
Number of new hires (by gender)	Male	Persons	112	104	53
	Female		111	81	41
Number of new hires (social equity)	Youth		205	151	81
	Female		111	81	41
	People with disabilities	Persons	11	24	5
Talents from non-metropolitan areas		124	115	65	
High school graduates		16	22	23	
New hiring of indefinite contract workers		56	79	7	
Job change status	Number of employee turnover (total)		144	217	145
	Male	Persons	106	164	102
	Female		38	53	43
	Turnover rate (quit rate)	%	4.7	7	4.6
	Regular retirement	Persons	37	53	45
Honorary retirement		6	10	14	
Younger than 30 years		48	52	30	
30 - 50 years old	Persons	41	76	49	
Older than 50 years		55	89	66	



Social area

Results of Parental Leave Use

Subject	Unit	Yr. 2021	2022	2023	
Persons in parental leave	Total	Persons	221	229	225
	Male	Persons	76	83	71
	Female	Persons	145	146	154
Those eligible to return from parental leave	Total	Persons	110	104	101
	Male	Persons	46	47	41
	Female	Persons	64	57	60
Those who returned after using childcare leave	Total	Persons	108	102	96
	Male	Persons	46	46	40
	Female	Persons	62	56	56
Employees who have worked for more than 1 year after returning from parental leave	Total	Persons	106	98	93
	Male	Persons	44	44	39
	Female	Persons		54	54
Rate of returning from parental leave	%	98.2	98.1	95.0	
Percentage of employees who have worked for more than 1 year after returning from parental leave	%	96.4	94.2	92.1	

Education Status

Subject	Unit	Yr. 2021	2022	2023	
Total number of trainees	Persons	100,269	102,547	98,339	
Education time	Total education time	Hours	311,324	305,537	334,599
	Education time per person	Hours/person	91.4	86.0	98.0
Education costs	Total education costs	KRW 1,000	2,096,070	2,191,388	2,810,082
	Education cost per person	KRW 1,000/person	615	617	822

\*The total number of trainees was calculated in duplicate for the same person according to the training program.

Labor Union Membership Status

Subject	Unit	Yr. 2021	2022	2023
No. of people eligible to join	Persons	2,985	3,031	2,960
Number of union members	Persons	2,923	2,967	2,928
Membership rate	%	97.9	97.9	98.9

\*The collective agreement application rate is 100%.

Ethical management

Ethics Education

Subject	Unit	Yr. 2021	2022	2023
Total number of people trained in ethics training	Persons	3,128	4,016	3,927
Total hours of ethics training	Hours	65,876	62,594	92,723
Ethics training hours per person	Hours	21	16	24

Status of Actions Taken after Ethics Code Violations

Subject	Unit	Yr. 2021	2022	2023	
Disposition details	Reprimand	cases	2	-	2
	Pay cut	cases	2	4	4
	Suspension	cases	3	1	5
	Demotion	cases	-	-	-
	Dismissal	cases	3	-	-
	Expulsion	cases	-	-	-
<b>Total</b>		<b>10</b>	<b>5</b>	<b>11</b>	

BOD

BOD Operations

Subject	Unit	Yr. 2021	2022	2023
Number of BOD meetings held	Frequency	15	14	17
Overall attendance rate	%	84.7	81.1	80.8
Attendance rate of executive directors	%	94.4	91.5	92.0
Attendance rate of non-executive directors	%	94.7	95.7	95.3
Agenda	Case	29	24	26
Reporting agenda	cases	4	3	3

Social contribution

Subject	Unit	Yr. 2021	2022	2023	
Volunteer work	Total number of participants	People	2,614	2,785	2,946
	Total participation time	hours	15,496	16,036	16,638
	Participation time per person	Hours/person	6	6	6
Social contribution donation	KRW million	185	255	237	

Shared growth

Subject	Unit	Yr. 2021	2022	2023
Purchase performance of products produced by people with severe disabilities	KRW million	5,776	9,131	11,065
Purchase performance of products from social enterprises	KRW million	8,189	15,406	22,153
Purchase performance of products from SMEs	KRW million	816,104	876,754	859,314

# GRI Content Index

- Statement of Use
 K-eco published its sustainability report referring to the GRI Standards for the period from January 1 to December 31, 2023 (quantitative performance basis).

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- GRI 1 used
 GRI 1: Foundation 2021

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- Applicable GRI Sector Standards
 As of May 2024, when K-eco publishes its report, there were no applicable GRI sector standards.

