



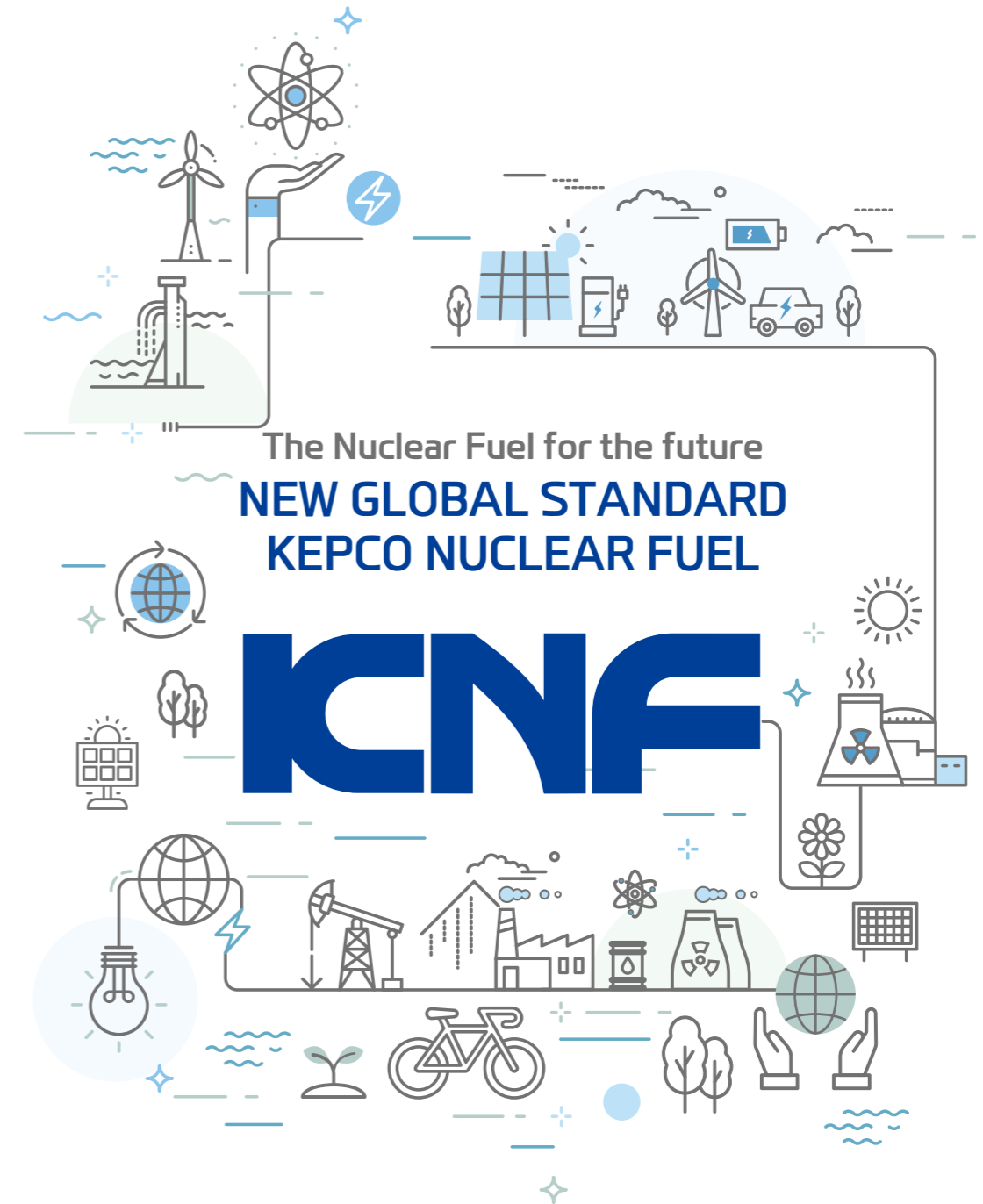
KNF Homepage  
<https://www.knfc.co.kr>



KNF Instagram  
[https://www.instagram.com/iam\\_knf/](https://www.instagram.com/iam_knf/)



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## ABOUT THIS REPORT

### Report Overview

As the only domestic institution specialized in the design, manufacturing, and servicing of nuclear fuel, Korea Electric Power Corporation Nuclear Fuel (KEPCO NF) has published its "2023 Sustainability Report" to communicate its ESG initiatives and accomplishments to various stakeholders and to promote active engagement and transparency. This report is the first publication since the 2018 KEPCO Nuclear Fuel Sustainability Management Report. It should be noted that the report format, content structure, and any interconnections with the previous report are different and there is no direct linkage between them. This report provides a detailed overview of the key issues for sustainable management within the organization through a dual materiality assessment, which measures both financial impacts and social/environmental impacts. The publication cycle for future reports is biennial.

### Reporting Period and Scope

The reporting period of this report is from January 1st, 2022 to December 31st, 2022, and it encompasses the sustainable management activities and achievements of KNF, including the headquarters, TSA Plant, NSA plant, and Gyeong-ju Branch. This report also includes some qualitative achievements, including the initiatives undertaken in the first half of 2023. To provide a comprehensive understanding of the performance trends, quantitative achievements are presented with 3 year data.

### Reporting Principle

This report has been written with reference to the Global Reporting Initiative (GRI) 2021 Standards, which are globally recognized guidelines for sustainability reporting. Additionally, the report aligns with the principles of ISO 26000, a standard that provides guidance on social responsibility. Regarding financial information, the reporting standards and definitions follow the Korean International Financial Reporting Standards(K-IFRS).

### Report Verification

To enhance the reliability and quality of the report, it has undergone verification by the KOSRI, a specialized verification organization. The detailed findings of the verification results are included in the appendix.

### Report Inquiry Contact

This report is available for check as an electronic document on KNF website. If you have any comments or inquiries regarding the report or the ESG activities of KNF, please contact us at the following contact information.

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# 01

## Introduction

CEO MESSAGE

ESG OUTCOMES

PERFORMANCE HIGHLIGHTS

Introduction of Institution

## CEO MESSAGE

2022 was a challenging year marked by global inflation, supply chain risks, and the climate crisis, leading to a high level of uncertainty in the external environment. However, thanks to the support of our stakeholders and the efforts of our employees, our company was able to achieve outstanding performance across various aspects of our business, including obtaining an ESG top rating and improving financial results. Rather than becoming complacent, we will actively pursue corporate innovation and sustainable management for the future, striving continuously to become a trusted company in the eyes of our stakeholders.

KEPCO Nuclear Fuel (hereinafter "KEPCO NF" or "KNF") strives to be a trusted environmentally friendly nuclear energy company that is committed to sustainable development. To achieve this, we actively practice ESG management by leading in environmentally friendly operations, environmental conservation, and creating social value for inclusive and safe societies. We also aim to establish transparent and fair governance structures.

**First**, KNF prioritizes environmentally friendly and public safety-focused management. We practice environmental conservation through the development of sustainable businesses that generate future value. In line with the era of climate crisis, we strive to achieve carbon neutrality by establishing high-efficiency, low-carbon manufacturing facilities. By doing so, we fulfill our responsibility to the lives and environment of the nation, ensuring a sustainable future for all.

**Second**, KNF, as a partner to the nation, is committed to promoting inclusive and safe societies. We actively contribute to regional development, address social issues, protect vulnerable populations, and serve as a social safety net. We strive to realize social value by fostering mutual respect in labor-management relations, prioritizing worker safety in the workplace, and promoting symbiotic growth with small and medium enterprises. Additionally, we take the lead in spreading a culture of cooperation, collaboration, and fairness to create a socially harmonious environment.

**Third**, based on a culture of integrity, KNF actively encourages public participation in major policy initiatives and strives to enhance communication with both internal and external stakeholders. We are committed to establishing a transparent decision-making system by actively engaging with the public and promoting open dialogue. Additionally, we aim to improve the functionality of our decision-making bodies and establish an ESG-driven governance system to achieve our ESG vision.

KNF is committed to practicing ESG management and will engage in sincere communication with our stakeholders to ensure its implementation. We appreciate your continued support and trust as we strive to become a global leader in the nuclear fuel market. Your unwavering confidence and interest in KNF are greatly appreciated. Thank you.

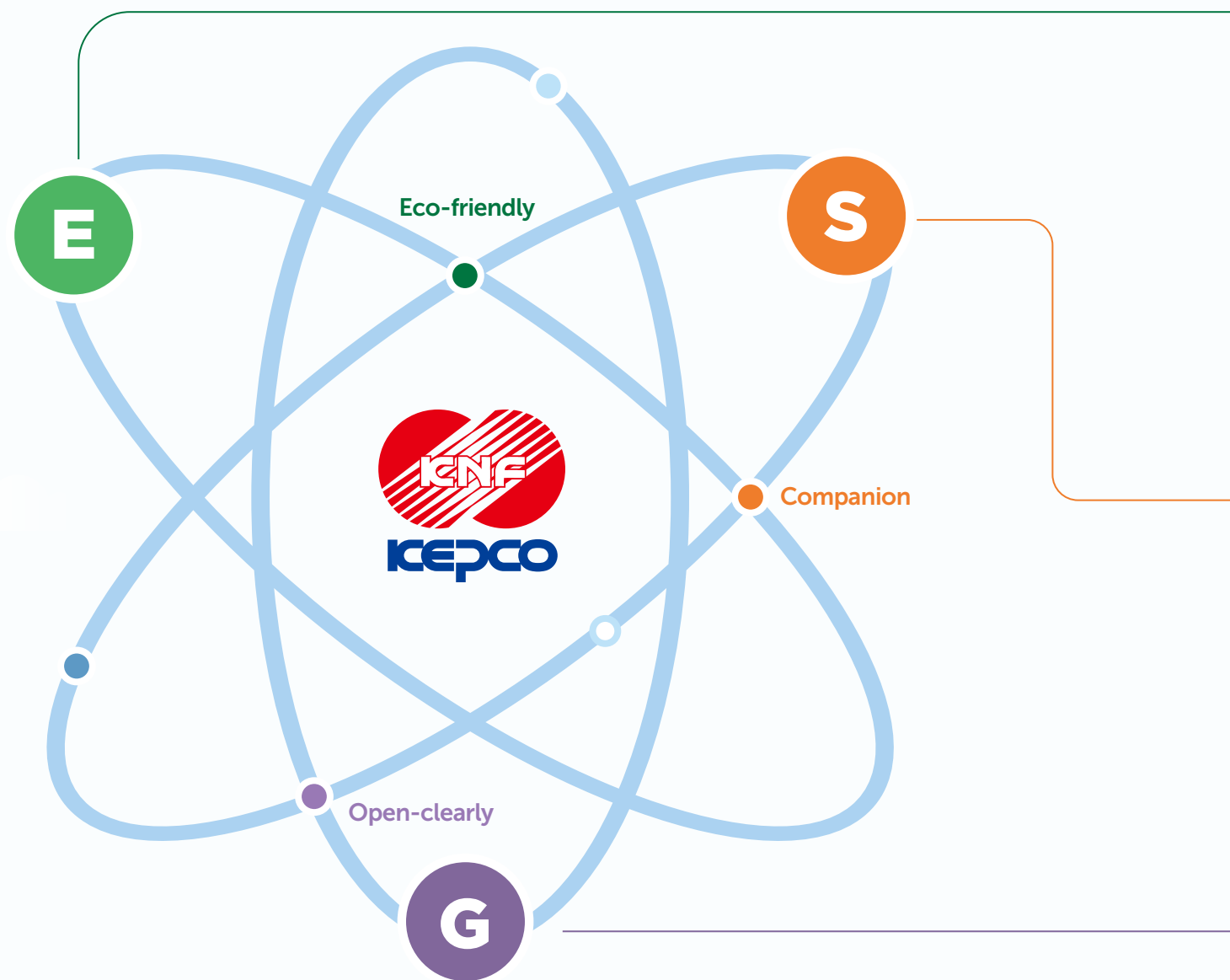
Choi Ik Soo, CEO of KEPCO Nuclear Fuel

최익수

“We strive to become a trusted KEPCO Nuclear Fuel that our stakeholders can rely on.”



# ESG OUTCOMES



**Citizen Safety**  
Creation of an eco-friendly nuclear power industry

**Active Response to Climate Change**

- Selection of **exemplary institution** for greenhouse gas and energy goal management
- Achievement of **12 Consecutive Years** of greenhouse gas reduction targets
- Achieved **40% reduction** in greenhouse gas emissions by government
- Adoption of Carbon Reduction Commitment by **1,047** Participants

**Development of Radioactive Waste Disposal Technology**

- Recycling of **78 tons** of radioactive waste and **459 tons** of air Pollutants
- Reduction of **1,186 drums** of radioactive waste
- Projected annual recycling of **7 MTU** of Uranium waste resources

**Advancement of Environmental Management System**

- 10 year consecutive certification** of environmental management system (ISO 14001)
- Expanding application of process for **environmental impact assessment**
- 100%** Disclosure of environmental radiation information
- KNF environmental index score of **93**



**Citizen Partnership**  
Realization of an inclusive and safe society

**Enhancement of safety management and information security system**

- Zero** major disasters
- Zero** cybersecurity incidents
- Safety activity level self-assessment: **Grade A**
- Strengthen support **safety package services** to small business

**Participation in solving social issues**

- Certification of community contribution recognition system for **4 consecutive years** and obtaining **the highest grade**
- Expansion of **carbon neutral green school** target institutions
- Expanding the scale of **social equity recruitment** for the disabled and high school graduates

**Creation a shared growth nuclear power plant ecosystem**

- Ministry of SMEs and Startups' evaluation of shared growth in public institutions for **2 consecutive year**
- KRW 830 million** in management stabilization funds to partner companies
- Subcontracting protector usage performance increases by **248%** compared to the previous year
- Contractor satisfaction rating of **4.84 out of 5**



**Citizen Trust**  
Establishment of a transparent and fair governance system

**Strengthen of ESG responsible management system**

- ESG management evaluation grade 1 for 2 consecutive years (**Top 0.2%**)
- Declaration of **Joint Labor-Management** ESG management
- Operating **ESG committees** within the board of Directors
- Driving major business with introduction of **ESG impact assessment**

**Incorporation of integrity and ethical management**

- Achievement of **excellent rating** in comprehensive transparency assessment for **2 consecutive years**
- Certification of anti-corruption management system(ISO 37001) for **6 consecutive years**
- Zero corruption** for 3 years in a row

**Expansion of stakeholder communication**

- Regularization of worker participation in board of directors meetings and **100%** attendance rate
- Disclosure rate of **96%** for information requests.
- Strengthen **ESG-related integrated disclosure** (2021 : 21 cases → 2022 : 29 cases)



## PERFORMANCE HIGHLIGHTS

Establishing a new vision on the 40th anniversary, KEPCO Nuclear Fuel is enhancing its institutional image internally and externally and contributing to strengthening the nuclear power ecosystem. KNF is overcoming global complex crisis, expanding investment in nuclear R&D, and achieving innovative results to secure world-class nuclear fuel technology, as well as aspiring to leap forward as a sustainable nuclear power leading company.



### 13.5%p improvement in production efficiency

Through improvements in manufacturing processes and innovative business process reengineering, KNF achieved a significant improvement in performance, with a production efficiency of 73.9% in 2022, marking a substantial increase compared to the previous year.



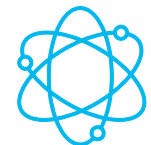
### Net profit reached KRW 31.5 billion (the largest in the last five years)

Through CEO-led financial performance initiatives, KNF successfully overcame the compounded risks of high inflation, exchange rates, and interest rates, generating a net profit of more than KRW 5.7 billion compared to the previous year.



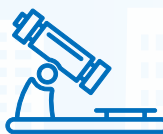
### KRW 30.7 billion in parts export contract orders (the largest ever in institution history)

KNF strengthened the global core component supply chain collaboration by independently signing a supply agreement with Westinghouse Electric Company (WEC) in the United States for nuclear fuel rods.



### Securing K-Taxonomy Leading Technology

KNF has improved our external status by establishing a global quality management system through objective evaluation and feedback on quality management activities.



### Expansion of R&D investment in eco-friendly and safe nuclear power

KNF is securing sustainable business areas through strengthened R&D investments linked to long-term strategic management. Also, exceeding the recommended investment rate for research and development by the Ministry of Science and ICT in 2022, KNF received commendations for outstanding R&D investment performance and achievements.



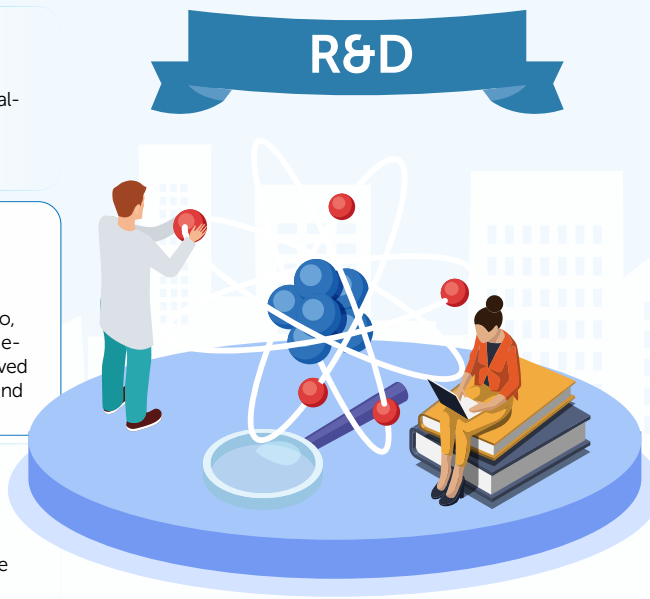
### Building ICT-based Smart Processes

KNF has developed a smart maintenance system utilizing augmented reality to enhance safety. We have achieved quality improvement and advanced manufacturing technology through the utilization of big data and deep learning.

## FINANCIAL



## R&D



## AWARD



### Presidential Commendation Awarded at the National Quality Management Conference

KNF has enhanced its external reputation by establishing a global quality management system through objective evaluation and feedback on quality management activities.



### Minister of Technology for Industrialization Award

KNF has contributed to enhancing the technological competitiveness of small and medium-sized enterprises through continuous technology sharing. Recognizing our efforts in promoting mutual cooperation, it has been awarded the Minister's Award for Meritorious Service in Technology Industrialization.



### Winning Gold Award in Public Sector at BIXPO for High-Strength focused ultrasonic decontamination technology

KNF has applied for international patents for a high-intensity focused ultrasound decontamination technology for radioactive waste, targeting three countries: the United States, Germany, and Canada. Moreover, it has received a gold award in the public sector category at BIXPO for our achievements.

## Achievement of ESG Management Evaluation Grade 1 for 2 Consecutive years



### Environmental

Achieving the goal of reducing greenhouse gas emissions in the public sector **for 12 consecutive years**

### Social

**Zero serious accidents** exdue to the establishment and operation of KNF-type safety management strategy plan

### Governance

Achievement of cellent grade in anti-corruption policy evaluation and **zero corruption cases**

# Introduction of Institution

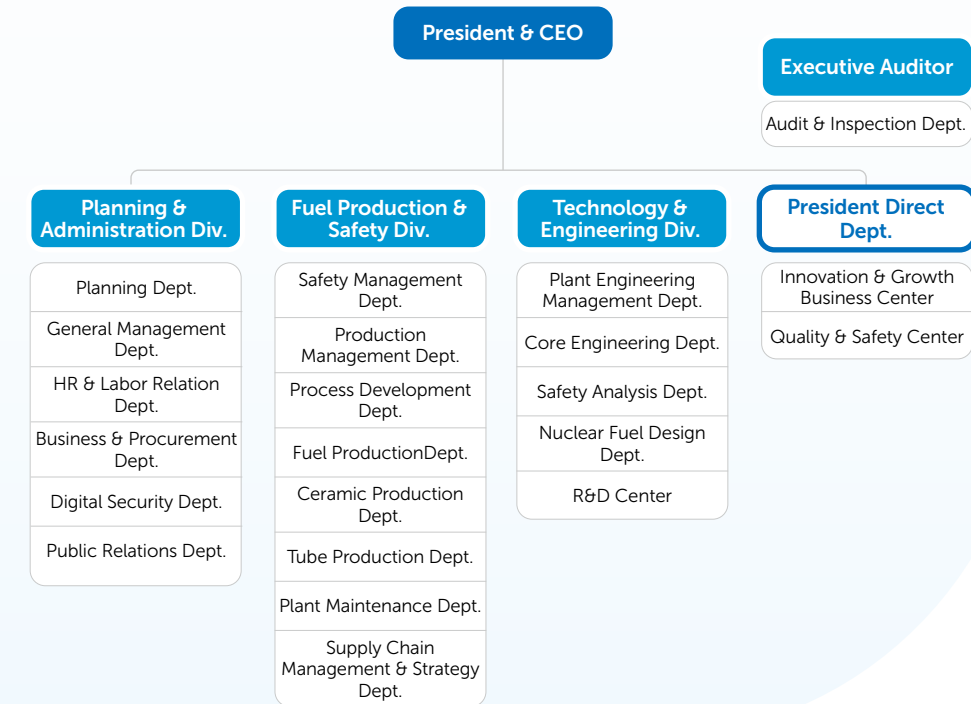
KEPCO Nuclear Fuel is the unique nuclear fuel design, manufacturing, and service institution in Korea, and it is building the foundation for sustainable future growth and strengthening its competitiveness in the global market through localization of nuclear manufacturing and design technologies. KNF will strive for excellence in producing and supplying high-quality, safe and environmentally friendly fuels to take the lead in national energy independence and grow into a company trusted by the people.

## General Status

<p><b>Establishment Date</b> 1982, November, 11</p>	<p><b>Legal Basis</b> Nuclear Fuel Localization and Technology (Article 317 of the Commercial Code)</p>	<p><b>Responsible Agency</b> Ministry of Trade, Industry and Energy</p>	<p><b>*No. of Employee</b> 1,073 (Based on the 4th quarter of 2022)</p>	<p><b>Location</b> 242, Daedeok-daero 989 gil, Yuseong-gu, Daejeon</p>
<p><b>Representative</b> Choi Ik Soo (Period : 2021.03.17 ~ 2024.03.16.)</p>	<p><b>Type of Institution</b> Other public institutions</p>	<p><b>Capital</b> 93,151 million KRW (Based on the 4th quarter of 2022)</p>	<p><b>Revenue Result</b> 304,405 million KRW (Based on the 4th quarter of 2022)</p>	<p><b>Total Revenue</b> 949,455 million KRW (Based on the 4th quarter of 2022)</p>

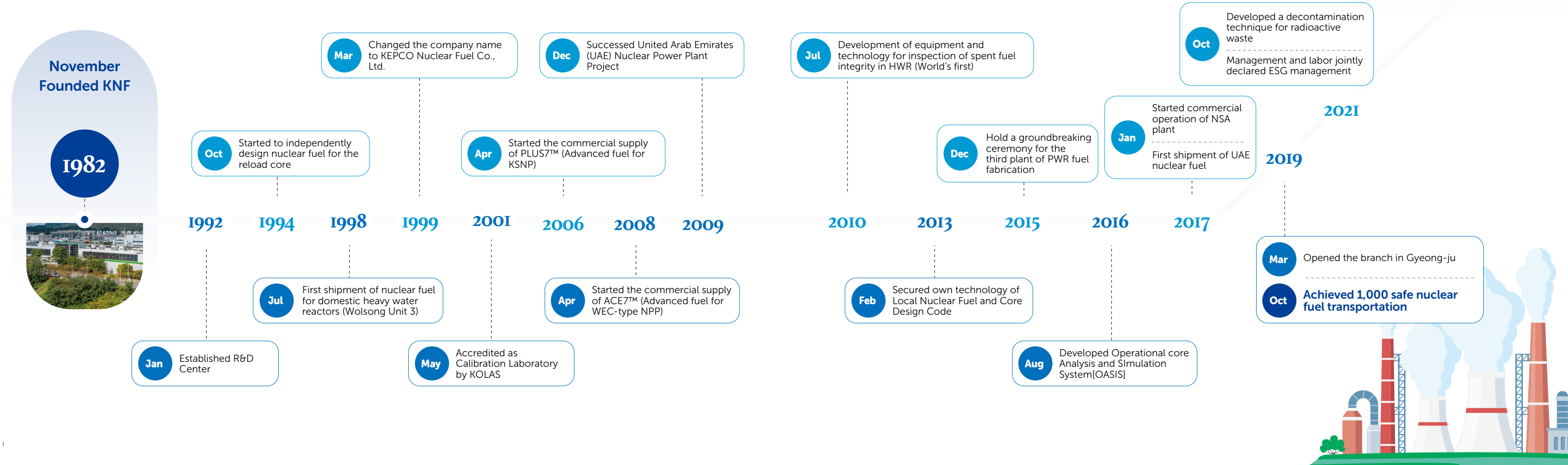
\*the sum of regular employees and unlimited contract employees

## Organization Structure



- Feb**: Obtained design certification from NSSC for the PWR shipping package
- Apr**: Achieved the best shared growth evaluation by public institutions
- Nov**: Awarded presidential commendation for Korean National Quality Award

## History of KNF

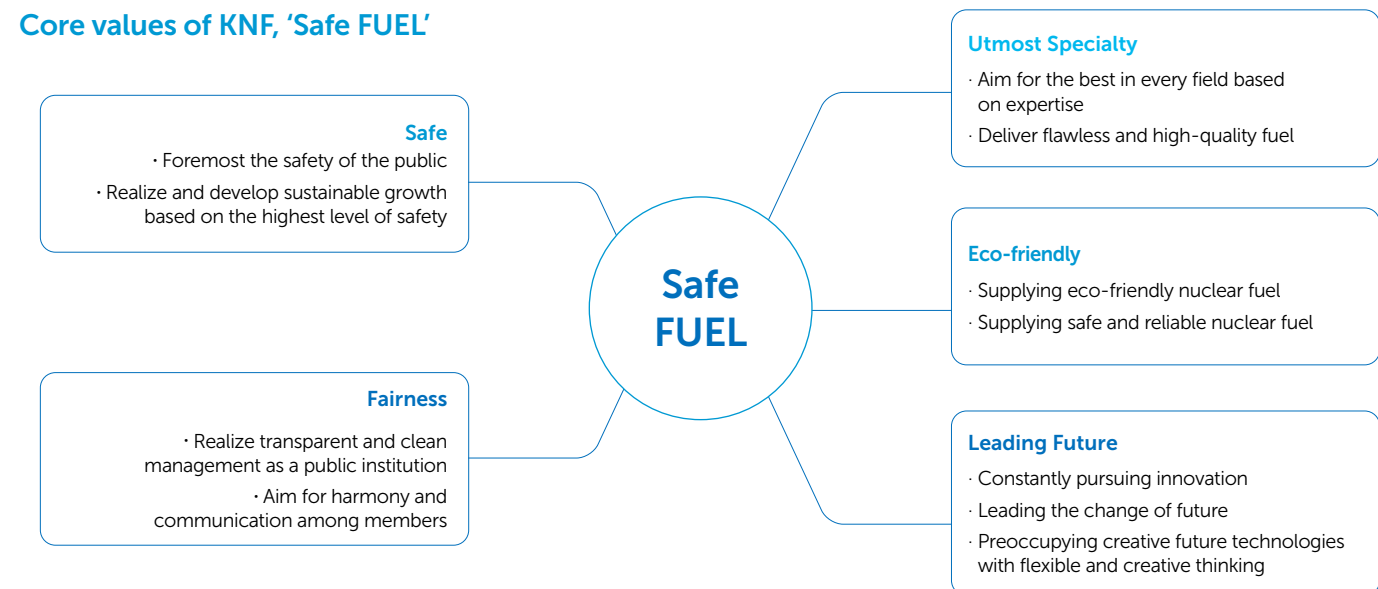


### KNF VISION 2035

KEPCO Nuclear Fuel pursues sustainable growth that puts environment and safety first. KNF will be reborn as a new reference point for developing future-oriented technologies, keeping the principles of safe nuclear power plant operation, and leading the global nuclear market.

<b>MISSION</b>	With safe and clean nuclear energy, we will create an abundant future of humanity			
<b>VISION</b>	The nuclear fuel for the future, New Global Standard KEPCO NF			
<b>Core values</b>	<div style="text-align: center;"><b>Safe FUEL</b></div>			
<b>Business Goal</b>	<b>Business Performance</b> Achievement of sales revenue of KRW 600 billion 30% of overseas sales	<b>Future Technology Development</b> Development of K-Taxonomy leading nuclear fuel technology (Safety) commercialization of ATF (Environment) Reduction of radioactive waste and development of spent fuel technology (Future) Development of small and medium nuclear fuel technology	<b>Enhancement of Social Value</b> Realization of sustainable management (ESG) The best grade (Safety) ZERO serious disaster (Financial) Debt ratio of 150% or less	
<b>Strategic direction</b>	Establishment of a strategic production system considering the increase in the proportion of nuclear power plants	Securing the basis for sales and future growth through active overseas	Development of nuclear technology that prioritizes safety, future, and environment	Promotion of management innovation and ESG-based sustainable management
<b>Strategic tasks</b>	Securing strategic production capacity to respond to demand elasticity Establishment of manufacturing innovation production system and advanced quality system Advancement and localization of manufacturing process for production optimization Establishment of accident-free safety management system	Creating results for overseas nuclear power plant projects Exploration of component, equipment, and service export business Promotion of environmental protection-type future projects Establishment of foundation for promotion of overseas and future projects	Development of technology that greatly enhances safety Advancement of design technology to secure world-class competitiveness Securing original technologies to lead future technologies Development of technology for environmental protection	Establishment of sustainable management infrastructure Promotion of management innovation in response to environmental changes Strengthening the infrastructure of fairness and integrity tailored to the public's eye level Establishment of the public safety environment network by leading carbon neutrality

### Core values of KNF, 'Safe FUEL'



■ Achievement rate (20%/bar) ■ Over achievement rate (10%/bar)

	Performance Indicator	Performance in 2021	Goal for 2022	Performance in 2022	Achievement rate
<b>Safe</b>	Major industrial accidents occur	0 case	0 case	0 case	100%
	Company-wide autonomous safety diagnosis performance	137 cases	144 cases	237 cases	164.6%
	Establishment of emergency response system for disaster	55%	60%	60%	100%
	Nuclear fuel assembly defect rate	0%	0%	0%	100%
	Performance of activities to secure safety and quality of partner companies	100%	100%	100%	100%
	Achievement of accident-free and safe transportation of nuclear fuel collection	0 case	0 case	0 case	100%
<b>Fairness</b>	Integrated integrity of public institutions	Grade 2	Excellent grade	Grade 2	100%
	Corruption case	0 case	0 case	0 case	100%
	Certification of anti-corruption management system	Certified	Certified	Certified	100%
	Board satisfaction	93.3 points	90 points	94.1 points	104.6%
	The rate of disclosure of an institution's original text	77.6 points	63.8 points	78.8 points	123.5%
<b>Utmost Specialty</b>	Sensitivity to personnel integrity	-	63 points	74.9 points	118.9%
	Customer satisfaction	99.2 points	95 points	99.8 points	105%
	Production efficiency	91.2%	73.1%	73.9%	101%
	Fuel supply and core design schedule compliance rate	100%	100%	100%	100%
	Plant operation technical support processing rate	100%	100%	100%	100%
	Approval process rate for commercial supply of high quality unique nuclear fuel	93%	97%	97%	100%
	Quality verification technology and system advancement	35%	65%	65%	100%
<b>Eco-friendly</b>	Advanced core design and safety analysis technology	59%	62%	62%	100%
	Reduction of radioactive waste	1,176 drums	1,150 drums	1,186 drums	103.1%
	Reduction rate of greenhouse gas	38%	34%	40%	117.6%
	KNF eco-friendly index (KEI)	80 points	85 points	93 points	109.4%
	Introduction and operation of carbon neutral practice Index	-	90 points	100 points	111.1%
	Process rate of commercialization of uranium scrap recycling and resource circulation plant	52.26%	52.90%	52.90%	100%
	Process rate of construction of the environmental network for public safety	-	60.8%	60.8%	100%
	Disclosure of environmental information to the public	100%	100%	100%	100%
<b>Leading future</b>	Development of growth business and commercialization performance	100 points	100 points	100 points	100%
	Global human resources development index	31.5%	32%	36.3%	113.5%
	Future manufacturing process construction progress rate	72.6%	94.3%	94.3%	100%
	Process rate of ATF technology development	33%	45%	45%	100%
	Process rate of technology development related to spent fuel	37%	55.4%	55.4%	100%
	Process rate for development of Innovative SMR technology	-	15%	15%	100%



# 02

## Primary Business Performance

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KNF Overview

Nuclear Fuel Manufacturing  
and Processing

Nuclear Fuel Design

Nuclear Fuel Technology  
Development and Innovative Growth

Nuclear Fuel Safety  
and Quality Management

Overseas Business



## KNF Overview

### Manufacturing and Supply

KEPCO NF manufactures and supplies all the required nuclear fuel for all light water reactor (LWR) type and heavy water reactor type (HWR) nuclear power plants currently in operation domestically. Currently, it possesses production facilities capable of manufacturing 550 MTU of light water reactor (LWR) fuel and 400 MTU of heavy water reactor (HWR) fuel annually. Furthermore, it is dedicated to enhancing its future production efficiency through the utilization of AI, big data, augmented reality, and other advanced technologies.

### Safety and Quality Management

KNF dedicates itself to ensure the quality of the supplied fuel, as well as to enhance the power plant utilization rate and safety. These efforts allow for cost reduction in power generation, safe operation of power plants, shortened maintenance periods, and reduction in radiation exposure. Accordingly, the organization continuously improve customer satisfaction every year.

### Design

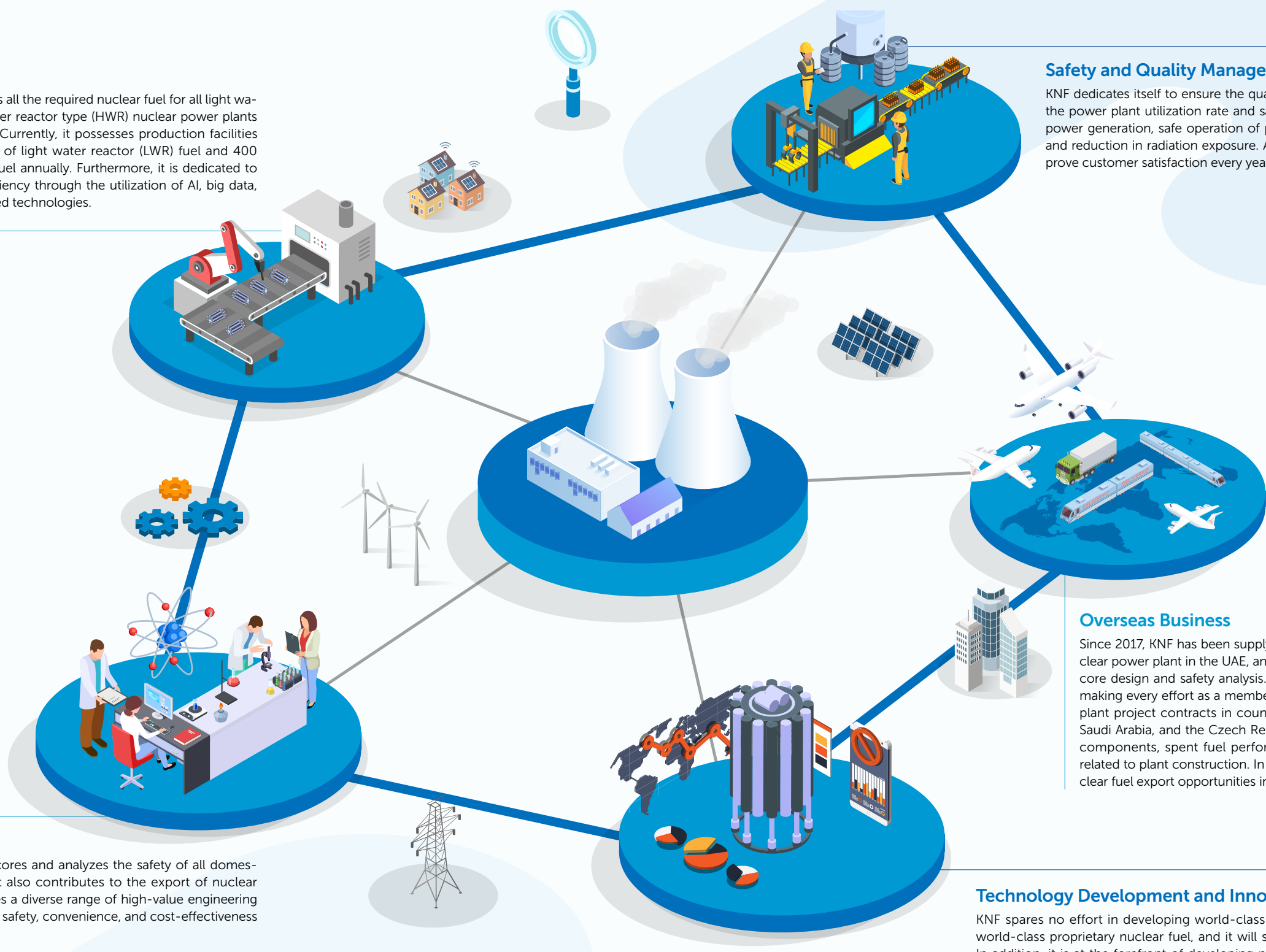
KNF independently designs reactor cores and analyzes the safety of all domestic light water reactors (LWR), and it also contributes to the export of nuclear power plants. Furthermore, it provides a diverse range of high-value engineering services and technologies to improve safety, convenience, and cost-effectiveness of nuclear power plants.

