

**JOIN ECO,
BE ENERGY, AND
MAKE ORIGINS**

About This Report

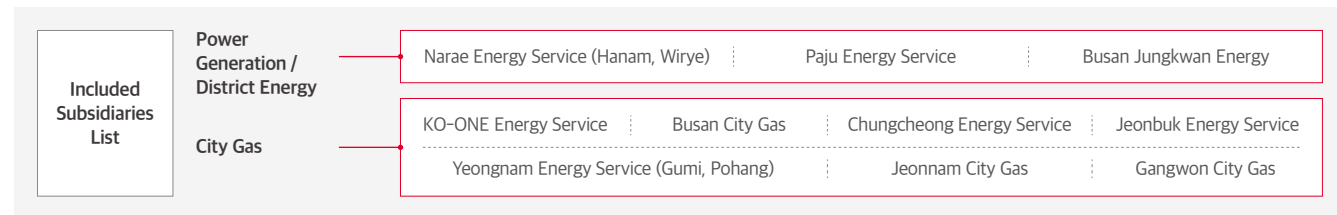
Since 2021, SK E&S has been publishing a Sustainability Report every year to transparently communicate with stakeholders about social, economic, and environmental values and performances created through business activities.

Reporting Period

This Report outlines our economic, social, and environmental achievements and activities from January 1 to December 31, 2021, with some key information up to June 30, 2022. For quantitative performance, data for three recent years are included to present our time-series trajectory.

Reporting Scope

The reporting scope of this Report covers SK E&S, our major subsidiaries, and establishments. Overseas business sites' data are included for some of our achievements. Financial data were prepared based on consolidated Korean International Finance Reporting Standards (K-IFRS). Annotations were added for some data that require additional attention in reporting scope and boundary to ensure more accurate understanding for readers.



Reporting Standards

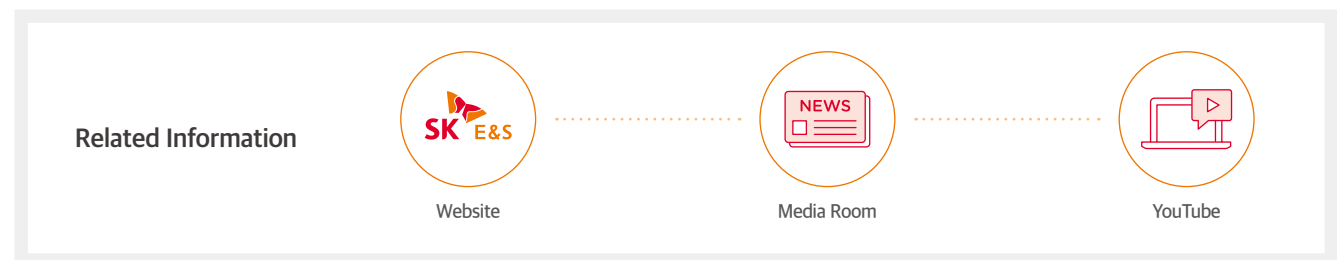
This Report is prepared according to the Core Options of the Global Reporting Initiatives (GRI) Standards which are the international guidelines for the sustainability report. It also reflects the indicators of UN Sustainable Development Goals (SDGs), Task Force on Climate-Related Financial Disclosures (TCFD), and Sustainability Accounting Standards Board (SASB), which are the global sustainability standards and initiatives.

Reporting Credibility

Third-party assurance was provided by the Korea Management Register (KMR) to publish objective and transparent report that stakeholders can trust. The assurance statement is available on the last page of Appendix.

Sustainability Report Point of Contact







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Join Eco, Be Energy, and Make Origins

Interactive User Guide

The SK E&S Sustainability Report is developed as an interactive PDF file to improve convenience and enhance readers' understanding. Readers can easily and conveniently move to the preferred page or related web page using various icons and links.

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CEO Message



From the establishment of a distinctive Green Portfolio to the creation of SK E&S's own social value and preemptive board-centered responsible management, SK E&S will continue to pursue ESG management to gain stakeholder sympathy.

Distinguished Stakeholders of SK E&S,

I believe this to be a very meaningful opportunity, to be able to communicate with stakeholders the efforts and achievements of SK E&S to create a sustainable future and happiness, following last year.

Last year, SK E&S established a 'Financial Story' containing the company's vision to pursue the growth of the company and the happiness of all stakeholders, and we are continuing to evolve, develop, and implement our plans even further. SK E&S is promoting the transition to a distinctive Green Portfolio unique to SK E&S through the close alignment among renewable energy, hydrogen, low-carbon LNG, and energy solutions, and has created and implemented a Net-Zero implementation roadmap that reduces greenhouse gas emissions in its process. In addition, in recognition of our various efforts for stakeholder inclusiveness from the Korean government, we were designated as the No. 1 ESG-driven voluntary win-win partnership company and received the Presidential Citation. We also have preemptively implemented the outside director election system in the composition of our BOD as well as a professional committee system to strengthen the independence and transparency of the governance structure, even when we do not bear any obligation to do so as an unlisted company.

SK E&S will continue moving on to pursue ESG (Environment, Social, Governance) management so that stakeholders can sympathize and support our endeavors, through never-before-possible attempts and bold challenges based on our efforts and achievements.

Jeong Joon Yu CEO & Vice Chairman of SK E&S

First, in terms of **Environment**, while continuously developing and supplying eco-friendly energy such as hydrogen and renewable energy, we will create an eco-friendly foundation for LNG business and blue hydrogen production combining it with CCUS technology that captures, utilizes, and stores carbon dioxide. In addition, we will further accelerate the deployment of distinctive Green Portfolio, which leads to efficient energy utilization through the energy solution business, leading to changes in the business environment as a responsible energy company, **while presenting a realistic alternative to carbon neutrality by pursuing the role of “Carbon-Neutral Energy Optimizer”**.

In the **Social aspect**, we will expand SK E&S's own Social Value Model so that not only our members but the whole of society can become happier. To this end, we will continuously improve the work environment and system of the workplace so that all employees and stakeholders are safe and healthy, and will create a workplace where employees can pursue their own happiness by cultivating and demonstrating their competencies. SK E&S will continue to expand regional regeneration projects and voluntary win-win partnership projects with the local society and the industrial ecosystem, while we develop and expand various types of resident-participating renewable energy business models.

Lastly, in terms of **Governance**, we will firmly consolidate and implement the board-centered responsible management that was preemptively introduced last year, identify the needs of ESG-related stakeholders, actively reflect them in business management, and transparently disclose various information in the company to stakeholders and investors to make SK E&S reliable.

We ask for your enthusiastic support and encouragement for SK E&S's future journey as a business that supplies energy, which is essential for the lives of the people, the national economy, and industry, supplying not only sustainable and stable energy. We further pledge to faithfully fulfill the social roles and responsibilities expected by stakeholders in the process, and conduct sound and transparent management.

Thank you.



Hyeonwook Choo CEO & President of SK E&S

Our Business

SK E&S is constantly challenging itself to provide the most stable and economical supply of eco-friendly energy that meets the needs of customers and society, from city gas and LNG value chains to hydrogen, renewable energy, and energy solutions.

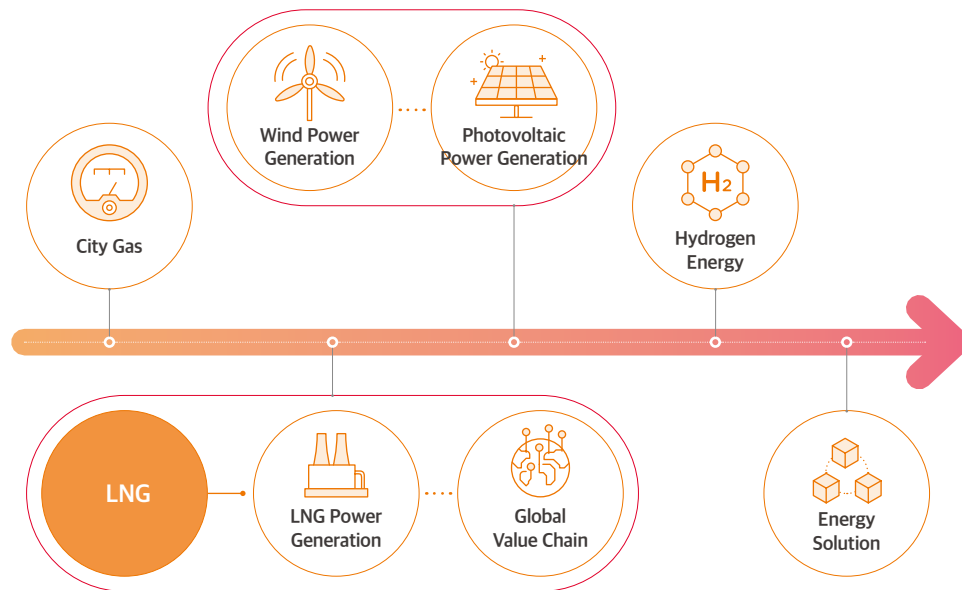
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Company Overview










Company Profile

Since the foundation of SK E&S as an city gas holdings company in 1999, it has grown as the No. 1 private Liquefied Natural Gas (LNG) company in Korea by successfully expanding the LNG value chain across the globe.

SK E&S is the only company in Korea that can closely align and make synergy with blue hydrogen, renewable energy, energy solutions, and LNG businesses. It continues to grow as a global major green energy company by entering the hydrogen industry, which is one of the next-generation energy sources, and building a green portfolio including renewable energy, energy solution, and low-carbon LNG.



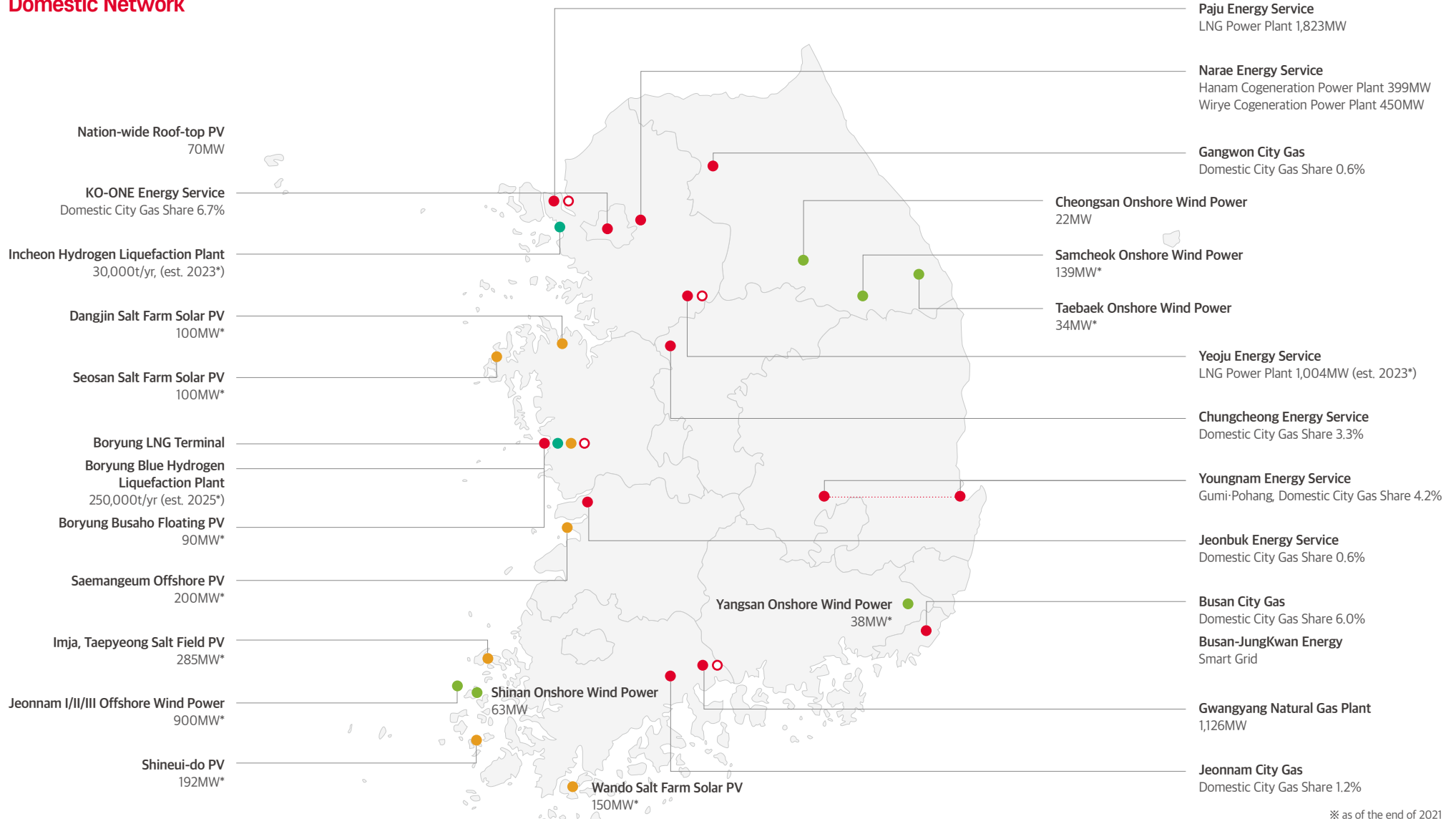
Current Status in 2021

 <p>Company Name SK E&S</p>	 <p>Headquarters Address SK Building, Jongno 26, Jongno-gu, Seoul</p>	 <p>Employees 2,314 employees (including 13 major subsidiaries)</p>
 <p>Date of Foundation January 13, 1999</p>	 <p>Business Scope 106 subsidiaries and investee companies worldwide</p>	 <p>Credit Rating AA (in domestic corporate bonds)</p>
 <p>Sales Revenue KRW 7,854.6 billion (USD 6,597.8 million)</p>	 <p>Operating Profit KRW 619.2 billion (USD 520.1 million)</p>	 <p>Total Assets KRW 15,477.3 billion (USD 13,000.7 million)</p>

※ \$1(USD) = ₩1190.50(KRW) (DEC 31, 2021)



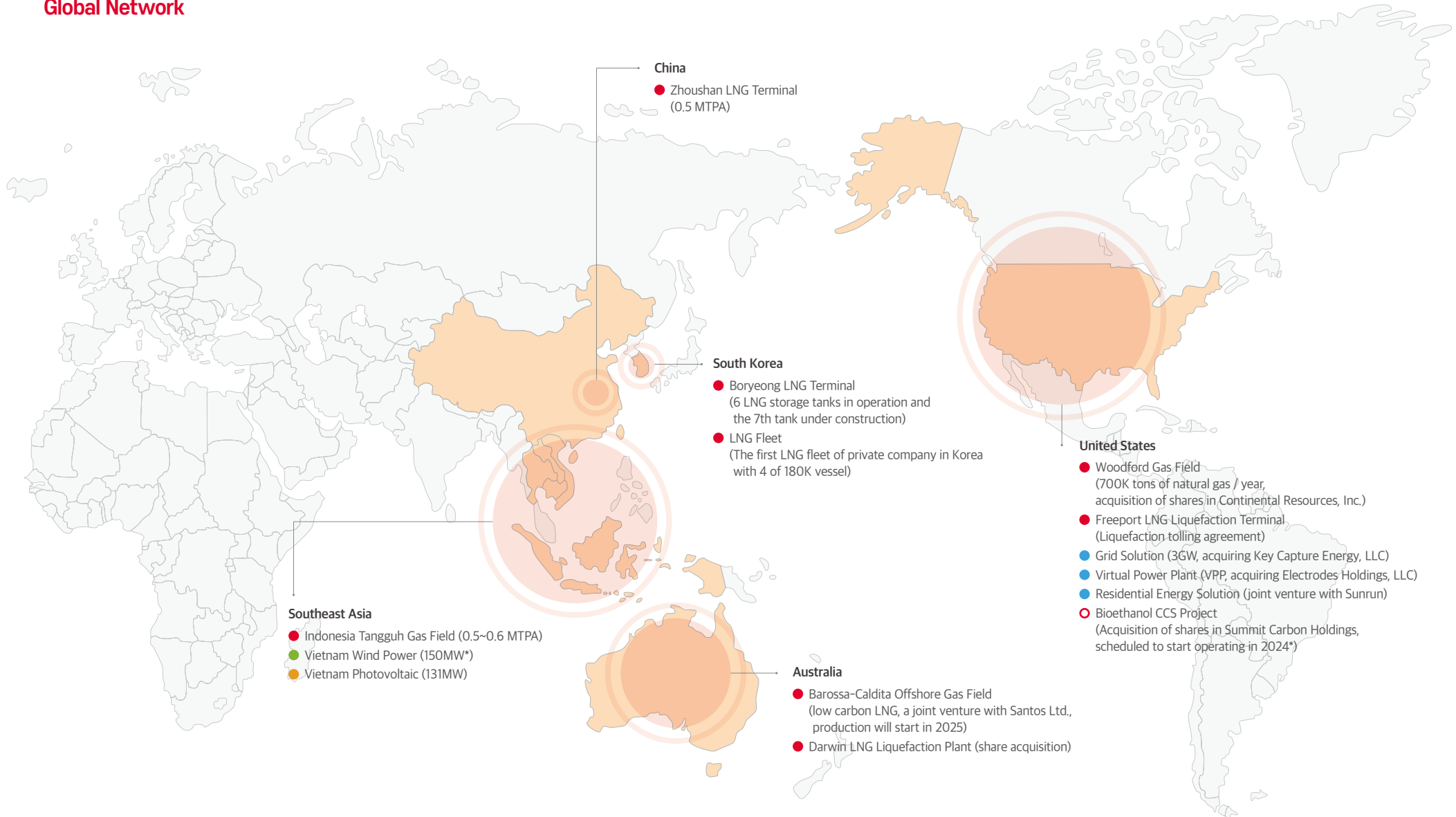
Domestic Network



※ as of the end of 2021

- Key Business (Power, LNG, City Gas)
- Renewable Energy (Wind Power)
- Renewable Energy (Photovoltaic)
- Energy Solution
- Carbon Capture Technology Demonstration / Commercialization
- * In Progress

Global Network

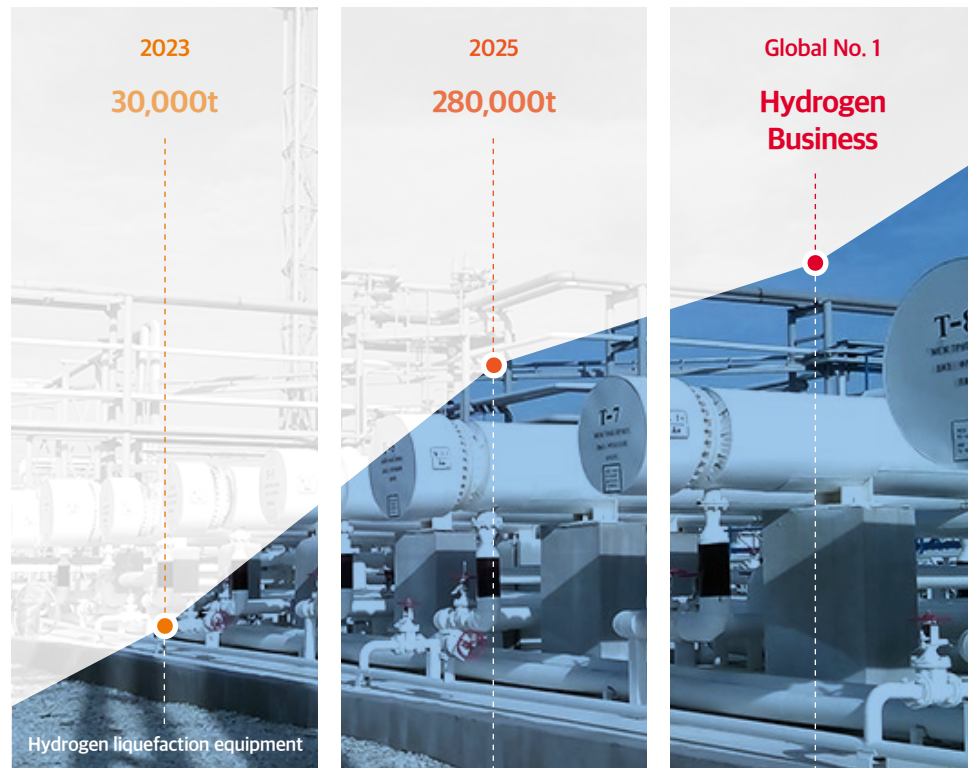


Business Transformation to ESG

Hydrogen Energy

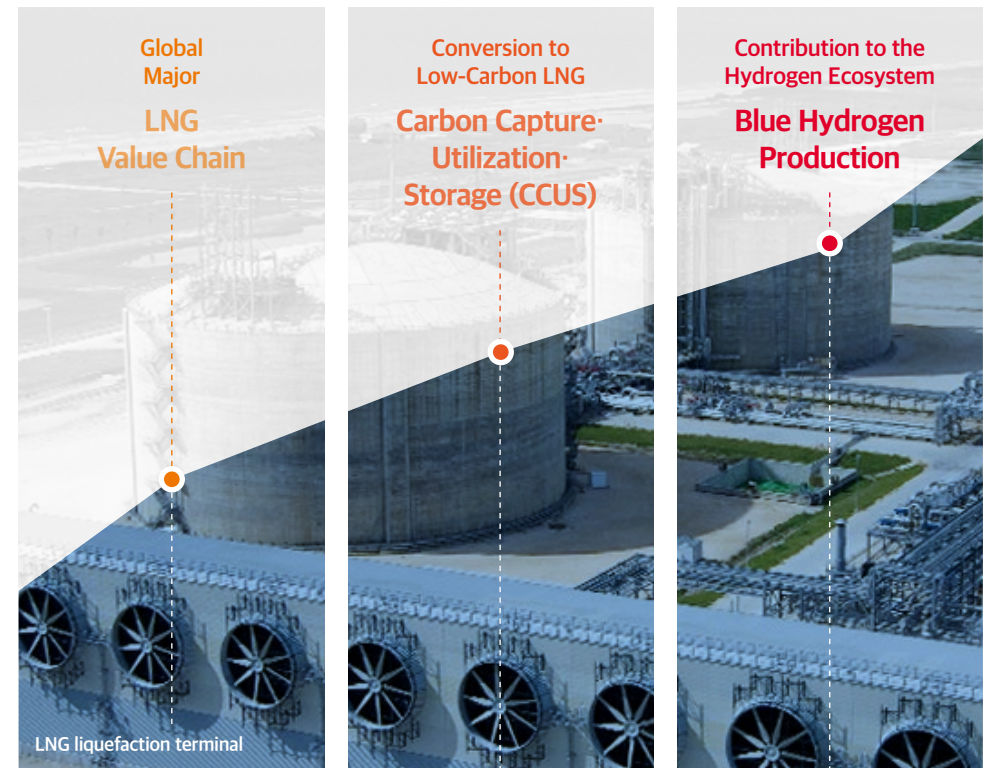
The world's largest hydrogen liquefaction plant in Incheon (30,000 tons per year) and the blue hydrogen liquefaction plant (250,000 tons per year) of which the Carbon Capture·Utilization·Storage (CCUS) technology is applied in Boryeong are scheduled to be completed in 2023 and 2025, respectively*. SK E&S is committed to lead global hydrogen market beyond Asia in the hydrogen business, the next-generation eco-friendly energy source.