Topic	GRI Disclosure	Page No.	Remarks
GRI 2: The organization & its reporting practices	2-1	Organization details	8, 9
	2-2	Entities included in the organization's sustainability reporting	2
	2-3	Reporting period, frequency & contact point	2
	2-4	Restatements of information	103
	2-5	External assurance	110, 111
GRI 2: Activities & Workers	2-6	Activities, value chain & other business relationships	8-12
	2-7	Employees	103
	2-8	Non-regular employees	103
GRI 2: Governance	2-9	Governance structure & composition	89, 90
	2-10	Nomination and selection of the highest governance body	89
	2-11	Chairperson of the highest governance body	89
	2-12	Role of the highest governance body in overseeing the management of impacts	90
	2-13	Delegation of responsibility for managing impacts	13
	2-14	Role of the highest governance body in sustainability reporting	90-92
	2-15	Conflicts of interest	87
	2-16	Communication of critical concerns	90-92
	2-17	Collective knowledge of the highest governance body	89

Topic	GRI Disclosure	Page No.	Remarks
GRI 2: Strategies, Policies, & Practices	2-22	Statement on sustainable development strategy	6, 7
	2-23	Policy commitments	20, 21, 50, 51, 82, 83
	2-24	Embedding policy commitments	6, 7, 22, 32, 38, 44, 52, 58, 64, 74, 84
	2-25	Processes to remediate negative impacts	93
	2-26	Mechanisms for seeking advice and raising grievances	73
	2-27	Compliance with laws & regulations	102
	2-28	Membership associations	118
GRI 2: Stakeholder Engagement	2-29	Approach to stakeholder engagement	15, 16, 96, 97
	2-30	Collective bargaining agreements	70, 104
GRI 3: Material Topics	3-1	Process to determine material topics	18
	3-2	List of material topics	19
	3-3	Management of material topics	19
GRI 201: Economic Performance	201-1	Direct economic value generated and distributed	100
GRI 203: Indirect Economic Impacts	203-1	Infrastructure investments & services supported	59-63
	203-2	Significant indirect economic impacts	59-63
GRI 205: Anti-Corruption	205-1	Operations subject to reviews on the risk of corruption	85
	205-2	Communication and training about anti-corruption policies & procedures	86, 105
	205-3	Confirmed incidents of corruption & actions taken	105
GRI 302: Energy	302-1	Energy consumption within the organization	101
	302-3	Energy intensity	101
	302-4	Reduction of energy consumption	30, 31
GRI 303: Water & Effluents	303-5	Water consumption	101

GRI Content Index 

Topic	GRI Disclosure	Page No.	Remarks
GRI 304: Biodiversity	304-2	Significant impacts of activities, products, & services on biodiversity	47, 62
	305-1	Direct (Scope 1) GHG emissions	101
GRI 305: Emissions	305-2	Energy indirect (Scope 2) GHG emissions	101
	305-3	Other indirect (Scope 3) GHG emissions	101, 113
	305-4	GHG emissions intensity	101
	305-5	Reduction of GHG emissions	30, 31
GRI 306: Waste	306-3	Waste generation	101
GRI 401: Employment	401-1	New employee hires & employee turnover	103
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	69
	401-3	Parental leave	104
GRI 403: Occupational Health & Safety	403-1	Occupational health & safety management system	75, 76
	403-2	Hazard identification, risk assessment & incident investigation	76
	403-3	Occupational health services	79
	403-4	Worker participation, consultation, & communication on occupational health & safety	70, 75
	403-5	Worker training on occupational health & safety	77, 102
	403-6	Promotion of worker health	79
	403-7	Prevention and mitigation of occupational health & safety impacts directly linked to business relationships	75, 76, 78
	403-8	Workers covered by an occupational health & safety management system	75, 76
	403-9	Accidents and days lost	102
GRI 404: Training & Education	404-1	Average hours of training per year per employee	104
	404-2	Programmes for skills management & lifelong learning	66-68