### Overseas Business

Since 2017, KNF has been supplying nuclear fuel to the newly constructed nuclear power plant in the UAE, and it also transfers technology regarding reactor core design and safety analysis. Based on its cutting-edge technology, KNF is making every effort as a member of Team Korea to secure new nuclear power plant project contracts in countries overseas, including the United Kingdom, Saudi Arabia, and the Czech Republic. Furthermore, it is exporting nuclear fuel components, spent fuel performance testing equipment, and technologies related to plant construction. In the near future, the institution will seek for nuclear fuel export opportunities in overseas plants.

### Technology Development and Innovative Growth

KNF spares no effort in developing world-class nuclear fuel. It has successfully developed a world-class proprietary nuclear fuel, and it will soon begin its commercial supply distribution. In addition, it is at the forefront of developing new technologies on safe nuclear power plant operation, including accident tolerant fuel, core operation system, and high-intensity focused ultrasonic decontamination technology. Furthermore, the institution is actively exploring new businesses such as waste management and back-end fuel cycle projects based on its exceptional technological capabilities.



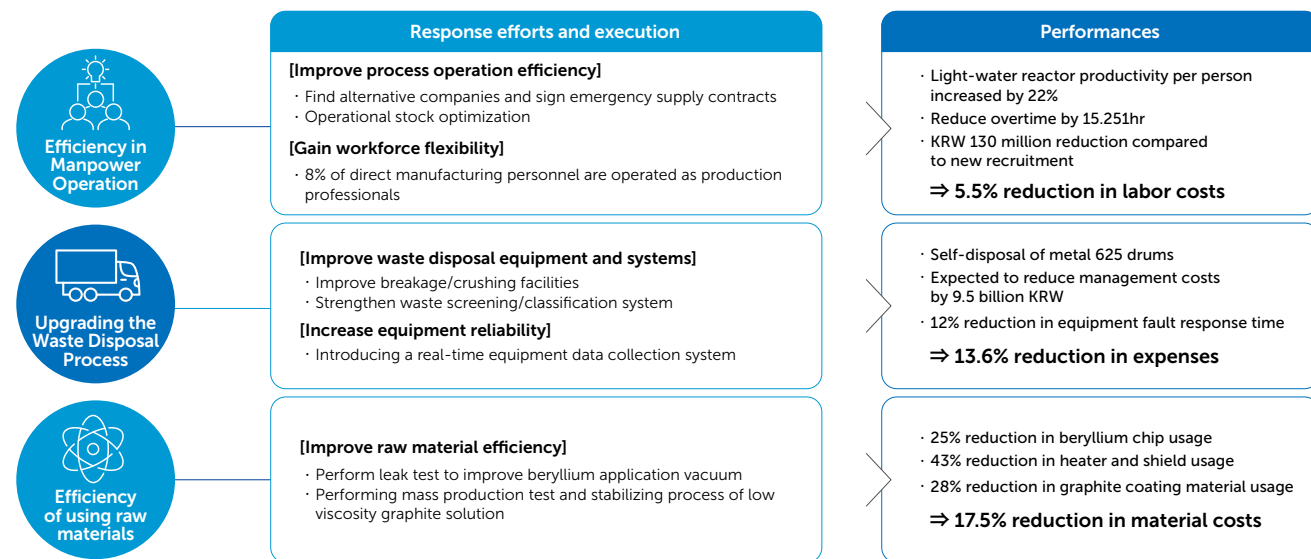
# Nuclear Fuel Manufacturing and Processing

## Strengthening Manufacturing Capabilities

As the Russia-Ukraine conflict prolongs, there is an increasing global focus on energy security, leading to a growing interest in nuclear energy. Moreover, stable nuclear fuel supply is being reevaluated as a means to implement government policies on carbon neutrality by 2050 and to advance as a leading nuclear power nation. To meet these domestic and international demands, KEPCO NF is enhancing its manufacturing system to increase productivity, expand the application of proprietary technologies, and secure competitiveness in the fuel services sector. As a result of the improvements, KNF is currently taking the lead as a top-notch nuclear fuel manufacturer.

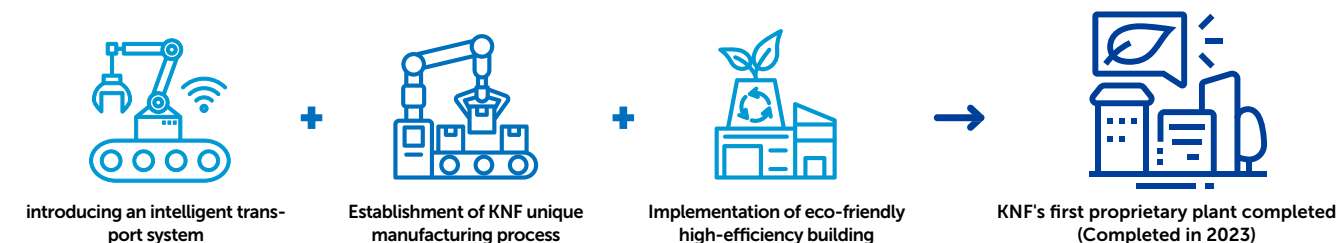
## Improvement of Production Factor Efficiency

To minimize production risks amid the spread of COVID-19, KNF has implemented the pre-production system, reducing the downtime of nuclear power plants and saving production costs of 7.5 billion KRW. In terms of workforce management, it has developed transition deployment plans considering the medium to long-term management conditions, ensuring efficient knowledge transfer and fostering a systematic maintenance system to prevent equipment trouble and enhance operational efficiency. To address the increase in fuel manufacturing costs, flexible workforce management and technical meetings have been conducted to stabilize production. Due to these efforts, the organization has achieved a cost reduction of 40.8 billion KRW in nuclear fuel production costs.



## Expansion of KNF unique Technology Application

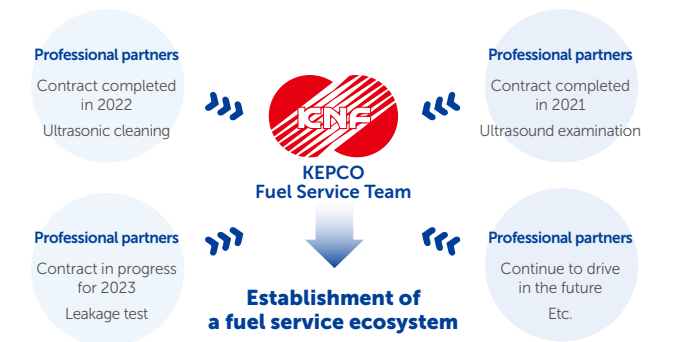
KNF has secured 100% ownership of the technology for uranium powder production, which was previously imported from France. This achievement has enabled KNF to establish its unique power plant and overcome constraints related to overseas exports and patent issues. With this technology, it can independently execute all stages of plant construction, from design to manufacturing processes, in the nuclear fuel facilities. This strengthens its international competitiveness in facilities and equipment in the entire nuclear power cycle. Additionally, the institution is enhancing productivity through the design and production of intelligent transportation systems, and it is also meeting the social demand for carbon reduction and energy efficiency. It is implementing green building certification evaluations to construct environmentally friendly and high energy-efficient buildings. These efforts contribute to meeting the social expectations for sustainable and energy-efficient facilities in the nuclear fuel industry.



## Strengthening the Competitiveness of the Fuel Service Business

To enhance efficiency and focus on its core business, KNF has classified the fuel service business into core and non-core tasks, allowing for optimized workforce allocation. Routine and irregular tasks have been outsourced to private infrastructure, freeing up resources to be deployed in key areas, such as technology development and new fuel service projects. Additionally, it is actively identifying and nurturing small and medium-sized enterprises specializing in fuel services, expanding the ecosystem of fuel service infrastructure. Through a qualification and certification process, it identifies new companies with expertise in specific areas, providing them with technical knowledge and support step-by-step. This approach not only meets domestic demand for fuel services but also lays the groundwork for entering international markets.

### Establishment of a fuel service ecosystem



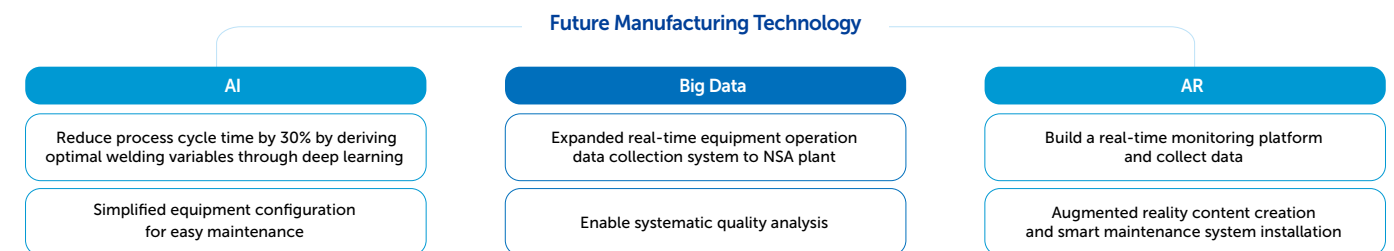
## Securing Future Manufacturing Capabilities

To be a global leader in the nuclear power market, KNF is actively leveraging advanced technologies, such as AI, big data, and augmented reality, to develop future manufacturing facilities. It is gradually implementing automated systems, digitizing process equipment, and developing data analysis systems to enhance manufacturing capabilities. Additionally, it conducts integrity assessments of aging equipment to strengthen safety measures. Moreover, the organization utilizes big data and deep learning techniques to improve product quality, while also fostering specialized talent in the field of nuclear power through training programs. These efforts contribute to Korea's aspirations of becoming a leading nation in the nuclear power industry.

## Building a Manufacturing Process Digital Infrastructure

To enhance the safety of nuclear power plant operations and strengthen manufacturing competitiveness, KNF is establishing an innovative smart factory. In the manufacturing process, it has seen an increase of 30% in productivity by utilizing AI-based laser welding processes, ensuring a stable supply capacity. Moreover, to address the increased tube production demand, it has developed a platform for collecting and analyzing technical data related to tube manufacturing, enabling proactive prevention of productivity issues caused by maintenance and repairs. Furthermore, it has implemented the smart maintenance and repair system using augmented reality, preventing major accidents in the event of unexpected failures. In terms of radiation worker safety management, the organization has established a big data-based safety management system to monitor and ensure the well-being of workers exposed to radiation. Additionally, the institution is actively promoting the development and enhancement of pre-emptive emergency response systems to swiftly respond to large-scale disasters such as fires and earthquakes.

### Future manufacturing technology capabilities and performance

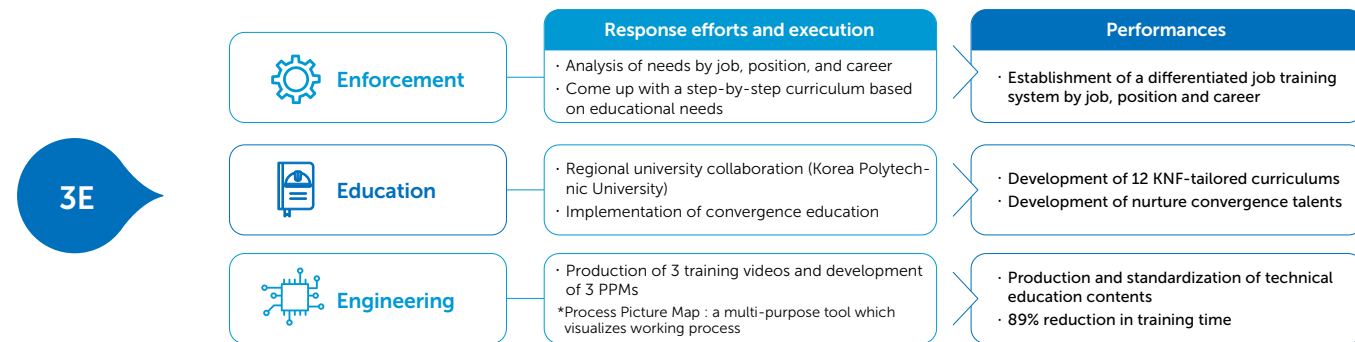


## Implementation of KNF Facility Integrity Assessment

To address the increasing occurrence of unexpected failures due to the aging of ceramic process equipment, KNF conducts equipment integrity assessments to identify and diagnose equipment requiring maintenance. Through a meticulous evaluation process, the organization selects priority equipment for management based on factors such as operating period, usage time, frequency, and environmental conditions. Each identified issue is then addressed with appropriate measures, ensuring the integrity of the equipment and minimizing the occurrence of sudden failures. Notable efforts include localization of control systems and extending the lifespan of thermal lines to mitigate sudden failures in the sintering process. The institution is also developing alternative systems and designing automated control logic to resolve issues related to the deterioration of cold traps.

### Development of Technology-Oriented Professional Talent and Educational Content

KNF has established a tailored job training system and provided differentiated educational content based on job types, positions, career stages, and expertise. Furthermore, it collaborates with local universities to implement interdisciplinary and comprehensive education programs. This collaboration ensures that trainees acquire excellent on-site problem-solving abilities. Additionally, the organization has standardized department-specific training materials and introduced education methods focused on process visualization, resulting in a remarkable 89% reduction in training time while improving employees' comprehension.



### Overcoming the Global Complex Crisis

KNF has proactively focused on overcoming its supply chain risks and strengthening the collaborative network to ensure the safety and stability of nuclear fuel production and supply in a challenging environment characterized by high exchange rates, oil prices, and interest rates.

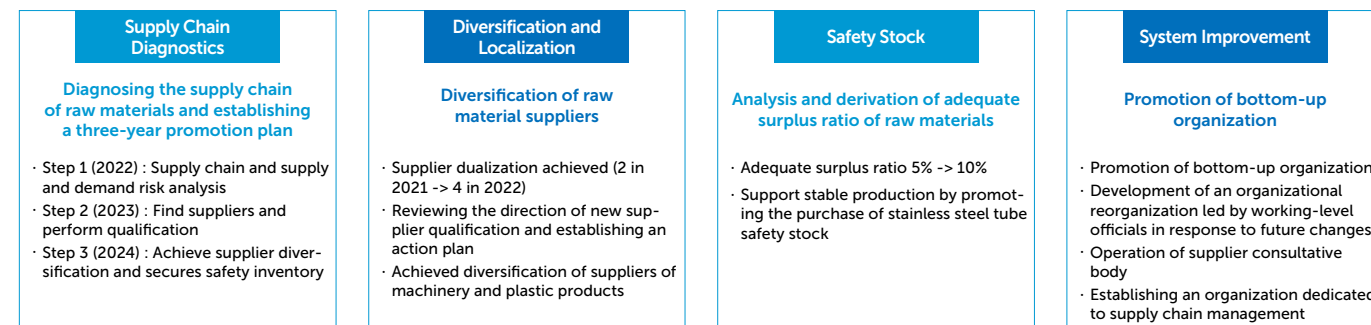
### Overcoming Supply Chain Risks

To minimize risks associated with inflation, KNF has taken measures such as diversifying its supply chain and securing safety stock levels of raw materials and components. Through the analysis of supply risks, it identifies priority items for management and addresses issues related to monopolistic supply by seeking additional suppliers or promoting domestic production. Furthermore, it has improved its storage methods for raw materials and ensured a margin of safety by considering factors such as quality defects and manufacturing environments. In addition, it has established a dedicated organization for supply chain management, enabling immediate response and effective management of supplier-related issues.

### Strengthening the Supply Chain Collaboration System

With the inclusion of nuclear power generation in the EU's Green Taxonomy, the importance of activating the nuclear power ecosystem has been reemphasized. KNF is actively pursuing continuous growth by strengthening collaboration among suppliers and establishing a new global cooperation system. It regularly operates a supplier performance review and consultation body to identify support measures in various fields and enhance the integrity of suppliers. To prevent safety incidents at supplier sites, the organization conducts safety inspections and transfers safety management technologies.

#### Strategy for overcoming supply chain risk



## Nuclear Fuel Design

### Improving and Uniqueize Design Procedures

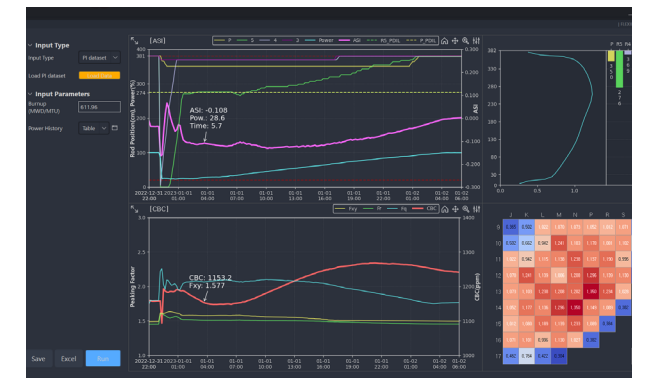
According to the government's policy to enhance the utilization rate of nuclear power plants, there is an increasing demand for establishing a stable export base and ensuring safe operation of nuclear power plants. KNF is addressing issues such as unplanned reactor shutdowns and foreign object debris by improving the design process. It has also developed a core monitoring and control system based on its own design code system, as well as an advanced core design methodology that allows operation under various nuclear power plant conditions. Furthermore, it is promoting the commercialization of nuclear fuel utilizing its proprietary design technology to gain a technological advantage in the global market. The organization is actively resolving current issues to ensure the successful commercialization of their proprietary design technology.

### Improve Design Methodology

KNF has developed a new design methodology to reduce errors in the existing design methodology, as well as prevent errors and exceedance of the tolerance range in measuring critical boron concentration and dynamic control rod worth. In order to achieve more accurate measurement of the critical boron concentration, a database of boron concentration ratio measurement status was established, and a rigorous assessment of the validity of the replacement core safety evaluation report was conducted based on the measured boron concentration ratio at the end of each cycle. As a result, the deviation of the critical boron concentration measurement criteria for reactor characteristic tests was reduced by 10% compared to the previous methodology. Furthermore, the tolerance range criteria for measuring the dynamic control rod worth were clearly defined, and the maximum control rod worth value of operating nuclear power plants was verified. This led to the establishment of a new procedure for verifying the design values for judging the measurement tolerance range. These methodological improvements have enabled more successful reactor characteristic tests, resulting in improved customer satisfaction.

### Advanced Core Design and Safety Analysis

KNF is conducting core design and safety analysis for the entire light water reactor (LWR) fleet operating in South Korea. It has developed the Core Operation Support System (SIMON) based on the KNF nuclear design code system, enabling three-dimensional core prediction calculations. By collecting data and strategies necessary for core operation, KNF can accurately monitor the real-time status of the reactor under all operating conditions. This system, equipped with high-precision core calculation technology, is the third successful development of its kind globally by KNF and has the advantage of effectively responding to sudden situations, such as power fluctuations. Furthermore, through the advanced core design, the organization has the flexibility to perform output reduction operations as required by the power grid. This capability is expected to have significant synergistic effects with the generation of renewable energy.



Execution screen of SIMON

### Promoting the Commercialization of Unique Nuclear Fuel

To strengthen the position in the global nuclear power market, securing intellectual property rights and promoting the commercialization of proprietary nuclear fuel technology are crucial. KNF has sought for the commercialization of proprietary design technology based on its unique core design code for Hanul Units 5 and 6. The organization has conducted safety evaluations of the proprietary design technology to achieve independence in design capabilities. Throughout this process, it has enhanced cooperation with relevant agencies and successfully resolved 100% of regulatory issues related to safety by sharing key concerns from previous licensing cases. As a result, the organization has successfully secured the technology for the commercial loading of proprietary nuclear fuel, marking a significant advancement in the field.

#### Promotion of nuclear fuel commercial loads



### Strengthening Response to Nuclear Power Plant Continuation Licensing

KNF is strengthening its response to the continued operation permits for operating nuclear power plants, not only for new nuclear power plant construction but also for operating plants approaching their expiration date. The main issues for obtaining continued operation permits include incorporating design modifications to address the decrease in fuel thermal conductivity, incorporating new requirements for control rod ejection accidents, and re-evaluating the design margins for seismic analysis within the containment structure. Safety-related aspects of nuclear power plants are being considered, including the ongoing safety analysis re-evaluation of Unit 2 of the Gori Nuclear Power Plant. Safety evaluations for continued operation will also be conducted for Units 3 and 4 of the Gori Nuclear Power Plant, Units 1 and 2 of the Hanbit Nuclear Power Plant, and Units 1 and 2 of the Hanul Nuclear PowerPlant.

License process for continued operation of nuclear power plants due to expire



### Performing technical support

In the midst of a rapidly increasing demand for technical support due to changing conditions of nuclear power plants operation, KNF is actively engaged in various forms of technical support to ensure continuous operation of nuclear power plants and enhance customer satisfaction. This includes developing strategies to prepare for natural disasters, emergency design for meeting power supply plan requirements, and providing technical support for resolving licensing issues. In addition to offline support, the organization also ensures 100% fulfillment of real-time non-face-to-face customer requests, resulting in the highest level of customer satisfaction recorded annually.

### Timely Execution of Emergency Design and Technical Support

Amid increasing calls to address power plant shutdowns and output reduction issues caused by natural disasters, KNF is meeting customer needs through emergency design and technical support. Notable examples include the formulation of operational strategies to mitigate output reduction during the Miryang wildfire incident at the Shin-Kori Nuclear Power Plant, and the simulation of axial directional output variation control at the Gori and Seawol Nuclear Power Plants affected by Typhoon Hinnun. By analyzing core operating guidelines and implementing logic for axial directional output variation control, it submitted strategic reports to prevent delays in power plant restarts.

### Providing customized solutions for customer

KNF contributes to the stable operation of nuclear power plants by utilizing its accumulated technical knowledge database to provide customized solutions based on customer requests. Particularly, considering the increased demand for remote technical support following the pandemic, it has activated a web-based real-time technical support system. By promptly resolving customer inconveniences and fulfilling a total of 99 technical support requests across different types, KNF achieved a customer satisfaction rating of 99.8 out of 100 for online technical support in 2022, generating a design revenue of 710 million KRW.

Number of online technical support and customer satisfaction score by year

Year	'18	'19	'20	'21	'22
Number of technical support (online)	70	67	76	10	99
Customer Satisfaction Score	98.9	97.5	99.5	99.2	99.8

Technical support performance (2022)

Customer request type	Number
Evaluation of Replacement Core Design and Periodic Plan	12
Operation of a movable nuclear power plant	39
Reactor power fluctuations and emergency shutdowns	21
Technical Support Description	10
Nuclear fuel inspection/damage/site support	6
Etc.	11
<b>Sum</b>	<b>99</b>

## Nuclear Fuel Technology Development and Innovative Growth

### Development of Safety Enhancement Technology

As nuclear power generation is considered an essential energy resource for achieving carbon neutrality, efforts are being made to increase the accident prevention rate and significantly improve the accident response time in nuclear power plants. In response to the global demand for enhanced nuclear safety, KNF is developing ATF (accident tolerant fuels) of the highest international standards. It is also creating seismic analysis models and safety analysis methodologies based on our proprietary technologies. These initiatives contribute to strengthening public trust in the safety of nuclear power and positioning Korea at the forefront of nuclear safety.

### Securing the World's Best <sup>1</sup>ATF(Accident Tolerant Fuel) Technology

With nuclear power being included in the EU Taxonomy, the world has begun expanding nuclear power operations in the pursuit of net-zero emissions. To classify nuclear power as green energy, it is essential to use accident tolerant fuels. In line with this, KNF has developed advanced UO<sub>2</sub> pellets and Cr-coated cladding tubes as a stepping stone to secure independent ATF technology. In the case of a new UO<sub>2</sub> pellets developed with unique additive compositions technology, it is expected that the release of fission gas could be suppressed by 30% as the grain size increases three times compared to the existing UO<sub>2</sub> pellets by utilizing the La<sub>2</sub>O<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>(LAS) additive. In addition, the strain at high temperatures is more than three times improved, reducing the pressure applied to the cladding tube through deformation when the UO<sub>2</sub> pellets swells under accident conditions. In the case of CR-coated cladding tube, a technology for coating Cr on the outer surface of domestic Zr-alloy cladding tube, named as HANA has been developed. The high-temperature steam oxidation resistance performance can be improved by nearly 10 times, thereby suppressing hydrogen generation in an accident. As such, KNF's ATF technology can secure 50 min more time to cope with accident conditions even when emergency core cooling is lost, and it is expected to contribute greatly to safe nuclear power plant operation and global competitiveness.

**ATF UO<sub>2</sub> Pellet**

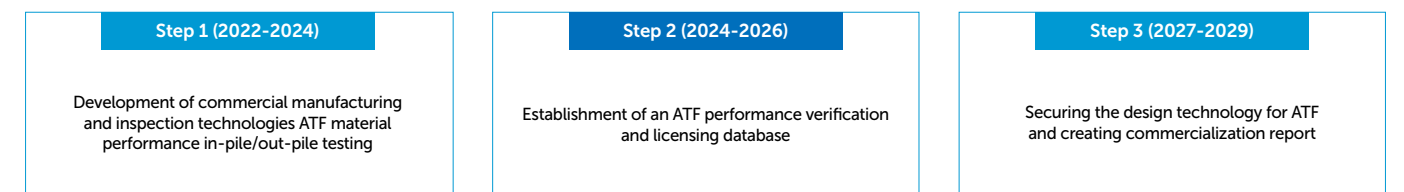
- Introduction of safety reinforcement shape unique to Korea
- Securing unique additive composition technology
- Fission gas emissions reduced by 30% compared to the previous one
- 3 times higher temperature strain

**ATF cladding tube**

- Korea's unique material cladding tube
- Securing proprietary Cr-coating process technology
- 10-fold improvement in oxidation resistance performance compared to the previous level
- Superior production and performance compared to foreign technologies.

### Commencement of ATF Commercialization

To expedite the early commercialization of ATF, KNF has proactively produced prototype fuels using its proprietary technology. Furthermore, a development strategy has been formulated to shorten the project schedule by two years by submitting the commercialization permit report earlier than originally planned. It aims to achieve performance verification, establish a licensing database for accident-tolerant fuels, and secure design technologies by 2029. Based on these achievements, it anticipated that its export competitiveness will be strengthened, leading to a stronger presence in the global market. Additionally, the increased safety margin of nuclear power plants and improved public trust in nuclear power operations are also expected as positive outcomes.



### Development of Seismic Analysis Model

With the tightening seismic regulations for nuclear fuel there has been an increasing need for appropriate strategies to address this issue and develop design data for the continued operation of existing nuclear power plants. KNF has successfully improved its seismic model by incorporating proprietary computational codes. Through multiple safety verifications, the reliability of the evaluation results has been established. Furthermore, efforts are being made to analyze the validity of nuclear fuel testing and grid impact testing for the aging power plant, and to derive methods for producing test assemblies and components that incorporate the conditions of the power plant. It is expected that through these ongoing efforts in safety analysis and design data development, the likelihood of obtaining a permit for the continued operation of the aging power plant will increase.

1) Improve accident response time even when the emergency core cooling function of the nuclear power plant is lost, and improve the safety of the nuclear power plant by suppressing hydrogen generation

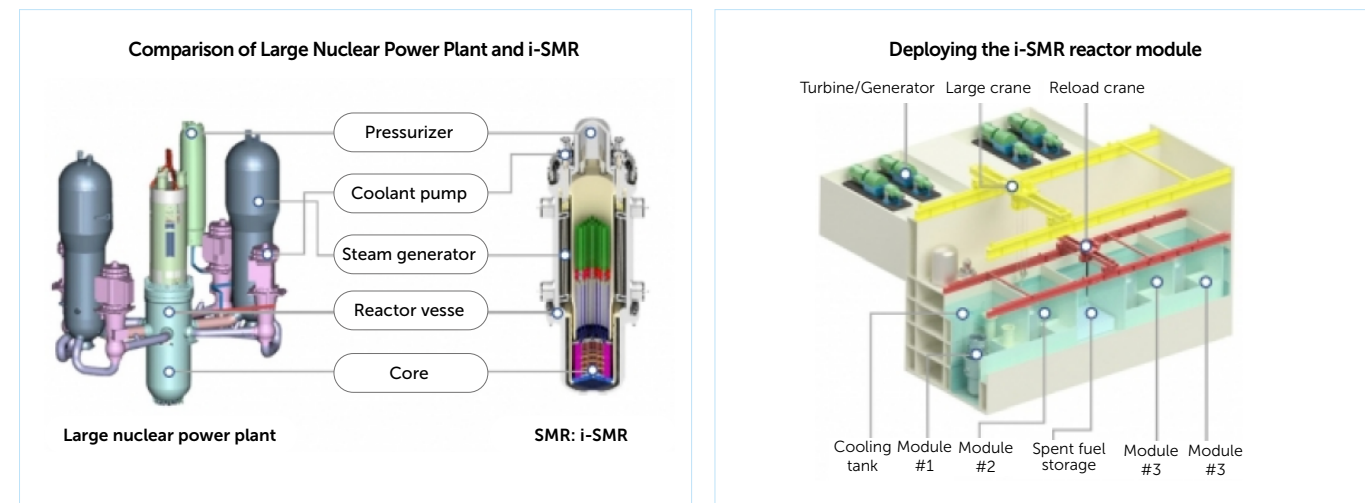
## Development of Future Growth Technology

KNF is fully committed to future technology development in preparation for the upcoming 2030s, based on the distinctive technical expertise. KNF aims to overcome barriers to overseas exports and gain a technological advancements through the development of innovative Small Modular Reactor (i-SMR) technology. Additionally, KNF is intensifying its support for the commercialization of original cladding material(HANA™) and expanding R&D investments to secure foundational technologies for leading future technologies.

### Development of i-SMR Technology

Small Modular Reactors (SMRs) are emerging as the future of the global nuclear power market, offering improved safety and economics compared to conventional large-scale nuclear power plants. Innovative SMRs are expected to replace around 600 MW-rated coal-fired power plants when four modules are deployed. They can effectively eliminate severe accidents through simplified design, integrated modular configuration, and entirely passive safety systems making them essential for achieving carbon neutrality and operating safe nuclear power plants. In line with this trend, KNF is actively leading the development of core technologies for i-SMR through close collaboration with domestic nuclear entities aiming to prevail the overseas market. In May 2022, i-SMR project was decided to be sponsored by the Korean government and soluble boron-free core model, safety analysis methodology meeting the top-tier requirements, and integrated burnable absorbers applicable to versatile reactors are under development as a part of i-SMR project, currently.

#### Overview of i-SMR technology development project



### Development and EUR Certificate of EUAPR1000

Due to the growing need of European Utility Requirement(EUR) Certification for the export of medium-sized nuclear power reactor(EUAPR1000), KNF has made a preparation of export roadmap of EUAPR1000 and also made enhancements in compliance with the EUR to satisfy the revised safety requirements for the provision of pre-licensing stages of EUAPR1000. As a result of compliance evaluations in 2022, EUAPR1000 was awarded EUR compliance certificate from the EUR association in March 2023. Based on this technological proficiency, KNF has joined in the consortium of bidding for new nuclear power plant projects in the Czech Republic in the field of fuel technology. Furthermore, KNF has solidified its international relationships in the nuclear power market by signing MOUs for technology cooperation with entities from Belgium and Finland and addressing issues through consultations with these entities. Through EUR certification, KNF expects significant benefits in terms of cost and risk reduction in future projects. It also anticipates enhanced technological expertise and competitiveness in a bidding by meeting the requirements of overseas utilities in the nuclear power industry.

### Licensing of HANA™ Cladding Materials

In order to address the issue of export restrictions due to the absence of domestic nuclear fuel materials and components, KNF has launched a project for the commercial licensing of HANATM material for nuclear fuel which is owned by KNF. Hot cell testing was conducted successfully and data collected reveals that HANATM shows world-class performance. Once the license is awarded for commercial supply of this material, completed localization of nuclear fuel materials and components will be made in the future. By supplying in-house nuclear fuel to domestic commercial nuclear power plants, it is expected to not only overcome technological barriers to the export of nuclear power plant but also improve the availability of nuclear power plants together with the reduction of spent fuel.

1) Performance test conducted at radiation shielding facilities for performance evaluation of spent fuel

### Establishment of Flexible Operation Design Methodology

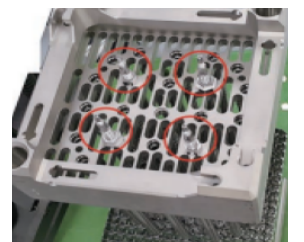
In response to the need for flexible operation to address power supply issues, KNF has created a design methodology for applying flexible operation to the APR 1400 nuclear power plant. It has developed a new core model considering flexible operation and established a corresponding safety analysis methodology, contributing to the flexibility of nuclear power plant operation. Furthermore, the organization has ensured a level of flexible operation performance that meets the international standard and derived proposed revisions to operational constraints, providing a systematic response to regulatory issues.

### Development of Spent Fuel Management Technology

In line with the revised guidelines of the K-Taxonomy, KNF is making every effort to be recognized as an environmentally friendly economic activity in its primary operations, including the construction of new nuclear power plants, continued operation of nuclear power plants, and nuclear-related research. It has focused on the development of back-end fuel cycle technologies related to the handling, transportation, and dry storage of spent fuel. By securing solutions for the management of spent fuel, it has contributed to public confidence, the potential for sustainable nuclear industry, and improved public acceptance. It has taken the lead in developing key technologies related to the handling, transportation (including other radioactive materials), and storage of used nuclear fuel, ensuring integrity and safety (criticality, transportation risk, other safety evaluations etc.), and providing environmentally friendly management solutions.