*As of 2021, the largest hydrogen liquefaction plant in the world produces 10,000 tons of hydrogen fuel a year (located in Texas, U.S.).



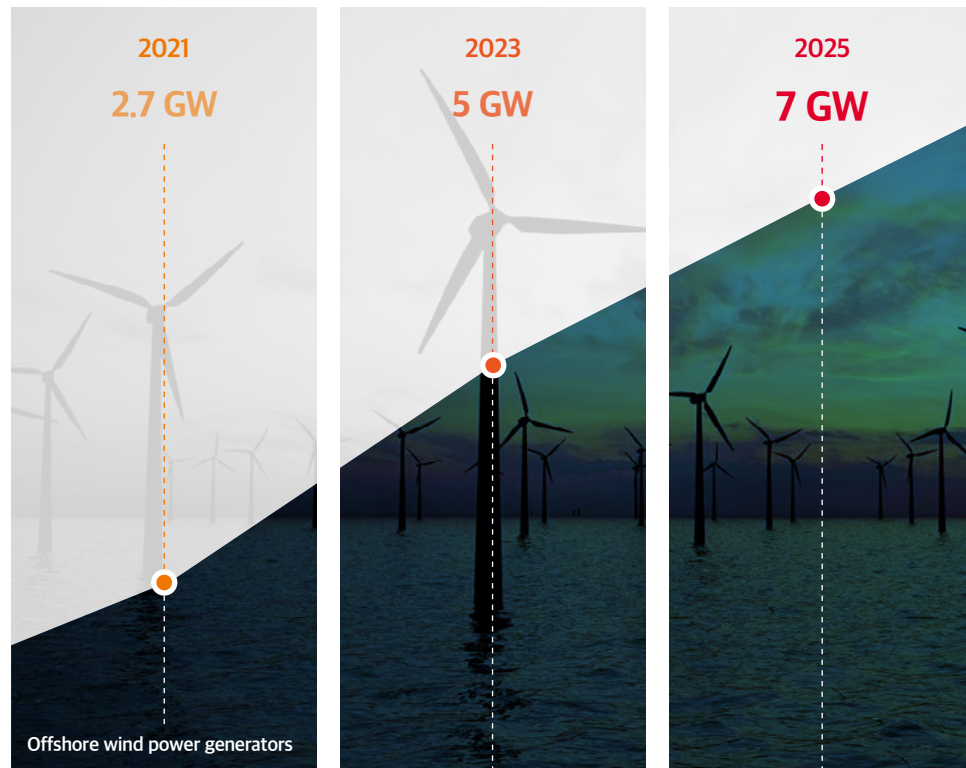
LNG Value Chain

SK E&S has built a global LNG value chain throughout the whole cycle—from upstream (production), midstream (transportation / storage), and downstream (supply / power generation)—in regions across Australia, the United States, Indonesia, and China. Furthermore, SK E&S will improve eco-friendliness and sustainability throughout the LNG Value Chain's whole cycle—from the gas field development to the LNG power generation businesses— by securing Carbon Capture·Utilization·Storage (CCUS) technology.



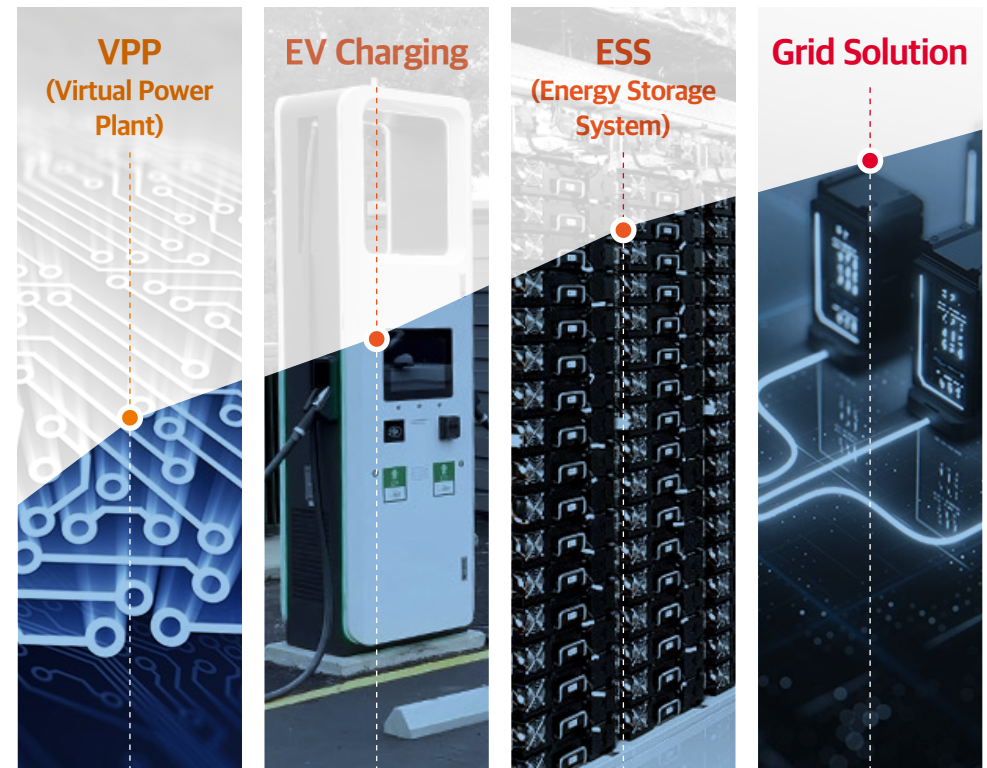
Renewable Energy

As of the end of 2021, SK E&S has been developing and operating solar and wind power business with a 2.7 GW capacity in the global market, including Korea and Southeast Asia. Moving forward, the company plans to expand the global renewable energy development capacity to 7 GW by 2025 by utilizing global partnerships and the use of SK E&S's specialized investment business model.



Energy Solution

SK E&S is preparing for the paradigm shift in the future power industry due to the distribution of power resources, through energy solution businesses, such as grid solutions, an energy storage system (ESS), VPP, and electric vehicle (EV) charging. As of 2022, we have been operating 304 MWh of ESS capacity nationwide, and have secured Mobility Energy Solution business opportunities, such as charging business, by acquiring the joint management right of the No. 1 Vehicle-Parking platform enterprise in Korea. Furthermore, the company is solidifying its position as a global top-tier Total Energy Solution company by establishing a joint venture with and acquiring shares of leading companies related to energy solution in the United States.

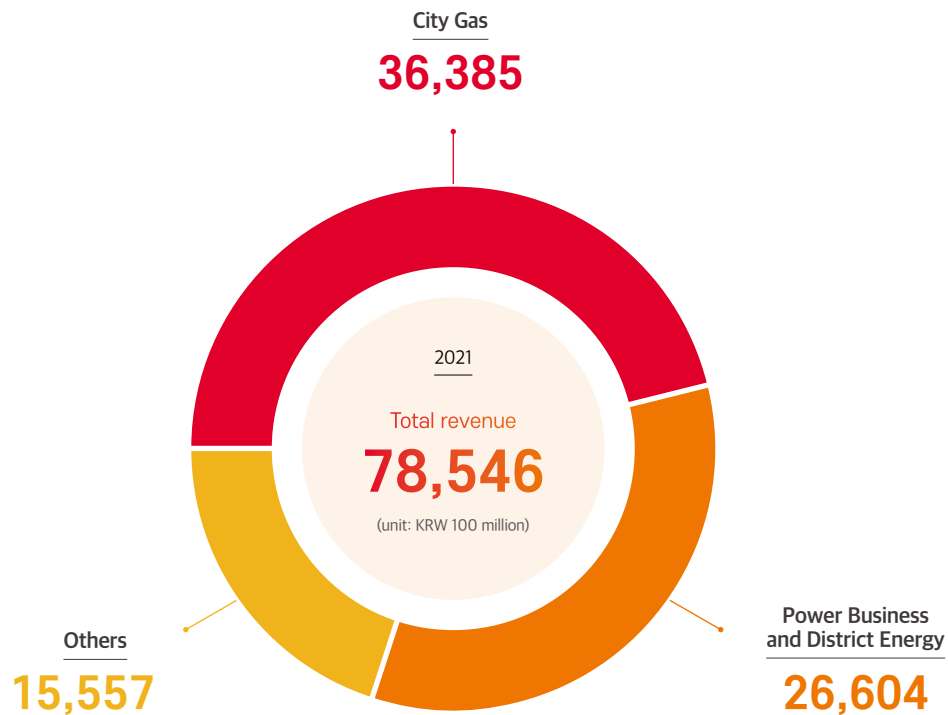


2021 Achievement

Economic Value

SK E&S has achieved outstanding financial records amid external and internal economic uncertainty, such as the continuous spread of the COVID-19 pandemic, rapid changes in the energy / environment industries, the insecure supply chain, and the rising pressure of global inflation.

Records by Business Sectors



Summarized Consolidated Income Statement

(Unit: KRW 100 million)

Category	2019	2020	2021
Sales	65,617	57,495	78,546
Sales cost	54,475	49,023	65,442
Gross profit	11,142	8,472	13,105
Operating profit	5,260	2,412	6,192
Net profit before income tax	10,334	12,478	6,628
Current net profit	6,971	8,618	3,888

Summarized Consolidated Statement of Financial Position

(Unit: KRW 100 million)

Items	2019	2020	2021	
Asset	Current assets	25,963	28,580	39,998
	Noncurrent assets	83,227	81,418	114,775
Total assets	109,190	109,998	154,773	
Liabilities	Current liabilities	29,809	30,711	32,052
	Noncurrent liabilities	36,003	40,782	60,011
Total liabilities	65,812	71,493	92,063	
Controlling interests	37,987	32,819	59,112	
Noncontrolling interests	5,391	5,686	3,598	
Total equity	43,378	38,505	62,710	

Social Value

SK E&S quantified the social value created based on the social value measurement model and managed the performance using objective methodologies. The social value measurement is divided into the indirect contribution to the economy, environmental performance (E), social performance (S), and governance performance (G)*. SK E&S has steadily advanced the performance measurement methodology by consulting with professional research institutions, such as the Center for Social Value Enhancement Studies.

In addition, we are contributing to the national greenhouse gas (GHG) reduction, such as the RE100 acceleration support, through the continuous expansion of domestic and international renewable energy businesses. We are also committed to leading the shift to a low-carbon future energy society by building hydrogen energy value chain infrastructure and energy solution business in the future.

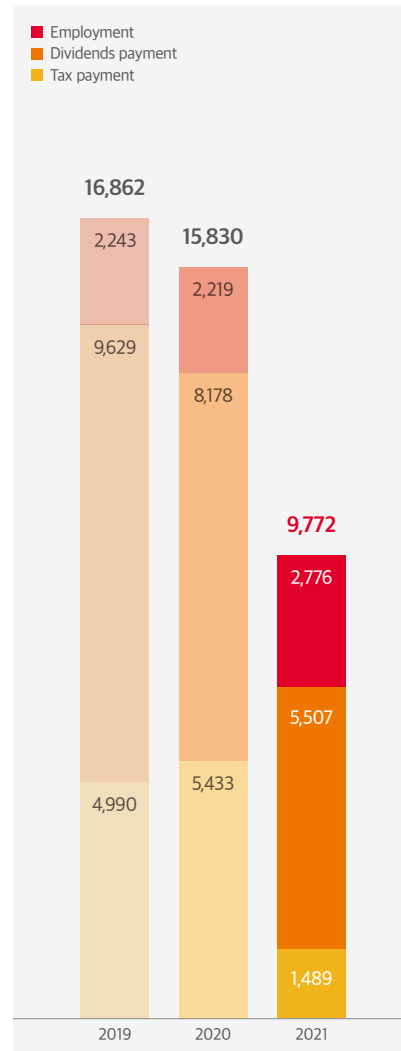
* The governance performance measurement model is under development.

(Unit: KRW 100 million)

	2019	2020	2021
Indirect contribution to the economy	16,862	15,830	9,772
Employment	2,243	2,219	2,776
Dividends payment	9,629	8,178	5,507
Tax payment	4,990	5,433	1,489
E Environmental performance	-9,347	-8,923	-9,124
Process	-9,414	-9,207	-9,285
Product / service	67	104	161
S Social performance	555	764	842
Product / service	415	433	464
Labor / shared growth	61	96	117
Social contribution	79	235	261
Total	8,070	7,671	1,490

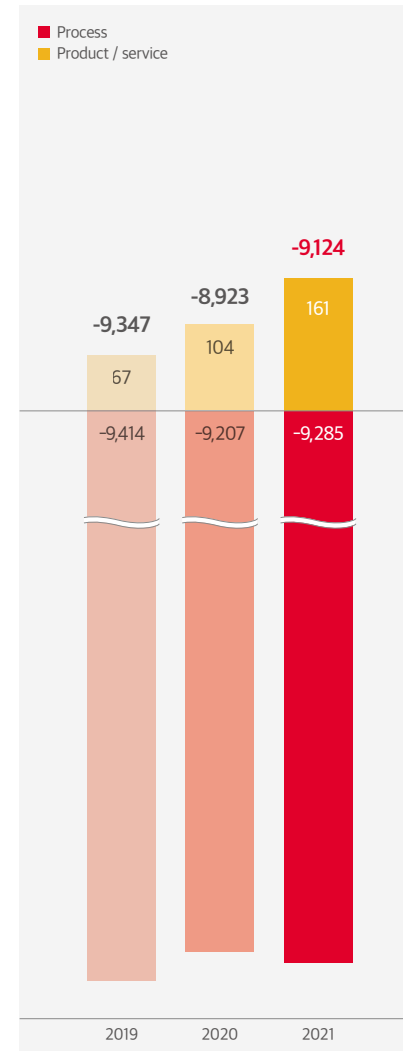
Indirect Contribution to the Economy

(Unit: KRW 100 million)



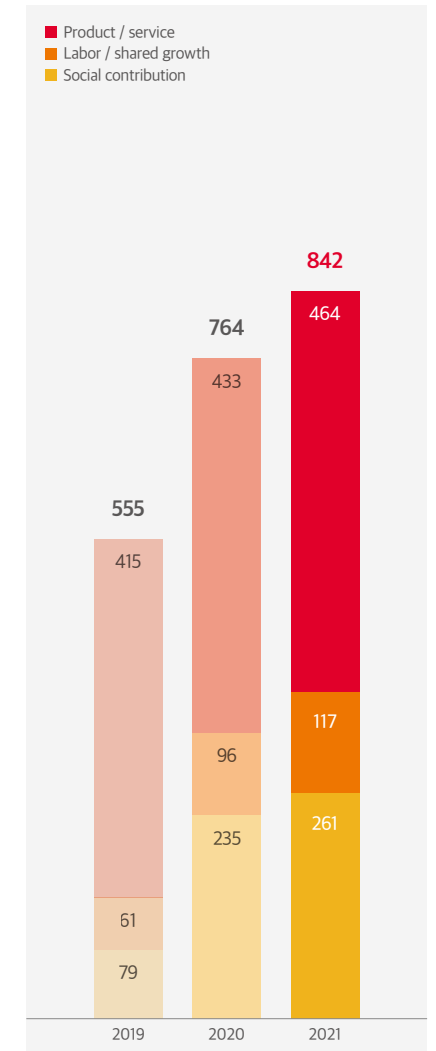
Environmental Performance

(Unit: KRW 100 million)



Social Performance

(Unit: KRW 100 million)



Major Social Value Creation Outcomes in 2021

Employment



- Steady job creation-related performance, through continuous employment activities (total employment increased by 5.2% compared to that of last year)

Society (Product and Service)



- Contributes to enhancing the public interest through dispersed power generation (cogeneration power plants and renewable energy), in areas such as the reduction in construction costs for the national transmission and distribution grid network

Environment (Process)



- Increased GHG emission because of the elevation in energy production following the increased power and heat demand, but efforts made to reduce air pollutant emission through equipment improvement, etc.

Society (Labor and Shared Growth)



- Improvement in society and employee's quality of life by employing vulnerable groups in labor market, adopting remote work and parental leaves system for work-family balance, etc.
- Continuously creating outcomes of win-win cooperation by supporting research and development (R&D) of small and medium-sized enterprise (SME), building an ecosystem of social companies, and assisting safety, health, and other consulting for partners via contributing to and utilizing win-win cooperation fund

Environment (Product and Service)



- Reduction in GHG and air pollutant emission by expanding the supply of renewable energy (wind and solar power)
- Solar power plants at a total of 1.3 GW capacity currently under operation or construction; an offshore wind power plant with the largest capacity in Korea (Jeonnam, 900 MW) under joint-development with global partners
- Stable natural gas supply contributes to the shift to low-carbon fuel (compressed natural gas [CNG] bus) in the Korean bus market and the reduction in GHG and air pollutants
- Continuous contribution to saving pollution treatment costs by supplying Biogas (CH₄) mixed fuels when supplying gas to urban areas in Korea

Society (Social Contribution)



- Medical support and living environment improvement projects for vulnerable groups, such as recipients of basic living and single-parent family members
- Supplying COVID-19-related monetary aid (vaccine fund) and goods (testing kits, blood donations, food support, etc.) for socially vulnerable groups and underdeveloped nations
- Donation support for social welfare facilities and vulnerable citizens around SK E&S business sites

Assessments, Awards, Certifications, and Leadership

**The commendation from the President
in the win-win cooperation field between conglomerates and SMEs**

Efforts to improve ESG through the continuous win-win partnerships with SMEs

**The first company of the Compassionate Company 2.0 Agreement,
the Ministry of SMEs and Start-ups and Innobiz Association**

Realization of hydrogen economy and carbon neutrality; resolution of regional problems

Vice Chairman Jeong Joon Yu, the first Energy Alliance chairperson

Carbon Neutral Innovation Initiative

**CEO Hyeongwook Choo,
head of the Hydrogen Business Promotion Division in SK Group**

Leading the establishment of the global hydrogen value chain

**“Excellent Environmental Education Program”
certified by the Ministry of Environment**

**“Excellent Institution of Educational Donation”
certified by the Ministry of Education**

Appreciation plaque from the Ministry of Education

Contributing to the career advisory education development and
bridging the gap in disadvantaged regions

**“Work Experience Institution of Educational Donation”
certified by the Ministry of Education**

**Appreciation plaque from Gunsan City
SK Group SUPLEX Pursuit Award**

Regional regeneration through “Local:Rise Gunsan”

Gold Zero Waste to Landfill (ZWTL) Validation

Paju Energy Service, Waste recycling rate 99%

**Occupational Health and Safety Management Systems certification:
ISO 45001 (OHSAS 18001)**

12 business sites (cumulative)

**Environmental Management Systems certification:
ISO 14001**

7 business sites (cumulative)

ESG Strategy

For sustainable management, SK E&S carefully listens to the opinions of various stakeholders and reflects them to pursue continuous improvement in each area of environment, society, and governance, and transparently communicates the results with stakeholders.