Topic	GRI Disclosure	Page No.	Remarks
GRI 405: Diversity & Equal Opportunity	405-1	Diversity of governance bodies & employees	89, 103
	405-2	Ratio of standard salary & remuneration between women to men	103
GRI 407: Freedom of Association & Collective Bargaining	407-1	Non-compliance with the right to freedom of association & collective bargaining	Not applicable
GRI 408: Child Labor	408-1	Operations & suppliers at significant risk for incidents of child labor	Not applicable
GRI 409: Forced or Compulsory Labor	409-1	Forced labor risk identification	Not applicable
GRI 411: Rights of Indigenous People	411-1	Incidents of violations involving rights of indigenous peoples	Not applicable
GRI 413: Local Communities	413-1	Operations with local community engagement, impact assessments, & development programs	63, 73
	413-2	Operations with significant actual & potential negative impacts on local communities	- None
GRI 416: Customer Health & Safety	416-1	Assessment of the health & safety impacts of product & service categories	76
	416-2	Non-compliance with health & safety requirements	- None
GRI 418: Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy & losses of customer data	- None



**Governance**

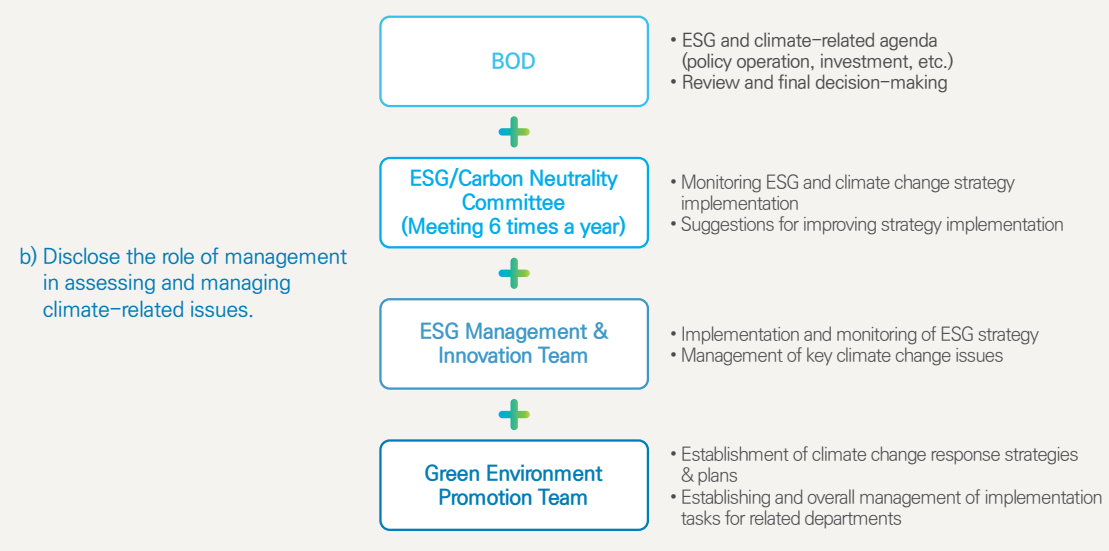
TCFD recommendations	K-eco's response activities
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a) Disclose the role of the board of the organization in overseeing climate-related issues.

K-eco's BOD is comprised of 6 executive directors and 7 non-executive directors with expertise in the environment/chemical & administrative fields, and supervises the national and K-eco operations of all businesses to achieve carbon neutrality. It is responsible for deliberating and deciding on K-eco's important work, such as matters related to climate change response, and reviewing the company's major policies & strategies related to climate change response.

Moreover, K-eco operates an ESG and Carbon Neutrality Committee comprised of internal & external experts with a focus on monitoring overall ESG goal implementation and performance and reviewing and providing directional advice on major strategic tasks related to climate change and carbon neutrality to ensure an active response to rapidly changing environmental changes and facilitate K-eco's future development.

Pursuing a strategy to advance mid- to long-term ESG management, K-eco has established and operates a roadmap according to the priorities for each task. To support carbon neutrality in response to the climate crisis at the national level, we undertake policies and support projects such as operating the Climate Response Fund and an emission trading system.



**Strategy**

TCFD recommendations	K-eco's response activities
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a) Disclose the climate-related risks & opportunities the organization has identified over the short, medium, & long term.