### Development of Spent Fuel Management System and Commercialization of Handling Reinforcement Equipment

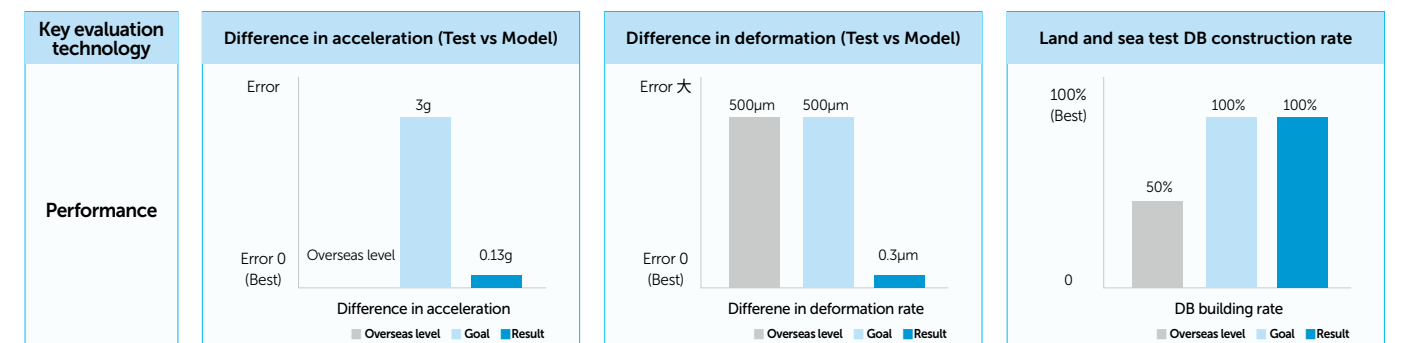
KNF has developed an initial characterization management system for spent fuel (SF) that enables the evaluation of SF characteristics with only a small number of sampling measurements, utilizing its proprietary design computer code. With the sampling measurement/evaluation system, it is prospected to save approximately 11.3 billion KRW and 6,700 hours compared to conventional measurement methods. This efficient management system is expected to enable effective management of over 18,000 bundles of SF in the country. Additionally, it has successfully developed the SAFER, a reinforcement mechanism for the safe handling and transportation of SF. Currently, the SAFER system has completed validation experiments in the Unit 1 of the Kori and is undergoing commercial licensing procedures. Based on these developments, it is anticipated that there will be an import substitution effect of around 40 billion KRW. The related core technologies can also be exported to countries operating similar nuclear power plants, further enhancing public trust in SF management.



Installation type of SAFER

### Leading to Develop Technology of Transportation and Storage of Spent Fuel

SF soundness/safety evaluation solution was developed to enhance safety of transportation, dry storage of spent fuel during saturation of nuclear storage capacity and dismantling of nuclear power plants and to meet the high-level radioactive waste management standards required by K-Taxonomy. Through the first-ever domestic road and maritime transportation tests, KNF has demonstrated superior performance in technical aspects, such as acceleration/deformation rate differences and test database establishment, compared to advanced overseas technologies. Based on these achievements, it plans to establish a soundness evaluation system for SF under transportation vibration/impact conditions and establish damage criteria for evaluation. Building on the accumulated technology and expertise in SF soundness and safety, it aims to establish SF delivery and acquisition industrial technology standards by 2026 and construct a soundness and safety evaluation system for SF handling, transportation, and storage conditions. These efforts are expected to contribute to the sustainability of domestic nuclear power generation projects and enhance competitiveness in overseas exports.



1) Flexible power increase/decrease operation according to power system load requirements and frequent use of control rods to control power distribution in case of power fluctuations

# Nuclear Fuel Safety and Quality Management

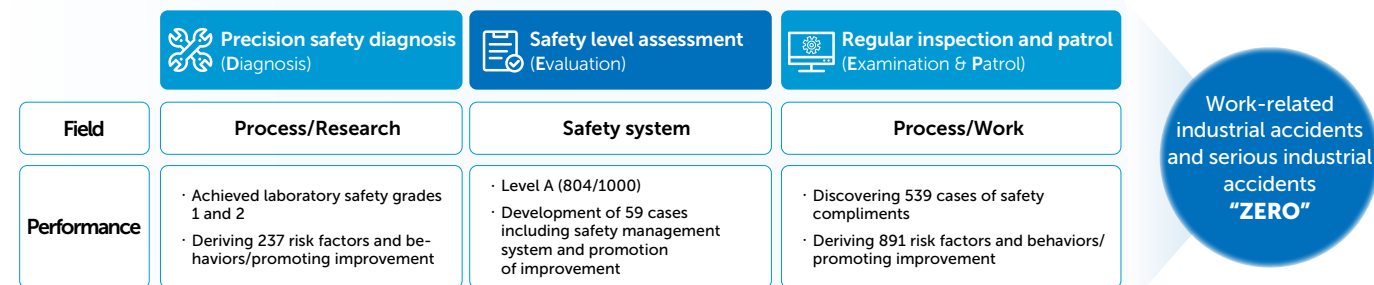
## Advancement of Disaster and Safety Management System

To address the strengthened safety regulations, including the Major Accident Offense Act, and alleviate public concerns about the risks of nuclear power plants, KNF has conducted safety assessments in collaboration with external experts to identify and mitigate potential hazards. Furthermore, it has established a smart disaster response system, achieving its goal of having zero industrial accidents in its facilities and research sites. In addition, the organization has intensified its efforts in promoting safety cooperation to create a nuclear facility where workers can feel safe.

### Implementation of Safety Diagnosis

KNF has conducted a comprehensive safety diagnosis called 'DEEP(Diagnosis/Evaluation/Examination and Patrol)' with the participation of external experts. Through this process, it has identified and eliminated accident-prone factors and behaviors, leading to the improvement of 1,187 unsafe elements. By implementing precise safety diagnostics, continuous safety evaluations, regular safety checks, and patrols, it has achieved zero industrial accidents and major industrial accidents related to its operations, obtained an A-grade safety management rating, and attained safety ratings of 1 and 2 for its research laboratories. Additionally, the institution has developed an in-house risk assessment tool and conducted evaluations across all departments, effectively addressing safety blind spots and fostering a company-wide improvement in safety consciousness.

Safety diagnosis 'DEEP'

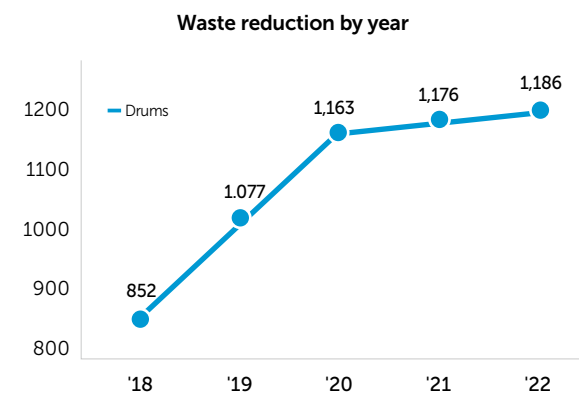


### Establishment of Smart Disaster Response System

Strengthening the ability to respond quickly to unforeseen disaster situations is essential in nuclear fuel manufacturing facilities. KNF has integrated various safety systems--such as CCTV, fire alarm systems, and emergency broadcasting--which were previously scattered throughout the TSA. It has also improved the fire monitoring system in all manufacturing, testing, research, and administrative facilities to enable real-time safety surveillance and enhance disaster response capabilities. Additionally, the organization has implemented the safety information integration system (RESH) that combines information related to fire, safety, health, and the environment. This system improves user convenience and increases the effectiveness of accident prevention.

### Securing Safety and Continuity of Nuclear Power Plant Operations

Due to the continuous demand from local governments and residents to reduce the amount of radioactive waste stored, the need for the development of long-term waste disposal technologies has increased. KNF has made efforts to localize key components of the pyroprocessing immobilization process and improve facilities to maximize waste reduction efficiency and increase productivity. In 2022, the organization achieved a reduction of 1,186 drums of waste, resulting in an economic benefit of approximately 18.7 billion KRW. Furthermore, operational days have been increasing annually, leading to improved productivity. It has also developed a high-intensity focused ultrasonic decontamination technology capable of treating complex metal waste. Moreover, the organization has applied for an international patent to establish the basis for the commercialization of decontamination technologies, as well as to enhance the safety of nuclear power plant operations.

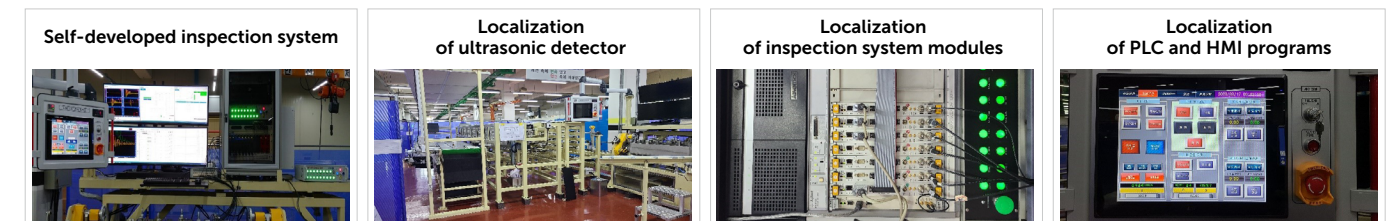


## Securing High Quality and Zero-Defect Nuclear Fuel

KNF has been enhancing its quality management system through innovations in inspection technology, process optimization, and internal quality activities, aiming to increase customer satisfaction both domestically and internationally. By localizing quality inspection technologies, it has resolved parts supply risks and established a more stable quality inspection system by introducing automated inspection technology and improving inspection processes. Additionally, the institution actively incorporates quality-related opinions through communication with both internal and external stakeholders, and support the enhancement of quality capabilities in partner companies, contributing to the strengthening of the nuclear power ecosystem.

### Localization of Quality Inspection Technology

To overcome the issue of component supply delays associated with the use of overseas technology equipment, KNF has developed and applied domestically produced substitute parts, promoting technological independence. One notable example of localization in inspection equipment is the ultrasonic detection device, where the focus was on domestic part localization from the design stage. Key machine and field components were applied as domestic standard models. The core inspection system was also localized, with domestic companies undertaking the design and manufacturing, resulting in successful integrity testing and patent registration. The localization of the ultrasonic detection device led to a cost reduction of approximately 1.4 billion KRW compared to the importation of foreign

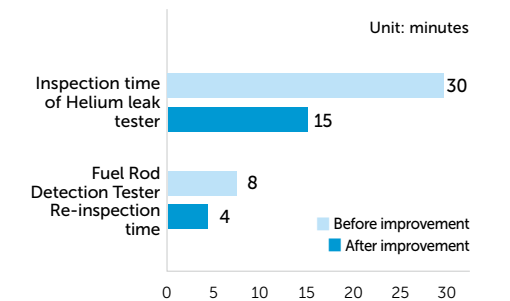


### Introduction of Automatic Inspection Technology

KNF has achieved automation in inspection technology to enhance efficiency and effectiveness. By staying abreast of the latest technological trends and benchmarking against exemplary cases from other companies, it has developed automated inspection technologies and programs optimized for internal processes. As a result, automation has been implemented in the inspection of fuel rod specimens and tube plug removal processes. The introduction of automated inspection technology utilizing non-contact inspection techniques has increased the number of specimens inspected per operation from one to five, and the average cycle time for tube plug removal has been reduced from 20 seconds to 15 seconds per unit. Additionally, the fixed tube transfer line has been transformed into a detachable type, allowing for the application of different tube sizes and improving the process's usability limits.

### Optimization of Inspection Process

To address the issue of decreased signal processing accuracy in fuel rod inspection caused by unstable power supply, KNF has designed an optimized system configuration and replaced components with the latest specifications. As a result, noise reduction has led to a 50% reduction in retesting time. In addition, the helium leak testing equipment has overcome leakage issues by changing the piping layout from a T-shape to a straight shape and reconfiguring the pump arrangement from parallel to serial. Equipment improvements utilizing magnetic technology have enhanced confidentiality and sealing capabilities. Furthermore, KNF has optimized inspection processes in various areas by developing analysis methods and streamlining the inspection process. As a result, the detection limit for silicon (Si) in uranium hexafluoride (UF6) has improved by nearly tenfold, which proves the flexibility of its manufacturing system.



### Strengthening Quality Assurance System by Collecting Internal and External Opinions

To provide customers with safe and zero-defect nuclear fuel, KNF actively gathers quality feedback from both internal and external stakeholders and strengthens the quality assurance capabilities of its partner companies. Customer quality meetings are organized to discuss quality issues and identify areas for improvement. By sharing current issues within internal departments such as quality, production, design, and business, it developed a collaborative system between departments and derived forward-looking improvement measures for quality enhancement. Additionally, the organization actively supports its partner companies through tailored technical assistance, quality assurance training, and business consultation meetings. These efforts aim to strengthen the quality assurance capabilities of partner companies and foster a mutually trusting relationship.

# Overseas Business

## Expansion of Overseas Business Area

Amidst the growing global expectation that nuclear power will be a key resource in low-carbon energy mix, there has been an increasing focus on strengthening the nuclear power industry ecosystem, especially as the government has declared the abandonment of the anti-nuclear policy domestically. Furthermore, there has been an increase in interest and importance placed on the exportation of nuclear power plants. Taking advantage of these rapid internal and external changes, KNF is expanding its overseas business areas. It has entered the global supply chain for essential nuclear fuel and actively participated in bidding for joint development projects of new nuclear power plants abroad, thereby enhancing its chances of securing contracts. Additionally, the institution strives to strengthen its global network by participating in various international technology information exchange meetings and signing memoranda of understanding with major overseas institutions.

## Export of Nuclear Fuel Components

Due to the fluctuation in the nuclear power market supply chain in Eastern Europe, there has been an increase in the demand for U.S.-made nuclear fuel. This has improved the prospects for KNF to enter the global component supply chain. Building on its long-term technological cooperation with WEC, the organization has been promoting the export of nuclear fuel components through tube manufacturing technology and production capacity utilization. In December 2022, it successfully completed the WEC Optimized ZIRLO cladding tube qualification test, leading to a standalone component export contract worth over 30.7 billion USD. Not only did this contract secure new growth momentum, but it also served as an opportunity to demonstrate its world-class tube manufacturing technology, given that the organization supplied its fuel components to the top nuclear power nation, the United States.

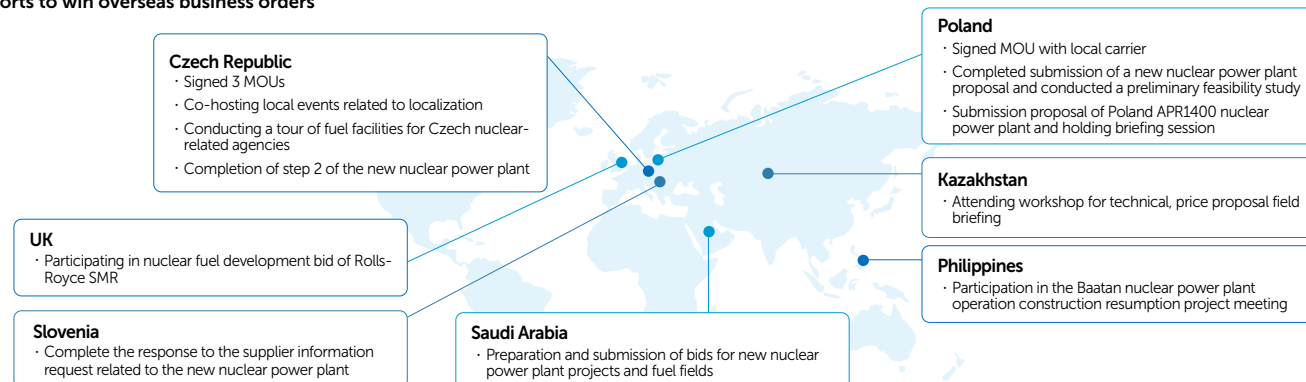


WEC Optimized ZIRLO coating tube supplier qualification prototype shipment

## Increase the Possibility of Winning Overseas Business Orders

Under the government-led Team Korea nuclear power export policy, KNF is actively pursuing various efforts to secure overseas projects. When participating in the bidding process for a new nuclear power plant development project in Dukovany, Czech Republic, KNF proactively established three MOUs with local entities such as Czech transport company, nuclear research institute, and insurance company. It also co-hosted local events related to localization and organized visitor programs to showcase its capabilities. As a result, KNF has differentiated itself through a distinctive bidding proposal, increasing the visibility of securing the project compared to competitors. Furthermore, KNF has demonstrated a proactive approach in the bidding process for the new nuclear power plant development project in Poland by submitting a differentiated proposal and submitting "The Plan" for preliminary feasibility study. KNF is committed to securing project contracts through active engagement. In addition to new nuclear power plants, it is also participating in bids for SMR nuclear fuel, aiming to enter the emerging SMR market. Leveraging its unique technical expertise and manufacturing capabilities, KNF participated in the fuel development bidding by Rolls-Royce SMR in the UK. KNF has also responded to bid proposals and information requests related to new nuclear power projects in Saudi Arabia and Slovenia. Moreover, KNF has attended nuclear power seminars and meetings in Kazakhstan and the Philippines, expanding the possibilities of securing overseas projects from various angles.

### Efforts to win overseas business orders



## Participation in Bidding for UAE Nuclear Fuel Manufacturing Plant Construction Project

KNF has participated in the bidding process for the construction of a local fuel fabrication plant for the stable fuel supply of the UAE Barakah Nuclear Power Plant. Leveraging over 30 years of fuel manufacturing expertise and experience in constructing the third plant, the organization highlighted its unique strengths. Based on the proven technology as the fuel supplier for UAE BNPP, it secured competitiveness in the bidding process. The institution held proposal technology and price explanation sessions, and through CEO-level discussions, strengthened trust, ultimately being selected as one of the participants in the final stage of the bidding process. Winning this project not only signifies the first export of a source technology-centric fuel plant in KNF's history but also serves as an opportunity to establish a long-term nuclear cooperation partnership with the UAE for over 60 years. As the final stage approaches, it is hoped that its unique technology and strengths will be emphasized, leading to favorable outcomes. The bidding process itself serves as a challenging experience for plant bidding and is expected to greatly contribute to the future growth of KNF.

## Strengthening KNF Global Network

KNF is strengthening the global network and expanding its presence in overseas markets through business collaboration and technical information exchange with major international institutions. With long-standing partner WEC in the United States, it maintains regular executive exchanges and business cooperation meetings, continuing various parts export projects such as cladding tubes, inconel raw materials, and support grid plates. In the UAE nuclear power sector, the organization actively participates in KNF-ENEC-Uranium Supplier business issue meetings related to the BNPP fuel project. Regular meetings are conducted for project-specific purposes-- including monthly progress review meetings, biweekly meetings, and design, manufacturing, and quality issue weekly review meetings--to systematically manage the project. In the field of Team Korea's overseas nuclear power projects, the institution conducts localization workshops in countries such as the Czech Republic, Poland, and Saudi Arabia to enhance the possibility of winning projects. Additionally, it established cooperative relationships through SMR technical information exchange with Rolls-Royce in the UK and the Brazilian Navy.

### Achievements in promoting global cooperation

Classification	Cases	Contents
Signing the agreement	7	<ul style="list-style-type: none"> <li>Signed MOU for the development of new overseas nuclear power plants : Poland's MMH, Czech Republic's DMS, UJV, nuclear insurance company</li> <li>SMR Development NDA Signed : UK's Rolls-Royce, U.S.'s Last Energy, Denmark's Seaborg</li> </ul>
Bidding the business	17	<ul style="list-style-type: none"> <li>Bidding Plant : UAE fuel plant construction and operation project</li> <li>Bidding SMR : UK Rolls-Royce fuel development</li> <li>Bidding new overseas nuclear power plant : Czech New Nuclear Power Plant, Poland New Nuclear Power Plant</li> <li>Bidding for parts : U.S. cladding tube, etc.</li> </ul>
Signing the contract	5	<ul style="list-style-type: none"> <li>Exporting parts : 3 cases including U.S. WEC cladding, inconel raw materials, and grid straps</li> <li>UAE BNPP : Training related to core reload and Non-LOCA analysis, etc</li> </ul>

## Achieving Customer Satisfaction and Secure Overseas Sales

During the global logistics crisis, which caused delays in the maritime transportation of nuclear fuel, KNF promptly updated the transportation situation and implemented new transportation plans to ensure smooth delivery schedules and enhance customer satisfaction. Furthermore, it established a foundation for expanding exports by obtaining and utilizing overseas licenses for KNF design code. Through fuel reload to meet customer needs and resolve uranium supply issues, the organization secured total sales of 38.6 billion KRW in the UAE BNPP fuel project. In the field of parts and service exports, it expanded its collaboration areas, resolved transportation issues, and established its position as a key supplier in the nuclear fuel core component supply chain. In addition, KNF achieved sales of 4.7 billion KRW in nuclear fuel components and service exports, showing a 55% growth compared to the previous year and confirming a promising outlook for independent export businesses.

### Fuel components and services export business

	Contents	Performance
[U.S.] Fuel components and services	<ul style="list-style-type: none"> <li>Supply chain cooperation : WEC asked for help to KNF, because of procurement issues caused by long-term Strike by U.S. raw material suppliers</li> <li>Expansion of cooperative areas : Promotion of U.S. nuclear power plant core design support service and grid strap supplies</li> </ul>	<ul style="list-style-type: none"> <li>Resolving U.S. procurement issues and strengthening supply chain partnerships between two companies</li> <li>Achieving 1.6 billion KRW by exporting of fuel components and services to U.S. and expanding business cooperation areas</li> </ul>
[Brazil] Exporting fuel components	<ul style="list-style-type: none"> <li>Exporting fuel components : Manufacturing and supplying of fuel components for Brazil's Angra Unit 1</li> <li>Resolution of pending issues : Responding to requests related to transportation issues and quality and payment issues due to Brazilian port issues</li> </ul>	<ul style="list-style-type: none"> <li>Achieving 3.1 billion KRW in sales through timely manufacturing and supply of core nuclear fuel components for nuclear power plants of Brazil</li> <li>Achieving customer satisfaction by addressing requirements 100%</li> </ul>





# 03

## Sustainable Management

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ESG Management Strategy  
and Promotion System




ESG Responsible  
Management System

Stakeholder Participation

Double Materiality Assessment

# ESG Management Strategy and Promotion System

## Vision and Goals

ESG Vision	Environmentally Friendly Nuclear Energy Company Trusted by the Public		
Goals	1) Generation of Future Value of 582 billion KRW by 2030 through the Implementation of Nu-Clean Business		
Core Values	 <b>Eco-friendly</b> Citizen Relief	 <b>Companion</b> Citizen Companionship	 <b>Open-clearly</b> Citizen Trust
Strategy Direction	<b>Creation of an eco-friendly nuclear power industry</b>	<b>Realization of an inclusive and safe society</b>	<b>Establishment of a transparent and fair governance system</b>
Strategic Objectives	Promotion of Environmentally Sustainable New Business Proactive Response to Climate Change Enhancement of Environmental Management System Expansion of Investment in Eco-friendly and Nuclear Safety R&D	Contributing to Local Community Development and Participating in Resolving Social Issues Establishing a Co-prosperous Nuclear Power Ecosystem Enhancement of Safety and Information Security Systems Cultivating a Positive Organizational Culture	Strengthening ESG Responsible Management System Enhancement of Integrity, Ethical Management, and Anti-Corruption Promotion System Strengthening Citizen Engagement and Stakeholder Communication
Operational Tasks	16 Projects Including Radioactive Waste Disposal Initiatives	11 Projects Including Social Contribution and Local Coexistence Cooperation	9 Projects Including Strengthening ESG Responsible Management System

## Joint ESG Management Declaration

In October 2021, the declaration ceremony for the "Joint Labor-Management ESG (environmental, social, governance) Declaration," attended by internal and external stakeholders, including the management, labor union representatives. At the event, KEPCO NF announced its ESG management implementation strategy and declared that it would set and fulfill common goals to continue developing into an eco-friendly nuclear energy company trusted by the public through the adoption of the Labor-Management ESG Declaration. The declaration to transform to ESG management with the Citizen Participation Innovation Group consisting of business partners, local residents, related organizations, and local youth, in particular, reaffirmed the company's commitment to spreading ESG values. The declaration for ESG management included creating a future value of KRW 582 billion by 2030 through new environmental conservation businesses based on management focused on eco-friendly and public safety, fulfilling the role of a social safety net as citizens' partner and leading the dispersion of win-win cooperation, partnership, and fair culture throughout society, and committing to establish an integrity-based transparent decision-making system. KEPCO NF held an ESG committee selected 11 strategic tasks in three strategic directions: creating future eco-friendly values with public confidence, creating an inclusive and safe society with public trust, and establishing transparent and fair governance.

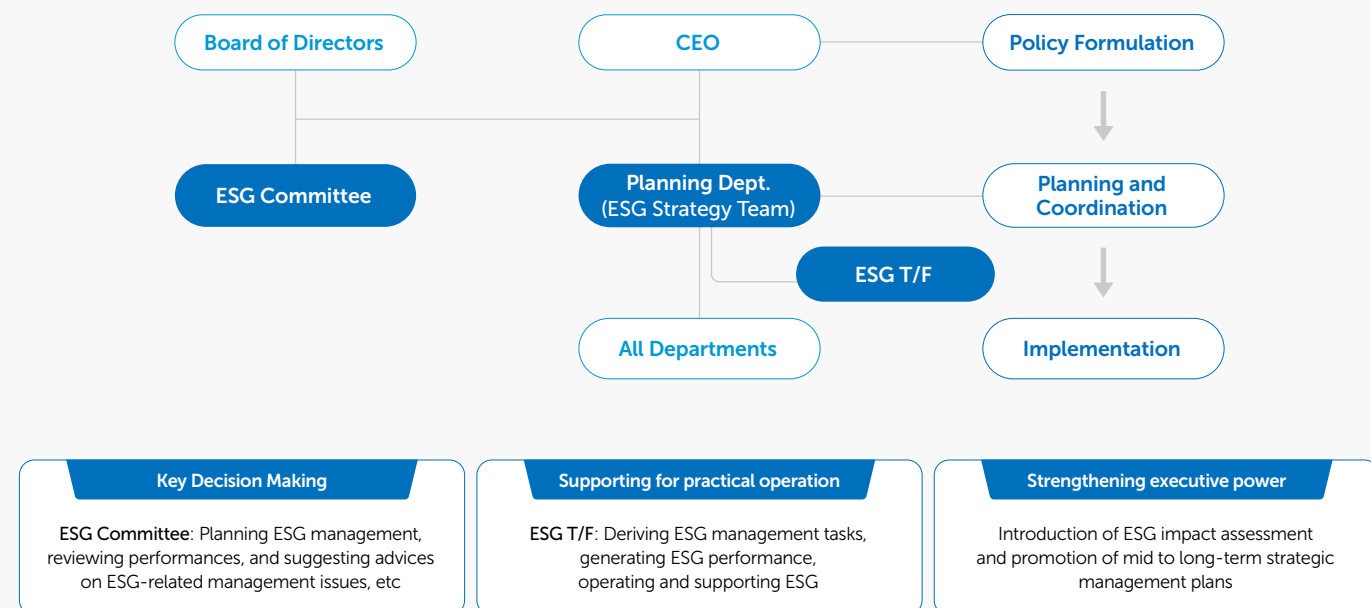


Joint ESG management declaration

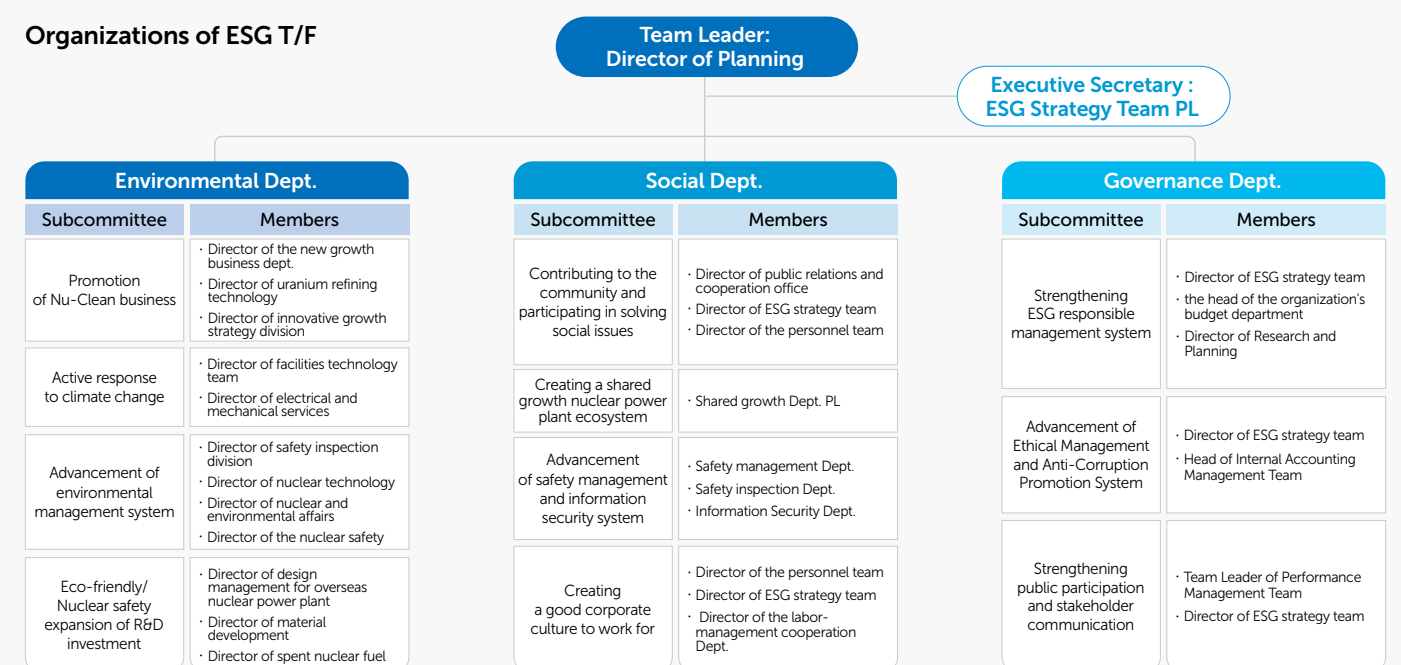


Launching and pledge ceremony of KNF integrity agent

## Organizations



## Organizations of ESG T/F



1) Vision 2035, which has been declared since then, offers 600 billion KRW in sales.

# ESG Responsible Management System

## Board of Directors

The board of directors is effectively managing the company by possessing expertise and transparency, achieving substantial results. It encourages non-executive directors' participation in management and operates the board of directors effectively. According to the bylaws, the CEO represents the company and conducts its business while also serving as the chairman of the shareholders' meeting and the board of directors.

(Criteria 2022. 12.)

Category	Name	Gender	Position	Tenure
Chairman	CHOI **	M	CEO of KEPCO Nuclear Fuel	2021. 03. 17~2024. 03. 16
Executive Auditor	JEONG **	F	Auditor	2021. 05. 27~2024. 03. 31
Executive Director	JEONG **	M	Director of Management Division	2021. 07. 27~2024. 07. 26
Executive Director	JOH **	M	Director of the Production	2021. 09. 28~2024. 09. 27
Non-Executive Director	PARK **	M	Director of Future Strategy Planning Division in KEPCO	2021. 07. 27~2024. 07. 26
Non-Executive Director	CHOI **	M	Vice President of Technology in KHNP	2020. 07. 02~2023. 07. 01
Non-Executive Director	JEONG **	M	Vice President of KAERI	2020. 04. 23~2023. 04. 22
Non-Executive Director (Outside Director)	SEO **	M	CEO of Maekyung Publishing	2020. 04. 23~2023. 04. 22
Non-Executive Director (Outside Director)	PARK **	F	(Previous) Chairman of Duk-sung Corporation	2020. 04. 23~2023. 04. 22

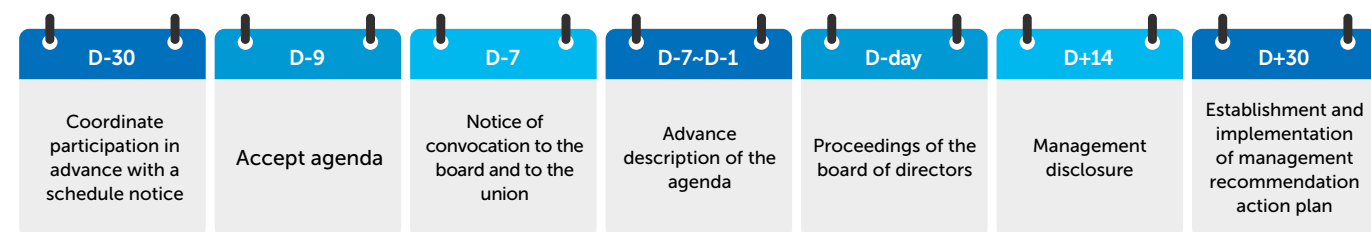
## Professionalism and Transparency of the Board of Director

The board of directors of KNF consists of a total of eight members, including three executive directors who hold positions as the CEO, director of management division, and director of the production as ex officio members. Non-executive directors are appointed as experts in fields related to the institution's business and hold a majority of seats on the board of directors to ensure transparent management. The appointment of executive directors follows the provisions of the articles of incorporation and the operating regulations of the CEO Candidate Recommendation Committee. On the other hand, the appointment of non-executive directors involves a process of open recruitment, evaluation, and final approval by the shareholders' meeting, with candidates being determined by the CEO Candidate and Executive Recommendation Committee. Furthermore, since the introduction of the Employee Attendance System in 2021, achieving a 100% employee attendance rate, we have secured diversity among the board members.

## Vitalizing the Board of Director

KNF's annual operation plan is prepared and announced that directors are able to adjust their schedule in advance. When formulating the plan, the institution refers to the results of the previous year's board satisfaction survey to improve the board's operations each year. Additionally, it has strengthened its on-line meeting systems and technical support in response to the increase in non-face-to-face meetings, leading to a higher participation rate in remote board meetings. KNF also distributes materials on agenda items in advance of board meetings, achieving a 100% pre-deliberation rate. Furthermore, it has established subcommittees under the board of directors and revised the operating policies of existing subcommittees. As a result, the average number of agenda items per committee meeting increased from 4.3 in 2021 to 5.5 in 2022.

### Example of a board operation schedule



## Expansion of Non-Executive Directors' Participation in Management

KNF has implemented a reform of system and information offering to encourage the participation of non-executive directors in management and improve their involvement. It has utilized the expertise of non-executive directors by seeking their advice on financial statements, budget proposals, and accepting advices with regarding core businesses and ESG management. Non-executive directors are required to attend CEO Candidate Recommendation Committees and Executive Recommendation Committees, enhancing the fairness of the process and establishing the foundation for transparent management. Furthermore, in addition to board agenda items, it has provided information on semi-annual business situations, export contract status, and other relevant updates. KNF has also obtained executive liability insurance coverage (up to 10 billion KRW) and established infrastructure to enable non-executive directors to actively participate in management with enthusiasm.

## Management Activities of Non-Executive Directors

All five non-executive directors of KNF had their proposals fully reflected in board resolutions. Additionally, their understanding of key business operations was enhanced through visits to production processes, which was utilized in the deliberation of business budgets.

### Cases of Proposing a Non-executive Director's Agenda

Issues	Non-executive directors' opinions	Follow-up measures
Report on the direction of the government's energy policy	"It is necessary to prepare for mid- to long-term changes in government policy direction"	Establishment of mid- to long-term management strategy plan covering policies, industrial environment, etc
Contributions to the in-house welfare labor fund	"It is preferable to actively use it for its original purpose rather than accumulating money."	20% of the accumulated amount will be changed to the target project cost and invested in employee welfare projects
Change budget	"It is necessary to take measures against foreign exchange risks in consideration of exchange rate volatility."	The Exchange Risk Management Committee shall be held and measures for the exchange risk hedge shall be held

## Evaluation Method of the Performance of the Board

KNF sets both quantitative and qualitative indicators to objectively evaluate board activities. Each executive receives a separate performance evaluation. The CEO enters into a contract with the Minister of Trade, Industry, and Energy during their term, outlining management goals and receives performance evaluations from other public agency management evaluation teams. The executive directors, on the other hand, enter into management contracts with the CEO, set management goals, and undergo evaluations based on the outcomes. Non-executive directors are evaluated based on quantitative indicators such as the number of information provided and qualitative indicators such as policy recommendations to assess their performance.