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Join Eco, Be Energy, and Make Origins

Green Portfolio

Business Re-design with ESG at its Core

An eco-friendly energy company shining even brighter amid the climate change crisis - “Carbon Neutral Energy Optimizer”

It is the core value of SK E&S to let customers use eco-friendly energy stably and efficiently. To this end, SK E&S is creating a distinctive growth story by continuously innovating its business portfolio.

SK E&S laid the foundation for preoccupation in the new energy market going forward by advancing into the hydrogen and energy solution business in 2021 and securing the basis for production and supply chain of Carbon Neutral LNG. Upon such basis, we will create a distinctive Green Portfolio unique to SK E&S, where renewable energy-hydrogen-low carbon LNG-energy solution businesses are closely aligned.

Social Value Model

Co-Evolution with Stakeholders

Creation of social value that creates happiness for all stakeholders

Together with SK E&S, the society and the industrial ecosystem come to life alongside our renewable energy business that shares profits with residents, the regional renewable model that leads balanced development of the region, the support for small and medium-sized enterprises that develop hydrogen and eco-friendly technologies, and the establishment of a social safety net for the vulnerable.

In addition, SK E&S will continue to improve the environment and systems of its business sites so that both customers and employees are safe and healthy.

Governance and Management System Innovation

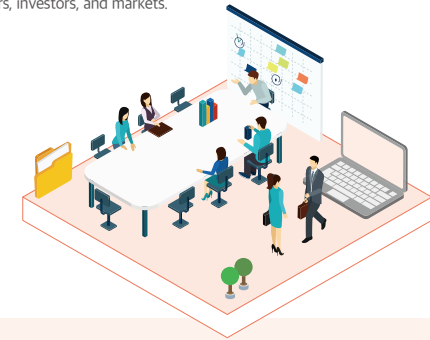
Responsible management centered on the BOD, stronger push for action from ESG-based management

Although SK E&S is an unlisted company, we preemptively implemented the outside director system, laying the foundation for responsible management centered on the board of directors. Also, we plan to continuously strengthen the independence and professionalism of the BOD and increase the transparency of the governance structure. Furthermore, we will continue to promote innovation in management infrastructure such as evaluation, compensation, and organizational structure and work methods to enhance the push for action regarding ESG management.

Our Approach to ESG

SK E&S has established ESG strategies to enhance its sustainability value and become a global leader in the eco-friendly energy business under the value of “Financial Story”*, the SK Group’s management strategy methodology. We have set the following main tasks: “creation of distinctive Green Portfolio,” “spreading the SK E&S social value model,” and “ensuring governance premium by enhancing the reliability” for each of E, S, and G. We have accordingly been promoting stereoscopic plans to satisfy stakeholders’ various needs.

* Financial Story: the SK Group’s management strategy methodology to increase the total value of economy and society by proposing the company’s growth strategy and future vision to various stakeholders, such as customers, investors, and markets.



ENVIRONMENT

Building a distinctive green portfolio

Renewable Energy

Global renewable energy player

Hydrogen Energy

Leaping forward to become the global top hydrogen provider based on new technology

LNG Value Chain

Low-carbon LNG production and supply; transition into eco-friendly business model

Energy Solution

Growing as a global total energy solution company

City Gas

Securing a growth engine using customer networks

Securing Eco-friendly Technology Competency

Securing the technical competitiveness of carbon capture such as CCUS, its demonstration, and commercialization

SOCIAL

Spreading the social value model of SK E&S

Customers

Aiming for “ZERO” issues concerning product and service safety and information security

Employees

Co-evolution between the company and employees (company’s growth + employee satisfaction)

Partners

Establishing a sustainable shared growth system (economic growth + ESG management)

Local Communities and Industry Ecosystem

Local regeneration, SMEs support based on hydrogen and eco-friendly technology, social safety net installation

GOVERNANCE

Ensuring a premium governance system by enhancing credibility

Governance

BOD-centered management accountability by reinforcing independence, expertise, and transparency

Management System

Building a management system to raise the ESG value and strengthen the executive ability of new businesses (evaluation, remuneration, ESG management system, etc.)

Communication with Stakeholders

Building and operating a communication system customized for each stakeholder (Customers, employees, investors, partners, and local communities)

ESG Promotion System

SK E&S establishes and runs its systematic ESG project promotion system both internally and externally, based on the communicative and cooperative relationship among the BOD, management departments, working departments, and supply chain. First of all, the company established and operated the ESG Committee in March 2021 under the BOD, comprised of outside directors, to promote the ESG management professionally and systematically. The ESG Committee conducts professional reviews and deliberation on ESG issues to commit to social responsibility as a green energy company and holds a meeting at least once a quarter from 2022, as well as on an irregular basis if additionally needed. We are planning to continuously expand the ESG Committee's agendas from not only ESG goals/performances, health and safety related contents, but also to post-2023 ethics management and anti-corruption related issues.

SK E&S has expanded and restructured the Social Value Promotion Headquarters into the ESG Headquarters for the integrated management of ESG issues and reinforcement of executive ability. The ESG Headquarters establishes overall ESG strategies and monitors the execution records and performance and plays a role in proposing a measure of improvements. In this process, we cooperate closely with responsible working departments about various ESG issues, such as business management based on employee satisfaction, ethics, supply chain responsibility, during which heads of working-level departments participate in discussing issues that affect our overall business.



The Link Between the ESG Performance and the Assessment/ Remuneration System of the Employees and Executives

Since 2022, SK E&S has reflected ESG performance in the setup and operation of the company's key performance indicator (KPI), which is the basis of the assessment and reward of the executives and employees. ESG performances are monitored in accordance with key ESG indicators considering SK E&S's business characteristics and the requirements of major external stakeholders such as Financial Society and the major ESG assessment organizations such as MSCI and the Dow Jones Sustainability Indices (DJSI).

Key ESG Indicators

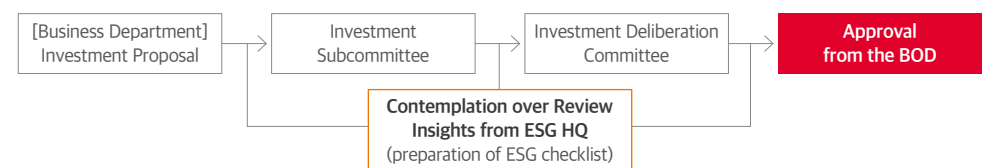
As of 2022, key ESG indicators consist of 43 indices in total, comprehensively managed and evaluated by the SK Group.



ESG-Based Investment in New Businesses

SK E&S has newly arranged and operated the review and deliberation process of relevant investment to preemptively examine and improve possible ESG-related issues during the process of reviewing and preparing a new business. The departments in charge of the business fill out an ESG checklist while preparing a new business and makes a decision on investment reflecting on the review results collected and presented by the ESG headquarter. In particular, various climate-change related risks and effects are being reviewed in multiple perspectives from corresponding business departments and the ESG headquarter, to be reflected in the process of business implementation. Also, the social value created from a new business is being predicted and measured when deliberating investment agenda. Once the business enters its operation stage, the social value created from each business is measured quarterly and monitored every year for performance management.

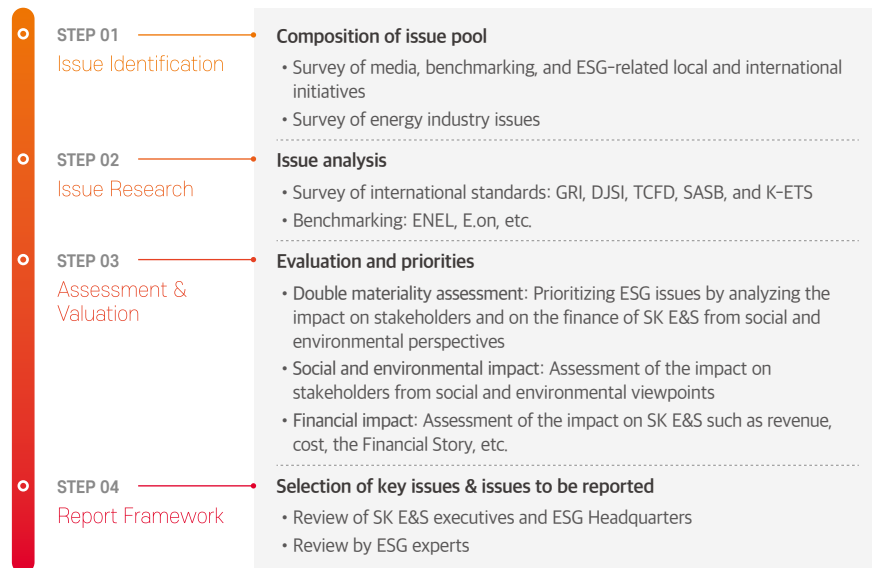
Investment Review and Deliberation Process



Materiality Assessment

SK E&S conducts a materiality assessment as part of its effort to converge the opinions of employees and various stakeholders when promoting sustainable management. A materiality assessment is conducted to discern the issues that have the most impact on SK E&S among various ESG sectors, such as human rights, environment, economy, and ethics through surveys and interviews with stakeholders. The materiality assessment results are not only dealt with as a key issue in the Sustainability Report, but also reflected in the management decision-making system by reporting the details to the executives. The 2022 materiality assessment used in this year's sustainability report preemptively employed the double materiality test method suggested in 2021 Global Reporting Initiative (GRI) and the new Corporate Sustainability Reporting Directive (CSRD) proposal adopted by the EU Commission in April 2021. The double materiality assessment considers the impact of ESG issues on external social and environmental matters as well as their internal financial impact on the company. In addition, SK E&S is planning to implement new communication channels in 2022 such as the 'Media Room', etc., and from 2023 we aim to not only advance the materiality assessment process but also continuously find ESG-related needs of various stakeholders, and actively engage in communication with stakeholders by executing materiality assessment at least once a year.

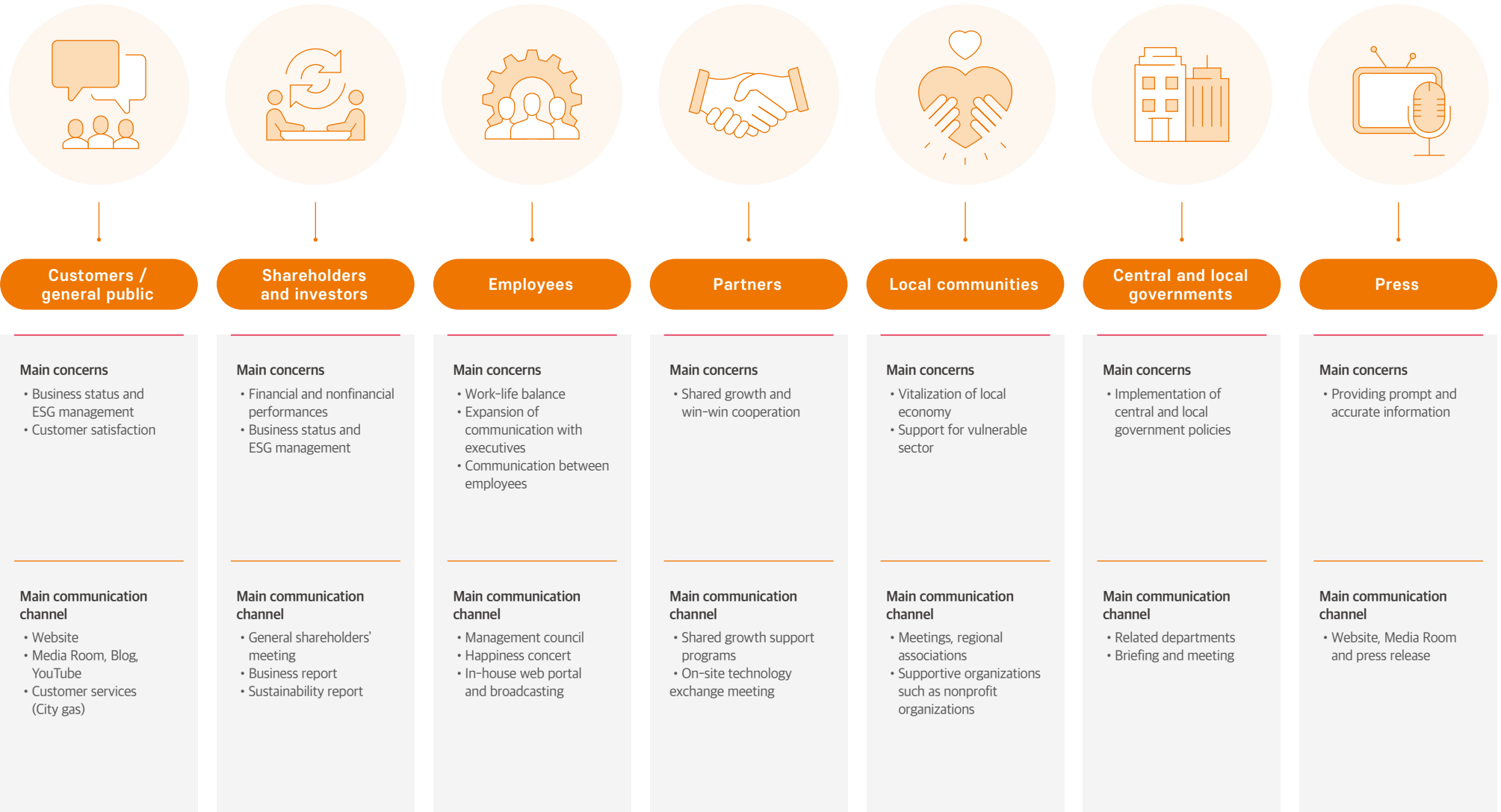
Materiality Assessment Process



Materiality Assessment Results

Issues	Social and environmental impact		Financial impact		Reported Section
	Impact of external environmental analysis	Impact of internal environmental analysis	Sales Revenue	Cost Financial Story	
Business portfolio considering ESG	●	●	●	●	Our Business > Business Transformation to ESG
Establishment of mid- to long-term GHG reduction targets	◐	●	●	◐	Environment > Responses to Climate Change
Strengthening safety and preventing accidents in establishments	◐	●	◐	◐	Social > Safety and Health Care
Shared growth with social enterprises	◐	◐	◐	◐	Social > Social Contribution
Reduction in environmental pollutants	◐	◐	◐	●	Environment > Environmental Management
Investment to improve energy efficiency	◐	◐	◐	●	Environment > Environmental Management
Management of external GHG emission source (Scope 3)	◐	◐	◐	●	Environment > Responses to Climate Change
System to monitor the management performance related to occupational safety and health	◐	◐	◐	◐	Social > Safety and Health Care
Acquiring the transparency, credibility, clarity, and timeliness of the disclosures of the ESG indicators	◐	◐	◐	◐	About this report
Promotion of local economy	◐	◐	◐	◐	Social > Social Contribution
Waste recycling expansion	◐	◐	◐	◐	Environment > Environmental Management
Water usage management, water recycle expansion, and protection of water intake source	◐	◐	◐	◐	Environment > Environmental Management
Support of ESG management for supply chain (partners)	◐	◐	◐	◐	Social > Shared Growth
Upgrading the information security system	◐	◐	◐	◐	Social > Information Security
Management and deliberation of ESG issues within the BOD	◐	◐	◐	◐	Governance > Board of Directors
Discovery and management of ESG issues based on the communication with stakeholders	◐	◐	◐	◐	ESG Strategy > Materiality Assessment
Strengthening the prevention of unfair conduct	◐	◐	◐	◐	Governance > Ethical Management and Anti-Corruption
Declaration of sustainable management internally and externally and participation in the initiatives	◐	◐	◐	●	Environment > Responses to Climate Change
Reflection of ESG in the executives' performance evaluation	◐	◐	◐	◐	Governance > Board of Directors
Measurement of the performance and the impact of social contribution activities	◐	◐	◐	◐	Our Business > 2021 Achievement
Strengthening anti-corruption activities	◐	◐	◐	◐	Governance > Ethical Management and Anti-Corruption
Reinforcing expertise in the BOD	◐	◐	◐	◐	Governance > Board of Directors
Ensuring independence of BOD composition and operation	◐	◐	◐	◐	Governance > Board of Directors
Declaration and systems of human rights management	◐	◐	◐	◐	Social > Human Rights Management
Prohibition of discrimination between employees	◐	◐	◐	◐	Social > Human Rights Management

Communication with Stakeholders



ISSUE 1

Business Portfolio Considering ESG

(Hydrogen and Renewable Energy)

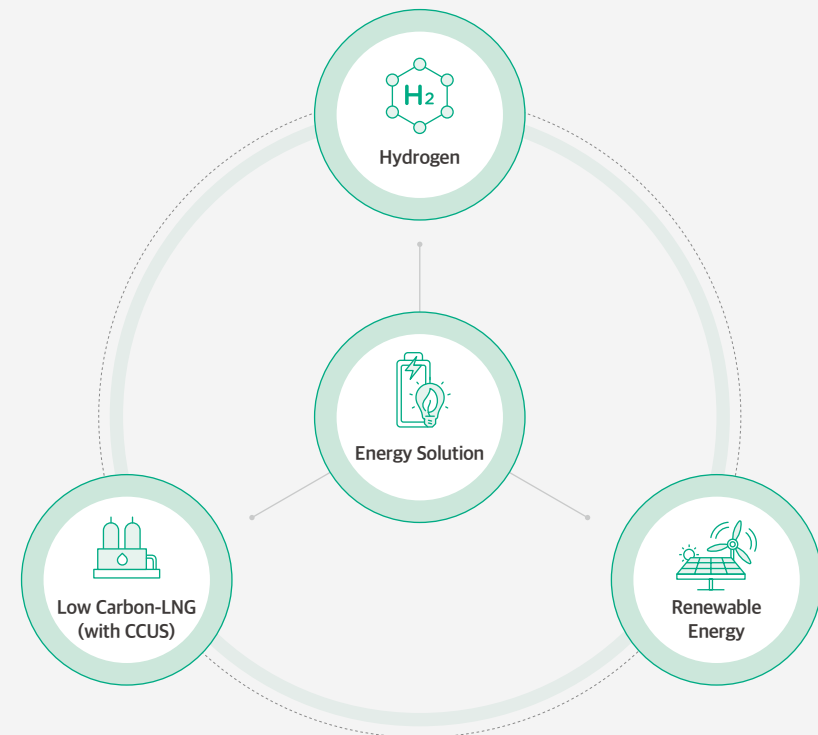
Materiality

In line with the global trend of carbon neutrality and development of renewables-related technology, the demand and market space for renewable energy have been rapidly expanding. SK E&S is committed to fully implementing the renewable portfolio standard (RPS) of the domestic regulations and expanding renewable energy businesses based on Korea's top development capability for power generation projects, playing a meaningful role in reducing carbon in Korea and overseas. The company is also striving to ensure distinctive competitiveness in the hydrogen project based on the synergy effect with the LNG project as we focus on hydrogen energy that can resolve the intermittency issue of renewable energy sources in an eco-friendly manner.

Action Plan

In 2021, SK E&S announced the Financial Story, including the expansion of hydrogen and renewable energy projects, for the transformation into safe and green energy. Based on this, the company aims to be reborn as a specialized investment company in global renewable energy sector through SK E&S's distinctive investment/business development model and cooperation with leading providers in domestic and international areas. The company is also integrating the value chain encompassing stages from hydrogen production to consumption and envisions to leap forward to become the top global hydrogen business by building an eco-friendly blue hydrogen production infrastructure based on CCUS technology and cooperation with key technology holders.

ESG-based Green Portfolio of SK E&S



Management

Building the World's Largest Hydrogen Liquefaction and Eco-friendly Blue Hydrogen Production Plant

SK E&S is constructing a plant in Incheon that is capable of producing 30,000 tons of liquid hydrogen per year with the goal of completion in 2023. Furthermore, the company will complete the world's first and largest plant that can produce eco-friendly blue hydrogen at a capacity of 250,000 tons a year near Boryeong LNG terminal located in Boryeong-si, Chungcheongnam-do, Korea, through an investment of around KRW 5 trillion by 2025. Through this project, the company will expand the hydrogen market in Asia and solidify its position as a global carbon-neutral energy optimizer. Moreover, the company will open the gates to the era of green and blue hydrogen by capturing carbon dioxide generated during the blue hydrogen production process using CCS technology and disposing of the captured carbon dioxide as landfill waste in the decommissioned gas field in Australia.