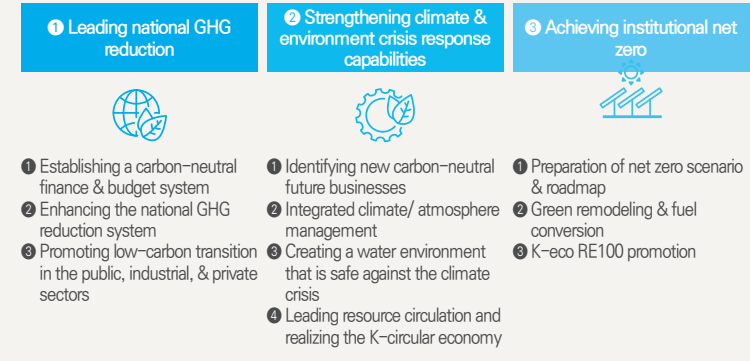
In accordance with the Korea Environmental Corporation Act, K-eco selects and implements key tasks that link K-eco's underlying business with the national carbon-neutral strategic direction, such as environmental pollution prevention, environmental improvement, resource circulation, & climate change response-related projects. As a specialized organization for green budgeting for GHG reduction, K-eco analyzes the impact of the national budget & funds on climate change, reflects the results in budget planning, and evaluates whether it has been appropriately executed at the time of settlement.

By reviewing and analyzing KRW 10.9 trillion worth of all national financial projects (approximately 8,400 projects) in 2023, we derived a reduction of approximately 4.36 million tCO<sub>2</sub>eq as of fiscal year 2024.

Moreover, K-eco is an entrusted manager of the Climate Response Fund established in accordance with the Framework Act on Carbon Neutrality & Green Growth for Coping with Climate Crisis, and K-eco's Climate Response Fund Center supports the Ministry of Economy Strategy & Finance in establishing a climate response fund operation plan. The fund, whose scale in 2023 was KRW 2.5 trillion, is divided into four core programs to improve consistency with the national basic plan and contribute to advocating national carbon neutrality. Taking into account climate change scenarios such as IPCC, K-eco has established a roadmap to realize net zero for the organization and is implementing it in phases until 2040. Relevant departments at each regional headquarters establish response strategies & implementation tasks through SWOT analysis every year in accordance with the short-, medium-, & long-term national strategy of carbon neutrality & green growth.

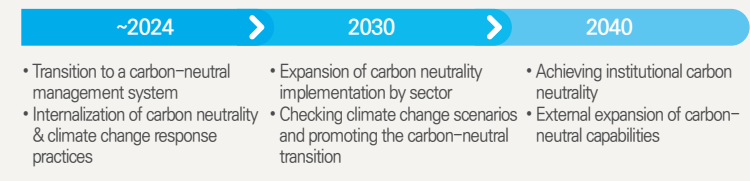
b) Disclose the impact of climate-related risks & opportunities on the organization's businesses, strategy & financial planning.

**Key tasks for carbon neutrality & climate change**



c) Disclose the resilience of the organization's strategy, taking into account different climate-related scenarios, including a 2°C or lower scenario.

**K-eco's roadmap for carbon neutrality & climate change response**







### Risk Management

#### TCFD recommendations

#### K-eco's response activities

a) Describe the organization's processes for identifying climate-related risks.

In October 2023, K-eco executed the project to advance ESG management strategy by reviewing its strategic system and diagnosing the ESG management level so as to identify improvement, discover ESG issues, and conduct materiality assessment through environmental analysis.

The importance of environmental issues linked to K-eco's business was derived from the priority of the materiality assessment. As a result, we identified GHG reduction & waste management as major issues, which can be found in the "ESG Management System" and "K-eco's Net-Zero Activities" sections of this Report.

b) Describe the organization's processes for managing climate-related risks.

K-eco holds six ESG/Carbon Neutrality Committee meetings a year to continuously manage implementation plans & performance results for climate change & carbon neutrality. K-eco's relevant departments are tasked with identifying agenda items, applying suggestions, and submitting agenda items. Additionally, the managing department oversees the Committee to ensure practical & efficient operations.



c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

K-eco examines climate response-related risks through the BOD and the ESG/Carbon Neutrality Committee, and has established a company-wide risk management system, with regular Risk Management Committee meetings being held to prevent and manage risks across environmental-related businesses.

The risk management process is performed in the order of "Identification (recognition) → Analysis/evaluation → Response → Monitoring/reporting," and crisis management is operated in lockstep with the manual-based response system in the order of "Catching crisis signs → Setting crisis level → Crisis response → Follow-up management." We have effectively managed various risks that may arise during business operations and promote safety & efficiency throughout the organization under the enterprise-wide risk management system.

### Metrics and Targets

#### TCFD recommendations

#### K-eco's response activities

a) Disclose the metrics used by the organization to access climate-related risks & opportunities that align with its strategy & risk management process.