### Performance indicator

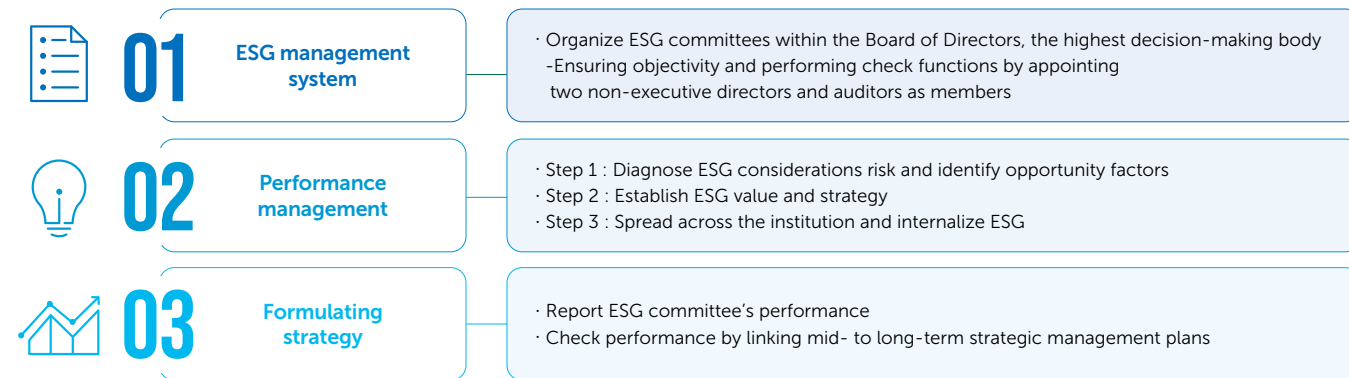
Strategy	Performance indicator	Outcomes	
		2021	2022
Spread ESG and Improve Governance	Number of ESG committees held	1 time	2 times
	Rate of Worker attendance	100% (1 time)	100% (4 times)
Resolving restrictions on the board's operating environment	Rate of Board Attendance	78.6%	84.4%
	Satisfaction score	93.3 points	94.1 points
Strengthening the role of non-executive directors	Rate of management proposal reflection	100%	100%
	Number of information provided	79 cases	81 cases

### Building a Dedicated ESG Organization

KNF is strengthening the internal ESG management while also aiming to promote the ESG value of KNF externally. To achieve this, KNF has established an ESG Committee and an ESG Task Force team to enhance our ESG management system.

#### Establishment of ESG Committee and Operational Regulations

KNF has introduced an ESG Committee to promote ESG management practices and disseminate ESG values. To enhance understanding and acceptance of ESG management, it conducts expert lectures in advance and distributes relevant literature on ESG management. The ESG Committee carries out consultations and deliberations on ESG-related management issues and evaluates the outcomes. It consists of one executive director (Director of Management Division) and two external directors as members. Meanwhile, the Chairman of the committee is elected from among the members. An auditor may be appointed as an advisory member but is not included in attendance or voting. While the committee is held on quarterly basis, it can convene ad hoc meetings upon request of the members, with a requirement of notifying the meeting at least 7 days in advance.

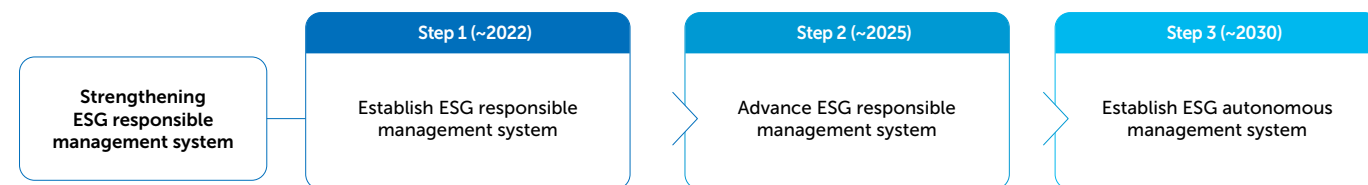


#### Activities of ESG Committee

In 2021, the ESG Committee was established, and during its inaugural meeting, a chairman was elected. The committee developed an ESG management strategy and presented an ESG management roadmap to be implemented across the organization. In the first meeting of 2022, the committee approved a draft of the ESG management practice agreement between KNF and its cooperative companies, effectively spreading ESG values internally and externally. In the second meeting, a report on ESG rating evaluation results was presented, demonstrating outstanding performance that placed us in the top 0.2% among all organizations. Furthermore, to foster a systematic commitment to ESG management throughout the organization, we established an ESG Task Force (TF) to formulate ESG strategies and drive practical implementation.

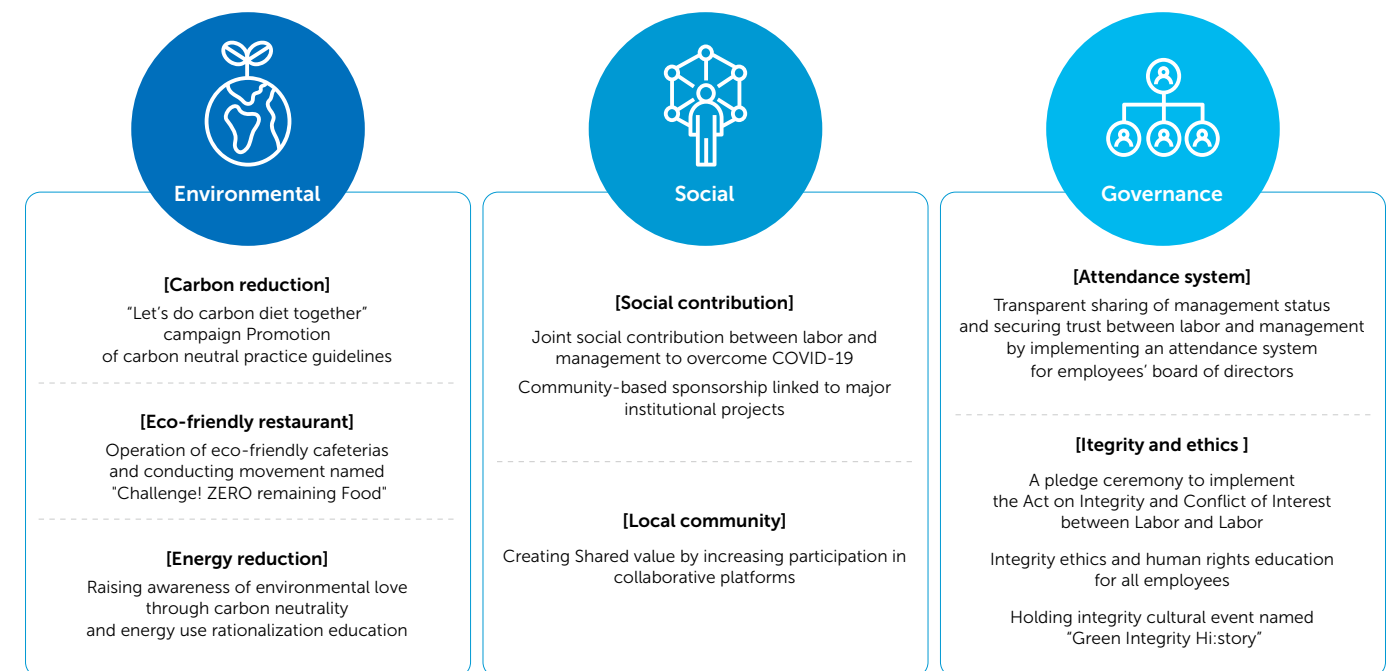
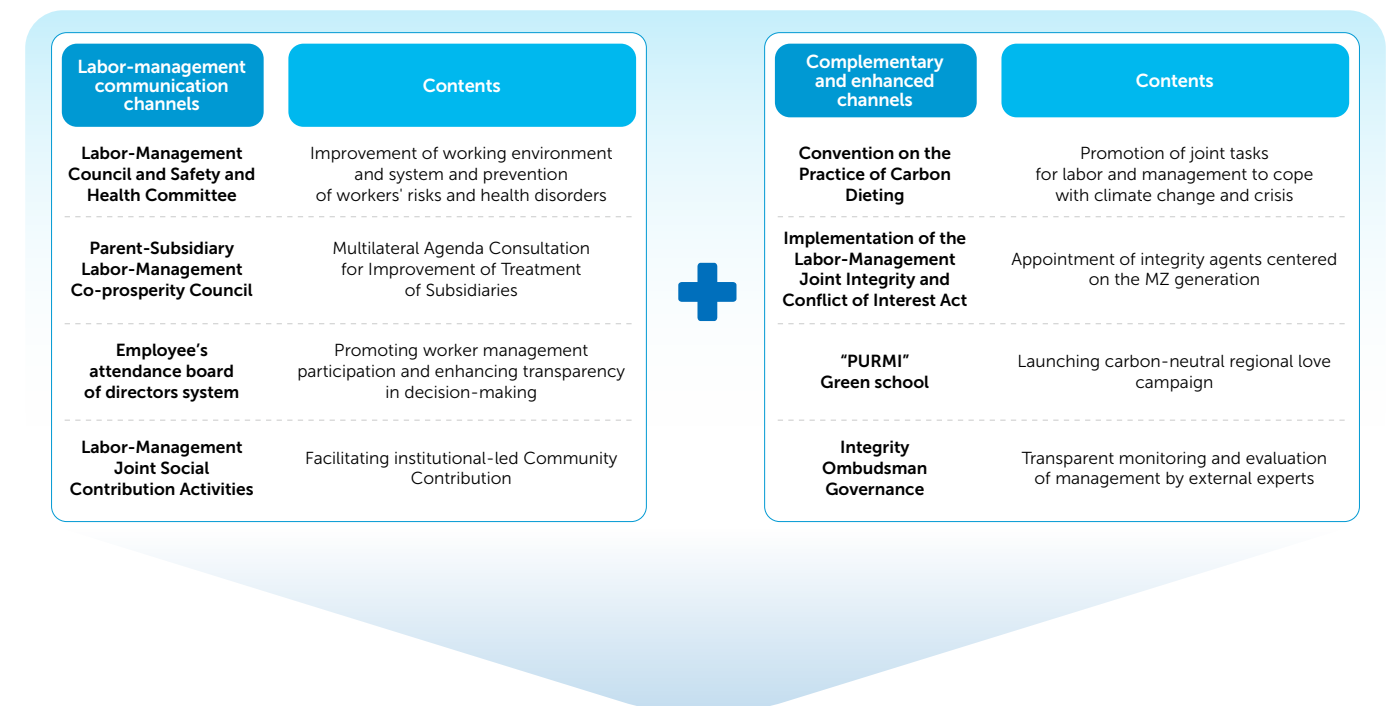
#### ESG Management Internalization

To facilitate substantial ESG management transformation and internalization, KNF declared joint labor-management ESG management in October 2022 and implemented ESG practice pledges. Internally, it disseminated ESG management plans through internal portals and management meetings. Externally, it organized explanatory sessions for the Citizen Participation and Innovation Committee and conducted promotional activities through releasing press and magazines. Furthermore, it incorporated ESG management plans into its medium-to long-term strategic management plan to ensure phased and systematic plan implementation. It also improved execution capabilities by appropriately linking rewards to performance. Additionally, it has introduced ESG impact assessment to consider sustainability in new business initiatives, R&D investments, and budget allocation.



### Joint Communication Between Labor and Management for ESG Management

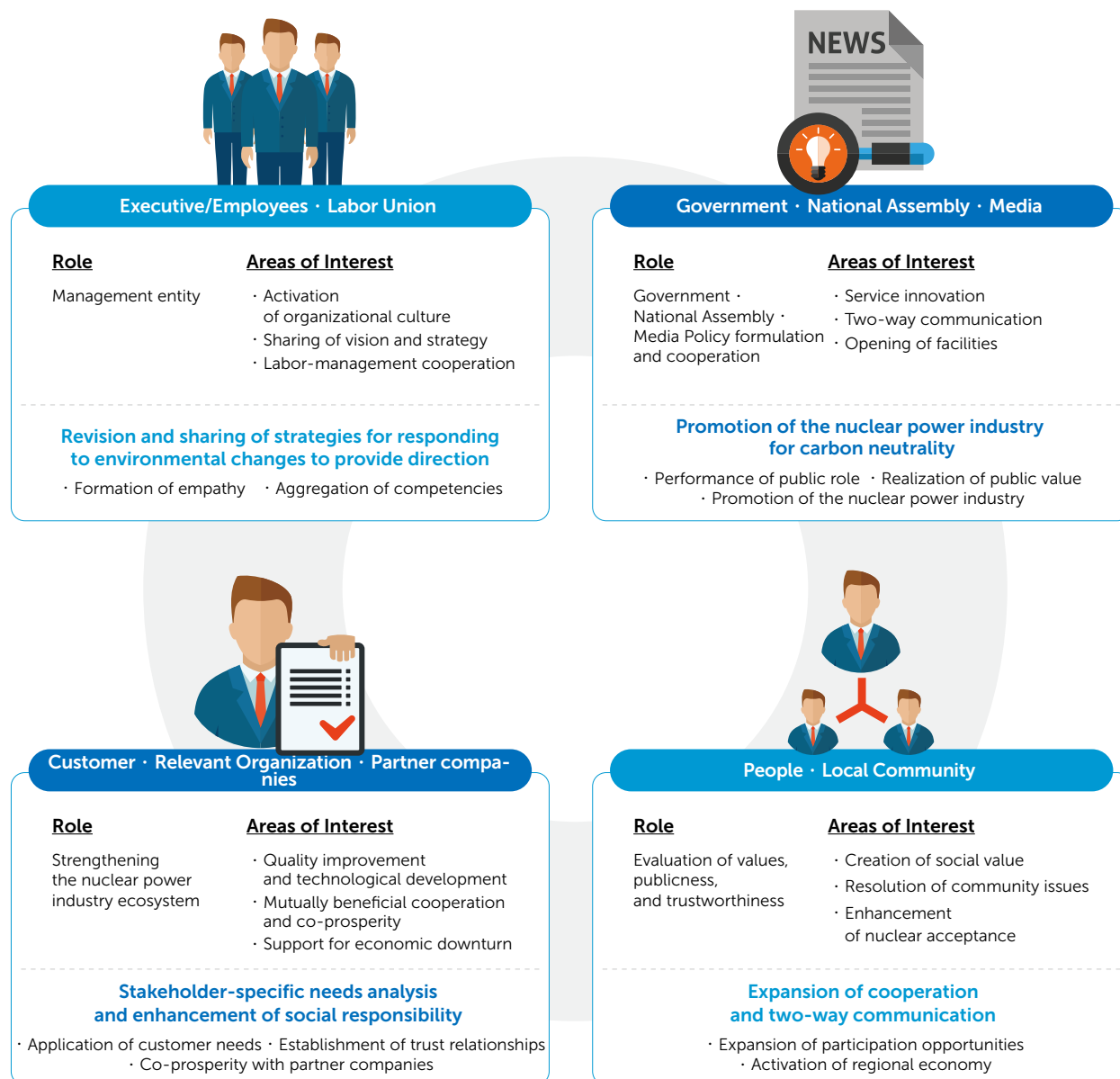
Since the declaration of joint labor-management ESG management in October 2021, KNF has been actively engaged in collaborative activities based on the ESG vision. Through multilevel labor-management communication channels and the operation of complementary and reinforcing channels, it aims to gain the trust of the public and establish ourselves as an environmentally friendly nuclear energy institution. It strives to achieve substantive ESG management, creating sustainable future value.



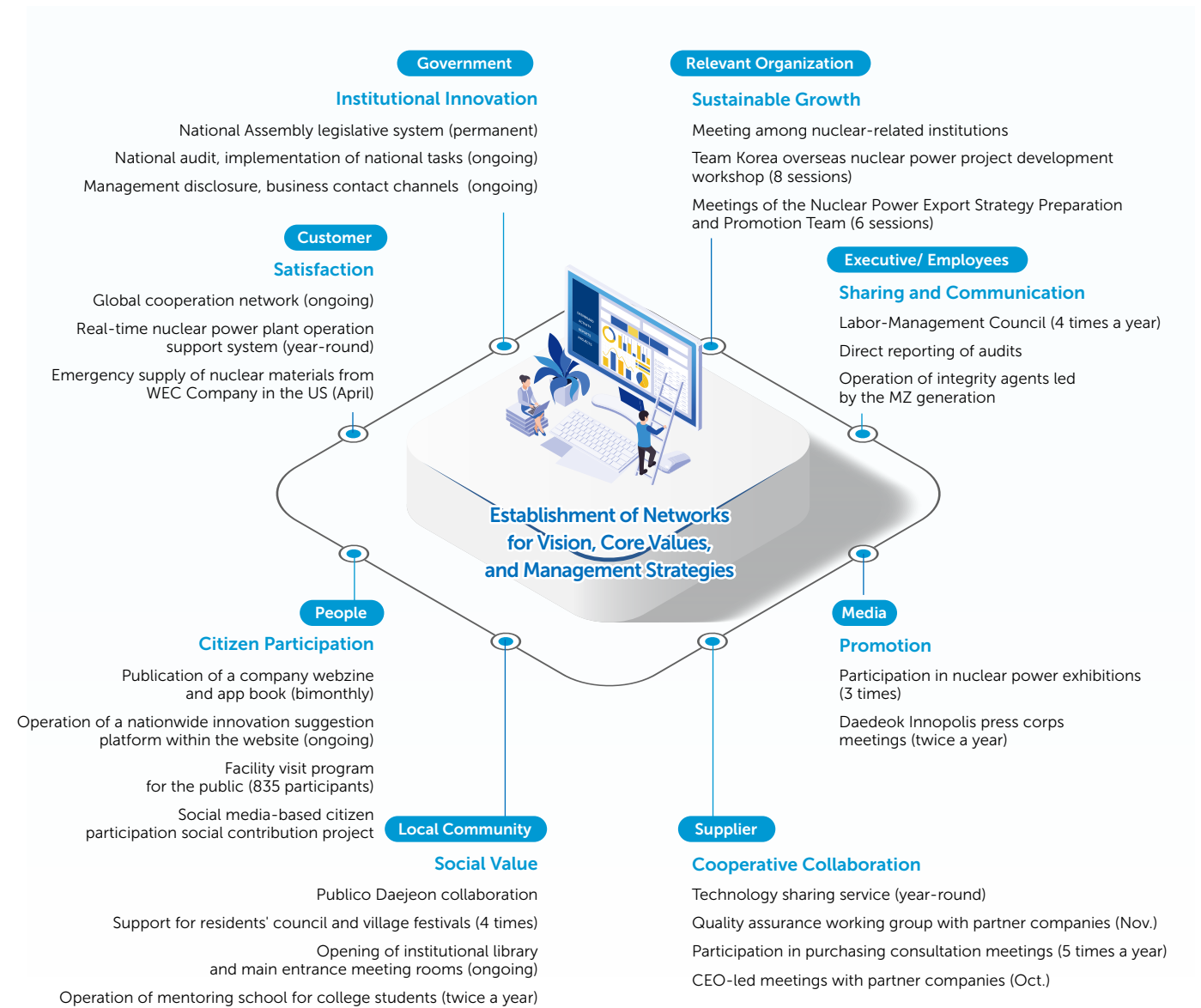
# Stakeholder Participation

KNF has been implementing tailored communication strategies for various stakeholders, both internal and external, to transparently share the organization's core values and ESG management strategies. Furthermore, KNF has established networks to facilitate two-way communication with stakeholders, enabling understanding of the organization's vision, long-term missions, and generated sustainable business performance.

## Categorization of Internal and External Stakeholders and Customized Communication Methods



## Creation of Business Performance through the Establishment of Communication Networks



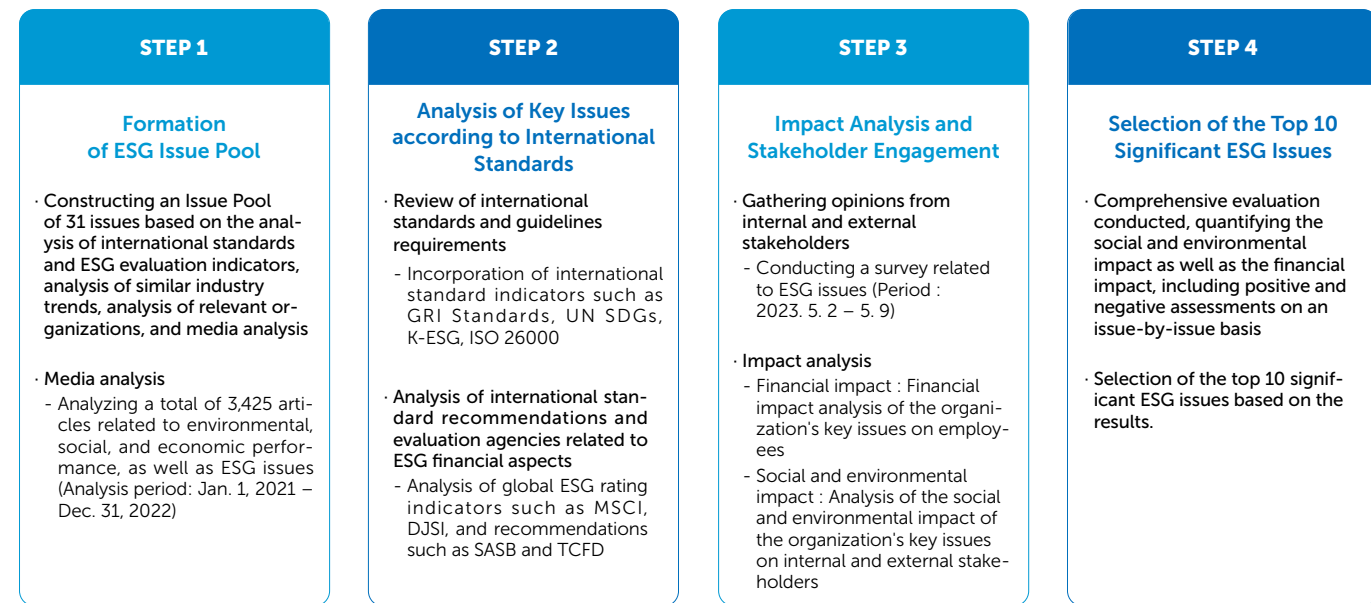
## Results of sharing and communication activities



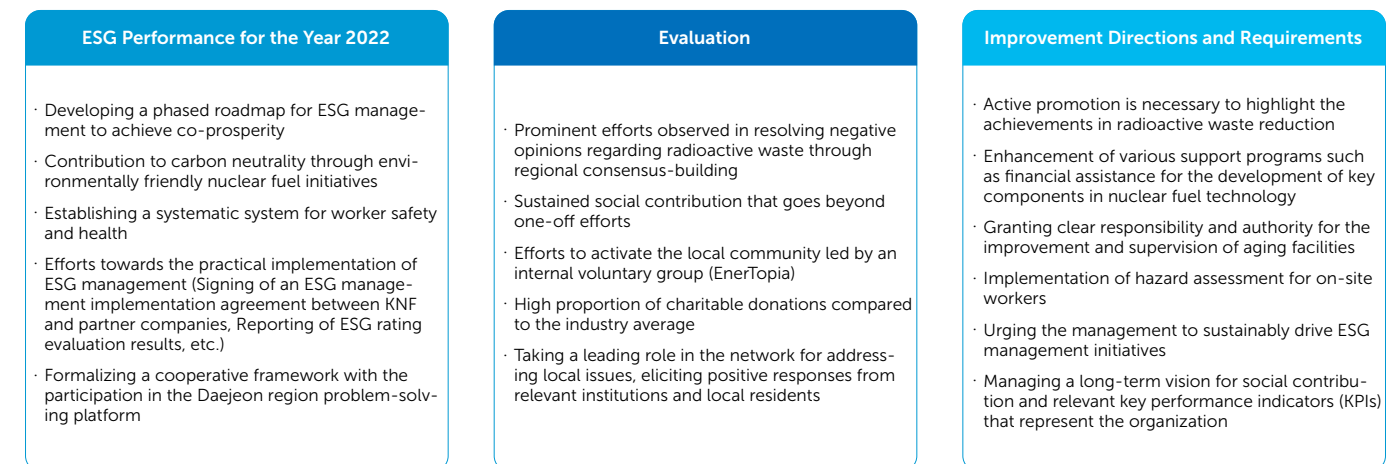
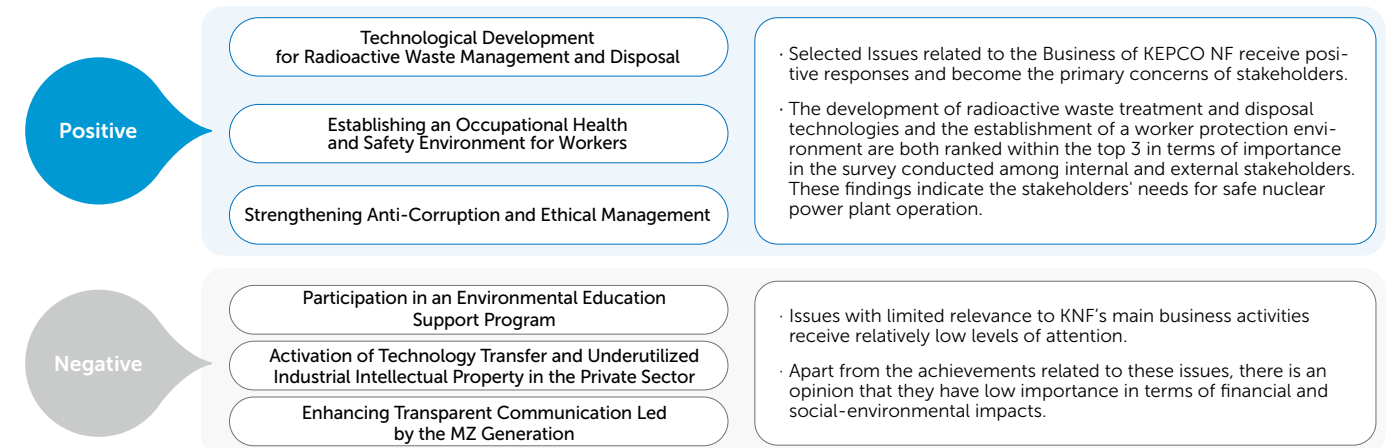
# Double Materiality Assessment

KEPCO NF has derived key ESG issues in a transparent and reliable manner, taking into account international sustainability management indicators such as ISO 26000 and GRI Standards. The identified issues have been collected as data to understand the areas of interest for key stakeholders and the financial and social-environmental impacts of sustainable management. These data were comprehensively integrated, taking into account international standard guidelines, media analysis, benchmarking with relevant organizations, and surveys of internal and external stakeholders. Furthermore, in-depth surveys were conducted with SMEs (Special Matter Experts) regarding the major issues, enabling us to gather more profound insights from stakeholders. KNF transparently discloses the activities and achievements related to the top 10 ESG major issues, which have been prioritized based on our financial impact and social-environmental impact among the total of 31 issues derived through this process.

## Double Materiality Assessment Process



## Stakeholder In-depth Perspectives



## Top 10 Significant ESG Issues

Impact High ● Middle ● Low ○

Rank	Significant ESG issues	Stakeholder				Impact		Pages	GRI
		People	Executive/ Employees	Partner Companies	Local Community	Social-environmental	Financial		
1	● Establishment of a worker protection environment	●	●	●	●	●	●	60-61	GRI 403 Occupational Health and Safety
2	● Development of specialized nuclear fuel technical professionals	●	●	●	●	●	●	22, 67, 73	GRI 404 Training and Education
3	● (E) Development of technology for radioactive waste treatment and disposal	●	●	●	●	●	●	27, 48-52	GRI 201 Economic Performance, GRI 306 Waste
4	● Establishment of a rational personnel system and enhancement of fairness	○	●	●	○	○	●	74-75	GRI 401 Employment, GRI 405 Diversity and Equal Opportunity
5	● Creation of a safe nuclear power facility environment	●	●	●	●	●	●	26, 55-56	GRI 403 Occupational Health and Safety
6	● Establishment of a strategic disaster safety management system	●	●	●	●	●	○	28, 63-64	GRI 403 Occupational Health and Safety
7	● Promotion of a cooperative culture based on labor-management collaboration	○	●	●	○	○	●	72	GRI 401 Employment
8	● Conducting inspections of nuclear accident emergency response systems and implementing disaster preparedness training	●	●	●	●	○	○	63	GRI 403 Occupational Health and Safety
9	● Strengthening anti-corruption and ethical management	●	○	○	●	○	○	78-81	GRI 205 Anti-Corruption
10	● Promotion of environmentally friendly new business (Nu-Clean)	●	○	●	●	○	○	48-52	GRI 302 Energy, GRI 306 Waste

# 04

## Sustainable Management Performance

### Environmental

Promotion of Nu-Clean Business  
Active Response to Climate Change  
Environmental Management

### Social

Safety Management  
and Information Security  
Shared Growth  
Community Development  
Healthy Organizational Culture  
Human Resources Development  
and Equal Opportunities

### Governance

Integrity and Ethical Management  
Disclosure of Information  
Risk Management  
Human Rights Management



# Environmental



## Importance of Issue

Due to climate change, the demand for carbon neutrality has increased worldwide, and low-carbon eco-friendly power generation has emerged as a major issue in the energy sector. Recently, nuclear power generation has been included in the EU Taxonomy classification and conditionally included in the K-Taxonomy. Developing nuclear power is responsible to address environmental changes. As a result, it is necessary to develop technologies in the nuclear industry to minimize environmental impact and compared with the other business fields, strengthening environmental management has been down for a key agenda due to the nature of nuclear power generation, which has stricter environmental protection standards. In order to maintain the eco-friendliness of nuclear facilities and fulfill its responsibilities as a public institution, KNF is promoting management innovation in response to environmental changes.

## Approach Method

Owing to a new environmental conversation project (Nu-clean) is in progress, KNF focuses on reduction of radioactive waste, development of treatment technique for spent fuel, uranium recycling for resource circulation and investment in R&D for green technology development. By reducing the radioactivity and volume of waste and upgrading the system throughout the process of treating waste, the impact of radioactive waste generation and already generated waste is minimized. In addition, it is pursuing eco-friendly projects and increasing sales of related industries by reprocessing fuel used in nuclear power plants. Inside the institution, it is conducting enterprise-wide energy management and campaigns to realize carbon neutrality, and it is expanding its institution's commitment to eco-friendly management internally and externally by upgrading the environmental management system.

## Key Achievements

 <p>Achievement of public sector greenhouse gas reduction target for <b>12 consecutive years</b></p>	 <p>Focused ultrasonic decontamination technology for BIXCO public sector <b>Gold medal award</b></p>	 <p>Radioactive Waste Reduction in 2022, <b>1,186 drum</b></p>	 <p>For greenhouse gas and energy target management, the Ministry of Environment's <b>selection of an excellent organization</b></p>
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## Focus SDGs





## Promotion of Nu-Clean Business

### Leading Development of Radioactive Waste Disposal Technology

KNF pulls its weight to reduce the potential amount of radioactive waste and minimize the amount of waste that already generated with the development of new technologies and the improvement of existing technologies.

#### Development of High Intensity Focused Ultrasound Decontamination Technology

KNF developed a decontamination technology using focused ultrasound waves to effectively decontaminate nonferrous metals such as zirconium chips and complex shaped metals. Pre-treatment, main decontamination, and fine decontamination resulted in ultrasonic decontamination step by step, and the subject of decontamination was expanded compared to the previous one. Experiments were conducted separately to develop a model to find improvements and verify performance. It is expected to handle 500 drums of waste annually with the development of high-intensity focused ultrasound for decontamination technology, and the business of metal waste decontamination has increased the effectiveness of radioactive waste generated from operating and dismantling nuclear power plants.

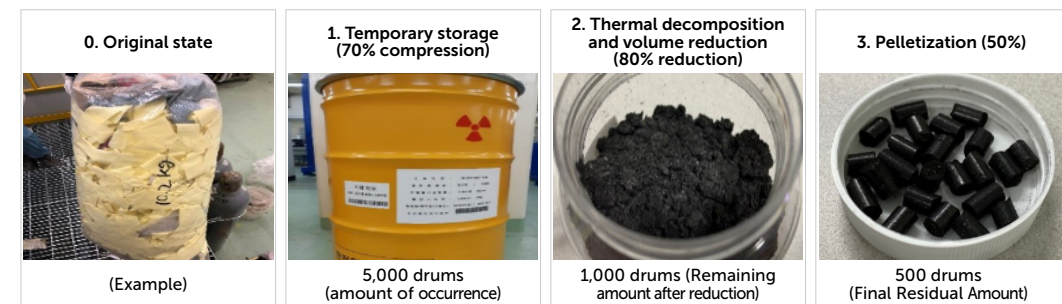


Before high-intensity focused ultrasonic decontamination | After high-intensity focused ultrasonic decontamination

#### Development of Additional Volume Reduction Technology for Organic Waste

In order to dispose of organic waste safe, since using the uranium-containing organic waste reduction meanwhile the technological function is additionally necessary to reduce the volume of waste. Accordingly, KNF has improved the final volume reduction rate by more than 90% by applying pelletization (physical compression) to organic waste reduction technology. Also, basic characteristics were derived using simulated waste, and the method of permanently disposing pellets and the suitability of disposal were reviewed to lay the foundation for permanent disposition of pellets. This technology can be thermally decomposed without oxygen, resulting in low exhaust gas generation and smooth post-treatment. Above all, during the course of process the emission and waste fluid are managed at less than half of the environmental standardization therefore KNF is minimizing to damage to the environmental impact. The development of volume reduction technologies is expected to reduce the total management cost by approximately 70.9 billion KRW (based on 5,000 drums generated). Additionally, it plans to pursue KEPIC standard certification for the respective process in the future.

#### Additional Volume Reduction Process for Organic Waste



Focused ultrasound decontamination technology for BIXCO public sector

**Gold medal award**

Focused ultrasonic decontamination technology for the United States, Germany, and Canada

**International patents in 3 countries**

### Expansion of Eco-Friendly Radioactive Liquid Waste Treatment Technology

In the process of cleaning the nuclear fuel processing plants and UF6 cylinder, chemical treatment method had been the way to treat the waste liquid currently process was completely improved method to the decomposition evaporation achieved a result reducing the radioactive concentration of liquid emissions to less than 1% of the legal standard. In addition, the amount of secondary radioactive waste generated was reduced by 89% from 70 drums per year to 8 drums per year, and the treatment efficiency increased from about 80% to 99%. KNF aims to reduce radioactive concentration by expanding the technology into the waste liquid process of new light water reactors.



Vacuum evaporation

#### Radioactive Field Measurement System (In-situ)

The In-situ method is applied to the radioactive site measurement to shorten the radioactivity measurement time and enable efficient work. The advantage of In-situ is that it can be applied immediately in the field without damaging the measurement because there is no sampling process. KNF is developing a drum scanner for permanent disposal and analyzing the radioactivity of metal waste for its own disposal. In the future, it will apply for its own disposal of metal waste using the In-situ method and permanent disposal of uranium waste that has undergone drum scanning.



Vacuum desiccator

#### Development of Permanent Disposal Process through Delivery of Disposal Sites

Compared to 2020, in 2021, 100 drums of radioactive waste increased by 40 drums were transferred to the disposal site, were delivered to the disposal site, it has been achieved to reduce the radioactive waste through permanent disposal for two consecutive years. Besides, according to newly developed permanently dispose, it is working hard to strengthen safety by classifying waste to be delivered to the disposal site, analyzing the packaged waste in terms of physical, chemical, and radioactivity. In addition, in order to improve the reliability of the process, the relevant radioactive waste inspector's qualification was conducted to secure professionals, and a waste quality guarantee system was established.