Founding a Joint Venture with Plug Power Inc. to Promote the Hydrogen Business

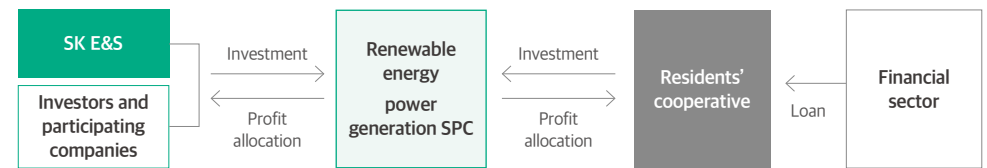
In January 2022, SK E&S established a joint venture to expand the hydrogen business market in Asia along with the U.S. hydrogen company, Plug Power. SK E&S holds a 51% stake in the joint venture and Plug Power holds a 49% stake, respectively. By 2024, the joint venture will construct the Giga Factory & R&D Center in the metropolitan area, which can mass-produce key equipment for the hydrogen business.

In addition, SK E&S will be distributing liquid hydrogen nationwide in the future, based on which we will lead the Asian hydrogen market.

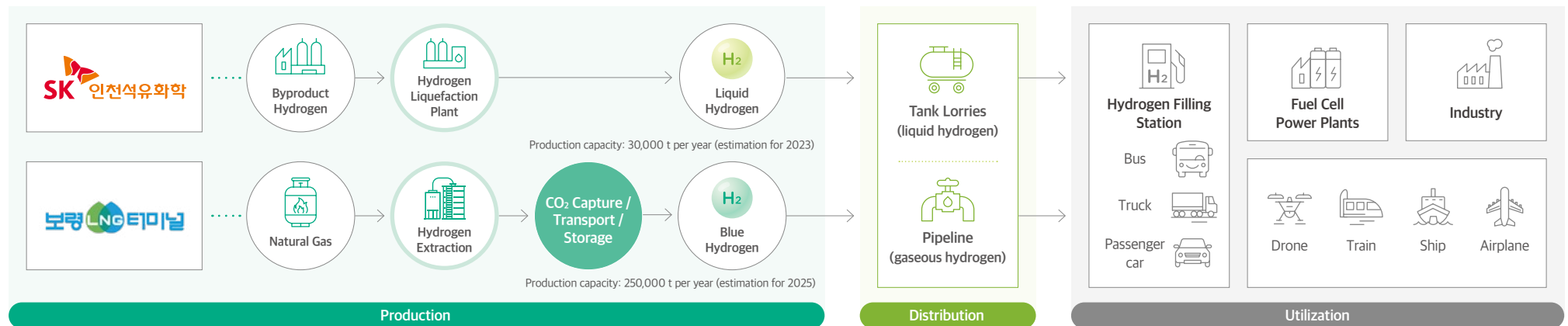
Expansion of Renewable Energy Power Generation

SK E&S continues to develop and invest in renewable energy businesses to grow as a major global renewable energy player. The company is promoting not only onshore photovoltaic using end-of-service salt fields, but also on large-scale floating PV and offshore wind power generation. The company also plans to expand the renewable energy business capacity to 5 GW by 2023 and 7 GW by 2025. Furthermore, we are contributing to the promotion of the regional economy and income generation for local residents by utilizing a business model where residents participate in the promotion process of renewable energy power generation projects.

Example of Renewable Energy Business Model with Resident Participation



Hydrogen Energy Value Chain



ISSUE 2

Establishment and Execution of Greenhouse Gas Reduction Goals

Materiality

Climate change is threatening human survival by causing natural disasters, such as heat waves, cold waves, floods, and drought. Accordingly, the international community has promoted the shift into a low-carbon economy based on the Paris Agreement and requested industries to actively participate. The voluntary effort of companies for successful carbon neutrality is urgently needed now more than ever.

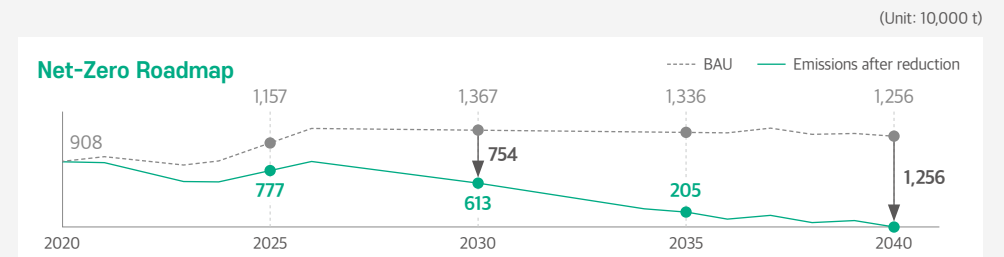
Action Plan

SK E&S, which strives to become a green energy company, has proposed a unique and distinctive green portfolio based on hydrogen, renewable energy, energy solution, and low-carbon LNG to proactively respond to the climate change crisis. In 2021, we have also preemptively declared Net-Zero (based on Scope 1 + 2) that reduces GHG emission both directly and indirectly from business locations by 2040 among the domestic energy companies. To achieve Net-Zero by 2040, we will reduce more than 50% of the business-as-usual (BAU) emission and flexibly use the direct reduction method through CCUS, shift to non-carbon fuels, and the use renewable energy for each business sector as well as adopt the indirect reduction method* through carbon credit.

* Offsetting carbon emission by securing Carbon Credit through renewable energy business and afforestation projects in underdeveloped countries)

Target

SK E&S is going to reduce GHG emissions, which is at 9,080,000 tons (Scope 1 + 2) in 2020, to zero by 2040 with continuous endeavors to reduce GHG reduction. SK E&S's 2040 Net-Zero goal has been set to level equivalent to 1.5°C scenario by comprehensively considering the Paris Agreement's target to contain the global average temperature rise within 1.5°C and the reduction target under the Framework Act on Carbon Neutrality and Green Growth in response to the domestic climate crisis (2030: 35% reduction compared to 2018 / 2050: achievement of carbon neutrality), and the National 2050 Carbon-Neutral Scenario (Transition Sector), which is established with the assumption that all countries promote 2050 Carbon-Neutrality without overseas reduction based on IPCC 1.5°C special report. We are going to promote the reduction of carbon practically by applying the direct reduction means that reduce actual carbon emission.



Management

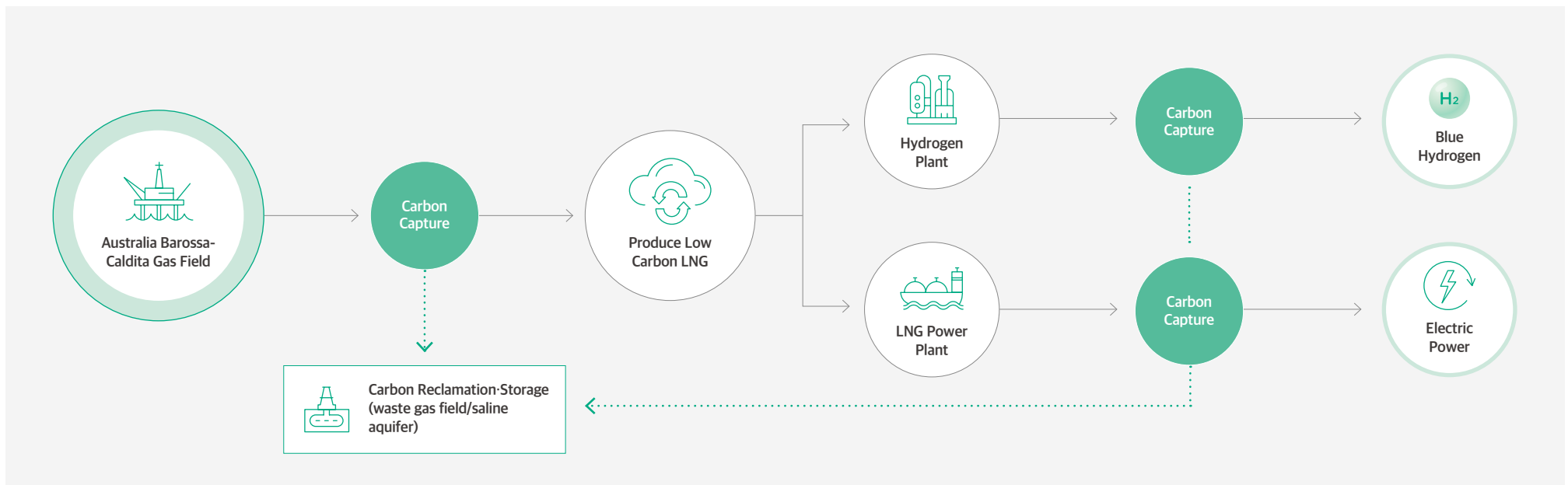
Greenhouse Gas (GHG) Reduction Measures

SK E&S is presenting a realistic alternative to carbon neutrality by adding eco-friendliness and sustainability to the existing LNG business by directly reducing CO₂ generated in each stage from LNG production to utilization through the application of CCUS technology. At the Barossa-Caldita offshore gas field in Australia, we plan to produce/supply low-carbon LNG through the application of CCS by capturing CO₂ generated during the LNG production and storing CO₂ in the Bayu-Undan depleted gas field. We are also promoting greenhouse gas reduction in the entire value chain of blue hydrogen production by capturing and storing CO₂ generated in the process of producing hydrogen based on low-carbon LNG through the application of CCS technology. Meanwhile, we plan to secure and apply CCUS technology to LNG power plants to reduce greenhouse gases generated in the process of power generation.

CCUS(Carbon Capture·Utilization·Storage)

In 2021, SK E&S signed an MOU with the Korea Institute of Energy Research, a national research institution, and CE-TEK, a specialized company in carbon capture technology, to internalize the key technology of carbon capture (CC). Currently, we are supporting the R&D of carbon capture (liquid solvent) technology, which is optimized for large-scale hydrogen production and LNG power plants. Carbon capture and utilization (CCU) refers to a technology that converts and recycles captured CO₂ into raw materials used in various chemical products and construction materials. In 2022, as SK E&S plans to implement a demonstration project in Gwangyang LNG Power Plant that operates a mineral carbonation process of CO₂, we have scouted top-tier global professionals in such fields. We are also continuing to collaborate with government agencies to secure chemical transition of CO₂.

Low Carbon LNG Value Chain



Carbon capture storage (CCS) refers to a technology that captures and stores carbon dioxide emitted from power plants and factories. We drive the demonstration and commercialization of capture technology, targeting power plant equipment and hydrogen plants of our affiliated organizations. Based on this effort, we aim to internalize key CCS technology and provide a cornerstone to achieve the Net-Zero target in the long term. We are also planning to capture carbon dioxide in the production process by applying the CCS technology in the Barossa-Caldita offshore gas field and producing low-carbon LNG using a method that stores captured carbon dioxide in the Bayu-Undan depleted gas field by 2025. In addition, we are planning to produce blue hydrogen that applies CCS technology in the Boryeong hydrogen plant in the

same year.

CCUS technology includes carbon capture, utilization, and storage technologies. SK E&S has made efforts to secure the competence of CCUS technology as key means to reduce GHG emitted in energy businesses. SK E&S is also participating in the bioethanol CCS project in North America, the biggest of its kind in the world, with plans for commercial operation by 2024. This is a new opportunity as well as another challenge to accumulate the carbon capture knowledge beyond our existing business. Through this, we will continue to accelerate the transition into a green portfolio and solidify the energy value chain through a global partnership.

CCS Application in Australia Barossa-Caldita Offshore Gas Field (commercial operation scheduled for 2025)

As countries around the world simultaneously move towards the goal of 'carbon neutrality', the necessity for a strategic 'energy mix' is growing. In a situation where it is impossible to reduce the usage of oil or coal at once, liquefied natural gas (LNG), which has relatively low carbon emissions, and carbon dioxide capture technology after using LNG are gaining traction. (.....)

According to the Global CCS Institute, as of September last year, there were 27 commercial CCS projects around the world, capturing 36 million tons of carbon dioxide annually. In addition, 106 projects capable of handling a total of 110 million tons are under development. Domestic companies are also moving quickly to commercialize this technology. SK E&S decided to apply CCS technology to the Barossa gas field in Australia, which it has been participating in development since 2012. The company plans to import about 1 million tons of low-carbon LNG per year into Korea for 20 years starting from 2025.

[Dong-A Ilbo, March 10, 2022](#)



Barossa-Caldita offshore gas field



Bayu-Undan Depleted Gas Field

Participation in the North American Bioethanol Production CCS Project (commercial operation scheduled for 2024)

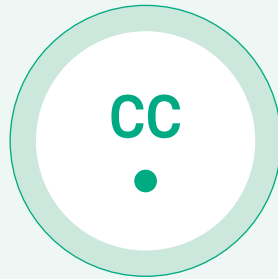
SK E&S, together with major US energy companies, will invest in the world's largest carbon dioxide capture and storage (CCS) project in North America. (.....)

The project is the world's largest CCS project that can capture and store up to 12 million tons of CO₂ annually from 32 corn-based ethanol production facilities in five states in the midwestern United States. Construction of CO₂ storage facilities and pipelines will begin in the first half of next year in earnest, and commercial operation is scheduled to begin in the second half of 2024.

[S&P Global Platts, May 10, 2022](#)



● Capture ● Utilization ● Storage



Carbon Capture

Developing and securing optimal capturing technology for facilities among liquid solvent, solid adsorbent, or membrane

Short-term

Application in gas field and blue hydrogen production process

Mid-Long term LNG power plant application

- Licensing-in of ATR (Auto-Thermal Reforming) technology by Air Liquide (2021)
- Signed an MOU with Korea Institute of Energy Research and CE-TEK (2021)
- initiated Design of Paju Natural Gas Power Plant CC Demonstration (2022)
- Internalization of core capturing technologies such as third-generation collection technology (by 2025)



Carbon Capture Utilization

Mid-Long term

Identification and internalization of next-generation technologies

- Demonstration of CO₂ Mineralization in Gwangyang Natural Gas Power Plant (2022)
- Recruitment of top-tier CCU original technology developers
- Promotion of securing non-mineralization technology based on cooperation with the Ministry of Science and ICT



Carbon Capture Storage

Short-term

Licensing and commercialization of certified technologies

Mid-Long term

Identification and internalization of next-generation technologies

- Completion of feasibility study and Pre-FEED of Bayu-Undan CCS (2021)
- Final investment decision for Bayu-Undan CCS in Australia (2022)
- CO₂ capture and storage in Australia's Barossa-Caldita offshore gas field and Boryeong blue hydrogen plant (2025)

ISSUE 3

Safety Enhancement and Accident Prevention in Business Sites

Materiality

SK E&S has managed safety in establishments as the foremost priority in management even before sustainable management became a hot topic. The prevention of safety accidents is now more important than ever because of the recent policy and social changes, and much social attention has been paid to safety-related indicators such as Lost Time Injury Rate (LTIR). In particular, the need for safety management has become more important in Korea throughout the overall supply chain as a result of the enforcement of the Serious Accidents Punishment Act.

Progress Status

SK E&S has put systematic safety risk management in place and investigated potential risks regularly to achieve world-class safety management and “Zero Serious Accident”. In addition, we have put the safety competence strengthening activity in place to settle down the safety culture of employees and partners. We are actively adopting new technologies that can improve our safety level and monitoring regularly whether we comply with the Safety Golden Rules (SGRs). If the SGRs are not complied with or risk factors such as poor on-site management occur, we strictly sanction them. Furthermore, we have appointed the Chief Safety Officer (CSO) to supervise systematic occupational safety and health management overall. We are also reporting occupational safety and health plans to the CSO, ESG Committee, and BOD since 2022, including activities to manage the employees’ occupational safety and health regularly every year and reflect these safety-related performances in the KPI of the executives.

Goal and Performance of Safety Management

Number of serious accidents



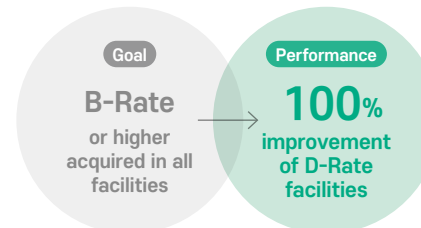
* Maintaining 0 cases since the serious accident standard applied and the casualties collected

Inspection on the safety management status of partners



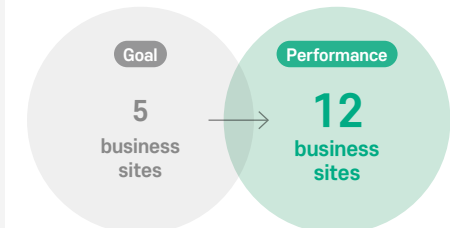
* 140 subcontractor partners

Enhancing the safety rating of City gas supply facility



* Starting from improvement of D-Rate facilities, mid- to long-term plan implemented to improve all the facilities to become safety level B or above

Certification of safety and health management system (ISO 45001)

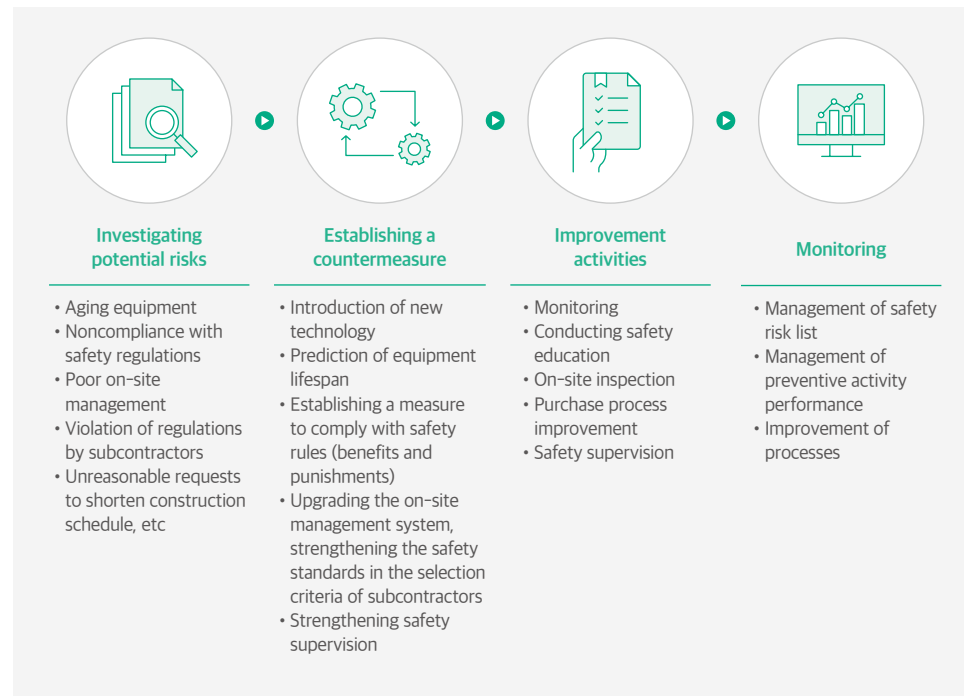


Management

Strengthening Safety Competency and Building Safety-First Culture

SK E&S conducts an emergency drill under the supervision of each establishment in precaution for safety accidents. The emergency drill is conducted through experimental training, with situations such as city gas pipe damage, confined space accident, fire, and hazardous chemical leakage, and training on how to respond to them to equip employees with high responsiveness under various crises. A total of 69 emergency drills have been conducted in the company including subsidiaries related to energy service and city gas in 2021. In addition, the safety risk assessment is regularly conducted in all establishments at least once a year, and reaction manuals for serious accident risk or occurrence are supplied to prevent the recurrence of safety issues in advance. We are strengthening our safety capabilities and building a safety-first culture by implementing safety campaigns, enacting daily safety rules, and nurturing safety experts.

Safety Risk Management Process



Safety of the Supply Chain

As the concept of safety has been expanded to overall stakeholders, SK E&S has identified risk factors that may occur in the supply chain after inspecting the safety management status of the partners in 2021. SK E&S has also reflected these risk factors in the safety system of the supply chain such as preventive guides for serious accidents and basic safety rules. The same safety management level as that of SK E&S will be expanded to the overall supply chain from 2022. Furthermore, we are going to support stronger implementation of safety management in all stages of supply chain through the educational assistance and distribution of guidelines, etc. to enhance the competence of safety management for partners.

Introduction of New Safety-related Technologies

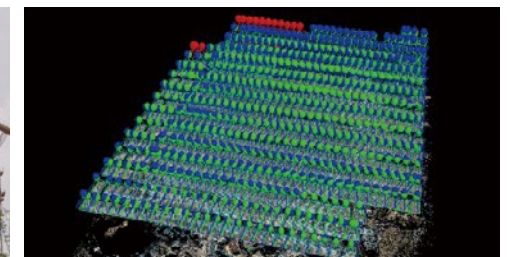
SK E&S has proactively developed and applied new technologies to make workplace safer for employees and partners. We have adopted the “GIS* absolute coordinate” system that minimizes the accident risk factors, which may occur because of the discrepancy between the blueprints and actual on-site measurements. We have also included the “Risk-Based Management System (RBMS)” in the Total Safety Management System (TSMS) of SK E&S to reinforce the risk monitoring. Furthermore, we have introduced the AIDEN drone walk-around inspection services** using augmented reality (AR), artificial intelligence (AI), and hydrogen fuel cells. Moreover, we will continuously search for new technologies and expand investments for safety, such as the introduction of the excavator GPS (E-GPS), which is currently a pilot system in its demonstration stages.