K-eco manages indicators, such as GHG emissions, energy usage, water usage, & green product purchase performance, to evaluate climate change-related risks & opportunities. These indicators are disclosed in the environmental part of the "ESG Data" section in the Appendix of this Report.

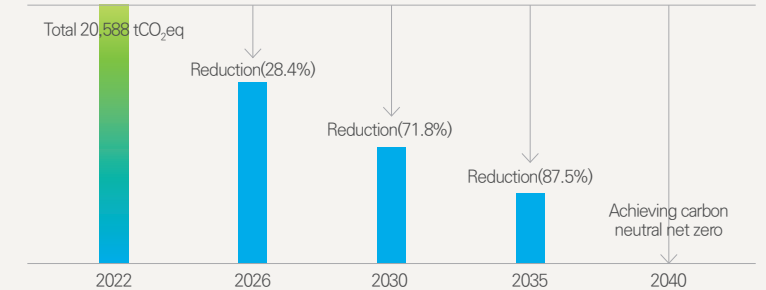
b) Disclose Scope 1, Scope 2, and if appropriate, Scope 3 GHG emissions and the related risks.

K-eco's GHG emissions were 13,719 tCO<sub>2</sub>eq in 2023. Direct emissions mainly from heating of K-eco's buildings in Scope 1 was 2,008 tCO<sub>2</sub>eq, and indirect emissions from electricity use in Scope 2 was 11,711 tCO<sub>2</sub>eq. Moreover, K-eco extracts and reports air travel & waste generation data to calculate other indirect emissions in Scope 3. It is the only quasi-governmental organization to disclose Scope-3 emissions through a third-party assurance. For 2020 through 2022, we disclosed a total of 832 tCO<sub>2</sub>eq through Alio.

c) Describe the targets used by the organization to manage climate-related risks & opportunities and performance results based on targets.

K-eco has established GHG reduction scenarios based on the GHG reduction targets (compared to emissions in 2022) of 28.4% in 2026, 71.8% in 2030, and net zero in 2040 according to its net-zero roadmap. We also have expanded solar power generation facilities (43 locations) and operated eco-friendly vehicles (244 units) to promote RE100. Moreover, we strive to achieve carbon neutrality through campaigns, such as carbon reduction activities using the Haenggarae app and Flea Market for Love of the Environment in alignment with eco-friendly life practices.

#### Roadmap for Carbon Neutrality by 2040



Subject	Effort highlights in 2023
Building	<ul style="list-style-type: none"> <li>Additional power generation of 643 kW (2,836 MWh) through the new installation of 12 solar power generation facilities (total 43 locations), such as the head office building and measuring stations</li> <li>Heat loss (thermal insulation) waterproofing work on the roof of the head office building using energy-efficient materials</li> </ul>
Transport	<ul style="list-style-type: none"> <li>100% purchase of eco-friendly vehicles for business in 2023 (244 units)</li> </ul>
Life practice	<ul style="list-style-type: none"> <li>Practicing an eco-friendly consumption culture through sharing markets</li> <li>Improving waste recycling awareness in connection with global social contribution activities</li> <li>Eco-friendly practices using the Haenggarae app (walking, zero leftovers, water conservation, etc.)</li> <li>Publicizing a ban on disposable products (twice a day) and operating Zero Waste café</li> <li>Incentivizing participation of all employees' personal vehicles (507 vehicles) in the weekly system</li> </ul>

# Third-Party Assurance Statement

## Verification Statement on The Sustainability Report for Korea Environment Corporation

### Dear Stakeholders of Korea Environment Corporation

Korean Foundation for Quality (further 'KFQ') has been requested by Korea Environment Corporation to conduct an independent verification on the 「2023 ~ 2024 Sustainability Report for Korea Environment Corporation」(further 'the Report'). KFQ has responsibility to provide an independent verification opinion against the criteria and scope of assurance as specified below. Korea Environment Corporation has sole responsibility for the preparation of the Report.