Achieving the goal of permanent disposal of radioactive waste

**100 drums**

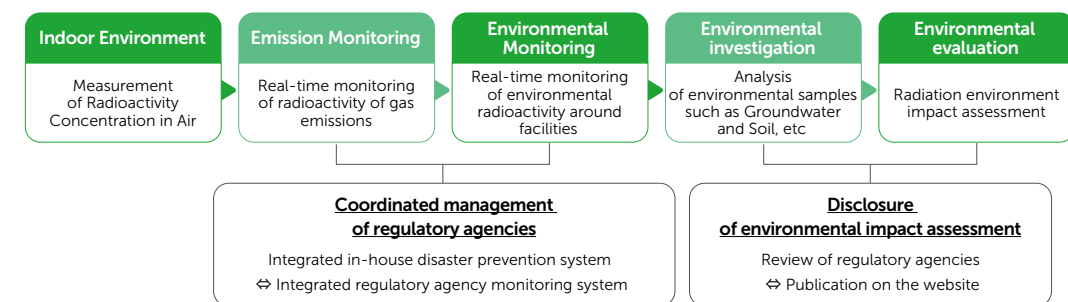
#### Enlargement of Environmental Radioactivity Monitoring

KNF operates a multi-monitoring system that encompasses both inside and outside the institution in cooperation with regulators (Korea Institute of Nuclear Safety, KINS). It secured transparency by posting it on the company's website, regulatory agency monitoring network, local government control system, and external electronic display boards to check environmental radiation information in real time. In the KNF Radiation Environment Impact Assessment Program upgrades such as adding setting elements related to new facilities and reflecting regulatory requirements were carried out.

Extending the scope of Radiological Environment Investigation

**55 branches**

#### Radioactivity Multi-Monitoring System Process



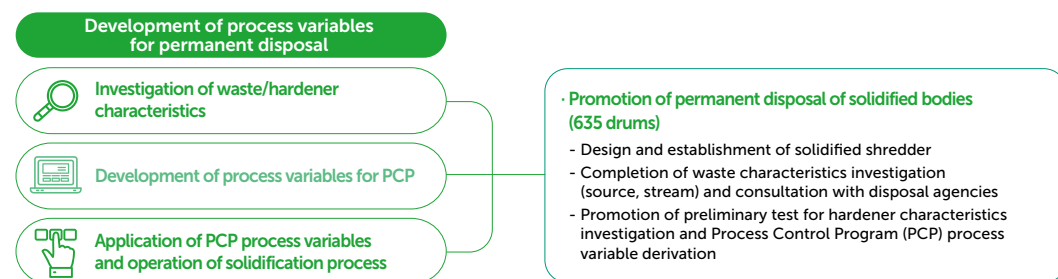
### Establishment of Integrated Radioactive Waste Management System

It is improving the management system and establishing a comprehensive management system for the safe transportation of waste. From generation to storage, treatment, and disposal, quality was tracked throughout the waste management cycle, and codes were assigned according to the type of waste and subdivided. In addition, it organizes the logistics process and monitors the storage status in a 3D model. Furthermore, in order to cope with stricter regulations related to the delivery of disposal, it has prepared a waste quality assurance program after certifying the qualifications of the inspection organization and inspectors. KNF plans to complete the construction of all systems by 2024, strengthening waste reduction and quality control, and upgrading the waste management system.

### Resolving Radioactive Waste Management Issues

In order to permanently dispose of Solidified Waste, KNF introduced a shredder for solidified materials and established a new related process a related process. The disposal process is operated efficiently to minimize groups when classifying waste, and preliminary tests are planned to derive variables that may occur during the treatment process. In addition, the efficiency of the process operation was improved by establishing a pre-classification process for waste and adjusting the number of intermittent processes.

#### Permanent disposal technology of solidified waste



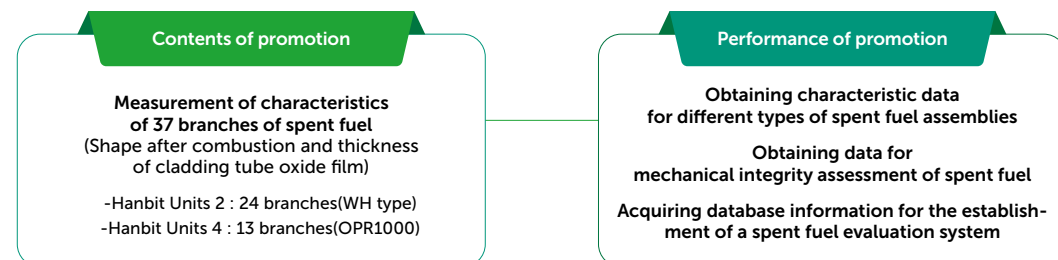
### A New Business Using Spent Fuel

Although spent fuel is at risk of becoming a high-level radioactive waste, KNF is promoting sales growth by conducting projects using spent fuel, and research on dry storage to replace wet storage is continuing.

### Development of Technology for Spent Fuel Management

KNF succeeded in moving spent fuel transport containers on land and at sea for the first time in Korea, and the data was secured and used to evaluate risk assessment capacity during transportation and deriving improvement points. In addition, Korea's first spent fuel leakage inspection equipment has been manufactured and commercialized, and new fuel soundness-related data have been secured by measuring the characteristics of each spent fuel at domestic light-water reactor nuclear power plants such as Hanbit Units 2 and 4. As such, KNF is improving the utilization of spent fuel in various ways to solve the problem of spent fuel saturation.

#### Obtaining data for evaluating the fuel integrity through the characterization of spent fuel from Hanbit Units 2 and 4



### Measures to Cope with Spent Fuel in Wet Storage

KNF has improved its soundness evaluation method for dry storage of spent fuel as there is not much spare capacity left in the wet storage tank of spent fuel in Korea. SPADE technology evaluates the mechanical integrity of spent fuel to be transported in dry storage. It builds models tailored to relevant regulations and increase the reliability of its interpretations to identify where the worst conditions occurred during transportation. Moreover, it is promoting the commercialization of the spent fuel handling reinforcement(SAFER). Currently, it is completed the first stage of commercialization, such as developing prototypes and improvements, and it will register the equipment for installing and dismantling SAFER as a patent. In addition, it prevents leakage of radioactive materials by inspecting spent fuels that are likely to be separated among nuclear fuels already stored.

#### Spent fuel assessment solution for dry storage engineering(SPADE)

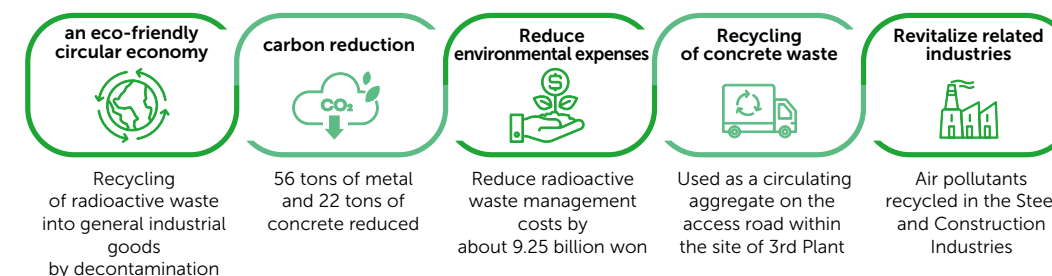
<b>Characteristics</b>	<ul style="list-style-type: none"> <li>- Increase the reliability of interpretation through various and wide verification processes compared to overseas</li> <li>- The worst boundary conditions in the container can be determined</li> <li>- Can reflect SF characteristics (such as bending deformation, irradiation growth, reduction in oxide corrosion thickness, etc.)</li> </ul>
<b>expectation effectiveness</b>	<ul style="list-style-type: none"> <li>- Leading domestic technology in the field of SF evaluation</li> <li>- Providing a complete solution for new fuel ↔ spent fuel interchange.</li> <li>- Other fields (evaluation of damaged spent nuclear fuel, heavy water reactors, etc.) and new spent nuclear fuel (HIPER, etc.) can be utilized</li> </ul>
<b>Application status</b>	<ul style="list-style-type: none"> <li>- Government task: SF evaluation of normal transport conditions on land and at sea</li> <li>- Service task for Korea Atomic Energy Research Institute</li> <li>- KHNP's entrusted task: Application of light water reactor to nuclear fuel characteristic inspection and safety enhancement services</li> <li>- SF to be used: High burnup, heavy water reactor, new fuel, etc</li> </ul>

### Resource Circulation

In order to realize a circular economy, KNF purifies uranium that has undergone a nuclear fuel manufacturing process, puts it back into the process, decontamination of low-contamination radioactive waste, and recycles it with new resources.

### Expanded Recycling of Waste Resources

KNF is used for steel and construction industries by recycling resources 56 tons of waste metal were decontaminated for steel companies to use as industrial scrap metal and provided to steel companies, and 22 tons of low-pollution radioactive concrete waste was used as a circulation aggregate in the access road to the 3<sup>rd</sup> plant, and radioactive concrete waste for the first time in Korea. Also, 459 tons of high concentration hydrofluoric acid solution generated during the fuel manufacturing process was converted into steelmaking and construction industry resources. This resource circulation reduced the cost of managing radioactive waste by about 9.25 billion won and the cost of producing metal, concrete, and hydrofluoric acid by 350 million won, while reducing carbon by 102tCO<sub>2eq</sub> in the metal recycling sector and 17tCO<sub>2eq</sub> in the concrete recycling sector.



Reduction of radioactive waste **78 tons**

Recycling of air pollutants **459 tons**

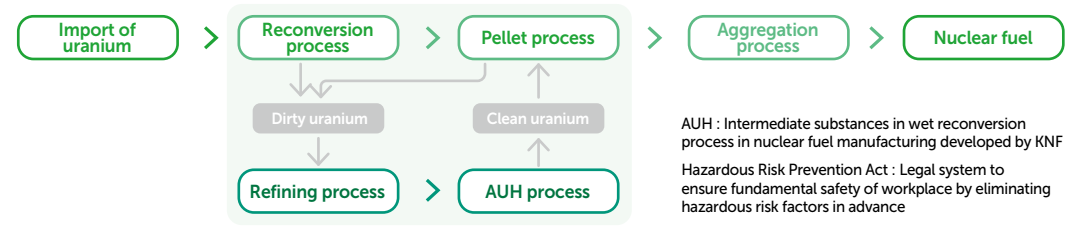
Reducing carbon emissions **119tCO<sub>2eq</sub>**

Annual renewable capacity of uranium waste resources **About 7MTU**

### Construction of Uranium Resource Regeneration Plant

KNF is actively responding to EU Taxonomy and nuclear power plant exports by launching uranium refining and \*AUH processes, a source technologies for renewing uranium waste resources, and preparing related facilities and personnel to build uranium resource regeneration plants by 2023. The uranium resource regeneration plant has been properly determined by the Health and Safety Agency for document screening and on-site verification of the \*Hazardous Risk Prevention Act. Currently, the construction of a uranium resource regeneration plant has been completed, and the about 7 tons of uranium waste resources will be regenerated annually from 2024.

#### Construction of Uranium Resource Regeneration Plant

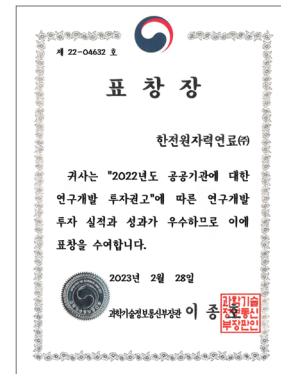


### R&D for Green Nuclear Power

While reducing the waste, the necessity for reducing the treatment costs and relieving environmental burdens is raised, KNF is preemptively entering promising nuclear-related businesses to increase sales and reduce environmental costs.

### Expansion of R&D Investment

KNF is expanding its R&D investment amount for future technology development and setting a separate investment plan according to the detailed goals of each project. Furthermore, by investing more than the R&D investment recommended by the Ministry of Science and ICT, it achieved a recommendation rate of 133.05% and received a "very good (S)" rating, and the investment was 129.91% compared to the target. As such, it received the Minister of Science and ICT commendation for implementing R&D investment recommendations for public institutions and generating results in R&D investment.



Minister of Science and ICT Award for R&D Investment

Strategic task	~2020	2021	2022~2025	2026~2030	Total (~2030)
Promotion of new environmental conservation projects*	9,196	4,945	85,515	55,435	155,091
Active response to climate change	89	1,276	2,754	783	4,902
Increased investment in eco-friendly and nuclear safety R&D	16,451	8,285	46,759	21,731	93,226
Advancement of Environmental Management System	178	1,724	1,978	500	4,380
<b>subtotal</b>	<b>25,914</b>	<b>16,230</b>	<b>137,006</b>	<b>78,449</b>	<b>257,599</b>

\*Excluding R&D and facility investment among new environmental conservation projects (reflected in eco-friendly and nuclear safety R&D and advancement of environmental management systems)

sortation	2021	2022	2023	2024	2025
Radioactive waste disposal project	794	40,524	13,952	9,307	10,284
Promotion of new spent nuclear fuel projects	2,875	2,875	2,875	3,248	2,561
Resource regeneration through uranium refining	4,151	2,175	8,586	-	-
Reduction of radioactive waste	390	1,693	680	158	-

## Active Response to Climate Change

### Establishment of Low Carbon and Green Manufacturing Facilities

In order to practice systematic carbon neutrality, KNF is expanding its related infrastructure tangible and intangible in all stages, from planning to certification of external institutions.

### Creating a Low Carbon Manufacturing Environment

The inclusion of nuclear power in the EU Taxonomy is increasing the demand for small nuclear power plants (SMRs). Moreover, the Korean Green Classification System (K-Taxonomy) also includes nuclear power generation, and KNF is developing nuclear core technologies such as accident-resistant fuels and innovative SMRs suitable for K-Taxonomy. The 2050 KNF carbon neutral roadmap was created to reduce the use of cooling and heating energy, and the 2022 energy efficiency rating evaluation was introduced as the first step in the roadmap. KNF will continue to achieve its successful carbon neutral goal by diagnosing the performance of greenhouse gas multi-emission facilities and introducing an energy management system.

### Net-zero Green Factory Construction

KNF constructed the first carbon-reducing nuclear fuel production facility in Korea and obtained a certification of Green Building at the 3rd place. It has established a carbon emission reduction type construction system using green building materials, environmental declaration products (EPD), and low-carbon materials. Ecological area ratio and green area ratio have occupied more than 40% of the total area, and by installing bicycle parking lots, it is promoting eco-friendly transformation and monitoring the usage of each energy source to reduce resource use. Additionally, the building is operated in accordance with more than eight maintenance manuals, and the electric energy peak management system has been established, lighting optimization, and central cooling operation have enhance energy efficiency. Also, it created an environmentally friendly infrastructure by pursuing carbon reduction and high efficiency throughout the operating system, such as using products that emit less pollutants indoors.

Construction	Operation	Analysis	Outcomes
<ul style="list-style-type: none"> <li>Expansion of ecological area</li> <li>EUse of low carbon double flooring</li> <li>EUse of non-metallic tiles and low-carbon elastic sealants, gypsum boards</li> </ul>	<ul style="list-style-type: none"> <li>13.8% improvement over lighting density standards</li> <li>Improvement of efficiency by 10% compared to the standard equipment of the central air conditioner</li> <li>Reduce water resources by using water-saving devices</li> </ul>	<ul style="list-style-type: none"> <li>Continuous reduction of greenhouse gases through the operation of energy monitoring system</li> <li>Increase energy efficiency with maximum power management</li> <li>Estimation of reduction measures by analysis of energy usage by district</li> <li>Application of the latest reduction technology to the operational stage</li> </ul>	<p><b>Annual reduction of 117.1 tons of greenhouse gases</b></p> <p><b>Construction of environmentally friendly nuclear fuel production facilities in a virtuous cycle</b></p>



Preliminary Certification of Green Building in Nuclear Fuel 3-dong

Annual greenhouse gas reduction **117.1 tons**

### Implementation of KNF-type Carbon Reduction Cycle

KNF has undergone a company-wide reorganization to reduce greenhouse gases. It is preventing the climate crisis by practicing low carbon in major businesses as well as campaigns and business guidelines.

### Process Management

In the reduction process, the facility for crushing combustible waste has been improved by conducting a precise diagnosis on substances contained in emissions such as sulfur and chlorine. consequently, operating days have raised to 191 days from the 177 days a year and the harmful emissions were less than 1/10 of the allowable standard, proving safety. In addition, in the support grating laser welding process, the operation of the equipment was suspended one after another by utilizing the stock of the sintered body and the operation efficiency was improved, resulting in a decrease in power consumption.

### Operation of Smart Power Monitoring System

It investigated information on facilities that use a lot of electricity and derived a power measurement operation plan by operating a real-time smart power monitoring system. The power measurement cycle, which was performed manually four times a day, was greatly reduced to seconds, and the scope management was expanded to 12 high-pressure facilities and 83 low-pressure facilities. Furthermore, a database is established in conjunction with the computerized maintenance management system (CMMS) and the appropriate load rate is maintained at 52% during the peak period of power to use power efficiently.

### Energy Management Efficiency

KNF utilizes renewable energy such as solar and geothermal energy, minimizes operating hours unless it is an essential facility, and expands centralized heating and cooling. The heating temperature in winter was kept below 17°C and the operation time of heating and cooling was reduced by 30 minutes, resulting in a 5% decrease in city gas usage compared to the previous year. Moreover, it saved energy and adjusted the maximum demand power by intensively operating the geothermal system of the design research building during the day, checking personal heaters, and turning off the lights by 50%.

### Introducing Green Mobility



Installation of electric vehicle charger in front of main building

It is reinforcing its charging infrastructure to introduce eco-friendly cars and expand the supply of eco-friendly electric vehicles. Business cars have continuously replaced with eco-friendly cars, and trucks and vans that were abolished were also replaced with eco-friendly vehicles. It installed fast chargers for electric vehicles in nuclear fuel 1-dong and 2-dong, main building, and TSA to maintain infrastructure at the same time. Four eco-friendly vehicles will be replaced by 22, and all 19 vehicles that are harmful to environmental conservation will be replaced by 30 years.

### Carbon Reduction Activities in Daily Life

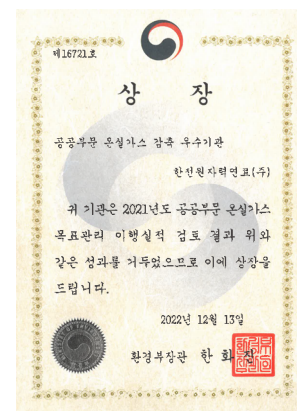
KNF has pledged to work together with labor and management through the "let's join us, carbon diet" campaign, and designated every Tuesday as Paper Free Day to reduce the use of disposable products and create carbon-neutral spaces at entrances, offices, and conference rooms. In addition, simultaneously by checking the temperature of each building every day, 50% of non-working areas and 30% of working areas are turned off to carry out energy-saving activities that can be felt. KNF plans to increase daily energy conservation activities for our members by replacing old equipment, systematically managing indoor temperatures in summer and winter, improving energy efficiency, and maintaining energy-intensive facilities.

Achievement of greenhouse gas reduction goals in public sector

**12th year in a row**

Greenhouse gas standard emissions cut over 2022

**40%**



Certificate of award for greenhouse gas target management system outstanding organization



Certificate for achieved 10 years of greenhouse gas reduction



Greenhouse gas target management performance reporting conference

## Environmental Management

### Creating an Eco-friendly Nuclear Power Plant Ecosystem

KNF applies the importance of environmental conservation to the management system and strives to create an eco-friendly nuclear power generation ecosystem. And it implements eco-friendly values in its management strategy by simultaneously certifying external institutions.

### Establishing an Eco-friendly Strategy

By intensifying competition for green growth, the need to apply environmental management to the supply chain increases, and an eco-friendly strategy has been established considering government policies and internal and external environments. The eco-friendliness of nuclear facilities is receiving the public's attention, KNF will provide support for the establishment of eco-friendly infrastructure and realize a green economy through resource recycling and energy management.

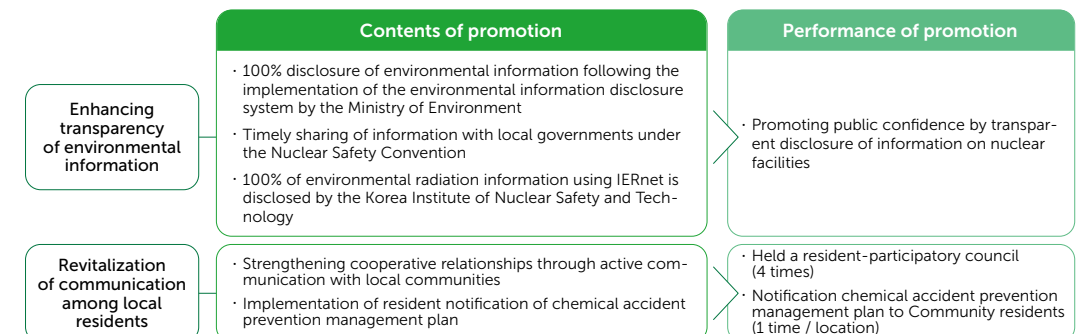
#### Eco-friendly and Carbon-Neutral Strategies

<b>Eco-friendly carbon neutrality vision</b>	<b>Creating a Rich Future for Humanity with Eco-Friendly Nuclear Energy</b>		
<b>Key objectives</b>	Laying the foundation for an eco-friendly nuclear operating ecosystem by continuously reducing environmental load factors		
<b>KNF 2030 achievement goal</b>	<ul style="list-style-type: none"> <li>Improvement of environmental safety level by 125% compared to KNF Eco-Friendly Index (KEI) standard performance</li> <li>Recycling of 12,246 drums of radioactive waste and 42 tons of uranium resources</li> <li>55% reduction compared to greenhouse gas standard emissions to achieve carbon neutral goals</li> </ul>		
<b>Strategic direction</b>	<b>(Environmental Management)</b> Strengthening of eco-friendly and carbon-neutral management infrastructure	<b>(Resource Recycling)</b> KNF-type Recycling Cycle Economy Completed	<b>(Carbon reduction)</b> Carbon weight diet to strengthen environmental health
<b>Strategic task</b>	Advancement of environmental management system and renewal of certification successfully	Reduction of carbon generation through recycling of radioactive waste as general industrial materials	Establishment of a sustainable nuclear facility operation system by promoting the establishment of a 2050 KNF carbon neutral strategy
	Expanding the scope of application of the environmental management system and actively implementing the implementation tasks	Construction of a uranium resource recycling plant	Achieving the goal of reducing greenhouse gases by carbon reduction and minimizing carbon footprint
	Promotion of people-oriented environmental management ecosystem		

### Advancement of Environmental Management System

KNF has been certified as an Environmental Management System (ISO 14001) for 10 consecutive years and has expanded the scope of the environmental impact assessment to 42 processes, including the entire tube plant. Also, established environmental safety and health goals by setting a total of 81 implementation plans in 9 areas. Additionally in 2022, it achieved 100% of the environmental safety and health goals. KNF takes up an environmental liability insurance and sets a compensation limit of KRW 10 billion per accident, classifies objects by air, water quality, chemical, and soil, and clarifies the responsibility for environmental preservation by setting manufacturing, use, and use of materials for each material. In addition, environmental information is disclosed 100% in compliance with the environmental information disclosure system. In particular, in the field of nuclear material processing facilities and tube plants, a resident-participating council is held to inform residents of the chemical accident prevention and management plan.

#### Promotion of people-oriented environmental management ecosystem



ISO 14001 Certificate

Renewal of environmental management system certification

**10 years in a row**

2022 KNF Eco-Friendly Index  
**93 points**

### Establishment of Environmental index

In line with the strategic tasks of promoting new environmental conservation projects, actively responding to climate change, expanding eco-friendly and safe R&D investment, and upgrading the environmental management system, the institution sets annual goals. Furthermore, according to give shape to 16 detailed implementation tasks such as radioactive waste disposal projects and KNF Eco-Friendly Index (KEI) is developed and used as an evaluation scale for environmental management. The KEI consists of 17 items, including radioactive waste management and greenhouse gas reduction, to enhance the sustainability of KNF by upgrading environmental management and establishing an environmental network.

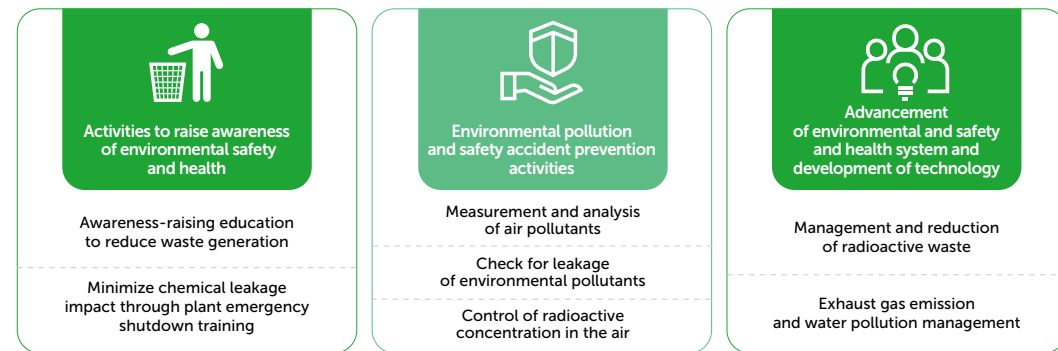
### Organization Dedicated to Environmental Management

The Ministry of Safety and Environment was established under the Safety Management Office to secure an organization dedicated to environmental management. to achieve carbon neutrality, The operating plant office was expanded to a plant maintenance department consisting of a conservation technology team, a maintenance department, and a facility management.. And it creates horizontal relationships within the organization to communicate efficiently and have senior employees working to prepare for field response. Based on an organization dedicated to environmental management, KNF is promoting preemptive environmental preservation by minimizing environmental impact around nuclear facilities by accelerating green operations to reduce radioactive waste.

### Promotion of Environmental Goals

KNF establishes an environmental and safety and health promotion every year, sets detailed goals, and specifies who's going to be the person in charge in charge to clarify its responsibility for the promotion plan. It checks performance indicators according to the promotion plan every quarter, analyzes the performance of the year afterwards, and reflects the improvements derived in the next year's plan. In addition, it reorganized the promotion of environmental and safety and health goals and greatly added items in the environmental field.

#### Environmental and safety health objectives implementation plan



### Contaminant Control and Chemical Management

The legal emission allowance for environmental pollutants  
**below 50 to 80%**

Waste management ledger is in the keeping of KNF and manage the industrial waste and designated waste separately it reduces waste water emissions by 10% by improving the sludge dehydration process, and wastewater discharge facilities and prevention facilities are operated in accordance with the law, such as recording water pollutants measured by designating water environmental engineers. Besides, water pollutants shall be controlled to be less than 50% of the allowable standard, and air emission facilities are installed and operated in accordance with the Air Environment Conservation Act. In the case of chemicals, the amount of movement and emissions are measured separately, and detailed reports are prepared by separating the manufacturing details and usage details of hazardous chemicals. In addition, The Chemical Safety and Health Data (MSDS) for each type of chemical substance is kept and the handling status of the chemical substance is managed in detail in accordance with the Occupational Safety and Health Act, the Chemical Substance Management Act, and the Dangerous Substances Safety Management Act. Chemical safety training was conducted by designating a manager.

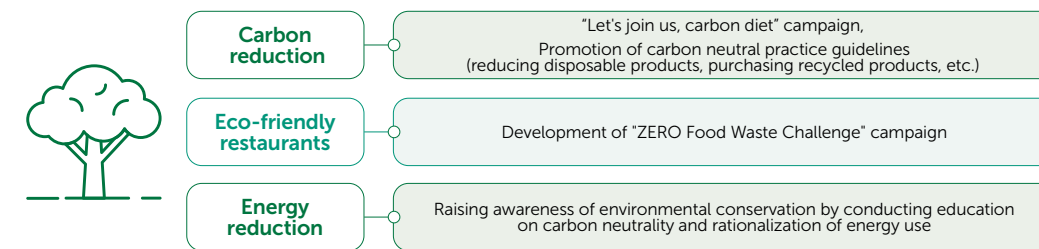
### Accelerate Green Activities

Except for laws and regulations, KNF is carrying out various activities to establish a voluntary eco-friendly culture, and in the process, it actively utilizes links with external institutions.

### Implementation of an Enterprise-wide Energy-saving Movement

KNF is actively striving for carbon reduction throughout the company by implementing the "ZERO Food Waste Challenge" campaign in the cafeteria and providing education on carbon neutrality and reasonable energy use. Moreover, by completing environmental safety education, it internalizes environmental safety awareness, expand environmental safety education for partners and social enterprises, and spread the eco-friendly eco-system throughout the community.

Carbon Diet Practice Convention  
**1,047 participants**



### Community Environmental Conservation Activities

KNF is carrying out various and steady activities related to the conservation of the community environment. Since forming a partnership with the National Daejeon Cemetery in 2014 for the "One Graveyard for Each Fallen Soldier" project, it has been conducting environmental cleanup volunteering activities at the dedicated graveyards every year before Memorial Day. It also participates in an "Eco Plogging Day" with the nearby Yusung-gu Comprehensive Welfare Center for Disabled Individuals, where collecting trash around the nearby Bansukcheon stream. Furthermore, it is striving to raise awareness of environmental conservation both internally and externally by supporting organic fertilizer donations to local residents for soil conservation and eco-friendly farming activities.

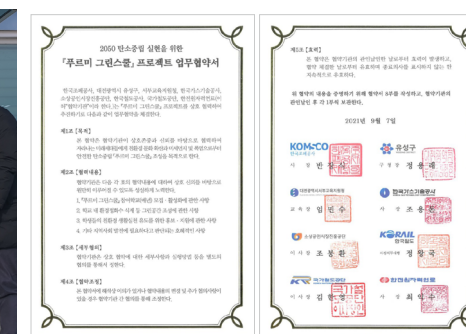
### Creation of Purmi Green School

Schools near KNF have industrial complexes and landfills, so systematic environmental improvement is needed. It created Purmi Green School to provide a clean natural environment for future generations and emphasized the importance of environmental and climate issues to provide environmental education to local schools and implement eco-friendly life practices. It has signed MOUs with the Office of Education, local governments, and public institutions and formed "Public Daejeon" to take the lead in creating green spaces and establishing an eco-friendly culture. Furthermore, it promoted air quality improvement and heat island mitigation by planting environmental purified water in empty spaces of schools and reorganizing to create heat wave shelters. In addition, it has joined the "Daejeon Regional Problem Solving Platform," a public-private partnership led by citizens, and is expanding publicity and recruitment to local schools. In recognition of these achievements, KNF was awarded the Air Environment Conservation Merit Award by Daejeon Metropolitan City.

Daejeon Metropolitan City Commendation Award  
**Air Environment Conservation Merit**



Purmi Green School Creation Ceremony



Purmi Green School Project Business Agreement

# Social



## Importance of Issue

There is a growing trend of stakeholders demanding corporate social responsibility from companies to address various social issues. The values of sharing profits and engaging in social contribution activities are becoming increasingly important for sustainable growth. Additionally, as human resources are recognized as a vital element for social development, it is necessary to eliminate biases in employment and make continuous investments in talent development. Furthermore, companies have obligations to provide safe working environment for their employees and to prevent disasters for the society.

## Approach Method

KEPCO Nuclear Fuel is enhancing safety inspections, reinforcing workforce, and conducting continuous training to ensure the safety of the nuclear power industry. It is also expanding technology sharing and performance sharing for mutual growth and collaboration within the industry. In terms of social responsibility, it is actively engaging in social contribution activities for the benefit of the local communities. Internally, it is improving working conditions to foster a healthy organizational culture, and it is also committed to eliminating discrimination in the recruitment process, as well as to enhancing employee talent development.

## Key Achievements



In production processes and research facilities,  
**ZERO Industrial Accidents**



Shared growth evaluation of 2022 results  
**Best Grade**

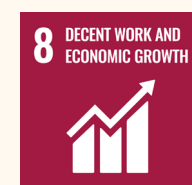


Selected as a recognized company for community contribution for  
**4 consecutive years**



Selected as an excellent organization for fair recruitment for  
**4 consecutive years**

## Focus SDGs



# Safety Management and Information Security

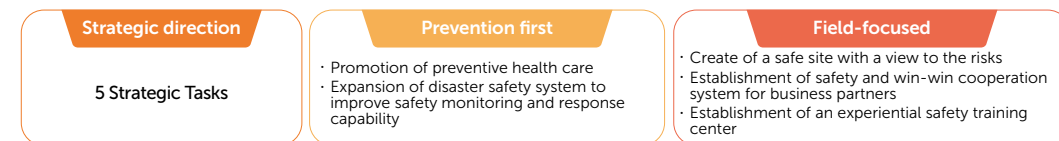
## Establishment of Worker Protection Environment

KNF has strengthened safety infrastructure across all areas of operations to prevent safety accidents and to minimize damages caused by natural disasters. By enhancing safety infrastructure, it aims to ensure a safe work environment and mitigate the impact of natural disasters.

### Safety Management

The KNF management committee has declared a commitment to safety management and developed a long-term strategic plan on safety management to promote a culture of safety throughout the organization and enhance safety awareness. Prior to finalizing plan, opinions from employees were gathered to improve policy acceptance and foster a sense of responsibility. In addition, the safety oversight organization in the manufacturing field was elevated from the Quality and Safety Department to the Production Safety Headquarters, with its position upgraded to a department-level status. A Director of Production Safety was appointed as the highest safety officer to strengthen its role in preventing major accidents. Furthermore, to motivate employees, outstanding individuals in safety contributions and cooperating companies in safety management were selected and awarded prizes and incentives.

#### Strategic plan for safety management



### Advanced Nuclear Safety Information Integration System

KNF utilizes big data composed of health check-ups, exposure doses, and other relevant information in its radiation safety management system. With a database consisting of data from nearly 100,000 radiation workers, it tracks workers' exposure levels based on this information. It enhances radiation management at work by improving measurement methods. Additionally, it conducts periodic radiation emergency preparedness training and early response drills to strengthen its radiation protection measures.

Obtaining radiation worker exposure data

About **100,000 cases**

### Development of KNF-type Safety Experts

KNF operates various programs to foster safety experts. It organizes capacity-building seminars and exhibitions for management supervisors in the fields of industry, disasters, and radiation. These events provide opportunities to share examples of real-life accidents and learn from safety management achievements. Additionally, in preparation for the enforcement of the Major Accidents Punishment Act, it invites experts to deliver safety lectures for executives. It also offers corporate disaster manager training education; safety and health manager specialized training; and Environmental, Safety, and Health Management System auditor training education. The budget for education and training in 2022 increased by 115.8% compared to 2021, contributing to the absence of industrial accidents in the processes and research facilities.

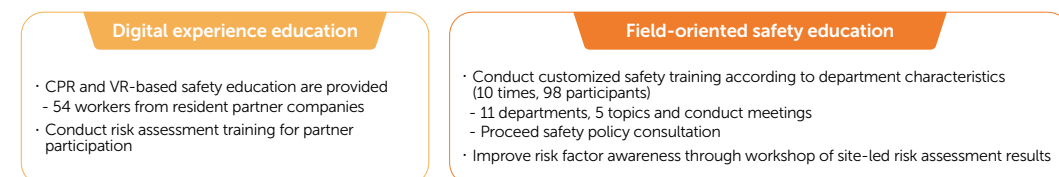
Industrial accidents in production processes and research facilities

**Zero**

### Conducting Institution-wide Safety Training

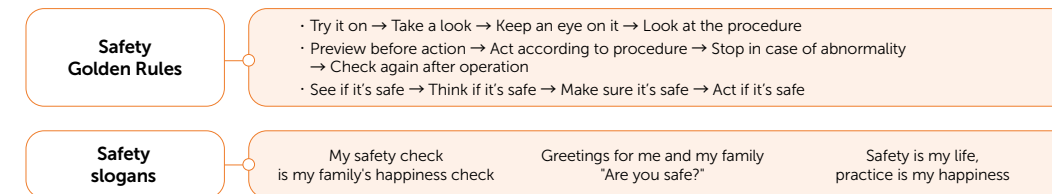
KNF has implemented safety education utilizing Virtual Reality (VR) to enhance the safety response capabilities of all employees. It has also provided hands-on experience in CPR training. Safety education has been conducted in various fields such as firefighting, hazardous materials, and electricity. In addition, meetings and safety policy consultations have been organized. As a result of these safety education initiatives, 25 Green Whistle suggestions have been received, and 106 voluntary improvement activities have been carried out.