* GIS: Geographic Information System

** Chungcheong Energy Service and Yeongnam Energy Service (Gumi)



AIDEN drone



GIS-based absolute coordinates

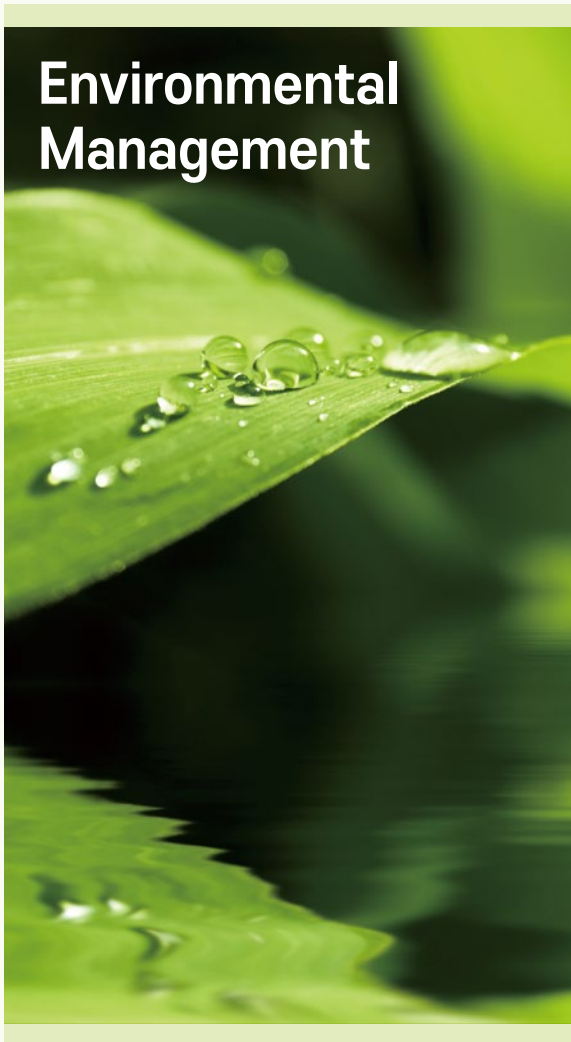


Environment

SK E&S is intending to be a “Carbon-Neutral Energy Optimizer” in minimizing the environmental impact of corporate activities, as well as proposing practical alternatives for carbon neutrality. Through this, we will lead the global green economy and contribute to the sustainable future of our society.

1	Environmental Management	31
2	Response to Climate Change	35

Environment 1



Environmental Management



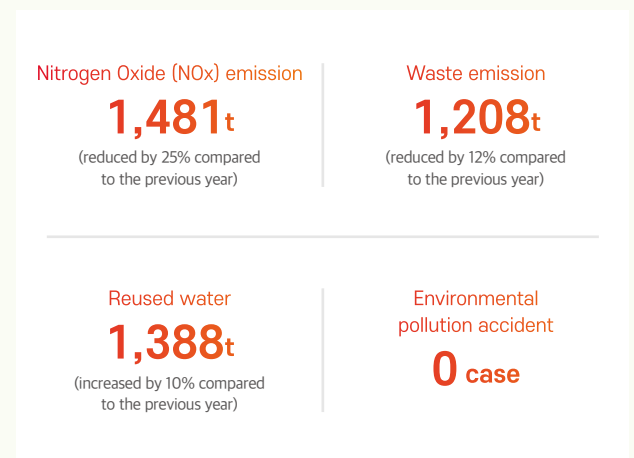
Roadmap



Environmental Management System



Major Environmental Performance and Status in 2021



SK E&S strives to reduce GHG and environmental pollutants from the overall business based on our eco-friendly management philosophy. Since the integrated environmental permit of SK E&S Gwangyang LNG Power Plant and seven subsidiaries* has been acquired in 2020 from the Ministry of Environment, we fulfilled a regular post-practice inspection of integrated environmental management without any issues in 2021.

We will not only execute the integrated environmental management plan and fulfill the conditions of an integrated environmental permit for each establishment but also schedule the improvement of our environmental management level constantly, such as the proactive adoption of the best available techniques (BAT) that is economically achievable.

We operate the Environmental Working Group every quarter (including SK E&S Headquarters and subsidiaries) to proactively respond to environment-related legislation and regulations, which are expected to be strengthened in the future. By sharing environment-related issues throughout the company and major environmental management work plans for each establishment regularly through the Working Group operation, we ensure organic cooperation and support between establishments. In particular, we selected the improvement of environmental indicators, such as water reuse rate and waste recycling rate, as the main task in 2022 and composed and operated the task force (TF) for this. As such, we will steadily improve the environmental management level throughout the company.

* Paju Energy Service, Narae Energy Service (Hanam), Narae Energy Service (Wirye), Busan Jungkwan Energy, Busan City Gas (Myungji Integrated Energy), Jeonbuk Energy Service (Kukdo Chemical), and Yeosu Energy Service

Reviewing areas for improvement regarding environmental indicators

- | | |
|------------------------|--|
| 1 Water reuse rate | 3 Expansion of green certification, etc. |
| 2 Waste recycling rate | 4 Other improvements of environmental indicators |

TF activities to improve environmental indicators in 2022

- 1 Derivation of key improvement tasks in 2022
 - Water reuse rate and waste recycle rate are derived as the key improvement tasks through the task analysis and review
- 2 Review of the application of improvement tasks
 - Review of applicability for each workplace (license and permit, technology, etc.)
 - Analysis of economic feasibility and review for investment
- 3 Derivation and execution of measures to execute improvement tasks

Participation in Global Initiatives

Among various global initiatives, SK E&S expands its participation particularly in environment-related global initiatives including climate change mitigation, to proactively showcase our commitment to improve environmental sectors as a responsible energy company. In 2021, we declared support for TCFD and acquired the gold rating certificate of ZWTL in Paju Energy Service in March 2022, through which we were recognized for the achievement of waste landfill reduction.

From 2022, the company discloses indicators and targets of climate change governance, strategies, and risk management in detail according to the TCFD recommendations. At the same time, we will faithfully disclose our efforts and information in relation to the response to climate change as we voluntarily participate in the carbon disclosure project (CDP). Furthermore, we will not only continue our efforts to reduce waste by expanding ZWTL-certified establishments but also expand our participation in initiatives concerning the environment such as carbon reduction in the medium to long term.

The Goal of Expanding Participation in Global Initiatives

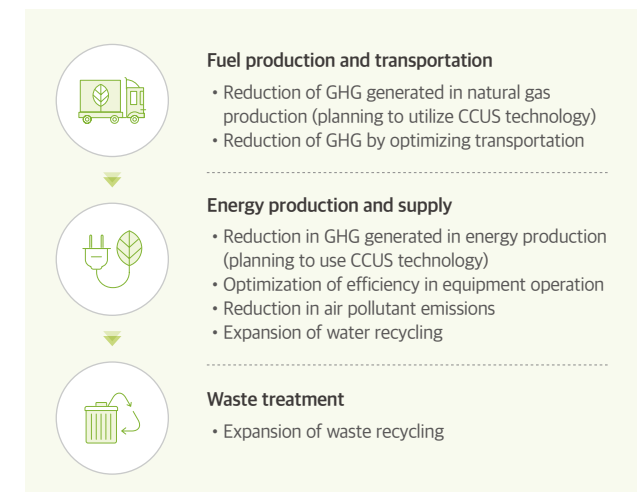


Environmental Management Value Chain

SK E&S is committed to minimizing the environmental impact throughout all value chains from the production and transportation of fuel and energy production up to supply and waste treatment. We are planning to reduce GHGs generated during natural gas, energy, power, and hydrogen production, by using the CCUS technology. We are also planning to continuously increase the reduction rate in air pollutant emissions by installing and operating air pollution prevention facilities and water and waste recycling in workplaces.

Identification of Environmental Impact when Initiating a New Business

Based on our eco-friendly business portfolio, SK E&S is expanding into solar power generation, ESS, hydrogen, and other businesses. To prevent environment impact of society in the process of new business implementation caused by Compliance Risk and business management, we are operating a process to identify environmental aspects and impacts in the project planning/review stage. Improvements found through the identification of environmental aspects are reflected in the establishment of detailed business plans to prevent related issues from occurring in advance. We will promote eco-friendly projects based on local environmental protection and compliance with environmental laws/regulations.



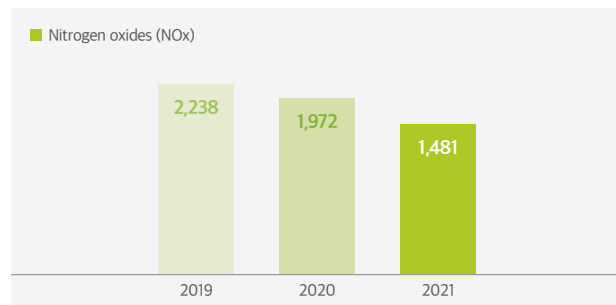
Management of Air Pollutants

All establishments in SK E&S installs and operates a facility to prevent air pollutants, such as a low-NOx burner and selective catalytic reduction (SCR), to minimize the emission of air pollutants. We are also monitoring the concentration of pollutants emitted into the air in real time through the tele-monitoring system (TMS). In particular, we completed the ultra-low NOx burner installation in the establishment of Myungji Integrated Energy in Busan City Gas in 2021 and established the SCR installation plan in Busan Jungkwan Energy to continuously reduce NOx that is generated during the operation.

Furthermore, the company is working on improvement activities to maintain the optimal efficiency of currently-in-operation air pollutant prevention facilities. To do this, we preemptively replaced the SCR catalyst in the cogeneration plant of Narae Energy Service Wirye in 2021. We are also conducting a regular inspection of the natural gas power plant in Paju Energy Service and cogeneration plant in Narae Energy Service Hanam and reviewing the SCR catalyst to maintain optimal efficiency. Based on these efforts, we have reduced the NOx emission by around 25% in 2021 compared to that of the previous year. SK E&S will continue to reduce air

Air Pollutant Generation

(Unit: t)



pollutant emission based on the new introduction and stable operation of air pollutant prevention facilities.

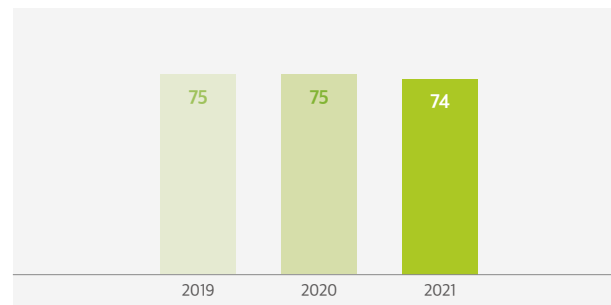
Waste Management

SK E&S adopts a legal waste management process to realize a circular economy, thereby facilitating the reduction and recycling of waste generated during business operation through outsourced waste management company. In addition, SK E&S establishes the improvement goals for each establishment to enhance the reduction in waste generation and recycling rate throughout the company and provides and drives the execution measure.

The subsidiary of SK E&S, Paju Energy Service, acquired the gold rating in the first quarter of 2022, while the company's waste recycling performance of 99% was recognized in the ZWTL certification assessment, which assigns a rating according to the waste recycling rate in a workplace. For now, we will continue to manage the waste recycling rate to expand the ZWTL certification to other establishments in the future. Other efforts to reduce waste have been variably made in city gas establishments such as the campaign of invoicing city gas bills in mobile and the reducing disposable product in offices.

Recycling Rate of Waste in All Worksites

(Unit: %)



Waste Management



Waste discharge

Activities to increase waste recycling rate throughout the company



Waste treatment

Checking whether external waste entrusting treatment companies are legally treating waste



Waste monitoring

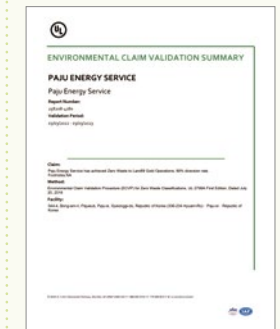
Management of appropriate treatment methods through the "Allbaro" system in the Ministry of Environment and reviewing the measure of resource-saving and waste recycle

Management of air pollutants



Installation of ultra-low NOx burner in Busan City Gas

Best practice of waste management



Paju Energy Service wins ZWTL Gold

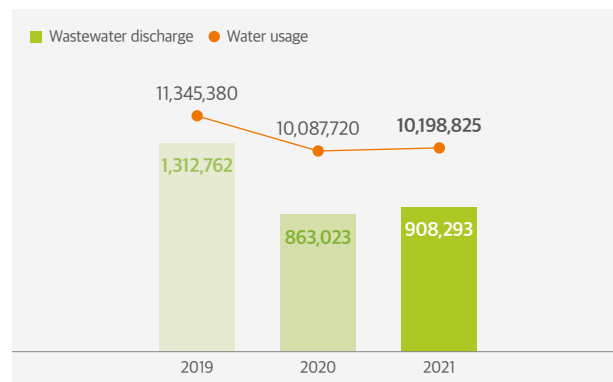
Water Resource Management

SK E&S is reinforcing water usage reduction activities, water reuse expansion activities, and water resource management such as water shortage prevention and regional water system protection. We introduced a process to reuse wastewater, search for measures to improve the additional water reuse rate, and promote equipment investment, to minimize water usage in the business operation. We also establish and fulfill the improvement measures for each establishment by improving the TF activities of environmental indicators to reduce the enterprise-wide water usage and improve the reuse rate.

The water quality standard regarding generated wastewater has been set up more strictly than the legal standard, and water quality is monitored 24/7 through the TMS. The establishments of SK E&S will ceaselessly continue to find the optimal water management measure, recognizing the importance of water resources and the protection of neighboring water streams.

Effluent Discharge Amount and Water Consumption of All Worksites

(Unit: m³)

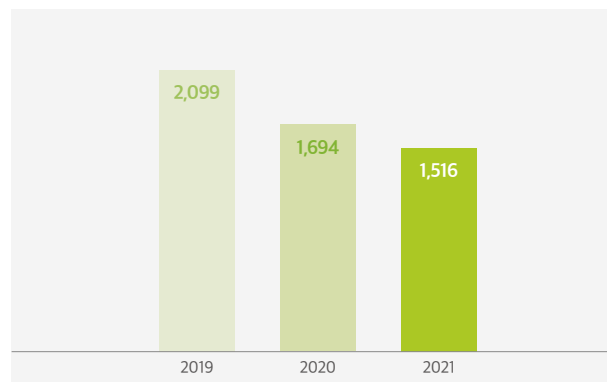


Chemical Control

SK E&S is inspecting chemical handling facilities and conducting accident prevention and response programs regularly to safely manage chemicals in use in the operation of worksites like power plants. For hazardous chemicals that may cause great damage to humans and the environment in the event of a leak, accidents are prevented through optimal usage management, leakage detection through sensors and CCTV installation, and reinforcement of unloading and handling management. In addition, the effectiveness has improved as we conduct training in response to chemical accidents based on scenarios, including manuals for swift reporting procedure and initial response, to prevent the damage from spreading. We will prevent and protect citizens from chemical accidents and serious disasters through the checklist operation for safety inspection of chemicals and the revision of management procedures.

The Usage of Hazardous Chemicals in All Business Sites

(Unit: t)



※ Based on the reported data on hazardous chemicals submitted to the Ministry of Environment

Status of Environmental Management Systems Certification, ISO 14001

	Worksite	Certification	Acquisition Year
Power	SK E&S (Gwangyang)	○	2007
	Narae Energy Service (Hanam, Wirye)	○	2021
	Paju Energy Service	○	2021
	Busan Jungkwan Energy	-	Planning in 2023
City Gas	KO-ONE Energy Service	-	
	Busan City Gas	○	2022
	Chungcheong Energy Service	-	
	Yeongnam Energy Service	○	2021 (Pohang)
	Jeonnam City Gas	-	
	Gangwon City Gas	-	
	Jeonbuk Energy Service	○	2021

Strengthening the Management of Chemicals



Regular inspection of facilities that handle chemicals



Emergency drill in preparation for hazardous chemical leakage accidents

Environment 2



Response to Climate Change

SK E&S joined TCFD* Supporters in 2021 for a systematic and sincere response to climate change. In the sustainability report, we have established a reporting system based on the TCFD Framework to disclose climate change-related governance, strategies, risk management, indicators and goals. In addition, in order to identify and manage the impact of climate change-related risks and opportunities on business activities, we have established and are operating a climate change response system comprised of the ‘BOD-management-working group’ chain. SK E&S will promote Net-Zero sincerely by inspecting the progress status every year and updating the plan.

* Task force on Climate-related Financial Disclosures

Corporate Governance

Supervision of the BOD for Climate Change Response

In the first half of 2021, SK E&S has newly installed the ESG Committee under the BOD to put the BOD-centered climate change response system in place for identifying the risk and opportunity concerning climate change and discussing Net-Zero strategy. The ESG Committee receives a report and reviews major issues related to the environment and climate change, and the Board of Directors, the highest decision-making body, reviews and decides on issues that have a significant impact on business activities. The ESG Committee was held twice in 2021 to discuss the ESG performance and promotion plan, including the response to climate change and SHE management status.

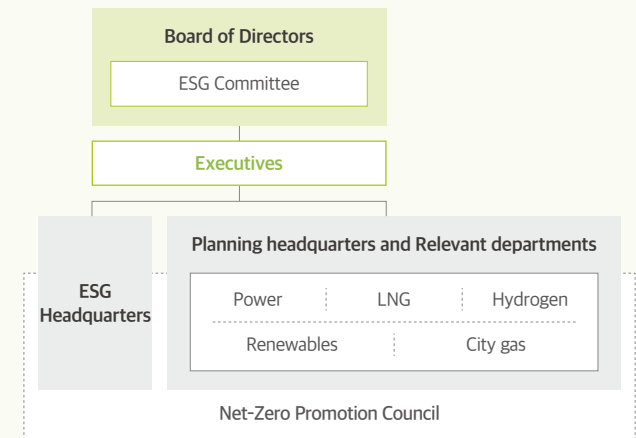
Role of Executives Examining and Managing Climate Change-related Risks and Opportunities

Executives conduct periodic monitoring on climate change-related issues, such as the status of greenhouse gas emissions and reduction measures for at least once a half-year. In addition, the performance of responding to climate change is reflected in the management performance evaluation (KPI) so that greenhouse gas reduction and Net-Zero achievement can be linked to business performance.

Since 2021, we have operated the “Net-Zero Promotion Council” that plays a role in establishing a strategy in response to climate change and discovering detailed execution tasks where ESG

headquarters and related departments participate together. Through this council, issues and matters concerning climate change, such as GHG emission volume of the company and reduction status, are discussed and reported to the executives and ESG Committee for managing the risk and opportunity factors concerning climate change. In addition, the company is planning to preemptively participate in the CDP this year despite its position as an unlisted company.

Climate Change Response System



Strategy

Climate Change-Related Risks and Opportunities

SK E&S analyzes financial impact by identifying risks and opportunity factors related to climate change. Risks are divided into transition risks and physical risks, and we are establishing a response plan for the financial impact of risks based on SK E&S' Net-Zero implementation plan.