### Verification Criteria and Scope

- Verification Criteria : AA1000AS(v3) and AA1000AP (2018)
- Verification Type: Type 1 [Verification of compliance of AA1000AP four reporting principles (Inclusivity, Materiality, Responsiveness, Impact)]
- Verification Level : Moderate [Verification based on limited evidence collected]
- Verification boundary : The reporting boundary as stated in the report (Headquarters and eight regional environmental offices and one business unit). The performance and reporting practices of other related companies, business partners and third parties beyond the scope of this verification specified in the report are not included.
- Verification Scope : Compliance with the four reporting principles according to AA1000AP and the GRI Standards 2021 reporting requirements

#### ※ GRI Standards (2021) Reporting Principles

Universal Standards		Topic Standards	
Requirements	Compliance	Requirements	GRI Standards/Topic Disclosure
Publish a GRI Index	○	Reporting material issues according to the GRI Topic Standards	<ul style="list-style-type: none"> <li>• GRI 205 : Anti-corruption</li> <li>• GRI 302 : Energy</li> <li>• GRI 305 : Emissions</li> <li>• GRI 403 : Occupational Health and Safety</li> <li>• GRI 404 : Training and Education</li> <li>• GRI 413 : Local Communities</li> </ul>
Provide a statement of use	○		
Notify GRI	○		

Universal Standards : Reporting with reference to GRI Standards (2021), compliance with the following requirements

### Methodology

In order to assess the reliability of the sustainability performance in the Report against above mentioned criteria, the assessment team reviewed sustainability-related processes, systems, internal control procedures, and available performance data. The documentation the assessment team reviewed during the verification includes:

- Non-financial information e.g., data provided by Korea Environment Corporation, disclosed Business Reports, and information obtained from media and/or the internet and
- Financial information i.e., Data disclosed in the All Public Information In-One (alio.go.kr) and data posted on the homepage. (However, the contents of the above data are not included in the verification scope.)

The assessment was performed by document verification and interviewing the person in charge. The validity of the materiality assessment procedure in the Report, the material issue selection considering stakeholders, the data collection, management, and report preparation procedure, as well as the validity of the description, were evaluated through interviewing the person in charge, but external stakeholder interviews were not conducted. Afterwards, it was confirmed that some errors, inappropriate information, and misstatement found in the above steps were appropriately corrected before publishing the Report.

### Competency and independence

The assessment team was consisted in accordance with KFQ's internal regulations. KFQ has no conflict of interest to the Korea Environment Corporation business which could threaten the impartiality of verification, other than providing third-party verification services.

### Limitations

The completeness and responsiveness of sustainability performance represented in the Report have inherent limitations due to its nature and the methodology used to determine, calculate and estimate its performance. The assessment team conducted a review of the information and evidence provided under the contract and did not check the reliability of the original data itself.

### Findings and Conclusions

As a result of the verification, the Report was prepared in accordance with the requirements for 'with reference to GRI standards 2021' and the assessment team found reasonable objectives to guarantee the four reporting principles of AA1000AP (2018) and the AA1000AS(V3) Type 1 assurance level. We also found no significant errors or inadequacies in the Report regarding compliance with reporting principles.

#### • Inclusivity

Korea Environment Corporation defined the four stakeholder groups (Value Distribution Type (Environment/Information vulnerable groups), Value sharing type (Partners/Related organizations), Value cooperation type (Local government/ Environmental organizations/Academics), Value creation type (MZ generation/Integrated labor union)) and heard their opinions through the communication channels considering the characteristics of each group for effective communication. The assessment team could not find any major stakeholders that were omitted during this process, and it was confirmed that Korea Environment Corporation is making efforts to reflect the collected opinions of stakeholders in its management strategy.

#### • Materiality

Korea Environment Corporation formed a pool of material issues through global standard analysis, assessment of the Corporation's ESG levels, and media research. Then through stakeholder surveys and validity verification, twelve final material issues were selected. Furthermore, by evenly selecting both internal and external stakeholders as survey subjects, the justification for the selection of material issues was enhanced. The assessment team confirmed that the identified material issues were highlighted in this Report, and that the material issues identified in the materiality analysis process were reported in the Report without omission.

#### • Responsiveness

Korea Environment Corporation cares to respond in a timely manner to the needs and major concerns gathered from the stakeholders. The assessment team found no evidence that the organization's response activities and performance on material issues were inappropriately reported.

#### • Impact

Korea Environment Corporation identified and monitored the impact of material issues related to stakeholders throughout its management activities, and reported them within the scope possible. The assessment team could not find any evidence that the impact related to material issues was inappropriately measured and reported.

### Recommendation for improvement

- ▶ Compared to last year's sustainability report, this report has achieved significant progress in the number of reported GRI provisions, TCFD reporting items, etc.
- ▶ We hope that the entire process, from the generation and collection of ESG-related data to performance reporting, will be managed and reported more comprehensively and systematically, ensuring that the Korea Environment Corporation's ESG management performance is effectively communicated to stakeholders.