The budget for education and training was increased by **115.8%**



### Vitalizing the Autonomous Safety Culture

To create a safe work environment, KNF has conducted various campaigns. It organized the Safety Rules Competition to select Safety Golden Rules and safety slogans, which were then promoted to all employees through exhibitions. KNF also held competitions to collect cases of safety and health improvement or near-miss accidents, and awarded six outstanding works to utilize them for promoting a safety culture. Furthermore, under the slogan of "3E Concentrated Management," which stands for Engineering Safety, Education, and Enhance Health, the organization aims to achieve substantial effects in safety policies.



### Mental Health Care for Workers

KNF operates an Employee Assistance Program (EAP) to promote the mental well-being of vulnerable workers. The EAP includes unique programs such as "Communication in Marriage," "Real MBTI," and "Accidental Workers." It also provides stress-relief items to support stress management. One advantage of the program is that professional mental health counseling conducted by experts is available not only to employees but also to workers from partner companies. KNF will continue to improve the worker's mental health care program to enhance job satisfaction and prevent work-related illnesses.

Occupational sick person

**Zero**

### Creation of Safe Nuclear Power Facility Environment

KNF is implementing various policies to create a safe working environment. It is actively collaborating with external organizations to ensure practical safety measures.

### Promotion of Autonomous Safety Management Through Risk Assessment

KNF has implemented enhancements to the risk assessment process to enable individual-level risk management. It has conducted preliminary investigations and established a risk assessment team to develop its evaluation methods. These efforts have been extended to all departments, including non-operational areas with lower safety inspections, to ensure comprehensive risk assessments and identify and address safety vulnerabilities. Following the risk assessments, KNF has organized workshops and training sessions to improve the satisfaction of management supervisors and employees.

Department subject to risk assessment was increased compared by previous year

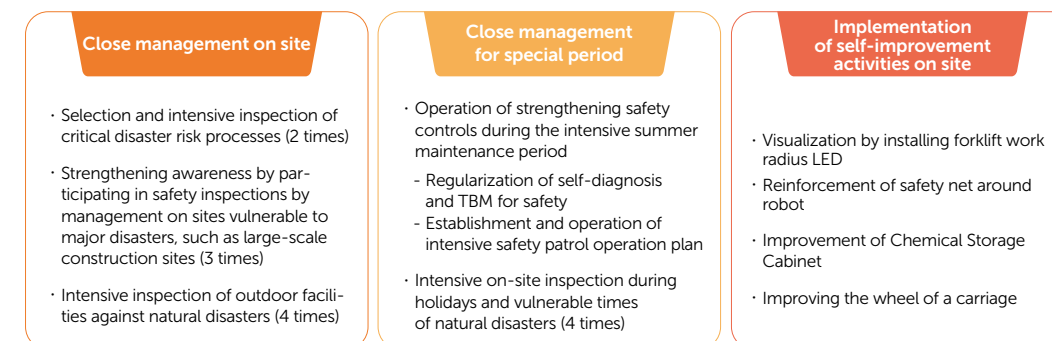
**12 Departments**

### Implementing Detailed Safety Management in Accordance with the Situation

KNF has achieved a goal of zero major accidents by implementing flexible safety management practices that are adaptable to different sites and circumstances.

Serious accident

**Zero**



### Strengthening Environmental Safety and Health Goals

KNF sets annual environmental, safety, and health goals to ensure close examination of safety and health practices. These goals include specific targets and implementation plans, with assigned personnel and departments clearly defined to ensure accountability. To assess the achievement of these targets, performance indicators are established and regularly monitored on a quarterly basis. At the end of each year or project period, performance is analyzed, and areas for improvement are identified.

### Safety Management and Information Security

KNF adheres to relevant laws and regulations to ensure safety and has developed specific checklists to evaluate compliance.

Special act on the safety and maintenance of facilities	Rules on occupational safety and health standards	Rules on restrictions on employment of hazardous work	Occupational safety and health act	Electricity business act	Basic fire service act	Act on the establishment of safety environment in the laboratory
Establishment of basic safety inspection plan	Checking compliance through safety inspection and training and implementing improvement measures	Having qualifications, licenses, and experience for the work concerned	Operating the safety and health management system properly	Appointment of electrical safety manager	Establishment of fire plan	Appointment of laboratory safety manager
Regular and precise safety inspections of the target facilities are in progress			appointment of a court administrator	Implementation of a statutory periodical inspection	Appointment of fire manager and completion of training	Preparation of laboratory daily checklist
			Completion of safety and health education	Completion of legal training	Fire drill and safety training	Conducting a precision safety diagnosis
			Preventive measures for industrial accidents in the event of a contract			

### Safety Cooperation with Power Group Corporation

KNF has established a meeting forum named the "Power Group and Chief Safety Officer (CSO) Consultative Committee" to enhance safety. This committee brings together CSOs from 11 power group companies, including KEPCO and KHNP, on a quarterly basis to discuss and address safety-related policies and issues. During these meetings, best practices and areas for improvement are shared among the participants. It has also played an active role in disseminating our safety manuals related to subcontracting and ordering to other organizations. KNF has benchmarked excellent organizations to introduce external safety experts through safety patrols. Additionally, efforts are underway to establish experiential safety training facilities.

### Renewing Safety and Health Management System Certification

KNF has successfully renewed the certification of its Occupational Health and Safety Management System through rigorous internal audits. A team consisting of the Safety Management Director, Disaster Prevention Division Chief, and 12 internal auditors formed an internal audit team to assess 10 departments. The team reviewed the adherence to procedures and manuals, ensuring compliance with internationally recognized standards. It also incorporated internal requests into the scope of the audit to verify the alignment of current practices with the Occupational Health and Safety Management System. During the internal audits, the compliance with relevant laws and regulations in the field of safety was evaluated. Through these efforts, it has achieved re-certification for KOSHA-MS and ISO 45001.



KOSHA-MS ISO 45001 certification

### Establishment of Strategic Disaster Safety Management System

KNF is establishing a comprehensive safety management system that oversees the headquarters and the Tube Plant, and is strengthening the disaster safety infrastructure in accordance with the implementation of the Major Accident Prevention Act. It has established new departments related to major accidents and are actively working on disaster safety measures. Furthermore, KNF collects data in the areas of fire safety, occupational safety and health, and environmental safety, and have established an integrated information network for safety information. It continuously improves its computer systems to enhance user convenience. Through these efforts, KNF aims to enhance its disaster safety management system, proactively prepare for potential risks, and respond to disasters in a preemptive manner.

### Emergency Response System Inspection and Taining

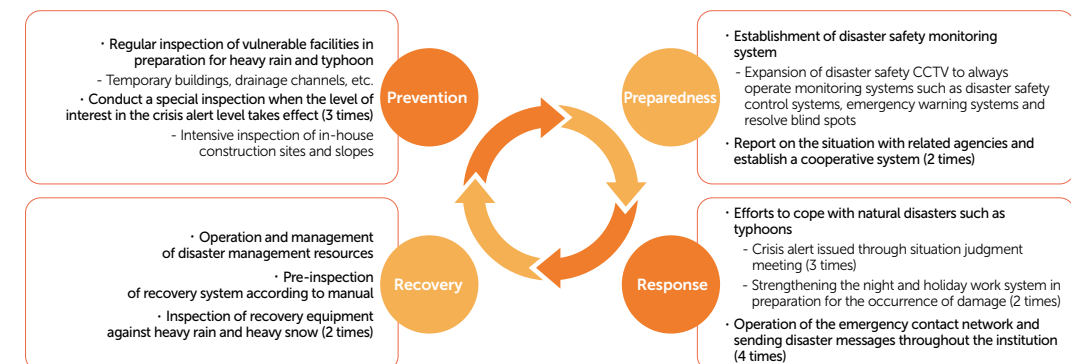
KNF has been enhancing the safety of its nuclear facilities by implementing an emergency response system and conducting rigorous and periodic training in response to unexpected situations caused by various chemicals, including radioactive materials, and based on the geographical characteristics of proximity to forests and residential areas. It has strengthened our monitoring capabilities for risk factors through the reinforcement of safety patrol personnel, and have implemented participatory emergency response training, such as additional outdoor evacuation area settings and unannounced training sessions for all employees. The institution will continue to make efforts to operate trustworthy and safe nuclear power plants, with remaining committed to prioritizing the safety of the public and its employees.

#### KNF disaster safety management system

<b>KNF core value</b>	<b>Safe Fuel → Safety First</b>	
<b>Goal</b>	The fundamental prevention of serious accidents through field-oriented safety management by prevention first	
<b>Direction</b>	<b>1. Expansion of disaster safety systems</b>	<b>2. Strengthening capacity to respond to disaster safety</b>
<b>Contents</b>	<ul style="list-style-type: none"> <li>Establishing a mid- to long-term strategic plan</li> <li>Strengthening the management system based on disaster safety risk factors</li> <li>Establishment of a foundation for close management</li> <li>Establishment of an advanced disaster safety management system</li> <li>Advancement of the disaster safety system's field response capability</li> </ul>	<ul style="list-style-type: none"> <li>Training of safety personnel through seminars on "Strengthening the Safety Capabilities of Core Personnel"</li> <li>Strengthen efforts to prevent industrial accidents through visible safety</li> <li>Establishment of a safety and win-win cooperation system for business partners</li> </ul>

### Active Preparation for Natural Disasters

KNF is preventing natural disaster damage through a four-stage approach consisting of prevention, preparedness, response, and recovery activities. In the event of natural disasters such as heavy rainfall and typhoons, construction sites, temporary structures, and drainage systems are thoroughly inspected. Additionally, it operates a disaster safety control system and an emergency alarm system 24/7, and strive to alleviate safety blind spots by installing additional disaster safety CCTV. In case of natural disasters, KNF collaborates with relevant agencies and conduct internal crisis assessment meetings to establish our own crisis alert levels. Furthermore, it operates a disaster safety crisis response manual to prepare for natural hazards and validate the effectiveness of the manual through continuous disaster response training. As a result of these efforts, KNF has achieved zero accidents and zero equipment failures due to natural disasters.



Natural disaster  
**Zero**

Facility failure due to natural disaster  
**Zero**



### Improvement of Fire Prevention System

Based on the forest fire impact assessment completed in the previous year, KNF has enhanced fire prevention measures by addressing fire-prone areas. Two-way access roads leading to the institution's rear mountain area have been maintained to ensure smooth movement of fire trucks, and firefighting equipment has been installed at five different locations. In the TSA, the disaster safety system has been integrated to enable immediate identification of the location through video transmission when a fire alarm is triggered, facilitating prompt emergency response. Furthermore, an institution-wide reinforcement of the fire monitoring system has been implemented to consistently reduce false alarms and enhance the reliability of the disaster management system.

### Supporting Safety Package Service

KNF has strengthened safety in the supply chain and local communities by providing safety package services to partner companies and social enterprises. It has contributed 66 safety technologies and provided firefighting equipment and personal protective gear. Additionally, KNF fully repaired the electric equipment in social welfare institutions. Furthermore, comprehensive inspections of systems, processes, and facilities related to safety have been conducted, and if any deficiencies were found, solutions have been proposed to enhance the safety infrastructure.

Safety package service satisfaction

100%

Contents	<ul style="list-style-type: none"> <li>Support for safety packages to social enterprises, social welfare facilities, and parts supply partners</li> <li>Transfer safety technical knowledge, provide safety goods and improvement costs</li> <li>Expansion of support targets and details compared to the previous year → Target : 6 → 7(increase in social enterprise)</li> <li>→ Contents : Maintenance of facilities and support for protective equipment, etc</li> </ul>
Performances	<ul style="list-style-type: none"> <li>(External cooperation) Collaboration of 8 public institutions in Daejeon</li> <li>(Internal cooperation) Collaboration of 4 departments to promote diversification of safety business</li> <li>Support for maintenance of electrical facilities and improvement of facilities in social welfare facilities</li> <li>Provision of fire-fighting supplies and safety equipment</li> <li>Expansion of incentive (improvement cost) support: 4 million KRW → 6 million KRW</li> </ul>

### Information Security

KNF has strengthened its information security system to address the increasing cyber threats by implementing state-of-the-art hardware and software.

### Advance Information Security Management Systems

KNF strives for the integrity of the information management system to proactively respond to information security. It has maintained a clean record without any incidents of cyber breaches, and the implementation rate of the cyber security diagnosis has reached an exceptional level of 99.98%. Building on these efforts, the institution's core systems such as ERP and MES have established systems that meet international standards, and the overall information security system has been certified with the international standard ISO/IEC 27001.



ISO 27001 certificate

#### Information security management system

Vision	Implementation of Safe & Secure KNF through establishment of information security management system and active response		
Goals	Establishment of a personal information protection system in accordance with laws and principles	Establishment and operation of information security management system based on national security guidelines	Establishment of cyber safety posture for rapid response to accidents and disasters
Tasks	<ul style="list-style-type: none"> <li>Strengthen response by improving the personal information protection management level diagnosis system</li> <li>Measures to ensure the safety of personal information Technical responses such as compliance with laws and regulations</li> </ul>	<ul style="list-style-type: none"> <li>Development of user-friendly security policies within the guidelines of higher-level agencies</li> <li>Replacing old information security systems to comply with security requirements</li> </ul>	<ul style="list-style-type: none"> <li>Conduct simulation training for data backup and recovery for company-critical information systems</li> <li>Conduct cyber incident response training for security core systems</li> </ul>
Inspection reflux	Personal Information Protection Level Diagnosis (Personal Information Protection Committee)	Cyber safety and security checks (MOTIE)	Renewal of Information Protection International Standard (ISO27001) certification (International Authorized Agency)

### Establishment of a Cyber Safety Framework for Disaster Preparedness

KNF has established a disaster recovery infrastructure between Daejeon (Headquarters) and Naju (Disaster Recovery Center) to ensure business continuity in the event of disasters and emergencies. An automated disaster recovery system has been implemented to enable seamless service provision from the disaster recovery center during such situations. Regular backup and recovery drills, as well as disaster recovery simulations, have been conducted to reduce the information system recovery time to within 4 hours and enhance the ability to respond to emergency situations. Furthermore, annual mock training exercises are conducted to defend against cyber attacks targeting the essential systems designated by the Nuclear Safety and Security Commission. Additionally, a system has been implemented to restrict the use of general USB devices on all work PCs, allowing only secure USB devices to prevent incidents of technical information leakage.

System recovery time to within

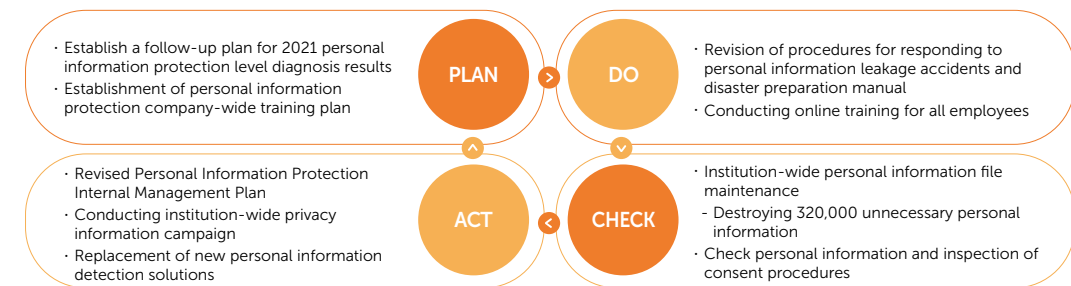
4 hours

### Carry out Institution-wide Personal Information Protection Level Diagnosis

Through CEO-led comprehensive reviews and improvements in the personal information protection system, KNF has maintained a clean record in the field of information security. In line with the revised personal information management level system, a thorough investigation of the situation was conducted, and any deficiencies were immediately addressed and improved. Special inspections were carried out based on a personal information audit checklist. The entire personal information files were reviewed, leading to the disposal of 320,000 unnecessary personal information records, and a manual for responding to data breaches was reviewed. Additionally, a survey was conducted among all employees to identify areas for improvement in the personal information protection system, and the directors of department actively promoted personal information protection by personally notifying employees.

In personal information protection level diagnosis,

achieve the highest grade



### Enhanced Network Security

To defend against external cyber attacks, KNF has improved the security of its internet and operational networks. Outdated web firewalls, DDoS response devices, and IPS have been replaced, and equipment with expiring security certifications has been substituted with new external network NAC and secondary DNS devices. Following government guidelines, the management server for the operational network has been transitioned to a new program, and the firewall has been replaced to ensure compatibility with the existing system. As a result of these efforts, despite the addition of audit items for information security inspections by the MOTIE, there has been a decrease in the number of deficiencies compared to the previous year, and KNF has maintained a rating of 'good' for four consecutive years.

### Regular Information Security Preparedness

KNF is actively promoting the integration of information security measures from various angles to prevent security incidents. In response to an incident where a radiation monitoring system in another institution was infected with malicious crypto currency mining code, it participated in a joint investigation led by the regulatory authority (KINAC). Internal systems were checked based on external checklists and received recognition for their security. In addition to regular unannounced inspections conducted every quarter, separate inspections are conducted for retiring employees. Furthermore, personalized cybersecurity training has been provided to all employees.

Technical information leakage

Zero

## Shared Growth

### Supporting Innovative Growth of Small and Medium Businesses

KNF improved its systems and provided support to its partner companies to ensure tangible results in co-prosperity. Furthermore, it has implemented institutional improvements to facilitate direct and indirect collaboration, enabling partner companies to achieve their goals.

#### Advancement of Shared Growth Strategies

KNF has organized face-to-face meetings to listen to the opinions of partner companies and has identified three key areas of co-prosperity: enhancing competitiveness, exploring new markets, and securing technological capabilities. It has also achieved the highest rating, "Outstanding," in the co-prosperity evaluation for the year 2022, through comprehensive co-prosperity management aligned with our overall business strategy.

#### Promoting KNF shared growth

Goal	Taking the lead in social responsibility by providing diverse support to strengthen the competitiveness of SMEs		
Tasks	Enhancing SMEs' competitiveness	Support for sales improvement through exploring new markets	Securing technological capabilities
Contents	<ul style="list-style-type: none"> <li>Comprehensive support through the activation of the performance sharing system</li> <li>Expansion of cooperative profit sharing system (safety and quality support)</li> <li>Expansion of ESG management to private sector to advance support</li> <li>Strengthen competitiveness through increased productivity</li> </ul>	<ul style="list-style-type: none"> <li>Support for participation in domestic and international exhibitions</li> <li>Development of KNF-linked overseas export market</li> <li>Expansion of purchases of innovative procurement products</li> <li>Participating in energy technology market platform</li> </ul>	<ul style="list-style-type: none"> <li>Providing test beds for cooperation and small and medium-sized enterprises</li> <li>Joint development of performance sharing task technology</li> <li>Protection of original technology through technology implantation</li> <li>Expanding the implementation of technology</li> </ul>

#### Sharing Performance and Collaboration Benefits

As a registered company under the performance sharing system mandated by law, KNF has divided the types of achievements and manages performance sharing accordingly. Under the technology development performance sharing program, it supports small and medium-sized enterprises and companies that have completed technology development projects by purchasing their products to help increase their sales. Additionally, KNF has applied productivity improvement performance sharing programs to seven companies in collaboration with innovation partnerships. Furthermore, incentive-based performance sharing programs have been implemented based on the results of ESG management diagnosis for partner companies.

<b>Performance sharing system of technology development</b>	<ul style="list-style-type: none"> <li>Contribute to expanding sales of SMEs by purchasing related to completion tasks of 3 companies</li> <li>Purchased 284 million KRW, including the development of zirconium alloy powder manufacturing technology for 3D printing</li> </ul>
<b>Performance sharing system of productivity improvement</b>	<ul style="list-style-type: none"> <li>Incentive performance sharing system for SMEs in Daejeon</li> </ul>
<b>Performance sharing system of supporting ESG management</b>	<ul style="list-style-type: none"> <li>Promotion of incentive-type performance sharing system through ESG management diagnosis of partner companies</li> </ul>

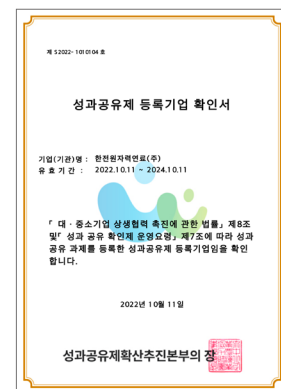
#### Development of SMEs' Market and Establishment of Platforms

KNF has supported cooperation companies and local SMEs to participate in overseas exhibitions, aiming to enhance corporate vitality and stimulate local economic activity. It provided financial support of 1 million KRW to companies participating in exhibitions and facilitated the signing of MOUs with visiting companies. Additionally, it promoted the cooperative business under the theme of technology development and market expansion through the "Energy Technology Market" platform. KNF also publicized its R&D collaboration partners, and as a result the purchase amount through the platform increased by tenfold compared to the previous year.

#### Support ESG Management Consulting

KNF conducted ESG management consulting for two partner companies in collaboration with external advisory agencies. Based on internal and external environmental analysis and understanding of each company's needs, their capabilities were assessed, and a direction for ESG management practices was established through education and on-site inspections. Through such consulting services, both partner companies obtained ISO 45001 certification, and KNF provided a 5 million KRW incentive for each company in conjunction with the incentive-based performance sharing program.

The results of shared growth evaluation in 2021 and 2022, **the best for the 2 consecutive year**



Performance-sharing registered company confirmation

Purchase of innovative products

**increased by 10 times**

All consulting partners are **ISO 45001 certified**

### Engaging ESG Management Agreement

KNF has entered into ESG management cooperation agreements with nine nuclear fuel component suppliers, collaborating in four areas, such as environmental management, employment improvement, shared growth, and transparent management. This agreement is set to be automatically renewed every year even after the initial term expires, and it will continue our ongoing ESG management collaboration with the partner companies.

#### Scope of ESG management cooperation

Environmental management	<ul style="list-style-type: none"> <li>Efforts for environmental management, such as reducing greenhouse gas emissions and recycling and waste management, to cope with climate change</li> </ul>
Improvement of employment	<ul style="list-style-type: none"> <li>Improving employment practices such as discrimination and prohibition of workplace harassment</li> </ul>
Co-prosperity and Sharing	<ul style="list-style-type: none"> <li>Realizing shared growth by sharing regional win-win, performance, and cooperative profits, such as supporting local commercial districts</li> </ul>
Transparent management	<ul style="list-style-type: none"> <li>Compliance with laws and industrial standards and practice ethics and human rights management</li> </ul>

### Strengthening SMEs' Technological Competitiveness

KNF has established a comprehensive support system with step-by-step assistance to ensure that partner companies can secure sufficient technological competitiveness. It actively implements administrative measures to promote the revitalization of the nuclear power industry and explore new markets.

#### Continuous Technology Sharing Practice

KNF participated in technology commercialization exhibitions and organized technology sharing presentations. It selected and shared four technologies in 2021 and six technologies in 2022, focusing on technologies that could be shared with others. Additionally, through technology sharing, it contributed to direct and indirect job creation. These achievements were recognized, and it received commendation from the Minister of Industry for our contributions to technology commercialization.

#### Protecting the Partner Companies' Technologies

To prevent technology leakage, KNF has strengthened intellectual property protection.

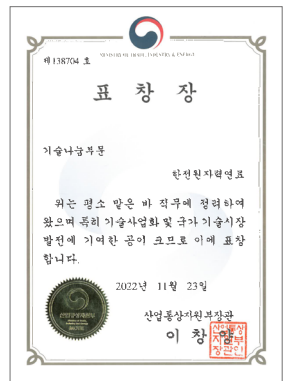
<b>Technical Implicit Support</b> Support for technology lease costs for companies that complete performance-sharing tasks	<b>Technical protection training for executives and employees</b> Expect preventive effects such as preventing technology leakage by strengthening technology protection capabilities and raising awareness	<b>Mandatory confidentiality agreements</b> Being mandatory to attach a confidentiality agreement that stipulates the technology protection of SMEs when signing agreements
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#### Establishment of fair trade order

KNF is making efforts to ensure fair trade is firmly established in the nuclear power industry through voluntary improvements in transaction contracts and financial support, as well as the promotion of a fair trade culture.

#### Creating an Interactive Industrial Ecosystem

KNF is incorporating the opinions of partner SMEs in promoting sharing growth. It operates a monitoring system on our website to ensure that the contract negotiation process is transparent and open for everyone to observe. It actively seeks for feedback to enhance the monitoring system. Additionally, it holds an annual Quality Assurance Business Council with partner companies to gather business requirements and conduct annual evaluations of their quality activities. It provides substantial rewards to outstanding companies as a form of compensation. These efforts have resulted in no contract-related complaints for three consecutive years, and it achieved a satisfaction score of 4.7 out of 5 in the 2021 Sharing Growth Program satisfaction survey.



Minister of Technology Commercialization Merit Awarded

Technology lease cost support

**10 companies**

Contract complaints

**Zero for 3 consecutive years**

Satisfaction level of shared growth project in 2021

**4.7/5**

Advance payment support increased compared to the previous year

**243.5%**

### Establishment of the Fair Trade Model

KNF has established a fair trade model to achieve performance goals in each field and use it as a fundamental tool for problem-solving in their relationships with partner companies.

#### KNF "4C" win-win and fair trade model

Goal	Completion of social responsibility by actively implementing the guide-line of the model through system maintenance of the fair trade model			
Sortation	Clear trading	Communication	Culture of win-win trading	Change and improvement of regulations
Detailed goals	Securing fairness by blocking unfair trade practices	Identify fair trade needs from the customer's perspective	Win-win measures to overcome the nuclear ecosystem crisis	Expanding the fair trade culture by improving practices and clarifying institutions
Contents	<ul style="list-style-type: none"> <li>Pre-disclosure of contract information and purchase specifications</li> <li>Submitting a fair contract pledge</li> <li>Using standard contracts in electronic bidding contracts</li> <li>Expanding using of subcontractors</li> <li>Request for memorandum of performance of integrity contract</li> </ul>	<ul style="list-style-type: none"> <li>Fair contract monitoring system                             <ul style="list-style-type: none"> <li>Check the requirements other than the checklist for each stage of the contract</li> </ul> </li> <li>Operation of the objection system                             <ul style="list-style-type: none"> <li>Operate anonymous reporting systems such as 'Simungo' and 'Red whistle'</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>joint payment of stamp duty</li> <li>Shortening the preemptive payment time</li> </ul>	<ul style="list-style-type: none"> <li>Mandatory to check whether there is a restriction on the conclusion of private contracts</li> <li>Development of regulations related to performance-sharing tasks</li> <li>Regulation of joint contractors of principal contractors</li> </ul>

### Improved Funding Performance

KNF has created various measures to ensure that partner companies can secure financial liquidity according to their individual needs. As a result, the performance of advance payments has significantly improved, with a 243.5% increase compared to the previous year (138 billion KRW in 2021 to 474 billion KRW in 2022). In terms of financial stability, it increased its management stability funds by 300 million KRW compared to the previous year, providing support of 830 million KRW to seven companies. The utilization rate of the win-win payment system increased by 13.6% (from 75.7 billion KRW in 2021 to 86 billion KRW in 2022), and the contract guarantee deposit rate was reduced by half (from 10% to 5%). Additionally, the organization shortened the deadline for advance payments by two days to facilitate prompt payment.

#### Increasing partner companies' fund liquidity

<b>Expansion of Advance Payment Support</b>	<ul style="list-style-type: none"> <li>Pre-disclosure of application information for advance payment support in the notice at the time of bidding</li> <li>Support for timely production and operation funds by activating advance payment applications</li> </ul>
<b>Expansion of support for business stabilization funds for partner companies</b>	<ul style="list-style-type: none"> <li>Raising a total of 1 billion KRW in management stabilization funds and extending the agreement through an agreement with the Industrial Bank of Korea</li> <li>500 million KRW by KNF + 500 million KRW by IBK</li> </ul>
<b>Expansion of the operation of win-win payment system</b>	<ul style="list-style-type: none"> <li>Introduction and operation of win-win payment system</li> <li>Looking for ways to expand performance, such as granting additional points to participate in shared growth projects to companies that use win-win payment payments</li> </ul>
<b>Reduction of contract deposit rate</b>	<ul style="list-style-type: none"> <li>Early payment of contract price to improve cash flow of suppliers to ease burden on suppliers</li> </ul>

### Compliance with Fair Trade by Reasonable Price Increases

In response to the request for contract modifications from SMEs, KNF conducted a review process involving the ordering department and contract department, resulting in the adjustment of the supplier's unit prices. In three areas--radiation management services, expansion of the coolant pump nuclear fuel shaping facility, and procurement of storage racks for the third plant--it increased the contract amounts to reflect the increase in prices, allowing the partner companies to earn an additional profit of 1.66 billion KRW compared to the previous year. For simple labor services, it determined the specific wage increase based on the understanding of typical salaries in each job category and recent market trends, thereby alleviating the burden on service providers by 180 million KRW.

Raising funds for management stability

**1 billion KRW**

## Community Development

### Revitalization of the Local Economy

KNF actively engages in various activities to promote regional economy through cooperation and shared growth. These efforts have been recognized, and it became the first public institution in the local area to receive the Daejeon Social Economy Award in the field of social contribution, and the Daejeon Metropolitan City Mayor Award for air conservation.

Becoming the first public institution in the local area to receive

**the Daejeon Social Economy Award**

### Promotion System of Regional Win-Win

Under the slogan of "Sustainable and Transparent 'Nuclear energy'-Love and Sharing," KNF has established a regional mutual growth system to create shared value in the local community and fulfill its social responsibilities. Two core values of the organization are regional win-win and regional cooperation--participation, sharing, and cooperation are the key features in the former, and communication and coexistence in the latter. Detailed plans are developed to implement various activities based on these keywords. To ensure effective social contribution, it has developed and implemented the KNF-type Core program, which is integrated with primary business activities. The program is divided into industry-linked, capacity utilization, and local community-focused categories, allowing for specific mutual growth activities to take place.

#### Regional win-win promotion system

<b>Slogan</b>	Sustainable and transparent 'Nuclear energy'-Love and sharing				
<b>Goal</b>	Creating shared values in local communities and enhancing social responsibility				
<b>Core value</b>	[Regional win-win] Participation, sharing, and cooperation		[regional cooperation] Communication, win-win		
<b>Direction [5 CO's]</b>	With & PostCovid-19 (Overcoming and Accompanying)	KNF-type core program (Detailed execution tasks)	Solidarity and cooperation (Collaboration Platform)	Multilateral communication channel (safety and harmony)	Regional win-win (4 districts and traditional markets)
	<b>COvid</b>	<b>COre</b>	<b>COLaboration</b>	<b>COmmunication</b>	<b>COmmunity</b>
<b>Detailed activities</b>	Quarantine supplies, blood donation participation, donation support	Primary business linkage type, Competency utilization type, Local friendly type	Carbon neutral green school, Support for families with disabilities, Revitalization of the social economy	Community safety and harmony residents' council, Implementation of the nuclear safety convention	Support for village festivals in local, Opening up of library materials, Revitalization of Traditional Markets
	<b>Volunteer group "Enertopia"</b>		<b>Networks</b>	<b>Enertopia fund/Matching grant</b>	
<b>Implementation organization</b>	<ul style="list-style-type: none"> <li>Leader(CEO)</li> <li>Deputy Leader(Director of Management Division)</li> <li>Secretary General(Director of Public Relations and Cooperation Office)</li> </ul>		<ul style="list-style-type: none"> <li>Regional Win-Win Council(Private/Government/Public)</li> <li>Publico Daejeon</li> <li>Local problem solving platform</li> </ul>	<ul style="list-style-type: none"> <li>Enertopia fund : Spontaneous fund raising by employees</li> <li>Matching grant : Fund contribution in proportion to the amount of employee creation</li> </ul>	

Purchase amount of local products

**9.1 billion KRW**

### Promote the revitalization of small business enterprises and traditional markets

For win-win cooperation and revitalization of the local economy, KNF has signed MOUs with local public institutions and Daejeon Metropolitan City to purchase equipment necessary for internal management and external events from traditional markets and small business owners. By strengthening the regional limited bidding system, purchases increased by 84.2% (5 billion KRW in 2021 → 9.1 billion KRW in 2022), and through Nara Market, purchases of products produced in Daejeon, Sejong, and Chungcheong increased by 42.9% (2.1 billion KRW in 2021 → 3 billion KRW in 2022). 57 stores participated in the flea market, which was held to contribute to the revitalization of the local market, and the Songgang Market Festival, which led from the planning stage, increased sales by 20% and the number of visitors to the market by 50%. In addition, it supported the vulnerable by purchasing products produced by village companies.

Songgang Market Festival sales increase

**20%**



<Ready, Value Flex> Poster

### Revitalization of the Social Economy Market

KNF participated in <Ready, Value Flex> with Publico Daejeon, a social contribution collaboration brand, and local public corporations to spread social values. The Value Flex Market is a product sales exhibition for social economy companies, and aims to provide opportunities for local social enterprises to expand their markets and create a foundation and ecosystem for the social economy. By sponsoring the Hanbit Civic Culture Festival, which was held at the same time at the same place, the total sales(20,825,000 KRW) of the Value Flex Market increased 2.1 times compared to the previous year, and it plans to promote online sales for future events.

Compared to the previous year, purchases of social enterprises and cooperative products increased

**55.7%**

### Expanding Support for Social Enterprises

To support local communities and social enterprises, KNF actively participates in the "One Company, One Social Enterprise" partnership program. It has entered into a partnership agreement with Witech Corporation, a producer of biodegradable masks and thermal insulation films, to purchase biodegradable insulation materials and support vulnerable groups during the winter season. KNF has designed and conducted programs to enhance the capacity of social economy enterprises in the areas of safety awareness and marketing education in collaboration with Publico Daejeon, Daejeon East Fire Station, and the Social Economy Research Institution. Furthermore, KNF actively purchases products produced by social enterprises and cooperative associations through public procurement. As a result, the purchasing amount increased by 55.7% compared to the previous year.



One company, one social enterprise alliance ceremony (with Witech Corporation)



Safety and marketing training for social economy enterprises

### Join to Local Issue Resolution Platform

As a member of the regional network "Publico Daejeon," which consists of 10 public institutions, KNF has signed a MOU for collaborative work to implement the values of ESG. It will continue to actively cooperate with relevant organizations and regional networks to address local issues and contribute to the community.

### Sponsor the Forest Care Program

KNF is participating in the psychological healing forest care program to relieve stress for the disabled and guardians of the disabled. The program was held for one night and two days at the Daejeon National Forest Sports Center, and a total of nine detailed programs helped the participating families relax and relax. After analyzing the changes in the stress index of the participants, the stress level and abnormal mood (comprehensive emotional disorder) were significantly reduced, and the subjective satisfaction was also high (4.88/5 points). Through this event, which was joined by public institutions and social cooperatives, it was able to lay the foundation for spreading across the country beyond the local platforms.



Forest care program for guardians of the disabled

### New Operation of a Cultural Camp(SMIM) for North Korean Defectors

For the first time in a community problem-solving platform, KNF proposed an agenda for North Korean defectors and held this event by adopting the agenda. In cooperation with three public and private institutions, it carried out activities to improve awareness of North Korean defectors, and provided various experience spaces and cultural performances to hold a venue for harmony.