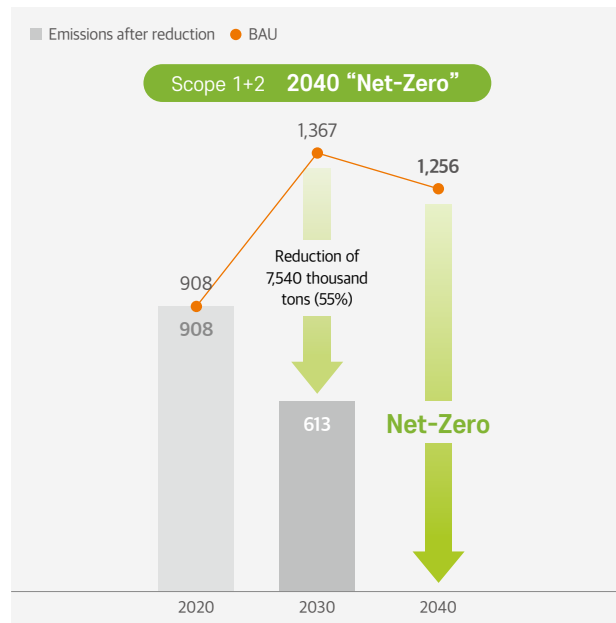
Climate Change Related Risks and Opportunities

Risk Type	Financial Impact	SK E&S Response Status	Period		
			Short - Term	Mid - Long Term	
Transition Risk	Policy/Law	<ul style="list-style-type: none"> Increase in response cost due to increase in carbon credit price and decrease in free allocation ratio Risks arising from litigation and violations of environmental and climate change laws Demand for expansion of renewable energy conversion 	<ul style="list-style-type: none"> Direct reduction through CCUS, carbon-free fuel conversion, and use of renewable energy Indirect reduction through carbon credits Advancement of internal management guidelines to respond to the emission trading system Discovering new reduction measures through the carbon reduction certification center within the SK group 	●	●
	Technology	<ul style="list-style-type: none"> Increase in R&D cost to secure eco-friendly technology Decrease in sales and loss of investment due to failure of demonstration and commercialization of eco-friendly technology 	<ul style="list-style-type: none"> Securing greenhouse gas reduction technologies such as CCUS and energy solutions and investing in companies with the target technology Discover eco-friendly innovative companies and support its R&D Prioritization of technology development considering business connectivity 	●	●
	Market	<ul style="list-style-type: none"> Increase in financial burden due to the increased investment in new projects 	<ul style="list-style-type: none"> Optimal utilization of existing business portfolio and systematic business expansion 	●	●
	Reputation	<ul style="list-style-type: none"> Increased impact on corporate credit/credit ratings according to environmental impacts such as ESG response strategies and carbon emission scale 	<ul style="list-style-type: none"> Disclosure of climate change response information according to the TCFD Framework Disclosure of information through Voluntary CDP Participation 	●	
Physical Risk	Acute	<ul style="list-style-type: none"> Physical damage to business sites or production facilities caused by abnormal weather, customer compensation and recovery costs Rapid fluctuations in raw material prices due to increased global raw material usage and climate change 	<ul style="list-style-type: none"> Promotion of energy management efficiency through energy solutions Stable energy source supply and demand through directly imported LNG Advancement of city gas safety management and introduction of new technologies (RBMS, GIS absolute coordinates E-GPS, hydrogen drone utilization, etc.) 	●	
	Chronic	<ul style="list-style-type: none"> Increased corporate operating costs caused by long-term abnormal climate Increased weather variability caused by long-term abnormal climate, rise of temperature and sea level 		●	●
Opportunities	Energy Resources	<ul style="list-style-type: none"> Increase in business opportunities due to higher demand for eco-friendly energy sources 	<ul style="list-style-type: none"> Promotion of hydrogen/renewable energy-based business <ul style="list-style-type: none"> Establishment of a plant capable of producing 250,000 tons of blue hydrogen per year (to be completed in 2025) Expansion of domestic and overseas renewable energy businesses such as solar and wind power (target: 7GW by 2025) 	●	●
	Product and Service	<ul style="list-style-type: none"> Increasing demand for development and expansion of low-carbon products and services <ul style="list-style-type: none"> Development of new products and services through mutual cooperation Expansion of demand for ICT-based eco-friendly products/services such as energy solutions 	<ul style="list-style-type: none"> Promotion of Green Portfolio conversion <ul style="list-style-type: none"> Establish partnerships to develop eco-friendly energy products and services Promotion of ICT-based grid solution, ESS, VPP, and electric vehicle charging businesses 	●	●
	Market	<ul style="list-style-type: none"> Entering new and emerging markets through various partnerships Promote eco-friendly projects through expansion and diversification of green finance 	<ul style="list-style-type: none"> Developed BU CCS in cooperation with Santos Ltd. and produced low-carbon LNG at the Barossa-Caldita offshore gas field in Australia using BU CCS Participation in the bioethanol CCS project through partnerships with Summit Agricultural Group, Continental Resources, Inc., etc. in the United States (planning to start operation in 2024) 	●	●

Net-Zero Implementation Plan

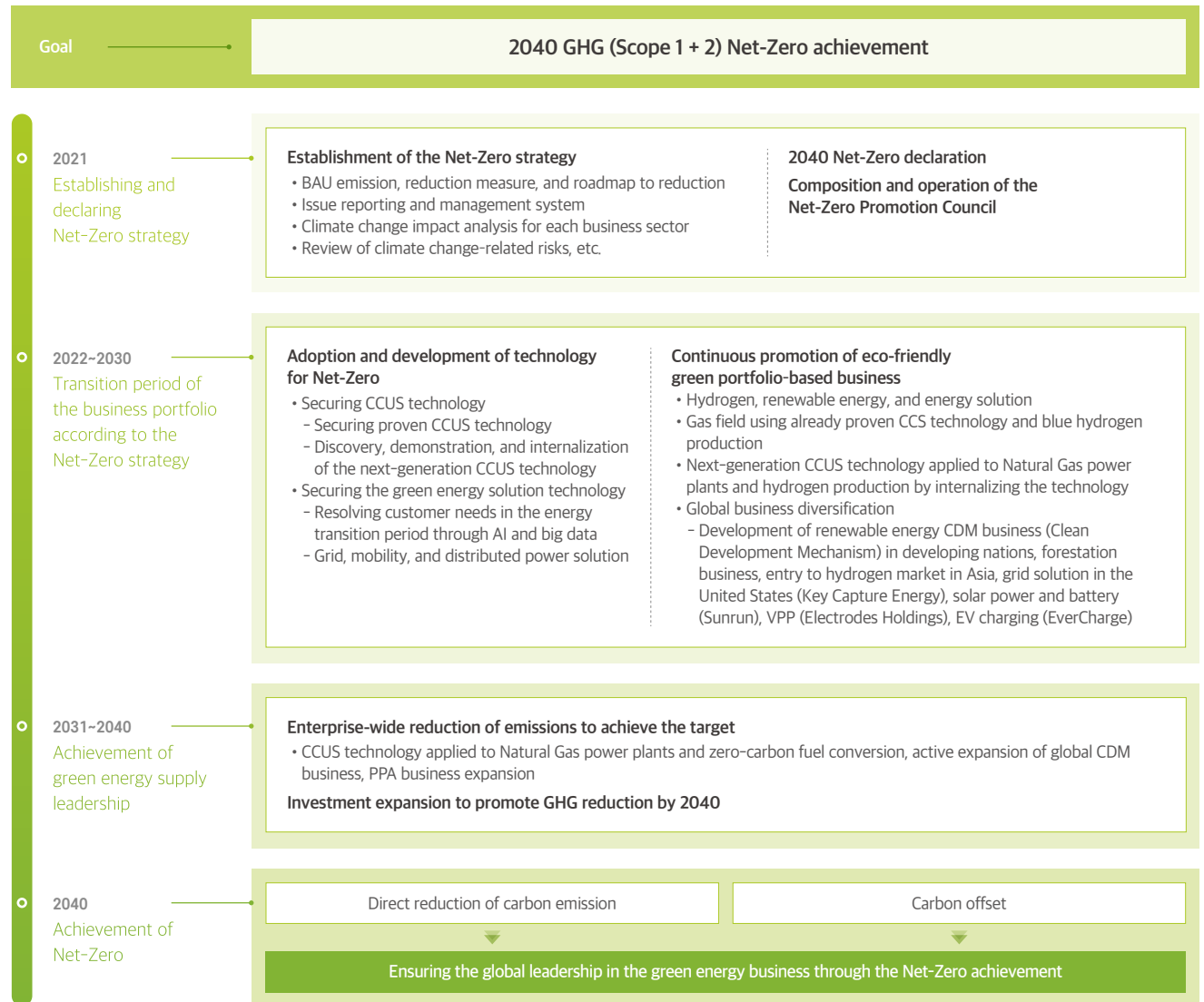
SK E&S has declared to promote “Net-Zero”, which refers to “zero” direct and indirect GHG (Scope 1 + 2) emissions in all domestic / international workplaces such as power generation, district energy, city gas, gas field, etc. by 2040. To do this, we have reviewed the execution plans, such as securing CCUS technology and step-by-step application, as well as securing and utilizing carbon credits through renewable energy and forestation businesses, etc. in underdeveloped countries. Furthermore, we will inspect the status of Net-Zero goal achievement every year regularly and update the execution plans periodically. In addition, we will make various additional efforts to contribute to GHG reduction, such as the green energy supply expansion, including hydrogen and renewable energy and energy solution businesses for the efficient use of green energy.

Reduction Roadmap (Scope 1+2, based on BAU) (Unit: 10k tCO₂-eq)



※ Including overseas sites

Reduction Roadmap

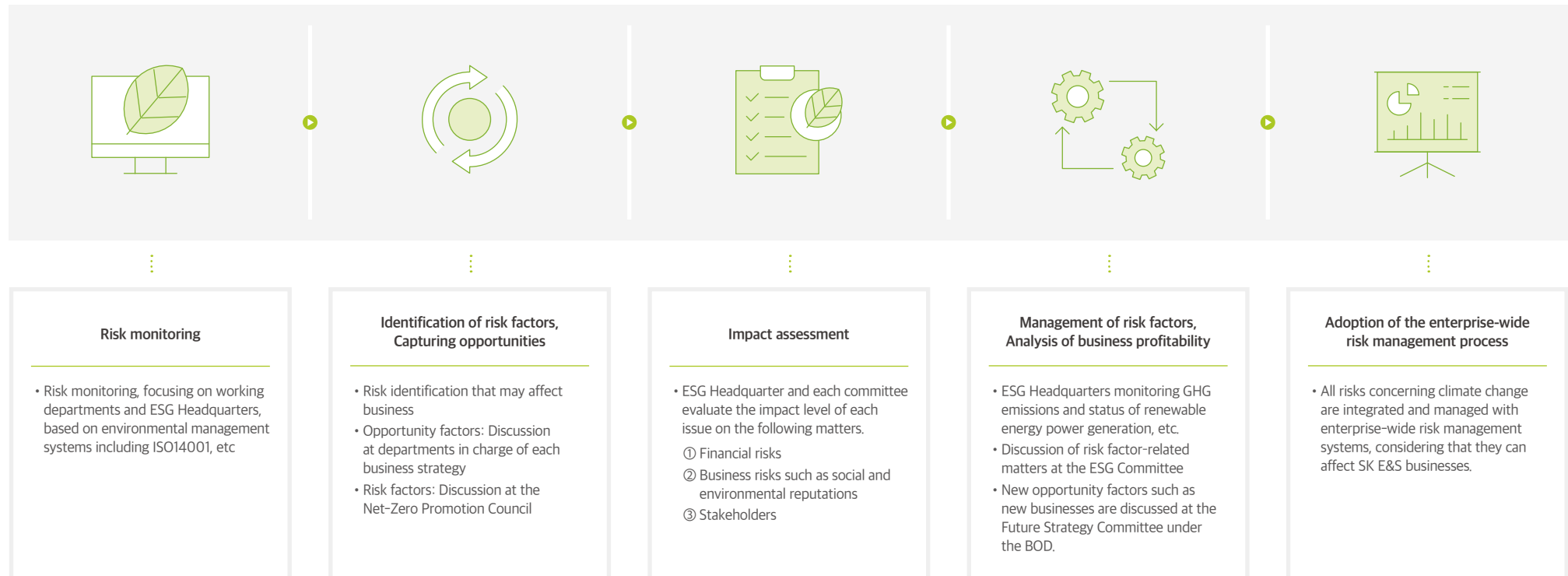


Risk Management

The energy transition in response to climate change is a major risk that affects the core business of SK E&S, the energy provider. We are proactively responding to the climate change risks by transitioning into an eco-friendly green portfolio.

SK E&S is constantly monitoring issues related to climate change that may occur in all business areas of energy production and supply, such as LNG production and transportation, and electric power/hydrogen. When an issue occurs, the person in charge of each business area reviews the issue and establishes a response plan through the Net-Zero promotion council together with the ESG headquarters, the department in charge of responding to climate change, and reports the result to the ESG Committee and the management including the CEO. Decisions are shared and implemented throughout the company through the Net-Zero promotion council, and opportunity factors such as new businesses that may arise due to climate change are discussed separately through the Future Strategy Committee under the BOD.

Climate Change Risk Management Process



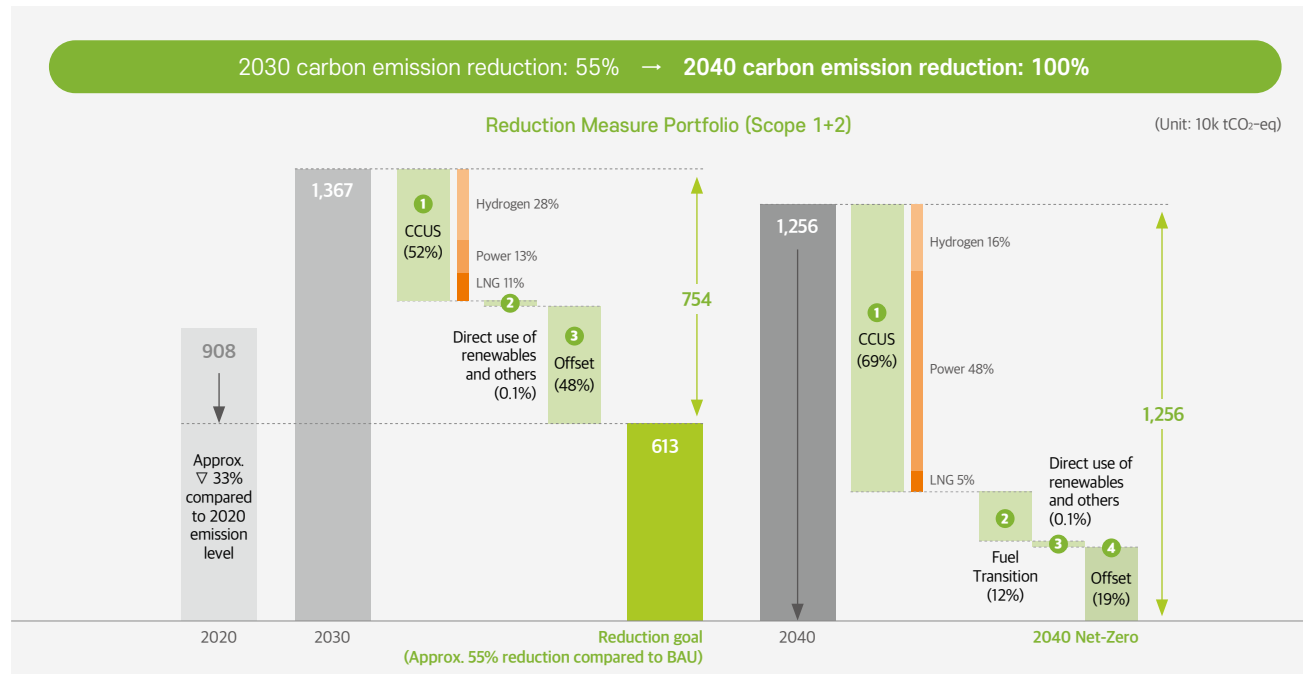
Indicator and Goals

Achievement of 2040 Net-Zero

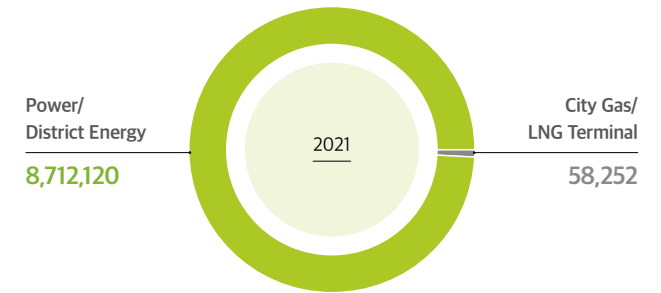


GHG Emission Management by Establishment and Sector

Paris Climate Agreement (1.5°C scenario), government policy (Framework Act on Carbon Neutrality and Green Growth), the establishment of reduction goals considering the 2050 carbon neutrality scenarios

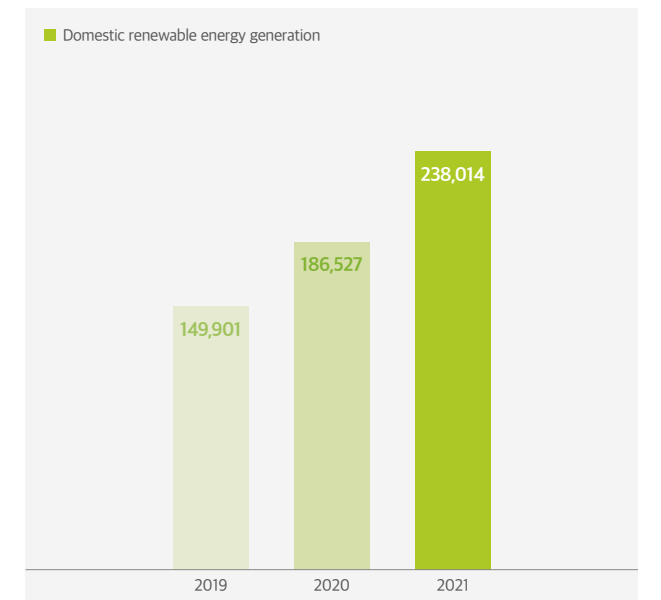


GHG Emission Proportion for Each Business (2021) (Unit: tCO₂-eq)



Expansion of Green Energy Supply

(Unit: MWh)



Energy Solution Investment

SK E&S is promoting various energy solution projects to not only reduce greenhouse gas emissions from business sites, but also to contribute to a whole-of-society response to climate change. The energy solution business includes renewable energy solutions that efficiently manage solar power generation resources, ESS* for safe energy storage, Grid/DERMS** solutions for stable power distribution network operation, and mobility solutions for the popularization of electric vehicles.

SK E&S is promoting the domestic microgrid business by utilizing Busan JungKwan Energy, which owns the largest distribution network among domestic private companies and conducts electricity wholesale and retail business, and from July 2021, we are conducting a V2G (Vehicle to Grid) technology demonstration project that supplies electric power stored in electric vehicles to the power grid through chargers. Furthermore, we are promoting the mobility energy solution business by securing stock shares of Parking Cloud, which has the largest parking lot infrastructure in Korea. In addition, by acquiring Key Capture Energy and Evercharge in the US, we are expanding our grid energy solution business and mobility energy solution business.