June, 2024  
Seoul, Korea  
Ji Young Song, CEO  
Korean Foundation for Quality (KFQ)

*Ji Young Song*

## K-eco Head Office & Local Organizations



## Public Awards in 2023



Field	Organizer	Award	Award details
Government Innovation	Ministry of Public Administration & Security	Prime Minister Award	No more garbage mountains! Illegal Waste Distribution Solved with Digital Solutions
		Ministry of Public Administration and Security Award	Monthly Reporting of Household Waste: "One-stop Service" for Work, "Zero" Costs, "Easy" Reporting
Knowledge Award	Ministry of Public Administration & Security	Prime Minister Award	With Customized Knowledge Sharing, Enhancing Environmental Services and Reducing Corporate Costs!
Proactive Administration	Ministry of Personnel Management	Prime Minister Award	Safe Nursery for Children from Vulnerable Groups, Free from Asbestos Risks!
		Ministry of Public Administration and Security Award	Establishing a Flood Safety System, Preventing Manhole Accidents in Heavy Rain!
Policy Response	Korean Association for Policy Studies	Policy Award (Creativity Category)	Establishing a High-quality Recycling System for Collection and Recycling in a Full Cycle
ESG Management (Fair Recruitment)	Ministry of Employment and Labor	Ministry of Employment and Labor Award (True Company Award)	Acknowledged for Efforts in Expanding Employment of People with Disabilities
		Ministry of Economy and Finance Award	Designated as an Excellent Company for Fair Recruitment (Ministry of Employment and Labor)
ESG Management (Win-Win Cooperation)	Ministry of SMEs and Startups	Ministry of SMEs and Startups Award	'Food Cycling' from Coffee Beverage Tasting to Recycling: Realization of Community Mutual Growth through Public-Private Cooperation (Cafe Earth Star)
ESG Management (Labor-Management Cooperation)	Korea Enterprises Federation	Korea Labor-Management Cooperation Excellent Award	Overcoming Conflicts and Establishing a Win-Win Culture between Labor and Management
ESG Management (Leadership)	Korean Association for Public Administration	Grand Prize	Grand Prize in Empathetic Leadership Category
		Global Innovation Award	Leadership by the President, Resulting in Carbon Neutrality, Laying Foundation for Efficient Work Processes through Digital Innovation
ESG Management (Carbon Neutrality)	Korean Society of Systems Engineering	ESG Innovation Award	Leading Korean ESG Management for Carbon Neutrality
ESG Management	Korean Association for Policy Analysis and Evaluation	Excellent Organization Award	Excellent Organization for ESG Management



## Organization Memberships

Korea Water Cluster Conference	The Society of Korean Smart Water Grid
National Assembly Water Forum	The Korean Society of Quality Assurance
CleanSYS	The Korean Society for Indoor Environment
Korean Society of Water and Wastewater	The Korean Association for Policy Studies
Geological Society of Korea	Korean Taxpolicy Association
Korean Society of Environmental Engineers	Korean Association for Organizational Studies
North Korea Water Research Association	The Korean Society of Soil and Groundwater Environment
Social Cooperative Hangang	The Korea Conservation Association of Soil and Groundwater
Water Quality Automatic Analyzer Association	Korean Society of Waste Management
Korea Business Council for Sustainable Development	The Korean Waste Association
Korea CRO Association	Korea Plastics Pipes Research Society
CEA	The Korean Association for Public Administration
Korea Society of Public Enterprise	Korean Environmental Las Association
The Korea Association of Governance Studies	The Korean Society of Environmental Health
The Korean Society of Climate Change Research	The Korean Society for Environmental Analysis
Korean Society Of Odor Research And Engineering	Korean Society of Environmental Impact Assessment
The Korean Society for Atmospheric Environment	Korea Environmental Policy and Administration Society
The Korea Water Forum	Korea Environmental Consulting Association
Korean Society on Water Environment	The Korea Academy of Environmental Science
Korea Water and Wastewater Works Association	Korean Society of Environmental Health and Toxicology
Korea Water Resources Association	K-Green Foundation



| 2023 Environment Contest, 'Growing the Earth', Grand Prize Winner in the Illustration Category |

**Creating a Healthy and Happy Environment  
for Nature and Humanity**