#### Activities of 「SMIM」

Experience various North Korean food and play	Using North Korea-related props and taking self-photos	Explanation of the North Korean defector course using an electric wooden train	Experience making unified bracelets and planting unified succulents

### Contribution to Community

KNF has been consistently providing support, both tangible and intangible, for the local community. Its efforts have been recognized through the receipt of the Certificate of Appreciation from UNICEF Korea and the Social Welfare Joint Fundraising Committee's Contribution Award (Hope Award).

### Regional Cooperation Type Win-Win Project

KNF has been actively engaging in various activities to spread the value of sharing in both headquarters and branch communities. It has sponsored shelters for child abuse victims and facilities for disabled residents, as well as provided essential items to food markets. During the early winter season, it supported the sharing of kimchi, a symbol of love, and ensured a warm winter for elderly residents living alone. Additionally, the organization assisted with the creation of universal books that allow disabled and non-disabled children to read together, fostering harmony. Furthermore, it has sponsored several village festivals in the surrounding areas of our headquarters, contributing to the local community's vitality.



Sharing neighborhood love event in the lunar new Year's



Supporting severely disabled people in winter



Supporting low-income families in winter

### Volunteer Activities by Employees

KNF has been actively promoting blood donation culture and overcoming blood shortages through the visit of the Love Blood Donation Bus to their facilities. Approximately 1,000 employees have contributed through pre-registration and on-site donations in the past two years. Throughout the process, strict adherence to COVID-19 infection prevention measures has been ensured. Moreover, it has been committed to improving acceptance and understanding of the nuclear industry and its facilities through communication with the local community and residents. It actively opens its facilities for public use, such as establishing the KNF mini library to share book resources and planning to open meeting rooms as gathering spaces for local community residents. Furthermore, in the wake of the COVID-19 pandemic, KNF aims to enhance social contribution awareness among all employees and expand volunteer activities in collaboration with employees, aiming to provide extensive support and assistance.



Blood donation campaign of love

### Conducting Post Evaluation

To effectively manage their community engagement activities, KNF implements systematic monitoring and evaluation measures. After each social contribution event, it conducts surveys among participants and employees, seek advice from experts, and hold meetings to assess the outcomes. It reports on community collaboration activities on a quarterly basis and maintain a separate volunteer activity statistics system. It utilizes a Community Contribution Index as a performance indicator and set weights for each evaluation criterion to ensure objective evaluation results. By implementing such systematic performance management practices, it achieved the highest level in the Community Contribution Recognition Program in 2022, maintaining this top rating for four consecutive years as a community-contributing company. KNF has also received the Appreciation Award from the Happy Nuri Foundation in the Yuseong District, acknowledging our dedication to community service.

#### Evaluation method of social contribution index

Evaluation items	Budget allocation and execution	Using primary business-linked capabilities	Collaborating networks	Purchasing local product	Customer experience	Sum
Proportion	20	25	25	20	10	100

For 4 consecutive year, selected as a

**recognized company for community contribution**

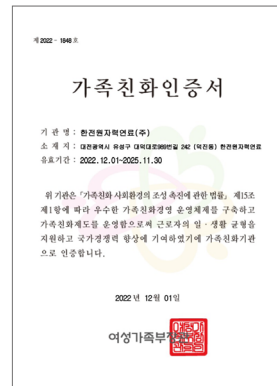
## Healthy Organizational Culture

### Work-Family Balanced Working Condition

KNF strives to create an environment where work and family life can harmonize by implementing customized work hour adjustments and welfare benefits programs for employees.

#### Operation of a Customized Family-Friendly System for Each Life Cycle

KNF has achieved a 100% utilization rate of automatic parental leave and childcare leave by recommending the application of an automatic leave system for maternity leave and childcare leave. It has ensured the effectiveness of the system by having its employees utilize parental leave for an average duration of more than one year. Building on this achievement, it has been recognized by the Ministry of Employment and Labor as a participating company in the "Work-Life Balance Campaign." Additionally, its efforts have led to a steady increase in the childcare leave rate among male employees, and it has received Family-Friendly Certification from the Ministry of Gender Equality and Family for 11 consecutive years, highlighting our commitment to promoting a family-friendly workplace.



Family-friendly certificate

Pregnant	Child birth	Parenting
<ul style="list-style-type: none"> <li>Expanding family planning leave for infertile couples</li> <li>Reduced working hours for employees during pregnancy or childcare</li> <li>The number of years of employment for short-term workers shall be recognized as before</li> </ul>	<ul style="list-style-type: none"> <li>Add childbirth congratulatory money to the in-house labor welfare fund</li> <li>Receiving in the form of a maternity souvenir voucher</li> </ul>	<ul style="list-style-type: none"> <li>Family care vacation</li> <li>Child care vacation</li> <li>Separating child care time</li> <li>Supporting medical treatment and examination for children under the age 5</li> <li>Operation of daycare centers in the workplace</li> </ul>

#### Implementation of Flexible Work System and Telecommuting

KNF has implemented flexible working hours and remoted work to allow employees to have personalized work arrangements. Employees can apply for a flexible commute schedule, known as a flexible time difference commuting system, as early as the day before. It has also revamped the system by expanding the range of eligible employees for such requests. The Technical Headquarters has established a self-regulated working hour management responsibility system, where working hours are automatically assigned based on the time of arrival, and this system is currently being implemented in selected departments based on their preferences.

### The Spread of Labor-Management Culture Based on Win-Win Cooperation

KNF is dedicated to strengthening a culture of mutual respect between the labor union and the company by establishing various channels of communication between the two parties. It has created platforms for effective communication and dialogue, ensuring that the agreed-upon matters are not only implemented but also monitored and followed up with regular feedback.

#### Formation of a Rational Labor Management Culture

In order to foster a constructive labor-management culture, KNF follows a systematic process for resolving issues when there are differing opinions between labor and management. It utilizes a working committee for pre-negotiations and ensure stable progress through the labor-management council, which includes a circulation process, to address key issues. Following the guidelines for public sector innovation, it has enhanced our welfare benefits system, addressing any deficiencies. The introduction of performance-based bonuses and the involvement of the labor union in the renovation process of employee housing and dormitories have improved employee acceptance and fostered a broader consensus through dialogue. These multi-faceted labor-management joint achievements have been recognized, leading KNF to be awarded as and best company for labor-management culture by the Ministry of Employment and Labor.



Letter of Certificate "Enterprise with Best Labor Management Culture 2022"

<b>Guidelines for Innovation in Public Institutions</b> Operation and consultation of non-regular labor-management consultative bodies to improve acceptability of welfare system improvement Three of the non-compliance items have been improved	<b>Remodeling of the House</b> Union participation in the entire process of improvement to create acceptance and empathy for employees (Migration after construction)	<b>Expanding in-house parking space</b> Construction of a parking lot on the new site of the headquarters Plant 3 to resolve parking difficulties and prevent safety accidents
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## Human Resources Development and Equal Opportunities

### Training of Nuclear Fuel Specialists

KNF is actively fostering highly skilled talents suited for their business through specialized training programs tailored to each job category. It aims to cultivate a culture of proactive learning by encouraging employees to pursue personal self-development.

#### Fostering Future Leaders to Secure Global Competitiveness

KNF annually selects a certain number of employees to participate in programs aimed at obtaining master's or doctoral degrees in respective fields. These programs are designed to enhance employees' expertise and knowledge in specialized areas. Additionally, KNF offers non-degree programs to cultivate professional managers. Graduates of these programs are assigned to various positions, including those that require specialized expertise, both domestically and internationally, including overseas branches. Furthermore, it manages a pool of experts to support key business initiatives.

#### Operating Customized Education Programs

KNF provides a curriculum suitable for each employee and improves the HRD system in a user-friendly manner.

<b>Training of professional personnel in core field</b>	<b>Specialized education in core field</b> <ul style="list-style-type: none"> <li>Operation of specialized courses such as nuclear power plant industrial engineering for the purpose of fostering professional and advanced human resources in key fields</li> </ul>	<b>Expansion of professional training programs</b> <ul style="list-style-type: none"> <li>Training of professional human resources, such as support for education linked to industry-academic research to cultivate scientific and automation technologies</li> </ul>	<b>Support for obtaining a professional certificate</b> <ul style="list-style-type: none"> <li>Continuous support for the acquisition and maintenance of management-related certificates</li> <li>Support for language and job competency education</li> </ul>
	<b>Reinforcing Innovation Capabilities by position</b>	<b>New employee</b> <ul style="list-style-type: none"> <li>Introductory training for new employees (2 weeks)</li> <li>1:1 mentoring training for new employees</li> </ul>	<b>Promoted person</b> <ul style="list-style-type: none"> <li>Promoted (to-be) person leadership</li> </ul>

### Introduction of In-House Ventures

KNF operates an in-house venture to drive new business initiatives and leverage existing capabilities for synergistic effects. Additionally, it plays a significant social role by commercializing ideas that cater to the needs of vulnerable people.

#### Prepared to Activate In-House Ventures

To foster innovative projects, KNF established an internal venture system. Through external consulting and the implementation of operational regulations, it has prepared for the launch of new business ventures. Additionally, KNF has created a positive atmosphere within the organization regarding ventures by providing awareness training and workshops to employees who show interest.

##### Process of in-house venture promotion

<b>Changing perception</b> <ul style="list-style-type: none"> <li>Awareness-changing education</li> <li>Workshop for interested employee</li> </ul>	<b>Holding competitions and selecting preliminary teams</b> <ul style="list-style-type: none"> <li>In-house venture contest</li> <li>Holding an evaluation committee</li> <li>Selection of reserve teams</li> </ul>	<b>Develop a reserve team and select a final team</b> <ul style="list-style-type: none"> <li>holding a deliberation committee</li> <li>Selection of in-house venture team</li> </ul>	<b>Convention and Operation</b> <ul style="list-style-type: none"> <li>In-house Venture Agreement Ceremony</li> <li>Operation of in-house venture business</li> </ul>
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#### In-House Venture Practicing ESG Values

The idea of developing a '3D pattern laser-based emergency detection system for the elderly and vulnerable' has been selected as the final project within the internal venture program. This initiative will leverage our technical expertise and software development know-how. By undertaking such projects, it is fulfilling its social responsibility as a public institution, spreading the values of ESG management, and making a positive impact on the local community.

### Establishing a Rational Personnel System and Strengthening Fairness

To promote gender equality values and foster an inclusive organizational culture, KNF implements various policies tailored to different departments, such as fair personnel management and gender-integrated leadership training. Additionally, efforts are made to improve the treatment of non-regular employees by implementing equal regulations in recruitment, welfare benefits, and aligning wage structures with regular employees. These measures aim to enhance the working conditions and overall well-being of non-regular employees within the organization.

#### Appointment of Talented Female

KNF includes female members in major committees and has appointed women executives who possess expertise in fields such as accounting and law, thereby meeting the government's criteria for the representation of women in executive positions. In recruiting candidates for significant internal positions, it adopts fair procedures by utilizing government data or employing an open application process, ensuring that capable female candidates are not excluded.

#### Empowerment of Female Employees

To prevent gender discrimination, KNF has implemented various measures, including organizing experimental networking and counseling sessions with female executives. Additionally, KNF differentiates between pre- and post-employment periods to take specific actions addressing gender-related issues.

- Application of blind recruitment in document and written screening
- Increase in the proportion of women among all interviewees, including those specializing in nuclear power



- Held a trial meeting with female executives
- Include conversations with seniors in the new employee curriculum
- Conduct women's leadership training according to position

#### Fair Recruitment Process

To prevent excessive hiring of non-regular employees, KNF has implemented a pre-screening system where a screening committee reviews the number, duration, and reasons for recruitment. Moreover, all hiring processes follow a blind recruitment principle, and a hiring committee oversees the entire process from planning to procedures to ensure fairness.



#### Improving the Treatment of Non-regular Employees

KNF has revised relevant regulations to ensure that non-regular employees receive the same benefits and compensation system as regular employees, in addition to welfare benefits and flexible working arrangements. When transitioning from non-regular to regular employment, the decision is based on evaluation results, and a standardized employment contract provided within the organization is issued in advance.

#### Increase Transparency of Employment

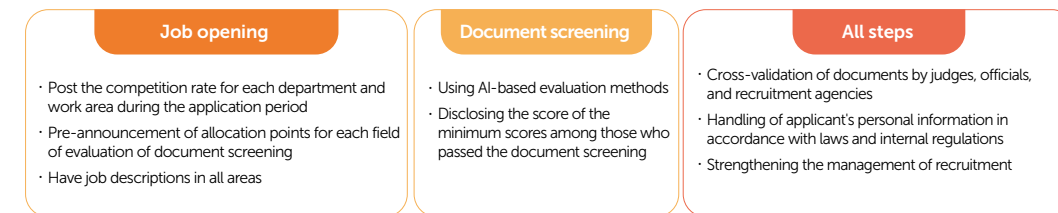
It has improved its selection process at each stage and introduced new evaluation methods to effectively identify suitable candidates for specific positions. Additionally, it has prepared necessary procedures to ensure smooth integration and successful onboarding of newly hired employees.

#### Leading Strategic Recruitment

KNF strives for job-focused recruitment and has implemented various procedures to assess the expertise of applicants. It has emphasized the importance of major-specific exams for each recruitment unit and increased the number of evaluators for nuclear specializations within research positions to ensure thorough validation. Additional points have been awarded for relevant certifications in technical, firefighting, and safety fields, and candidates have been evaluated through presentations of research papers and other PT activities to select competent individuals. After recruitment, comprehensive entry-level training is provided to newly hired employees, along with access to various information sources, to support systematic recruitment that has a tangible impact on the institution.

### Improve Recruitment Process

KNF has improved the system in each recruitment process to ensure fairness in the selection process. During the application, the competition rate was posted for each department and work area unit, and the score for each evaluation field of document screening was announced in advance to induce selection and preparation suitable for job applicants. In recognition of these efforts, the MOTIE completed the recruitment audit in 2022 without pointing out, and it was certified as an excellent fair recruitment agency for four consecutive years.



Achievement of the target of allocation of

**High school graduates and local talent**

### Expansion of Social Equity Employment

KNF is committed to providing fair opportunities to vulnerable groups in the recruitment process, fulfilling the social responsibility. It aims to achieve 100% of our social equal employment targets by 2030.

#### Increasing Employment among Employment Vulnerable Groups

Through strengthened promotion of disabled recruitment and the addition of suitable positions for disabled employees, KNF has made efforts to increase diversity in workforce. In 2022, it achieved a record number of disabled new hires with six employees. Furthermore, the institution expanded the opportunities for high school graduates by adding positions in the fields of electronics and chemical engineering, and for the first time in its history, it selected both college graduates and graduates from specialized vocational schools through the general recruitment process by excluding academic qualifications from the criteria for college graduates.

#### Improvement of the Youth Internship System

Young interns, selected through a blind recruitment process, are assigned to their desired positions and engage in one-on-one mentoring relationships with existing employees. Through the mentoring system, interns enhance their problem-solving abilities and have opportunities to showcase their job skills during presentations. In 2022, for the first time, a former intern was hired as a full-time employee, indicating the success of the youth internship program.

#### Follow-up After Recruitment

Even after the recruitment stage, KNF prepared follow-up measures so that employees who joined the institution could continue to work through social equity recruitment.



For 4 consecutive years, selected as an

**Excellent organization for fair recruitment**

In 2022, Department of Industry recruitment audit points

**Zero**

# Governance



## Importance of Issue

With the increasing demand and necessity for sustainable business practices in society, there is a growing focus on fair and transparent management policies and the expansion of ESG-related disclosures. For organizations in the nuclear fuel sector, particularly, ensuring public safety and promoting sustainable business practices through transparent information disclosure and effective stakeholder engagement have become essential. In response, KEPCO Nuclear Fuel has established an ESG Committee and strengthened corporate governance with the aim of promoting ESG management and transformation.

## Approach Method

To promote effective ESG management, KNF is strengthening ESG governance framework. It established a dedicated ESG Task Force team and diversified the participation of non-executive directors within the board to gather a wider range of opinions. It also conducts organization-wide integrity and ethics education programs to foster a sound organizational culture. Moreover, it actively engages with stakeholders through various communication channels to listen to their opinions and strive to promote a comprehensive understanding of human rights both internally and externally. Fulfilling its social responsibilities as a public institution, it maintains a sound financial structure by setting long-term goals and enhancing its risk management system to ensure the safety of nuclear power plant operations.

## Key Achievements

  
Certification of anti-corruption management system (ISO 37001) for  
**6 consecutive years**

  
The obligations of public institutions under the Conflict of Interest Prevention Act,  
**100% fulfillment**

  
Violations of Conflict of Interest Prevention Act  
**Zero**

  
Abuse of power and workplace harassment  
**Zero**

## Focus SDGs



# Integrity and Ethical Management

## Internalization of Integrity Perception

KNF operates various programs to establish a culture of integrity throughout the institution and employs multiple systems to proactively prevent corruption.

## Implementation of Customized Integrity Education

To enhance employees' awareness of integrity, regular integrity education programs are conducted, tailored to their roles and positions. These programs cover areas vulnerable to corruption based on job functions, education on integrity and anti-graft laws, and special lectures on anti-corruption leadership. Both in-person and online training sessions are conducted to ensure effective education.

## Spreading a Culture of Integrity

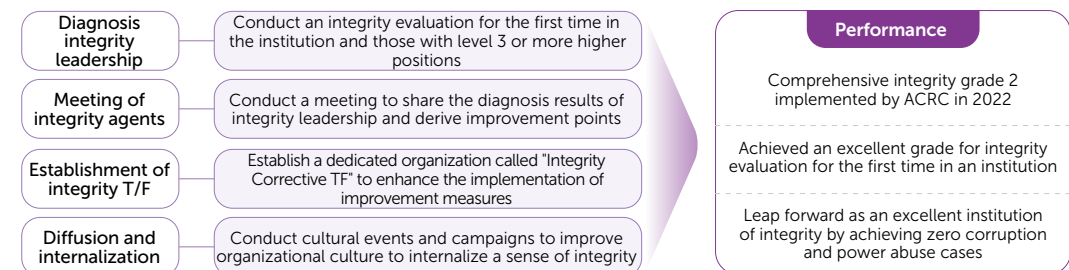
KNF is actively engaged in various efforts to promote a culture of integrity both internally and externally. It organizes the "Integrity Hi:Story" event, which includes the integrity quiz zone where employees can learn about relevant laws and regulations, as well as the integrity exhibition to cultivate employees' legal and ethical awareness. Additionally, it broadcast a monthly in-house program called "Integrity Warm Air" to further promote integrity among our employees. It also provides integrity education to its subsidiaries and partner organizations, support them in implementing integrity initiatives, and distribute integrity pledges such as the "Cheongryeom Seohanmun" (Integrity Oath). These actions demonstrate its commitment to generating tangible results and spreading a culture of integrity. The success of these efforts has been recognized through "the integrity effort evaluation," in which the organization achieved excellence on the first time it was assessed.

## Breaking-down Unreasonable Practices

In order to establish a healthy organizational culture, efforts are being made to improve inappropriate practices through internal systems and campaigns. The reporting system has been enhanced through the implementation of a simulated reporting system for workplace bullying, enabling employees to report such incidents. Furthermore, the performance evaluation system has been revised to include additional criteria to strengthen measures against workplace bullying. To foster two-way communication between the CEO and employees, the "Speak Up to the CEO" event has been organized, resulting in the rectification of four cases of misconduct. Additionally, the "119 Campaign" and the "Restart Dining Culture" were launched to improve departmental gatherings in the post-COVID-19 era.

## Promotion of Step-by-Step Integrity Reform

KNF conducted an unprecedented integrity leadership diagnosis to identify corruption risks. A total of 115 individuals, including top executives and employees in positions of authority, were surveyed on issues such as improper work orders, integrity culture, and the eradication of workplace bullying. The results revealed a score of 9.67 out of 10, indicating a high level of integrity within the organization. Furthermore, recognizing the significance of the MZ generation, the organization formed a group of integrity agents with a focus on this demographic and organized multiple meetings to establish integrity innovation tasks. The frequency of these meetings increased more than twofold between 2021 and 2022. Discussions during these gatherings centered around enhancing the commitment to integrity among managers, improving unreasonable practices, and tackling issues related to workplace bullying and abuses of authority. To ensure the effective execution of proposed ideas, the organization established the Integrity BARO Improvement Task Force (TF) and is actively driving six major integrity innovation tasks.



In integrity effort evaluation

**Achievement of excellence grade**

A case of power abuse

**Zero**

In 2022, Integrity agent meeting held

**58 times**

## Establishment of the Integrity Ombudsman System

KNF continuously enhances the institution's integrity and transparency by integrity ombudsman system. The integrity ombudsman system investigates institutional practices or policies that may unintentionally give rise to corruption during work and requests corrective actions within the institution. The system members are limited to professors, experts, and former high-ranking public officials, and they serve a term of two years with only one reappointment allowed. In 2022, the organization successfully implemented all four corrective actions requested by the system, demonstrating its commitment to addressing identified issues. Furthermore, efforts were made to establish channels of communication and collaboration with relevant agencies' integrity ombudsman systems, further fostering transparency and integrity.

## Strengthening the Anti-Corruption System

KNF has restructured its existing systems to enhance the infrastructure necessary for anti-corruption and ethical management. Efforts have been made to improve the ethical management system and strengthen internal controls and audits to ensure the alignment between the institution's operations and ethical management.

## Improvement of Ethical Management System

With the increasing public interest in the integrity of public institutions and the enactment of laws such as the Conflict of Interest Prevention Act, the organization revised its ethical management system and incorporated it into its medium- to long-term management strategy. As a result, the overall integrity and internal integrity of the institution have both improved by one grade, and it has met the criteria to be recognized as a mentor institution for integrity.

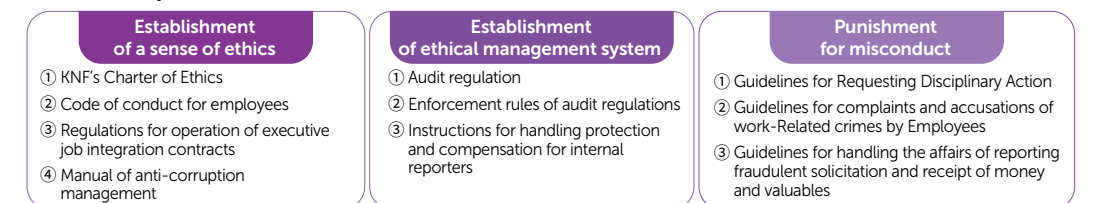
### Integrity and ethics management promotion system

New 2035 the mid- to long-term strategic system	Core value		Strategic task
	[New] Select 5 core values of integrity		[New] New strategic tasks to strengthen fairness and integrity infrastructure tailored to the public's eye level
Vision of integrity	Be Clean, Be Happy, Be Safe		
CEO's will	"In the event of an unsavory event that impairs integrity, respond firmly and quickly without any exceptions"		
Strategic direction	Enhance fairness and integrity management	Creation of Integrity Ethics Management Ecosystem	Leading a culture of integrity
	Integrity system innovation	Preemptive reinforcement of integrity infrastructure	Spread culture of integrity internal and external
Strategic tasks	<ul style="list-style-type: none"> <li>Diagnose managers' integrity leadership</li> <li>Identification and promotion of measures to improve integrity</li> </ul>	<ul style="list-style-type: none"> <li>Improvement and recertification ISO 37001</li> <li>Advancement of anti-corruption reporting and monitoring system</li> </ul>	<ul style="list-style-type: none"> <li>Holding integrity culture event and campaign</li> <li>Promotion of integrity meeting for partners and subsidiaries</li> </ul>

## Advanced Anti-Corruption Monitoring

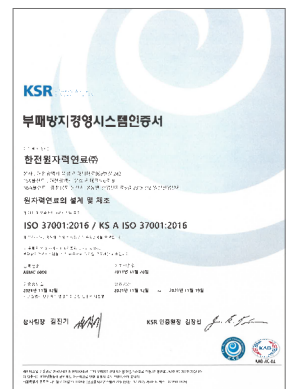
KNF implements internal controls and audits while utilizing an independent reporting system to prevent corruption. It has established a reporting channel which allows direct reporting to the standing auditor and set a internal reporting system integrated with the Anti-Corruption Portal of the Public Interest and Integrity Commission. In addition to the reporting system, the organization conducts specific audits on the operation of public contracts to identify areas for improvement and strengthen internal controls through ongoing routine audits. Through these efforts, it has maintained ISO 37001 certification for anti-corruption management systems for six consecutive years.

### Ethical code system



Certification of anti-corruption management system for

**6 consecutive years**





Compared to the previous year, ethical management budget

**Doubled**

### Expanded quantitative support input

KNF has increased resource allocation to strengthen ethical management. The budget for ethical management has doubled from 57.6 million KRW in 2021 to 168 million KRW in 2022. It has also established the KNF Integrity Award, which rewards outstanding employees engaged in integrity activities with mileage points, thereby expanding the reward system. Furthermore, the institution has introduced the position of Chief Ethics Officer (Ethics Part Leader) to increase personnel and ensure the integration of business operations and ethical management. The Performance Management Department has been merged with the Ethics Management Department to facilitate the alignment between business operations and ethical management. As a result, the overall department has been expanded and reorganized into the Ethics and Human Rights Management Office.

### Preparation for Conflict of Interest Prevention Act

In response to the implementation of the Conflict of Interest Prevention Act, KNF has prepared various measures to ensure compliance with the law. It will continue to enhance and reinforce the relevant regulations and policies to effectively prevent conflicts of interest within the organization.

### Establishment Prevention System of Conflict of Interest

To pro-actively respond to the Conflict of Interest Prevention Act targeting public officials, KNF has implemented a conflict of interest prevention system and actively promoted a culture of integrity.

#### Prevention system of conflict of interest

Direction	Establishing a preemptive institutional foundation	Establishment of Conflict of Interest Reporting System	Establishing a sense of compliance with employees
Tasks	<ul style="list-style-type: none"> <li>Establishment of Guidelines for Operation of Conflict of Interest Prevention System</li> <li>Revision of the Guidelines for Requesting Disciplinary Action</li> <li>Revision of related regulations such as personnel regulations</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of Conflict of Interest Reporting Center</li> <li>Designation of Conflict of Interest Prevention Officer</li> <li>Establishment of a reporter protection system</li> </ul>	<ul style="list-style-type: none"> <li>Holding a pledge ceremony for conflict of interest</li> <li>Conduct compliance training for employees</li> <li>Meeting of suppliers and subsidiaries</li> </ul>
Organization	[Resolution] Ethics and Human Rights Management Committee	[Practice] Office for the Promotion of Ethical Human Rights	[Advisory] Advisory Body on Conflict of Interest Prevention System
Monitoring	[Before incidents] Self-diagnosis checklist	[After incidents] Reporting center of conflict of interest	
Regulation	[New] Guidelines for operation of conflict of interest prevention system, Guidelines for protection and compensation of public interest reporters [Revised] Personnel regulations / contract regulations / reward and punishment regulations / guidelines on disciplinary action requests / executive and employee codes of conduct		

### Introduction of Conflict of Interest Prevention System

To comply with the Conflict of Interest Prevention Act, KNF has established a framework to ensure legal compliance. After conducting an assessment of the existing situation, it has introduced operational guidelines for the conflict of interest prevention system and established disciplinary guidelines to address violations of the law. Additionally, regulations have been enhanced to clearly identify individuals subject to restrictions on family employment and to require the mandatory submission of a declaration of limitations on contractual engagements. Furthermore, measures have been taken to strengthen the penalties for improper actions that exploit job-related confidentiality, aligning the organization's internal regulations with the Conflict of Interest Prevention Act.

### Building infrastructure to prevent conflicts of interest

To ensure effective prevention of conflicts of interest, KNF has appointed an Ethics Code Officer as the person in charge of conflict of interest prevention and established an advisory body for the conflict of interest prevention system. Additionally, a Conflict Reporting Center has been introduced to receive reports categorized into mandatory reporting, recusal reporting, and violation reporting, allowing relevant departments to take appropriate follow-up measures. These improvements have resulted in 100% compliance with the obligations of the Conflict of Interest Prevention Act for public institutions, and no cases of violation of the Conflict of Interest Prevention Act or related regulations have occurred.

Public institutions under the Conflict of Interest Prevention Act

**100% fulfillment**

Cases of Violation of the Conflict of Interest Prevention Act

**Zero**

### Improving the Effectiveness of Preventing Conflicts of Interest

KNF has distributed a self-assessment checklist to identify reporting obligations and prohibited acts related to conflicts of interest, and introduced a consultation service where individuals can seek advice from the responsible officer before making a conflict of interest-related report. Additionally, a joint pledge ceremony for conflict of interest prevention was held, involving the Anti-Corruption Agents, labor union representatives, and the CEO, where they discussed anti-corruption achievements and future plans. Furthermore, remote education on the Conflict of Interest Prevention Act was conducted for all employees, and efforts were made to provide guidance on the 10 major behaviors and corresponding penalties under the act through the internal network system. Based on these efforts, the organization achieved a perfect score in the conflict of interest prevention category during the comprehensive integrity evaluation conducted by the Anti-Corruption and Civil Rights Commission.

Comprehensive integrity survey corruption cases conducted by Anti-Corruption and Civil Rights Commission,

**Zero point deduction**

#### Efforts to prevent violations of the Conflict of Interest Prevention Act

Sortation	Practices
Education and special lecture	(High-ranking employees) Special lectures on the Act on the Prevention of Conflict of Interest between Management and Managers by inviting integrity instructors of the Anti-Corruption and Civil Rights Commission (Executives and employees) Promotion of online education on the Conflict of Interest Prevention Act for all executives and employees (External Customer) Support training for employees of major partners and subsidiaries to prevent conflicts of interest
Public relations and meetings	(Pop up promotion) Promoting pop-up windows related to the main contents of the Conflict of Interest Prevention Act and punishment standards for violations (Meeting) Conducting integrity ethics management meeting for partners and subsidiaries

### Expansion of Budget Management

The institution has revised its budget management regulations to prevent unnecessary budget waste and ethical misconduct. It is actively pursuing budget reduction based on detailed diagnostics.

### Improving Budget-related Procedures and Regulations

KNF has enhanced transparency in budget execution by revising its budget management system. It has refined the criteria for budget planning and conducted a thorough review of previous budget utilization. During the budget deliberation process, ESG self-assessment is performed to strengthen the validity verification system, and practical personnel participate in the investment project review committee to enhance transparency. Additionally, exemplary cases of budget reduction have been selected, resulting in the recovery of 3.1 billion KRW of unused budget through cost savings. Furthermore, various guidelines and manuals, such as those for gift card management, travel expenses, domestic business trips, and policy research services, have been substantially improved to eliminate budget waste. These efforts have led to no deductions in the comprehensive integrity index due to corruption in vulnerable areas.

### Strengthening Management of Corporate Credit Card

KNF has strengthened regulations on managing corporate credit cards to ensure thorough budget management. When a corporate credit card is issued, the card manager is required to sign a commitment to integrity. The cards are separated into corporate credit cards and business trip cards, and the total number of cards is monitored. Previously, the expenditure details were examined after using the corporate credit cards, but by specifying restricted industries, unnecessary budget waste unrelated to work is prevented in advance. Furthermore, corporate credit cards can not be used during late-night hours. These measures have resulted in zero reported cases of suspected improper use of corporate credit cards.

Suspected improper use of corporate card

**Zero**

## Disclosure of Information

### Transparent Disclosure of Information

KNF complies with disclosure standards and practices transparent management. It discloses public data that meet the needs of users and strive to enhance information accessibility, ensuring that the disclosed information is appropriately utilized.

### Improvement of Access to Information

KNF has improved the information access channels to ensure that the disclosed information is widely utilized. It responds promptly to information disclosure requests, avoiding cases of exceeding the response deadline or extending the response period. As a result, the disclosure rate for information disclosure requests increased from 87% in 2021 to 96% in 2022. Additionally, during the website renewal, efforts were made to enhance convenience and robustness for people with disabilities and the elderly, and the main design was modified to align with current trends. Thanks to these efforts, the monthly average number of visitors to the website increased by 17.3% compared to the previous year, and the organization received the 'Web Accessibility' quality certification from the Ministry of Science and ICT.

Disclosure rate for information disclosure requests in 2022  
**96%**

### Strengthening the Records Management System

KNF recorded a data error rate of 0% due to the advancement of data management, and plans to use it in various ways by opening new data.

A data error rate of  
**0%**

#### Data integrated management system

Background of promotion					
Need to establish and upgrade a system to open and use private data					
Key area	Open	Standard	Usage	Grounding	
Contents of promotion	<ul style="list-style-type: none"> <li>Expanding the opening by collecting opinions from the private sector, such as partners</li> <li>Seeking ways to discover open content</li> </ul>	<ul style="list-style-type: none"> <li>Checking for errors in open data</li> <li>Checking data integrity, including the latest data delivery</li> </ul>	<ul style="list-style-type: none"> <li>Increase the percentage of open data open formats</li> <li>Application for public data provision and timely handling of error reporting</li> </ul>	<ul style="list-style-type: none"> <li>In-house training on basic concepts of public data and private use cases</li> <li>Participate in common public data training</li> </ul>	

### Selective Data Sharing Expansion

KNF is progressively disclosing public data with a user-centric approach. It provides data regarding the technology the institution owns and discloses pre-specifications for bidding, procurement and ordering plans, as well as contracts and agreements. Immediate disclosure is made for reports on the transportation of nuclear materials and the management status of radioactive waste, demonstrating our commitment to environmental protection and safety. It is also promoting the original disclosure of work documents, achieving a current disclosure rate of 78.8%. For information that cannot be disclosed due to confidentiality or security reasons, the Information Disclosure Deliberation Committee establishes detailed guidelines to manage the disclosure decision.

Disclosure rate of original documents  
**78.8%**

### Increase the level of inspection of disclosure

KNF diligently performs information disclosure and reporting obligations in accordance with formal procedures. Four additional categories, including budget and litigation information, have been added to the website's management information disclosure. Results of disciplinary actions and environmental radiation levels are updated in real-time, fulfilling the public's right to know. Regular audits are conducted three times a year, and the disclosure departments of KNF and other organizations share information and conduct cross-checks to enhance the accuracy of integrated disclosures. Additionally, disclosure-related items are included in internal evaluations, and manuals have been developed and distributed internally along with external disclosure templates. Furthermore, as the number of detailed items related to ESG disclosure increased from 21 in 2021 to 29 in 2022, the organization diligently discloses this information to enhance accessibility for external stakeholders regarding its ESG management. These efforts have resulted in a decrease in the number of modification requests and disclosure penalties in the integrated disclosure system.

Compared to the previous year, the number of revisions to the integrated disclosure  
**decreased 3 times**

Compared to the previous year, disclosure penalty points  
**decreased by 4.45 points**

## Risk Management

### Revision of the Financial Management Plan

To achieve the government's new energy policy and the national task of becoming a "nuclear powerhouse," KNF is revising the medium to long-term financial management plan and maximizing the efficiency of resource allocation to ensure financial soundness. Additionally, efforts are underway to enhance the reliability and transparency of financial information by improving the internal accounting management system.

### Promotion of Achieve Mid- to Long-term Financial Goals

KNF is formulating its investment direction to ensure sustainable growth and improve its medium to long-term financial goals in response to the rapidly changing business environment. It is optimizing its assets by divesting non-core assets and pursuing resource allocation efficiency through institution-wide efforts to improve manufacturing costs and reduce expenses. Additionally, the institution is expanding investments in future industries while maintaining rational budgeting practices. Through these efforts to secure financial soundness, it aims to achieve our medium-term goal of reaching 600 billion KRW in revenue by 2035.