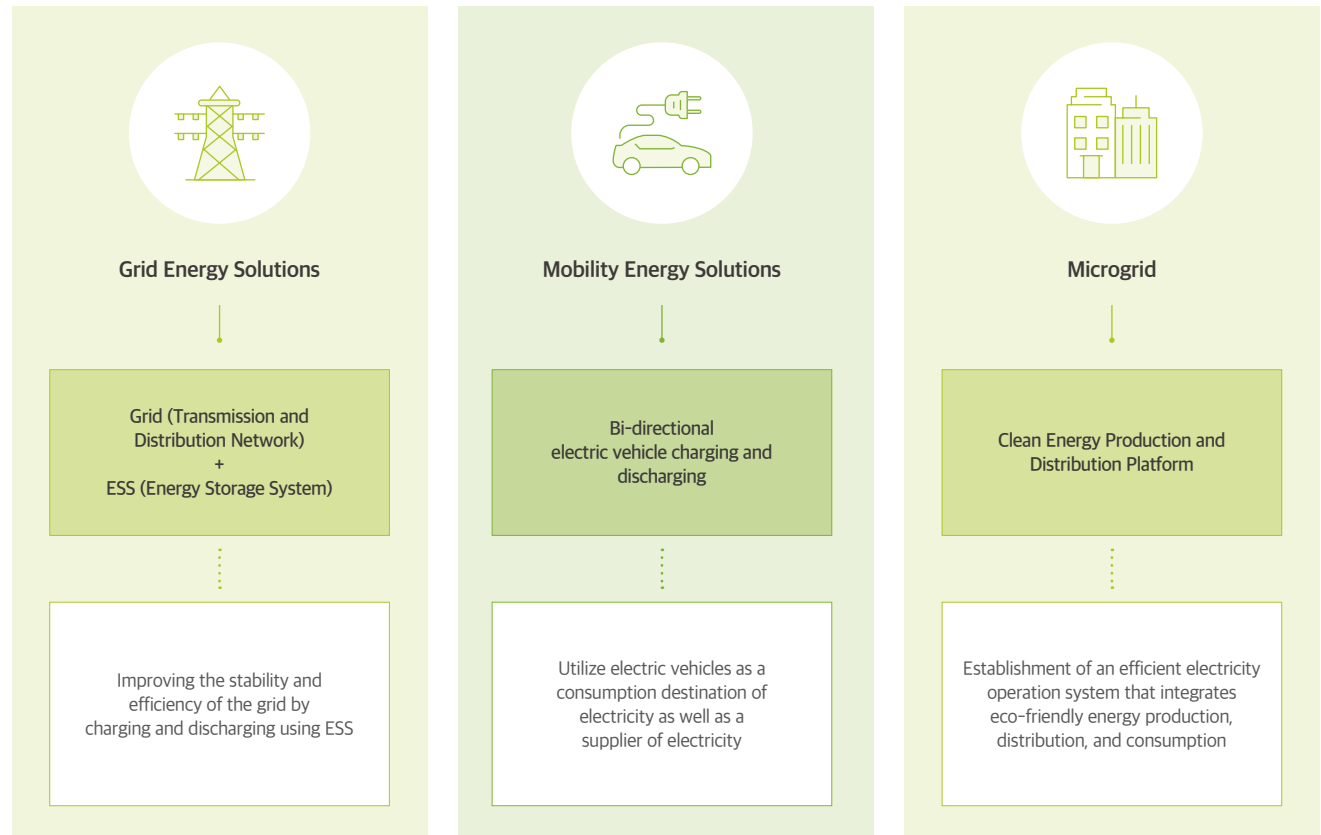
* Energy Storage System

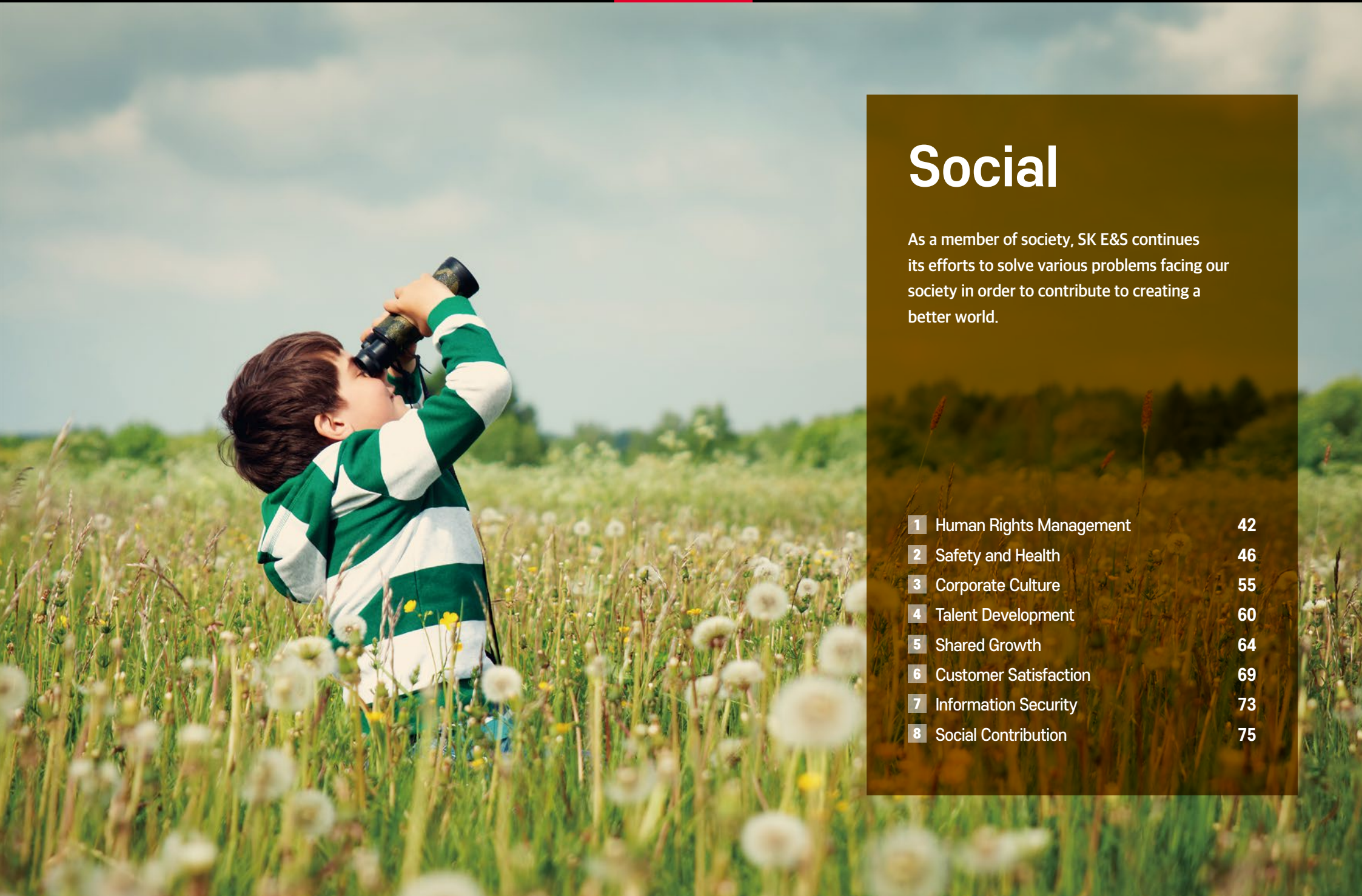
** Distributed Energy Resources Management System



V2G charging station in Busan JungKwan Energy

Energy Solution Business Overview





Social

As a member of society, SK E&S continues its efforts to solve various problems facing our society in order to contribute to creating a better world.

1	Human Rights Management	42
2	Safety and Health	46
3	Corporate Culture	55
4	Talent Development	60
5	Shared Growth	64
6	Customer Satisfaction	69
7	Information Security	73
8	Social Contribution	75

Social 1



Human Rights Management

Roadmap



Human Rights Review and Improvement Process (PDCA Cycle, Plan-Do-Check-Act Cycle)



Human Rights Management-Related Achievements

<p>Reported number of sexual harassment cases</p> <p>Zero</p>	<p>Reported number of corruption cases</p> <p>Zero</p>	<p>Ethics training completion rate</p> <p>100% (headquarter)</p>	<p>Joined the</p> <p>UNGC</p>
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Human Rights Management Guidelines

SK E&S supports and complies with the human rights standards of international organizations such as the UN and OECD, and implements human rights management that respects and protects the human rights of its members based on SKMS, the management philosophy of SK Group. From the stage of identifying human rights issues, we manage them through materiality assessment and communication with stakeholders and operate according to the setting of human rights-related issues for each stakeholder and detailed operation guidelines. We will continue to reflect the results of human rights due diligence, including the human rights impact assessment, which will be implemented from 2022, in the detailed operating guidelines to improve the level of human rights for SK E&S stakeholders.

Declaration of Human Rights

We strive to maximize the happiness of our stakeholders and do our best to prevent human rights violations in the course of our business activities. We support the UN's Universal Declaration of Human Rights (UDHR) and the UN Guiding Principles on Business and Human Rights (UNGPR), which were unanimously adopted by the UN Human Rights Council. We actively comply with Global Initiatives including ILO and OECD guidelines.

We declare that the SK E&S human rights policy is a basic obligation that our employees, overseas corporations, and all business partners must comply with.

Detailed Operating Guidelines for Human Rights Management

Respect for human rights

SK E&S respects all members as human beings, strives to prevent any acts that may constitute human rights violations, and provides prompt and appropriate remedies for human rights violations that occur in the process of business.

Working hours

SK E&S regular working hours and overtime hours follow the standards set by national or regional labor laws.

Prohibition of forced labor

SK E&S prohibits forced labor that goes against the free will of its members, and the company does not obtain any business benefits from forced labor.

Wage

SK E&S ensures that the wages of its employees exceed the minimum level set by the labor relations laws of each country or region.

No discrimination

SK E&S does not discriminate on any grounds such as gender, race, nationality, religion, disability, political opinion, etc. in employment, and does not discriminate by working conditions such as wages or promotion for any reason stated above.

Maternity protection

SK E&S strives to protect maternity and achieve work-family balance for its members.

Prohibition of child labor and employment for minors

SK E&S does not employ children or youth under the age of 15. When it is necessary to hire a minor under the age of 18, we employ him/her in compliance with the labor laws of the relevant country and region, and do not engage in dangerous or harmful work, including night work and/or overtime.

Workplace environment and safety

SK E&S provides a safe and friendly working environment where employees can work voluntarily and with enthusiasm. We continuously strive to prevent safety accidents for our employees and business partners, and respect and protect the rights to life and personal safety of local residents in areas where E&S's business activities take place.

Freedom of association

SK E&S guarantees freedom of association and the right to collective bargaining and does not give disadvantages for union membership/activity.

Respecting human rights of business partners

Under the principle of 'where there is influence, there is responsibility', SK E&S requires its partners, including subsidiaries, to practice human rights management, and provides support if necessary, as to prevent human rights violations by the supply chain through the exercise of good influence.

Human Rights Risk Management

SK E&S operates a human rights due diligence process to efficiently manage human rights risks that may arise from business activities. From 2022, we plan to establish a mid- to long-term roadmap for human rights improvement and conduct human rights due diligence through an external specialized agency in earnest. SK E&S's human rights due diligence is designed to respond closely to social, environmental and cultural changes, and based on the results of the due diligence, we plan to continuously raise the level of human rights of all stakeholders by upgrading the questions.

Definition of the Scope of Human Rights Issues and Stakeholders

Following the Ministry of Justice's "2021 Guideline on Business and Human Rights," SK E&S has selected 11 human rights issues area through internal self-assessments and internal and external

environment analysis. In addition, by matching key stakeholders such as customers, employees, partner companies, and local communities for each issue area, issues are clearly defined.

Identification of Major Human Rights Issues

SK E&S conducts human rights impact assessments through external expert institutions and identifies major human rights issues that could have a direct and indirect impact on our business operations.

Establishment of Improvement Goals

SK E&S establishes specific improvement goals to eliminate human rights risks identified through human rights impact assessments. Such goals include risk solution measures and related rescue measures plan.

Grievance Handling Process

SK E&S operates the "human rights grievance reporting" channel to monitor potential human rights risks that could occur in business operations and treat reported cases fairly. The reporting can be done via email, telephone, written forms, in-person submissions, or the human rights grievance reporting bulletin board. Investigations are initiated within three days of the grievance submission date and completed within 20 days. A noncompliance case with human rights management is addressed and disclosed according to applicable company regulations through the human rights grievance handling committee.

Human Rights Due Diligence Process



Monitoring Results

SK E&S actively monitors major human rights risks identified based on the established improvement goals and reflects corrective measures in corporate human rights policies.

Disclosure of Results to Stakeholders

SK E&S plans to disclose the results of human rights due diligence activities (which started in 2022) to all stakeholders via the company's sustainability report.

Human Rights Education

SK E&S regularly conducts human rights education programs to ensure that all employees adhere to human rights policies and improve their awareness of human rights management. Relevant education programs include those for sexual harassment prevention, improvement of disability awareness, and workplace harassment prevention, etc.

Human Rights Education

(Unit: Number of persons)

	2019	2020	2021	Target for 2022
Sexual harassment prevention	437	472	496	516
Improvement of disability awareness	432	476	496	516
Workplace harassment prevention	377	475	496	516
Participation rate (%)	100	100	100	100

Human Rights Risk by Stakeholders' Type

Category	Detail	Major stakeholders
Nondiscriminatory employment	Ban any discrimination by race, religion, disability, gender, place of birth, and business position of employment	Employees
Prohibition of forced labor	Prohibit any form of forced labor	Employees and partner companies
Prohibition of child labor	Ban child labor	Employees and partner companies
Industrial safety guarantee	Implement measures to guarantee occupational health and safety	Employees, partner companies, and local communities
Workplace harassment ban	Prevent a coercive and high-handed work environment, verbal violence, and harassment	Employees and partner companies
Establishment of a human rights system	Create a reliable and effective corporate human rights system	Customers, employees, local communities, and partner companies
Freedom of association and collective bargaining	Guarantee rights to establish and join labor unions	Employees
Responsible supply chain network management	Strive to maintain business relationships without human rights infringements	Partner companies
Local residents' human rights protection	Protect the residents' human rights in communities near our overseas operations	Local communities
Environmental right guarantee	Endeavor to prevent environmental pollution and climate warming	Employees, customers, partner companies, and local communities
Customers' human rights protection	Guarantee the products' safety and protect the customers' rights	Customers

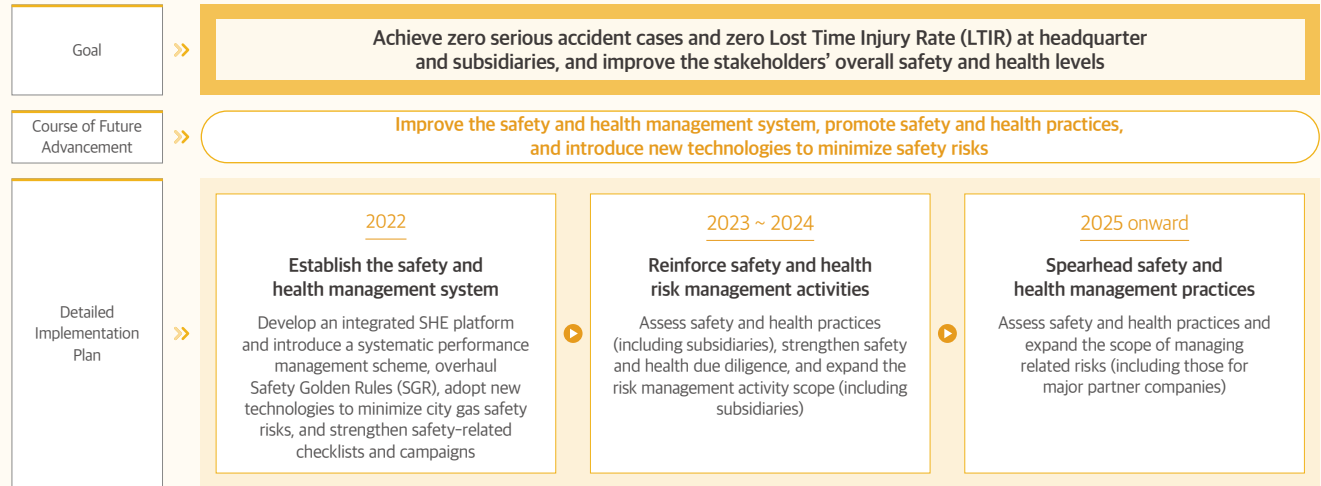
Human Rights Grievance Handling Process



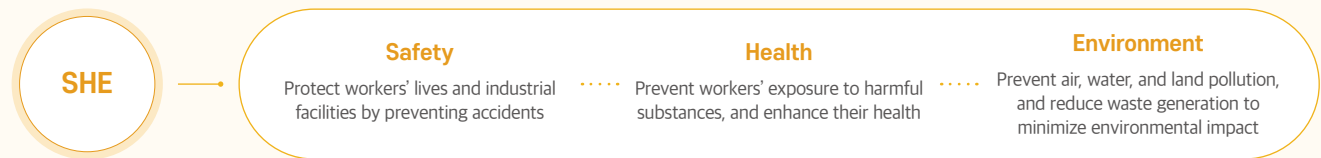
Social 2



Roadmap

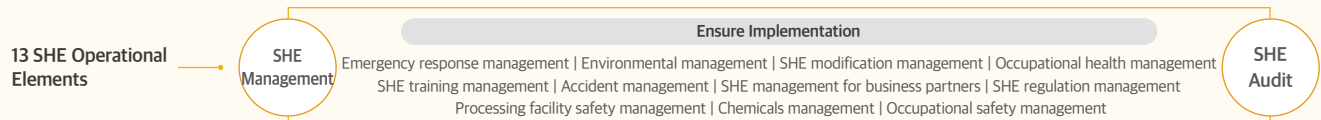


Safety/Health Management Guideline



Safety/Health Management System

SK E&S recognizes the pursuit of SHE (integrated management including the environment in addition to safety and health) as an important value to pursue the happiness of stakeholders and create a sustainable business environment, and is striving to implement responsible SHE management. We analyzed the internationally accepted essential SHE management elements and established them as 13 SHE operation elements, reflecting them in the SHE organization and audit system for strict compliance. We also regularly report SHE agendas to the Board of Directors and ESG Committee.



SHE Organizational Structure



SHE Operations by Business Unit

SHE Operations by Business Unit

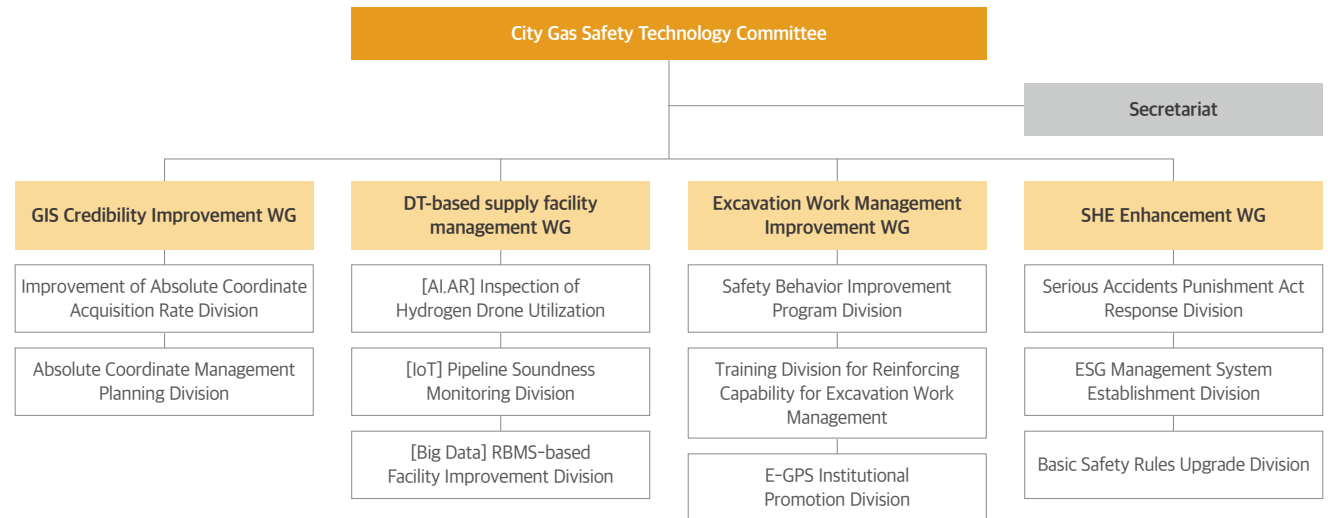
Power Business | Starting from 2021, SK E&S created the SHE council under Narae Energy Service O&M, a subsidiary responsible for power plant operation and management to reinforce safety and health measures at power plants.

City Gas Business | SK E&S operates the City Gas Technology Safety Committee, a body that consists of executives and SHE managers at city gas subsidiaries, to strengthen safety management efforts for the city gas business. In 2021, 4 working groups and 11 subgroups, including those for new safety technologies, were organized to reinforce safety management.

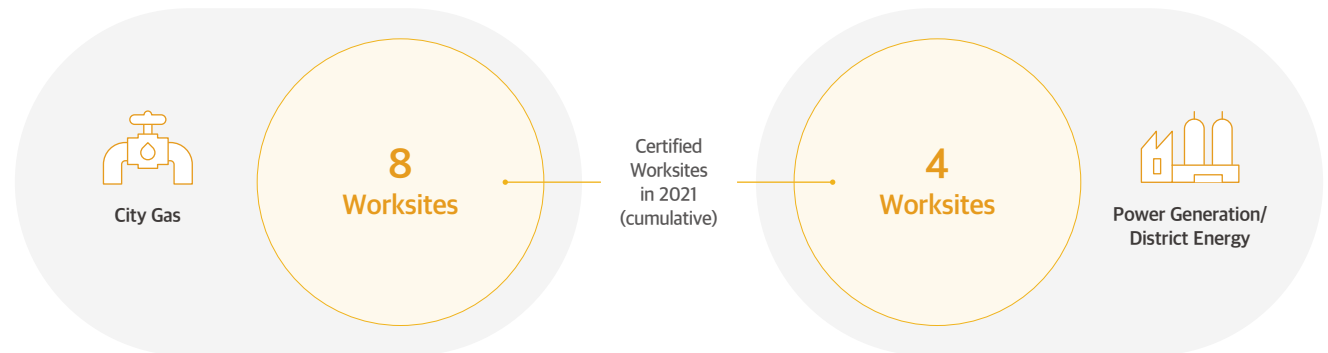
Safety and Health Management

In 2021, SK E&S identified risk factors and established and operated a safety and health guide by examining the safety and health status of the overall supply chain, including the headquarters, subsidiaries, and suppliers.

City Gas Safety Management Framework



Status of Safety and Health Management System Certification ISO 45001 (OHSAS 18001)



In 2022, to prevent major accidents at SK E&S and its subsidiaries, we are securing safety and health infrastructure through reorganization of SHE regulations, accident prevention campaigns, and risk assessment implementation checks. The Chief Safety Officer (CSO) conducts regular on-site inspections of business sites and supervises disaster prevention and necessary improvement activities at the business sites. In addition, through the SHE consulting and training programs, we will improve the safety and health capabilities of our employees, and check whether they comply with safety and health-related laws/company regulations, including basic safety rules, to continuously supplement matters that need improvement.



on-site inspection by the Chief Safety Officer (CSO)

SK E&S has established its SHE system, which enables data search, offers legal information, and supports on-site operations to create a systematic SHE management scheme and standardize SHE-related operations. Because of adopting the SHE system, we have laid the foundation to strengthen the management of SHE compliance risks at all business sites and improved the overall work efficiency based on enhanced IT solutions. Moving forward, we will further improve our safety and health management operations by stabilizing the current system and developing additional features.