#### Measures to achieve financial goals

Measures to achieve financial goals	Asset maintenance	Cost reduction	Strengthening budget and exchange risk management	Expansion of future investment
	<ul style="list-style-type: none"> <li>Sale of non-core assets (idle sites, membership rights, investment companies, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Efforts to improve manufacturing costs at the enterprise level (process advancement, current expenses reduction, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Reduce cost and expense budgets</li> <li>Monitoring exchange rate fluctuations (every day)</li> <li>Foreign currency balance check (monthly)</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of critical/urgent investment (construction of plant 3, future R&amp;D, etc.)</li> <li>Current and non-core investment savings</li> </ul>

KNF's mid- to long-term financial objectives  
**Sales 600 billion KRW**

Operating profit ratio  
**13%**

Net income of total assets ratio  
**5%**

Debt ratio  
**under 50%**

#### Profitability/Growth Indicators reflecting financial objectives

	2022	2023	2024	2027	2035
<b>Sales (100 million KRW)</b>	2,792	4,205	4,418	4,979	6,142
<b>Operating profit (100 million KRW)</b>	336	421	606	439	801
<b>Total assets (100 million KRW)</b>	9,637	10,290	10,708	10,925	11,322

### Improving Financial Information Transparency

To enhance internal control functions in line with the advancement of ESG management systems, KNF is taking measures to strengthen the expertise in internal accounting management and enhance the understanding of all employees regarding the operation of these systems. These measures aim to establish a robust preventive response to corrupt practices. Additionally, regular tax audits are conducted to minimize tax risks and ensure transparency. The operation of the investment project review committee has also been improved to enhance objectivity and fairness in the project selection process.

External audit issue Zero, Accounting fraud Zero			
Improvement of internal accounting Management System	Jointly resolve issues of group companies through collaboration	Improve the understanding of all employees in the operation of the system	Check the operating system for third-party embezzlement incidents

### Maintaining Financial Structure Safety

In response to the risks posed by the "3 Highs" phenomenon (high inflation, high interest rates, high exchange rates) and non-financial risks resulting from internal control failures, KNF has established risk indicators for each type of risk and developed tailored management approaches. This allows for a comprehensive response system to future risks. Additionally, strategic budgeting is implemented to secure future growth foundations and drive sustainable management practices.

### Future Risk Diagnosis and Institution-wide Response System Operation

KNF is proactively addressing future risks by predicting and establishing a comprehensive response system to mitigate risks associated with the "3 Highs" phenomenon. Internally, it is enhancing internal controls and auditing processes to improve reliability. Externally, the institution is dealing with financial risks through cost reduction measures, public discourse on fund monitoring, and the foreign exchange risk management system. Building upon these efforts, it has secured an additional 26.6 billion KRW in revenue to supplement existing business operations and achieved positive outcomes such as maintaining healthy financial ratios and reaffirming tax transparency.

Risk classification	Financial risk			Non-financial risk
	Business risks from high prices	Liquidity risk due to high interest rates	Market risks from high exchange rates	Risk of reliability due to failure of internal control
Risk indicator	<ul style="list-style-type: none"> <li>Cost increase and decrease in profitability</li> </ul>	<ul style="list-style-type: none"> <li>Increase in interest cash crunch</li> </ul>	<ul style="list-style-type: none"> <li>Increased exchange rate volatility</li> <li>Foreign currency balance mismatch</li> </ul>	<ul style="list-style-type: none"> <li>Tax risks such as internal accounting design, operation, evaluation, and tax audit occurrence</li> </ul>
Management system	Organization	Committee for Innovation and Growth	Borrowing Evaluation Board	Exchange Risk Management Committee
	System	<ul style="list-style-type: none"> <li>Quarterly cost analysis and feedback</li> <li>Price monitoring and contract change</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring the daily fund marketplace</li> <li>Establishment of quarterly funding plans</li> </ul>	<ul style="list-style-type: none"> <li>Regular exchange rate trends and foreign currency balance inspection</li> </ul>
Management plans and strategies	<ul style="list-style-type: none"> <li>Increase price-linked contract</li> <li>Cost reduction through manufacturing efficiency and diversification of purchases</li> <li>Discovery of new businesses</li> </ul>	<ul style="list-style-type: none"> <li>Fund monitoring and public debate</li> <li>Securing low interest rates and minimizing new borrowing</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening the exchange risk response system</li> <li>Participation in seminars, forums to strengthen expertise</li> </ul>	<ul style="list-style-type: none"> <li>Operation of internal accounting management system</li> <li>Strengthening tax advisory and tax law education</li> </ul>
Performances	<ul style="list-style-type: none"> <li>Securing additional 26.6 billion KRW in sales from existing businesses</li> <li>Reduce manufacturing cost by 4.8%</li> </ul>	<ul style="list-style-type: none"> <li>Zero cash crunch</li> <li>Maintaining a sound financial ratio</li> </ul>	<ul style="list-style-type: none"> <li>Profit of 6.2 billion KRW related to foreign currency based on settlement of accounts</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening internal control and auditing</li> <li>Reinforcement of tax personnel and reinforcement of education</li> <li>Utilize external experts</li> </ul>

### Strategic of Budgeting

To ensure sustainable management and secure future growth foundations, KNF is actively pursuing rational and efficient budget allocation. By considering strategic priorities such as project importance and urgency, it reduces unnecessary costs and allocate saved resources to generate future growth drivers. Additionally, it monitors the budget execution performance of each headquarters and department, enabling the formulation of measures to address deviations from the planned execution and factors contributing to under performance. This monitoring process also aids in adjusting the scale of budget allocation for the following year.

Expected revenue generation of new businesses  
**459.1 billion KRW**

The highest net profit in the last five years  
**31.5 billion KRW**

2nd consecutive year of  
**Good financial position rating**

Compared to the previous year, foreign currency-related net profit  
**up 77%**

## Human Rights Management

### Strengthening the Human Rights Management System

As a public institution, KNF is committed to fulfilling its social responsibilities and creating a happy workplace. It strives to strengthen human rights management both internally and externally. To improve human rights impact assessments, it established a systematic foundation for human rights management. The organization operates workplace human rights protection programs and collaborate with local communities to achieve mutually beneficial human rights management, spreading awareness of human rights protection among internal and external stakeholders. Additionally, it fosters a culture of respect for human rights through campaigns to prevent human rights violations and by activating reporting mechanisms.

### Improving Human Rights Impact Assessment

KNF has revised human rights impact assessment response system and introduced new evaluation criteria based on the National Human Rights Commission's manual. The previous response system, which classified answers into "yes," "no," or "improvement needed," has been divided into five more detailed categories. Additionally, five new evaluation items related to workplace harassment and work-life balance have been introduced to enhance the accuracy of the assessments and promote a culture of eliminating workplace harassment and fostering a work-life balance.

### Operation of a Human Rights Protection Program in the Workplace

As social interest in the rights of vulnerable groups increases, there is a growing demand to expand tailored support systems and strengthen internal human rights protection. KNF is committed to establishing a workplace culture that safeguards human rights by expanding the employment of people with disabilities and eliminating discriminatory factors against non-regular workers. Efforts are being made to mitigate discrimination and establish a culture of human rights protection within the workplace. Furthermore, it has strengthened support systems tailored to different generations and achieved success in increasing the recruitment of female talents and expanding the proportion of female managers, leading to four consecutive years of recognition as an excellent company in fair recruitment practices.

<b>Expansion of the disabled workforce</b> <ul style="list-style-type: none"> <li>Expansion of employment for the disabled</li> <li>Creating a Working Environment for People with Disabilities by Working From Home</li> <li>Development of new jobs for people with disabilities</li> </ul>	<b>Mitigating discrimination among the working vulnerable</b> <ul style="list-style-type: none"> <li>Elimination of Discriminatory Factors for Non-regular Workers</li> <li>Support for life planning after retirement for senior class</li> </ul>
<b>Strengthening the Support System by Generation</b> <ul style="list-style-type: none"> <li>Strengthening the support system by generation with family members</li> </ul>	<b>Strengthening the use of female talent</b> <ul style="list-style-type: none"> <li>Promote the employment of fair women without discrimination</li> <li>Increasing the proportion of female managers</li> <li>Educational support for professional enhancement</li> </ul>

### Realization of Regional Win-Win Human Rights Management

KNF's efforts to promote human rights extend beyond the internal organization and reach out to the local community, cooperative companies, and vulnerable groups in a collaborative manner. Recognizing the unstable livelihoods of vulnerable groups amidst prolonged economic downturn, the institution is engaged in on-going sharing activities to support them. It actively contributes to the development of the local community's economy by supporting social enterprises and revitalizing traditional markets. Additionally, it implements human rights management that promotes collaboration with the local community by reducing security deposits, providing advance payment support, and offering information to alleviate the economic burden on partner companies.

### Strengthening the Prevention and Relief Activities of Human Rights Violations

To establish a culture of respect for human rights and ensure effective procedures for addressing human rights violations, KNF operates its own programs. It conducts human rights campaigns and events to internalize a culture of human rights within the organization and provide education on preventing different types of human rights violations to our employees, aiming to pro-actively prevent such incidents. Furthermore, it has expanded and improved its reporting channels for addressing human rights violations. The organization focuses on enhancing protection for whistleblowers and improving the convenience of the reporting system, thus fostering a healthy reporting culture within the organization.

Score of KNF human rights index  
**9.82 points**

2022 Selected by the Ministry of Employment and Labor for  
**Outstanding labor-management culture**

2022 selected by the Ministry of Gender Equality and Family for  
**Family-friendly certified company**



KNF human rights day

Disciplinary actions against abuse of power and workplace harassment  
**Zero**



# 05

## Appendix

- Financial Statements
- Social · Environmental Data
- Certification · Award and Membership
- UN Global Compact · UN SDGs
- GRI STANDARDS INDEX
- Independent Assurance Statement

# Financial Statements

## Statement of Financial Position

Description	Current : 2022.12.31. Previous : 2021.12.31.	
	Year of 2022	Year of 2021
<b>Assets</b>		
<b>I . Current Assets</b>	378,815,621,003	367,800,974,108
1. Cash and cash equivalents	469,646,274	1,515,961,799
2. Financial assets	1,583,098,755	1,817,310,853
3. Accounts and other receivables	73,721,774,048	93,466,304,147
4. Inventory	291,941,368,943	261,998,147,743
5. Non-financial assets	11,099,732,983	9,003,249,566
<b>II . Non-current Assets</b>	570,639,263,467	469,447,749,607
1. Financial assets	6,337,386,219	6,732,088,279
2. Long-term accounts and other receivables	576,977,624	1,056,748,077
3. Investments in equity-accounted investees	4,155,006,612	4,103,985,702
4. Tangible assets	478,663,575,130	390,533,215,327
5. Intangible assets	18,910,853,358	16,697,417,302
6. Deferred tax assets	46,387,303,874	49,669,859,531
7. Non-financial assets	547,797,347	654,435,389
8. Net defined benefit assets	15,060,363,303	0
<b>Total Assets</b>	<b>949,454,884,470</b>	<b>837,248,723,715</b>
<b>Liabilities</b>		
<b>I . Current Liabilities</b>	378,815,621,003	367,800,974,108
1. Accounts and other payables	469,646,274	1,515,961,799
2. Non-financial liabilities	1,583,098,755	1,817,310,853
3. Income tax payable	73,721,774,048	93,466,304,147
4. Provisions	291,941,368,943	261,998,147,743
5. Financial liabilities	11,099,732,983	9,003,249,566
<b>II . Non-current Liabilities</b>	570,639,263,467	469,447,749,607
1. Financial liabilities	6,337,386,219	6,732,088,279
2. Employee benefit liabilities	576,977,624	1,056,748,077
3. Provisions	4,155,006,612	4,103,985,702
4. Non-financial liabilities	478,663,575,130	390,533,215,327
<b>Total Liabilities</b>	<b>490,214,872,946</b>	<b>405,613,849,060</b>
<b>Equity</b>		
<b>I . Paid-in Capital</b>	93,151,000,000	93,151,000,000
<b>II . Retained earnings</b>	366,089,011,524	338,483,874,655
<b>III. Other components of equity</b>		
<b>Total Equity</b>	<b>459,240,011,524</b>	<b>431,634,874,655</b>
<b>Total Liabilities and Equity</b>	<b>949,454,884,470</b>	<b>837,248,723,715</b>

## Statement of Comprehensive Income

Description	Current : 2022.1.1.~2022.12.31. Previous : 2021.1.1.~2021.12.31.	
	Year of 2022	Year of 2021
<b>I . Sales</b>	304,405,239,336	323,729,190,967
<b>II . Cost of Goods sold</b>	244,905,390,230	255,262,505,825
<b>III. Gross Profit</b>	59,499,849,106	68,466,685,142
<b>IV. Selling and Administrative Expenses</b>	22,349,808,593	19,627,913,057
<b>V . Operating Profit</b>	37,150,040,513	48,838,772,085
<b>VI. Other Income</b>	460,266,890	603,864,784
<b>VII. Other Expenses</b>	425,720,000	5,140,100,159
<b>VIII. Other Profit (Loss)</b>	5,926,835,206	-12,183,399,565
<b>IX. Financial Income</b>	1,551,840,660	1,365,515,634
<b>X . Financial Cost</b>	4,283,449	2,119,670
<b>XI. Share of Profit (Loss) of Equity accounted Investees</b>		
<b>XII . Income before Tax</b>	44,658,979,820	33,482,533,109
<b>XIII. Tax Expenses</b>	13,150,685,532	7,683,692,130
<b>XIV. Ongoing Operating Income</b>		
<b>XV . Discontinued Operating Income</b>		
<b>XVI. Net Income for the Current Period</b>	31,508,294,288	25,798,840,979
<b>XVII. Other Comprehensive Income for the Current Period</b>	15,360,199,468	3,025,592,156
1. Items that will not be reclassified as profit or loss	15,360,199,468	3,025,592,156
1) Remeasurement factor of net defined benefit liabilities	15,360,199,468	3,025,592,156
2) Share of Retained Earnings in Associates Subject to Equity Method		
3) Share of Other Comprehensive Income in Associates Subject to Equity Method		
<b>XVIII. Total comprehensive income</b>	46,868,493,756	28,824,433,135
<b>X IX. Earnings per share</b>		
<b>Basic earnings per share</b>	3,382	2,770

## Statement of Changes in Equity

Description	Current : 2022.1.1.~2022.12.31. Previous : 2021.1.1.~2021.12.31.			
	Paid-in Capital	Retained Earnings	Other Components of Equity	Total
2021. Jan. 1. (Beginning of the previous period)	93,151,000,000	315,062,199,520		408,213,199,520
Changes in Comprehensive Income :				
Net income for the previous period		25,798,840,979		25,798,840,979
Remeasurement of the net defined benefit liability		3,025,592,156		3,025,592,156
Share of Other Comprehensive Income in Associates Subject to Equity Method				
Transactions with shareholders recognized directly in equity				
Payment of dividends		- 5,402,758,000		- 5,402,758,000
2021. Dec. 31. (End of the previous period)	93,151,000,000	338,483,874,655		431,634,874,655
2022. Jan. 1. (Beginning of the current period)	93,151,000,000	338,483,874,655		431,634,874,655
Effect of Amendment of Financial Accounting Standards Update No. 1037		- 7,656,742,287		- 7,656,742,287
2022. Jan. 1. (Beginning of the current period after the Amendment)	93,151,000,000	330,827,132,368		423,978,132,368
Changes in Comprehensive Income:				
Net income for the current period		31,508,294,288		31,508,294,288
Remeasurement of the net defined benefit liability		15,360,199,468		15,360,199,468
Share of Other Comprehensive Income in Associates Subject to Equity Method				
Transactions with shareholders recognized directly in equity				
Payment of dividends		- 11,606,614,600		- 11,606,614,600
2022. Dec. 31. (End of the current period)	93,151,000,000	366,089,011,524		459,240,011,524

## Summary Cash Flow Statement

Description	Current : 2022.1.1.~2022.12.31. Previous : 2021.1.1.~2021.12.31.	
	Year of 2022	Year of 2021
<b>I. Cash Flows from Operating Activities</b>	58,621,031,890	50,679,024,724
1. Cash generated from operations	76,899,889,590	60,342,068,911
2. Interest received	504,649,452	274,721,590
3. Interest paid	-3,381,548,195	-2,542,321,497
4. Dividends received	833,400,000	833,400,000
5. Income taxes paid	-16,235,358,957	-8,228,844,280
<b>II. Cash Flows from Investment Activities</b>	-105,131,936,615	-52,567,810,288
<b>III. Cash Flows from Financing Activities</b>	45,480,218,451	-2,140,106,868
<b>IV. Increase (Decrease) in Cash and Cash Equivalents before Reflecting Effects of Exchange Rate Changes</b>		
<b>V. Effects of Exchange Rate Changes on Cash and Cash Equivalents</b>	-15,629,251	140,041,838
<b>VI. Net Increase in Cash and Cash Equivalents</b>	-1,046,315,525	-3,888,850,594
<b>VII. Cash and Cash Equivalents at the Beginning of the Year</b>	1,515,961,799	5,404,812,393
<b>VIII. Cash and Cash Equivalents at the End of the Year</b>	469,646,274	1,515,961,799

## Social · Environmental Data

### Employee Status

Category			Unit	2020		2021		2022		
				M	F	M	F	M	F	
Employ Status	Location	Domestic	Persons	1,060	91	1,027	98	1,027	102	
		Overseas		2	0	2	0	2	0	
	Type of Employment	Regular employment		1,055	81	1,013	76	986	82	
		Non-regular employment		7	10	15	16	42	16	
		Unlimited Contract employment		1	4	1	4	1	4	
	Age	Below the age of 30		143	25	118	22	112	25	
		30~49		606	54	624	62	630	63	
		Over the age of 50		313	12	287	12	287	14	
	Total			1,062	91	1,029	96	1,029	102	

### Employee Diversity

Category			Unit	2020		2021		2022	
				M	F	M	F	M	F
Managerial Positions	Headcount	Persons	4	0	3	1	3	1	
Employment Status of People with Disabilities	Total Number	Persons	27	0	25	0	27	0	
	Proportion	%	2.54%	0.00%	2.43%	0.00%	2.62%	0.00%	
Patriots/Veterans and Bereaved Families	Total Number	Persons	43	0	41	0	39	0	
	Proportion	%	4.05%	0.00%	3.98%	0.00%	3.79%	0.00%	

### Recruitment and Turnover Status

Category			Unit	2020		2021		2022	
				M	F	M	F	M	F
New Hires	Number of new hires	Persons	34	7	15	6	30	5	
Turnover Status	Number of voluntary turnover	Persons	9	6	10	2	13	1	
	Employee turnover rate	%	0.85%	6.59%	0.97%	2.08%	1.26%	0.98%	

### Maternity and Parental Leave Utilization Status

Category			Unit	2020		2021		2022	
				M	F	M	F	M	F
Number of employees who took maternity leave			Persons	48	5	53	5	64	5
Number of employees who took parental leave				14	10	19	13	23	17
Number of employees who returned to work after parental leave				10	3	14	3	12	7
Number of employees who have worked for 1 year since reemployment				9	3	14	3	12	7

### Labor Union Membership Status

Category	Unit	2020	2021	2022
Total Number	Persons	1,164	1,156	1,164
Union Members		897	879	863
Membership Rate		77%	76%	74%

### Activities Contributed to Society

Category	Unit	2020	2021	2022
Donation (Society)	Million won	236	205	214

### Survey on Customer Preference

Category	Unit	2020	2021	2022
Survey on customer preference	Score	99.5	99.2	99.8

### Environmental Performance

Category		Unit	2020	2021	2022
Greenhouse Gas Emission	Total GHG emissions	tCO <sub>2eq</sub>	15,531	15,524	16,053
	Scope 1 emissions	tCO <sub>2eq</sub>	1,969	2,385	2,299
	Scope 2 emissions	tCO <sub>2eq</sub>	13,562	13,139	13,754
	Reduction in GHG emissions	tCO <sub>2eq</sub>	7,012	9,693	10,822
Energy Usage	Total energy usage	TJ	396	402	415
	Electricity usage	TJ	346	343	359
	City gas usage	TJ/million won	47	57	55
	Heating usage	TJ	-	-	-
	Gasoline, Diesel, LPG	TJ	2	1	1
Water Usage	Water usage volume	ton	117,090	133,303	147,219
Waste Volume	Normal discharge amount	ton	391.56	368.24	344.4
Waste Recycled	Recycling volume	ton	132.96	110.59	107.23

### Safety Management

Category		Unit	2020	2021	2022
Industrial Accident Rate	Workplace accident rate	%	0.35	0.18	0.18
	Number of casualties	Persons	4	2	2

\* Industrial accidents not considered as serious industrial accidents  
 ※ Serious industrial accident : It refers to an accident that has caused any of the following results among industrial accidents under subparagraph 1 of Article 2 of the Occupational Safety and Health Act  
 1. More than one death occurred  
 2. The same incident resulted in two or more injuries requiring treatment for more than six months  
 3. More than 10 occupational diseases prescribed by Presidential Decree, such as acute addiction, occur within one year due to the same harmful factors

## Certification · Award and Membership

### Certification and Award Performance Status

2022	Certification and Award Performance	Supervisory Institution (Certifying Body)
Dec.	Selection of Excellent Public Sector Organizations for Greenhouse Gas Reduction	Ministry of Environment
Dec.	Family-Friendly Certification	Ministry of Gender Equality and Family
Dec.	Exemplary Organization for Fair Recruitment	Korea Management Registrar
Dec.	Excellence Award for Integrity and Ethics in the Public Sector	The Institute of Internal Auditors Korea
Nov.	National Quality Management Award	Korean Standards Association
Nov.	Certificate of Commendation for Technology Sharing Sector	Ministry of Trade, Industry and Energy
Jul.	Certification as a KOLAS Accredited Calibration Institution	KOLAS
Jun.	Certification of Excellence in Labor-Management Culture	Ministry of Employment and Labor
Jun.	ISO 14001 Certification for Environmental Management System	Korean Standards Association
Feb.	Obtaining Approval for New Fuel Transportation Container for light-water reactor	Nuclear Safety and Security Commission
2021	Certification and Award Performance	Supervisory Institution (Certifying Body)
Dec.	Selection of Public Sector Organizations for Achieving Greenhouse Gas Reduction Targets for 10 Consecutive Years	Ministry of Environment
Dec.	Award of the Export Tower (70 Million Dollars)	Korea International Trade Association
Nov.	Ministerial Commendation for Contributions to Nuclear Technology	Korea Management Registrar
May	Ministerial Commendation for Contributions to Nuclear Technology	Ministry of Science and ICT

### Membership Status

NO	Name of Association and union	NO	Name of Association and union
1	Daedeok Innopolis Association	22	Korean Standards Association
2	Daejeon-Sejong-Chungnam Environmental Engineers Association	23	Korea Project Management Association
3	Daejeon-Chungnam Environmental Preservation Association	24	Korea Accounting Association
4	Daejeon Chamber of Commerce and Industry	25	WNA(World Nuclear Association)
5	Korea Electric Association	26	WNFM(World Nuclear Fuel Market)
6	Association of Public Institution Auditors Korea (APIA Korea)	27	Daedeok Innopolis Fire Safety Measures Consultative Council
7	Korea Association of Standards & Testing Organizations	28	Korea Energy Foundation (WEC Korean Member Committee)
8	Korea Management Association	29	Energy Future Forum
9	Korean Association for Radiation Application	30	Korean Association for Radiation Protection
10	Korea International Trade Association	31	MOTIE Emergency Planning Consultative Council
11	Korean Radioactive waste Society	32	Korea Institute of Nuclear Materials Management
12	Korea Industrial Technology Association	33	Facility Management Specialist Group
13	Korean Institute of Plant Maintenance	34	Korea Business Communicators Association
14	Korea Engineering & Consulting Association	35	Consortium of CERT
15	Women in Nuclear Korea	36	CDaedeok Innopolis Defense Council
16	Korea Nuclear Equipment Advancement Association	37	Korea Productivity Center
17	Korea Institute of Nuclear Industry Promotion	38	Korean National Quality Award winner
18	The Korea Atomic Industrial Forum	39	The Korean Association for Public Administration
19	Korea Academy of Nuclear Safety	40	The Institute of Internal Auditors Korea
20	Korea Nuclear Society	41	UN Global Compact
21	Korea Nuclear Association for International Cooperation		

## UN Global Compact · UN SDGs

### UN Global Compact

KEPCO Nuclear Fuel (KNF) is committed to sustainable management through joint efforts between labor and management, including the declaration of ESG management, in order to adhere to internationally recognized standards of corporate social responsibility. As part of this endeavor, KNF has joined the UNGC, a UN initiative aimed at promoting and advancing corporate social responsibility in the four key areas of human rights, labor, environment, and anti-corruption. KNF is committed to evolving as a trusted and environmentally friendly nuclear energy company, striving for sustainable development. In pursuit of this objective, KNF takes a proactive stance in environmentally friendly management and environmental conservation. **Furthermore, KNF endeavors to generate social value through inclusivity and the establishment of a safe society, and aims to establish a transparent and fair governance structure. Going forward, KNF pledges to adhere to the Ten Principles of the UNGC and embrace the ESG principles as the foundation for setting and implementing shared goals between labor and management.**

**Human Rights**

1. We support and respect declared human rights protection internationally.
2. We confirm that we are not complicit in human rights abuses.

**Labor**

3. We ensure the freedom of association and the right to collective bargaining.
4. We exclude all forms of forced labor.
5. We effectively abolish child labor.
6. We eliminate employment and workplace discrimination.

**Environment**

7. We support a preventive approach to environmental issues.
8. We take a lead in assuming greater environmental responsibility.
9. We support environmentally-friendly technology development and diffusion.

**Anti-corruption**

10. We strive to eradicate all forms of corruption, including unfair acquisition and bribery.

### UN Sustainable Development Goals

The Sustainable Development Goals (SDGs), adopted by the United Nations General Assembly, constitute a set of 17 shared objectives for humanity, aiming to achieve sustainable development by the year 2030. The 17 SDGs and their corresponding 169 targets outline the direction that humanity should strive for in five key areas: People, Planet, Prosperity, Peace, and Partnership. KEPCO Nuclear Fuel actively supports the United Nations SDGs in its pursuit of sustainable development. We strives to ensure sustainability throughout our business operations by making every effort to secure it.



- |   |  |  |
|---|--|--|
| <ol style="list-style-type: none"> <li>1. No Poverty</li> <li>2. Zero Hunger</li> <li>3. Good Health and Well-being</li> <li>4. Quality Education</li> <li>5. Gender Equality</li> <li>6. Clean Water and Sanitation</li> </ol> | <ol style="list-style-type: none"> <li>7. Affordable and Clean Energy</li> <li>8. Decent Work and Economic Growth</li> <li>9. Industry, Innovation and Infrastructure</li> <li>10. Reduced Inequalities</li> <li>11. Sustainable Cities and Communities</li> <li>12. Responsible Consumption and Production</li> </ol> | <ol style="list-style-type: none"> <li>13. Climate Action</li> <li>14. Life below Water</li> <li>15. Life on Land</li> <li>16. Peace, Justice and Strong Institutions</li> <li>17. Partnerships for the Goals</li> </ol> |
|---|--|--|



# GRI Standards Index

Statement of use		2023 KEPCO Nuclear Fuel Sustainability Report Reference to GRI 2021 Standards (Reporting period : 2022.01.01~2022.12.31.)				
GRI 1 used		GRI 1 : Foundation 2021				
Applicable GRI Sector Standard(s)		N/A				
GRI Standards	Category	Disclosure No	Disclosure Name	Page	Etc.	
<b>Universal Standards</b>						
<b>GRI 2: General Disclosures 2021</b>	The organization and its reporting practices	2-1	Organizational details	12-13		
		2-2	Entities included in the organization's sustainability reporting	About this report		
		2-3	Reporting period, frequency and contact point	About this report		
		2-4	Restatements of information	2		
		2-5	External assurance	98-99		
	Activities and workers	2-6	Activities, value chain and other business relationships	18-31		
		2-7	Employees	92		
		2-8	Workers who are not employees	92		
	Governance	2-9	Governance structure and composition	36		
		2-10	Nomination and selection of the highest governance body	36		
		2-11	Chair of the highest governance body	36		
		2-12	Role of the highest governance body in overseeing the management of impacts	36-37		
		2-13	Delegation of responsibility for managing impacts	38		
		2-14	Role of the highest governance body in sustainability reporting	36-37		
		2-15	Conflicts of interest	80-81		
		2-16	Communication of critical concerns	36-37		
		2-17	Collective knowledge of the highest governance body	36		
		2-18	Evaluation of the performance of the highest governance body	37		
		2-19	Remuneration policies	N/A		
		2-20	Process to determine remuneration	N/A		
		2-21	Annual total compensation ratio	N/A		
		Strategy, policies and practices	2-22	Statement of sustainable development strategy	6-7	
			2-23	Policy commitments	34-35	
	2-24		Embedding policy commitments	72, 74-75, 85		
	2-25		Processes to remediate negative impacts	79-81, 84		
	2-26		Mechanisms for seeking advice and raising concerns	79-81		
	2-27		Compliance with laws and regulations	78-79		
	2-28		Membership associations	94		
	Stakeholder engagement	2-29	Approach to stakeholder engagement	40-41		
		2-30	Collective bargaining agreements	93		
<b>Material Topics</b>						
<b>GRI 3: Material Topics 2021</b>	Disclosures on material topics	3-1	Process to determine material topics	42		
		3-2	List of material topics	42-43		
		3-3	Management of material topics	42-43		

GRI Standards	Category	Disclosure No	Disclosure Name	Page	Etc.
<b>Economic</b>					
<b>GRI 201: Economic Impacts 2016</b>	Economic impacts	201-1	Direct economic value generated and distributed	18-31	
<b>GRI 203: Indirect Economic Impacts 2016</b>	Indirect economic impacts	203-1	Infrastructure investments and services supported	69-71	
		203-2	Significant indirect economic impacts	66-70	
<b>GRI 205: Anti-corruption 2016</b>	Anti-corruption	205-2	Communication and training about anti-corruption policies and procedures	79	
<b>Environment</b>					
<b>GRI 302: Energy 2016</b>	Energy	302-1	Energy consumption within the organization	93	
<b>GRI 303: Water and Effluents 2018</b>	Water and Effluents	303-5	Water consumption	93	
<b>GRI 305: Emissions 2016</b>	Emissions	305-1	Direct (Scope 1) GHG emissions	93	
		305-2	Energy indirect (Scope 2) GHG emissions	93	
<b>GRI 306: Waste 2020</b>	Waste	306-2	Management of significant waste-related impacts	48-52	
		306-3	Waste generated	93	
<b>Social</b>					
<b>GRI 401: Employment 2016</b>	Employment	401-1	New employee hires and employee turnover	92	
		401-3	Parental leave	92	
<b>GRI 403: Occupational Health and Safety 2018</b>	Occupational health and safety	403-1	Occupational health and safety management system	60-64	
		403-2	Hazard identification, risk assessment, and incident investigation	28-29, 61	
		403-3	Occupational health services	Information unavailable	
		403-4	Worker participation, consultation, and communication on occupational health and safety	39, 72	
		403-5	Worker training on occupational health and safety	60-61	
		403-6	Promotion of worker health	61	
		403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	61-64	
		403-9	Work-related injuries	93	
		<b>GRI 404: Training and Education 2016</b>	Training and education	404-2	Programs for upgrading employee skills and transition assistance programs
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	Diversity and Equal opportunity	405-1	Diversity of governance bodies and employees	36, 92	
<b>GRI 413: Local Communities 2016</b>	Local communities	413-2	Operations with significant actual and potential negative impacts on local communities	No such place of business	
<b>GRI 414: Supplier Social Assessment 2016</b>	Supplier social assessment	414-2	Negative social impacts in the supply chain and actions taken	No applicable cases	
<b>GRI 416: Customer Health and Safety 2016</b>	Customer health	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	No applicable cases	
<b>GRI 418: Customer Privacy 2016</b>	Customer privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	No applicable cases	

# Independent Assurance Statement

## To the Stakeholders of KEPCO NF

KOSRI (the "Assurance Provider") was requested by the 2023 KEPCO NF Sustainability Report (the "Report"). This Assurance statement is an independent opinion on the validity of the information contained in the Report in accordance with internationally recognized assurance methodologies. The opinion will be provided to KEPCO NF's management and shared with KEPCO NF's stakeholders. All information and assertions stated in the report is the responsibility of the KEPCO NF.

## Independence and Competence

The assurance provider does not have any interest with KEPCO NF that could compromise its independence and impartiality other than to perform the assurance engagement on the Report. The assurance provider is a certified organization that has a license agreement with AccountAbility, a global consulting and standards organization, to assure AA1000 reports and is the publishing partner for the Korean version of AA1000AS v3. All assurance results have been responsibly reviewed by appropriately qualified assurance auditors based on their work history and expertise in sustainability.

## Scope of Assurance

We assured the sustainability management strategy, implementation, and performance of KEPCO NF, including the head office, TSA Plant, NSA Plant, and Gyeongju Branch, from January 1, 2022 to December 31, 2022 (including the first half of 2023 for some qualitative performance), and the material issues included in the report and the materiality judgments results. The financial information included in the report appendix, the contents posted on KEPCO NF's website, and data and information about the organization's partners and contractors outside the report's reporting boundaries were excluded from the scope of assurance.

## Assurance Standards

The assurance provider confirmed the AA1000AS v3 at the Type 1 and Moderate levels and assessing adherence with the four principles (Inclusivity, Materiality, Responsiveness, and Impact) presented in the AA1000AP (2018). The report was assured for adherence with the Universal Standards and Topic Standards of the GRI Standards (2021).

### [GRI Standards]

- Universal Standards
  - GRI 1 : Foundation 2021 - Reporting Principles
  - GRI 2 : General Disclosure 2021 (2-1~30)
  - GRI 3 : Material Topics 2021 (3-1~3)
- Topic Standards
  - 201-1, 203-1~2, 205-2, 302-1, 303-5, 305-1~2, 306-2~3, 401-1, 401-3, 403-1~7, 403-9, 404-2, 405-1, 413-2, 414-2, 416-2, 418-1

## Methodology of assurance

The assurance provider conducted the assurance engagement in the following ways

- Reviewed the sustainability management plan and implementation system
- Reviewed stakeholder engagement and approach
- Reviewed the appropriateness of the materiality assessment process and the material issues identified
- Reviewed report data errors, omissions, and inaccuracies and review whether or not they are reflected
- Conducted due diligence and interviewed with working-level staff on supplementary items that require performance figures, certifications, etc.

## Assurance Opinion

The assurance provider has confirmed that this report is in accordance with the reporting principles of the GRI Standards (2021) and, based on the materials and information provided, and has not found any errors and inaccuracies in the detailed indicators of the Universal Standards and Topic Standards. Our opinions on the four Principles of AA1000AP 2018 is as follows.

### • Inclusivity

KEPCO NF recognized the importance of stakeholders' participation in sustainability management. KEPCO NF identified and classified key stakeholders as employees · labor unions, government · national assembly · media, contracted customers · affiliated organizations · suppliers, and the public · local communities. KEPCO NF communicated with them to induce diverse participation.

### • Materiality

KEPCO NF confirmed that it selected material issues through the materiality assessment process, conducted materiality assessments based on a pool of issues derived from internal and external literature reviews and analysis of media press releases and disclosed the results throughout the report in connection with sustainability management performance.

### • Responsiveness

KEPCO NF established a sustainability management strategy to respond to the needs and interests of stakeholders, and created management performance through communication networks established with key stakeholders and described the contents appropriately in the report.

### • Impact

KEPCO NF confirmed that it considers the social impact of material issues and pays attention to related environmental and safety issues, and disclosed activities to minimize negative impacts in the reports.

## Limitations

This assurance engagement is subject to limitations that are based on the assumption that the information and data presented in the report are complete and sufficient. We performed tests to assure that the information and data are consistent with their descriptions and that the figures presented are consistent, and we checked external certifications and internal company reports.

## Recommendations

KEPCO NF has materialized its commitment to ESG management through its sustainability report. The content focused on environmental and safety clearly stated the organization's mission. However, it seems that the preliminary preparations for the report, such as the materiality assessment process, should be supplemented, and we recommend strengthening the responsiveness and impact on stakeholders.



30 June 2023

**KOSRI Representative Researcher**