SK E&S Digital SHE Management System (SHEM) installation

Management of SHE-related laws and regulations

Legally required inspections	Appointment and dismissal
Licensing/permits	Laws/regulations
Legal impact review	

Environment/chemical substances

Air quality management	Water quality management
Waste management	Soil management
Greenhouse gas (GHG) management	Chemical substance management

My SHE

Schedule management	Approval status
My inspection	Notice
Information	Bulletin board

Safety management

Risk assessment	Permit to work
Inspection management	Energy cut-off

External system (Interface)

(Oil price information)	(Latest law information)	(Information related to advance legislation notice)	(Meteorological information)

Management of Safety Issues and Accidents

SK E&S operates the Issue & Risk Report (IRR) system to ensure company-wide safety issue management. Safety accidents and related issues are immediately reported to the CSO and CEOs of each subsidiary, and related departments assist in a swift response by analyzing the cause of the reported accident and establishing measures to prevent recurrences. In short, the operation of the Issue & Risk Report system helps us to prevent repeated safety accidents.

We have continued to invest in safety measures and strengthened reviews of risk factors to achieve zero accidents. Because of this, we have achieved zero serious accident cases and maintained the LTIR figure which is one of safety management indicators at around 0.1682* over the past three years (including the headquarters and subsidiaries). We will further strive to prevent safety accidents at establishments through continued safety management efforts.

* calculated from the number of Lost Time Injuries per 200 thousand working hours, as of 2021

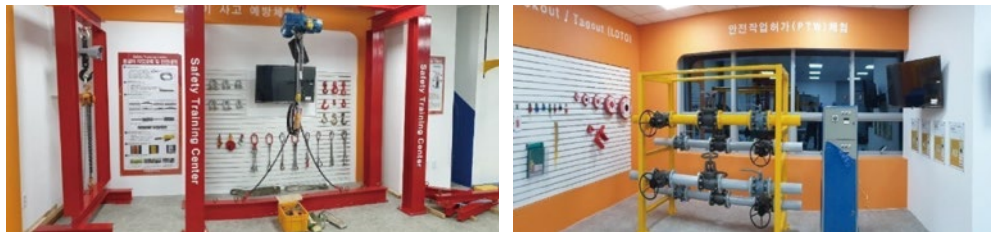
Safety Indicators for Our Worksites

		2019	2020	2021
Lost time injury rate (LTIR)	Headquarter	0	0	0
	Subsidiaries	0.1142	0.4078	0.1741
Serious accident cases	Headquarter	0	0	0
	Subsidiaries	0	0	0

※ Based on the SK E&S headquarters and its subsidiaries (excluding partner company personnel)
 ※ LTIR for every 200,000 man-hours

Major Safety-Related Systems

Safety golden rules	<ul style="list-style-type: none"> Since the foundation of SK E&S in 1999, we have established the Safety Golden Rules (SGR) based on our accumulated knowledge from analyzing causes of accidents and preventive measures. This year, we will distribute an amended version to reflect the newly enacted Serious Accidents Punishment Act to our employees (nine categories), partner companies (nine categories), and customer centers (seven categories). ※ Contract/service workers and workers in special employment types included
Permit to work	<ul style="list-style-type: none"> Permits to work are given only to certified employees who have regularly received training and tests specific to their roles. <ul style="list-style-type: none"> Facility Control Person (FCP): Supervises safety work procedures and assumes general responsibilities Senior Authorized Person (SAP): Reviews risks and preventive measures, issues permit to work, and decides on energy cut-off/input Authorized Person (AP): Hosts test operations, performs gas measurements, and implements energy cut-off/input Competent Person (CP): Examines work hazards, submits work requests, and supervises work procedures
Personal lock system	<ul style="list-style-type: none"> Workers, supervisors, and other responsible personnel store the key for energy isolations in a designated key box at each worksite. The system aims to verify the workers' safe return and prevent safety accidents.
Advanced site safety audit	<ul style="list-style-type: none"> The program promotes the employees' initiative to prevent serious accidents and create a safe working environment. Unsafe behaviors and conditions are identified in advance to prevent safety accidents.
Safety experience center	<ul style="list-style-type: none"> Operated by Paju Energy Service, the safety experience center hosts safety education programs for employees and partner company members. Hands-on training programs are offered to improve the understanding of work-specific risk factors and emphasize the importance of safety.



Safety management of city gas pipelines	<ul style="list-style-type: none"> Adopted the GIS-based Total Safety Management System (TSMS) Introduced the Risk-Based Management System (RBMS) using big data. Perform leak tests on pipelines using drones.
Emergency response drills	<ul style="list-style-type: none"> We regularly perform drills under potential scenarios, ranging from accidents that occur in closed spaces—from fire explosions to toxic leaks—to help employees respond better to possible accidents.
Improvement of safety facilities	<ul style="list-style-type: none"> Regularly check our firefighting and disaster control equipment installed at our worksites to ensure that they are in the best condition Investments are made whenever there arises the need to refurbish, replace, or expand existing facilities to maintain a safe working environment.
Program to nurture safety management experts	<ul style="list-style-type: none"> We plan to expand our program to nurture experts for specific areas (such as pipeline network analysis and exploration or electric anticorrosion), including all employees performing safety management jobs in 2022, and hold competency-building programs regularly.



ISO 45001 Certification for Safety and Health Management System (OHSAS 18001)

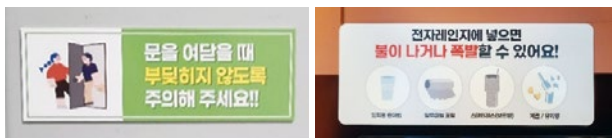
	Worksite	Certification	Certification Year
District Energy	SK E&S (Gwangyang)	○	2011
	Narae Energy Service (Hanam, Wirye)	○	2021
	Paju Energy Service	○	2021
	Busan JungKwan Energy	-	Expected in 2023
City Gas	Ko-one Energy Service	○	2021
	Busan City Gas	○	2021
	Chungcheong Energy Service	○	2021
	Yeongnam Energy Service	○	2021 (Gumi)
		○	2021 (Pohang)
	Jeonnam City Gas	○	2021
	Gangwon City Gas	○	2021
	Jeonbuk Energy Service	○	2021

Day-to-Day Safety

SK E&S established basic guidelines ensuring safety in daily life, to prevent any accidents for our in-office employees in addition to our on-site workers, to promote a safe working environment. Furthermore, we have set three dos and three don'ts for daily activities and promoted them through corporate broadcasting and office banners. Also, we perform risk assessments to identify possible risks of accidents that could occur in our office building, as well as develop and implement improvement measures required to create a safe working environment.



Precautions when using the stairs: Put away your phone and walk one step at a time, using the handrail as a guide



Precautions when using the entrance door and microwave

Safety Management for Stakeholders

Policies to Prevent Safety Accidents at Partner Companies

Code of Conduct for Partner Companies - Safety/Health

Partner companies shall comply with the safety and health laws and regulations in the country of their business operations and obtain the necessary licenses and permits related to industrial safety and health. They shall eliminate all risk factors to ensure safety and provide workers with appropriate protection gears to help them avoid any hazards. Furthermore, partner companies shall establish emergency measures and response systems to minimize any harm, keep all facilities clean, and regularly check the safety of all hazardous or dangerous machines/facilities in the establishment.

Implementation and Plans to Improve Safety and Health Management System for Business Partners

SK E&S has been making multifaceted and systematic efforts to review the safety practices across the overall business partner network and respond to the enforcement of the Serious Accidents Punishment Act. In 2021, SK E&S checked the status of safety management measures across its 140 partner companies. In addition, based on its classification of high-risk jobs, SK E&S established guidelines to ensure the fulfillment of safety and health obligations. This year, we plan to establish and distribute prevention guidelines and develop measures to facilitate the implementation of the guidelines. Moving forward, we will further strive to prevent serious accidents, not only at our own and our subsidiaries' worksites but also across the overall business partner network.



Activities to Prevent Safety Accidents for Partner Company Employees

Advancement of Excavation Work Management

One of the biggest safety hazards that could occur in an excavation process is gas pipeline damage. SK E&S operates a safety coaching program to prevent such hazards. 62 managers conducted 3,281 on-site coaching—a figure that represents 109.6% of the targeted level—to correct 3,430 unsafe behaviors from May to October, a period when construction works are most frequently performed. In addition, training programs for excavation work management were accompanied to improve employees' on-site safety management capabilities.



As a result, the safety rate increased from 53.9% in April 2021 (before implementing the program for excavation work management advancement) to 91.0% in September, with positive feedback from 77% of coaching program participants. This year, we will select and manage high-risk jobs and further improve the coaching program's quality.

Hydrogen Drones

We have adopted hydrogen drones to regularly check city gas facilities and applied them to various projects conducted with partner companies. In 2021, drone-based inspection services were performed in Eumseong-gun and Jincheon-gun in the Chungcheongbuk-do area and are to be expanded to Cheongju and Gumi cities moving forward.

The position of the excavator is confirmed with an alarm by calculating the separation distance from the pipe (AR) through the use of a hydrogen drone, which recognizes the excavator as an object (AI)

(Hydrogen) drone



Excavator

[AIDEN] Drone Control + Excavator Object Recognition Prgm

Institutionalization of the Excavator - Global Positioning System (E-GPS)

We plan to link the Excavator - Global Positioning System (E-GPS) with the Korea Gas Safety Corporation's Excavation One-Call System (EOCS) to prevent accidents caused by excavation works conducted without prior notice. With that said, we have signed memorandums of understanding with seven city gas subsidiaries, municipal governments, and other related institutions and completed a report on demonstrating related technologies. In addition, we are planning to join the Ministry of the Interior and Safety's new deal project.



Pipe Monitoring Activities for Stable Supply

Electric Potential Monitoring | SK E&S has introduced electric potential monitoring equipment for medium-pressure pipelines that could cause potential risks to customers. In 2021, we achieved an average 54% monitoring rate and sought to improve it further. In addition, we will continue to enhance monitoring operations by improving the performance of our monitoring equipment, utilizing Internet of Things technologies, and establishing an integrated inquiry system.

Achieved around 20% Electric Potential Monitoring Rate for Medium-Pressure Pipelines

Category	Ko-one	Busan	Chungcheong	Gumi	Pohang	Jeonnam	Gangwon	Jeonbuk	Total
Blocks	25	50	24	11	9	11	8	5	133
Remote TB	44	39	23	23	31	24	16	10	209
Monitoring extension (km)	455	393	336	117	103	134	179	79	1,792
Monitoring rate (%)	48	26	25	36	45	100	100	50	54

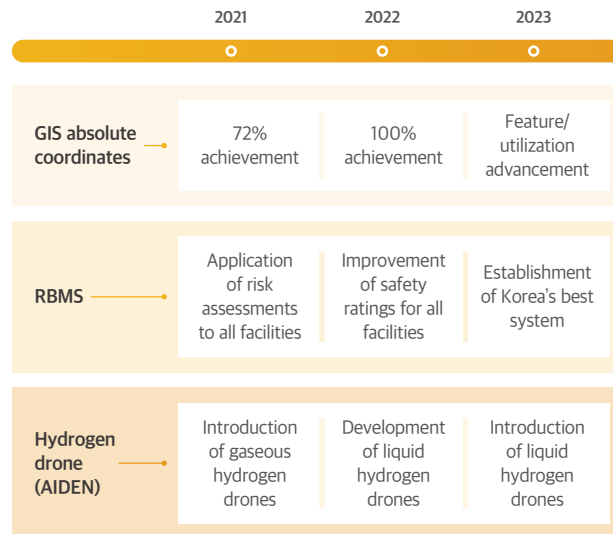
* Status of remote TB installations and monitoring of medium-pressure pipelines by the company

We have preemptively discovered abnormal electric potential patterns, which imply potential risks of fires or explosions, and prevented such risks by adding insulation works.



429, Gil-dong, Gangdong-gu, Seoul (Gilcheon Bldg.)

Inspection of Safety Environments and Assessment of Potential Risks

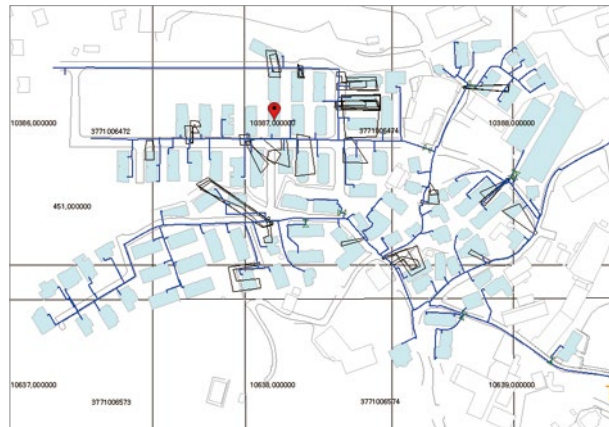


Information-Based Safety Management System

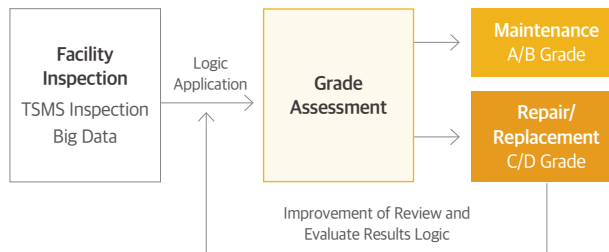
SK E&S Base Map | Based on over 30 years of accumulated knowledge and the use of the latest geographical information, SK E&S has established the TSMS, monitoring customers' activities 24/7 to ensure their safety. The system helps us prevent excavation accidents stemming from wrong geographic information and improve the efficiency of drawing management.

By introducing surveying drones and adopting orthoimagery and structuralization-related technologies, SK E&S has created a system to develop its base map for the first time in the industry—an achievement that has enabled us to quickly and precisely update digital maps.

In addition, we are planning to shift our city gas pipeline management technique from a relative coordinate-based method to a more accurate absolute coordinate-based method. In 2021, we obtained absolute coordinates for a length of 1,680 km—a level that represents 72% of those acquired over the past 10 years—and aimed to complete 100% (3,936 km) by the end of 2022.



RBMS Component Evaluation / Improvement Process



Risk-Based Management System

SK E&S has adopted the Risk-Based Management System (RBMS) technology along with hydrogen drone and expanded its application to supply facilities of encompassing pipelines, valves, and manostats. Furthermore, RBMS is a big data-based risk assessment system using on-site inspection results on supply facilities. We have assessed the risks of safety accidents for our supply facilities using the system and repaired or replaced high-risk facilities based on the assessment results (with 27 pipelines and manostats improvement in 2021). In addition, we have established an RBMS operation guideline to further improve the risk assessment system's speed and accuracy.

In 2021, we graded all of our 220,713 pipeline sections based on their risk levels and removed risk factors for 1,488 sections. Notably, we repaired or replaced all of the facilities that received the lowest grade of D (including pipelines, valves and entire manostat). As for those that received grades C and B, pipelines with coating defects or valves with operation failures were fixed with priority, as they could lead to accidents or gas leaks. Moving forward, we will further strive to remove risk factors for all of our supply facilities by conducting regular risk assessments and improving the RBMS.

Conducted Risk Assessments for All Supply Facilities, Performed on-site Scrutiny, and Removed Risk Factors

Category	Subject	A	B	C	D
Pipeline	220,713 Sections (9,232km)	169,914 Sections (6,103km)	47,080 Sections (2,821km)	3,530 Sections (299km)	189 Sections (9km)
Valve	42,982 Units	23,363 Units	18,746 Units	820 Units	53 Units
Manostat	1,354 Units	520 Units	808 Units	26 Units	-

Risk Improvement ¹⁾
1,488 Sections (25km)
104 Units ²⁾
256 Units

1) Risk factors removed for facilities with overall grade D, and those with grades C and D for additional criteria 2) Inspection for 35 valve units underway

Drone-Based Surveillance Inspection Service

With SK C&C conducting pilot runs in several regions in 2020, SK E&S has jointly developed the “AIDEN drone-based surveillance inspection service” because of the rising application of drone technologies. We officially introduced the service in 2021 and institutionalized it this year.

Our “AIDEN drone-based surveillance inspection service” is a cloud-based safety management service that analyzes videos recorded by drones and surveillance cameras, as well as mobile videos in real time to immediately identify risky situations. The service allows us to monitor facilities in areas that have potential safety concerns but are challenging for human access, such as densely populated residential areas, housing development districts, and wall pipelines on high-rise buildings.

In 2021, the service’s application expanded from medium-/large-sized excavators to small-sized excavators, allowing greater on-site use. Furthermore, by adding artificial intelligence (AI) and thermographic cameras, we plan to elaborate the technology to enable 24/7 site monitoring for gas leaks. We will further make investments to improve the quality of our safety management practices.



Chungcheong Energy Service,
Hydrogen 1550
(18kg, 1,550mm)



Yeongnam Energy Service,
DS30W
(21kg, 1,999mm)

Health Management

Activities to Promote Employees’ Health

SK E&S supports medical checkups, psychological counseling services, and medical expenses for all employees (including both permanent and temporary workers), as well as their family members. We have improved our health support system to reduce employees’ medical expense burden by supporting the treatment of serious illnesses of employees and their family members. We will continue to offer the necessary support to promote our employees’ physical and mental health.

General Health

Support for medical checkups

SK E&S supports comprehensive medical checkups for employees who are 36 year-or-old and above annually and general/comprehensive checkups for employees under 36 years old every 2 years. To employees’ spouses, we offer biennial comprehensive checkups.

Support for medical expenses

We offer medical expense support regarding coverage and noncoverage expenses to promote the health of our employees and their family members. In 2022, we have expanded the scope of support for noncoverage treatments (which were limited to items such as hospitalization and examination fees in the past) to include all items for treatment purposes, with the support ceiling also raised to an amount that is twice the previous level. Furthermore, employees are covered by group accident insurance plans to get additional support for any injuries or illnesses incurred during their work.

Psychological counseling services for employees

We operate a variety of psychological counseling programs for employees, their spouses, and immediate family members to help them cope with work-related stress, personal relationships, family issues, childcare, finance, and legal matters. In addition, professional counseling sessions and related follow-up management are not subject to internal application processes, with all personal information and counseling details kept strictly confidential, to help employees feel comfortable about using the program. In 2022, we have introduced an on-site counseling program in which employees are given professional counseling services. By 2023, we plan to expand the on-site counseling program suitable to various employees’ working environments.

Industrial Health

Working environment management

We regularly select risk factors and establish management standards, then measure, evaluate, and improve risk factors at worksites, as well as share the results with all employees. In particular, we frequently analyze the risk factors of each worksite and seek to eliminate them, preventing work-related illnesses. Furthermore, employees who deal with harmful chemical substances are offered additional special health checkups more than once a year.

International SOS

We protect our employees to prevent any harm from infectious diseases or conflicts if they are sent abroad for business purposes. We also assist them in emergency situations by providing them with information and reservations at renowned health-care institutions, as well as medical interpretation. Moreover, we further monitor their health conditions and take necessary follow-up measures.

Major Health Management-Related Achievements

	2019	2020	2021
Medical checkups (employees, number of persons)	370	362	428
Medical checkups (employees’ spouses, number of persons)	95	103	286
Medical checkup rate (including temporary workers, %)	100	100	100
Psychological counseling (number of sessions)	42	99	84

* Based on the SK E&S headquarter

Response to COVID-19

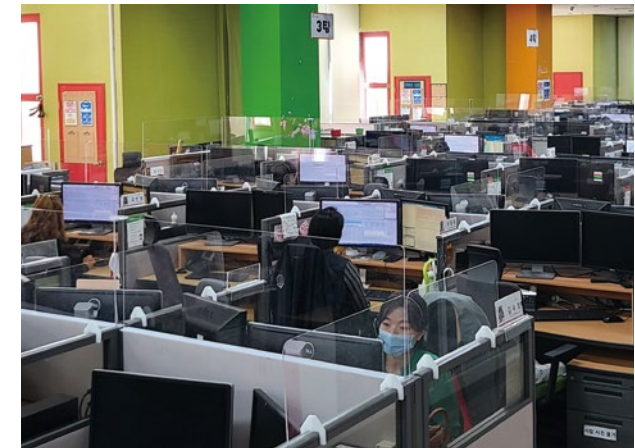
SK E&S has established a COVID-19 emergency response organization. The headquarters and all other business sites have drafted a Business Continuity Plan and created a working environment according to the plan. Furthermore, we have applied stricter management standards than those set by the health authorities.

Having created COVID-19 emergency response systems, we strive to preemptively contain the spread of the virus. A health-care guideline has been distributed to employees in the headquarters

and other business sites, and related posters were published in our office building and business sites. Furthermore, we have set commuting standards in line with the government's social distancing protocol and notified employees of such standards, as well as provided them with face masks and self-testing kits. We have also adopted telecommuting and supported our employees with the necessary tools and environments to work from home in order to prevent the spread of COVID-19.

Partner Company - Support to Protect Call Center Workers from COVID-19

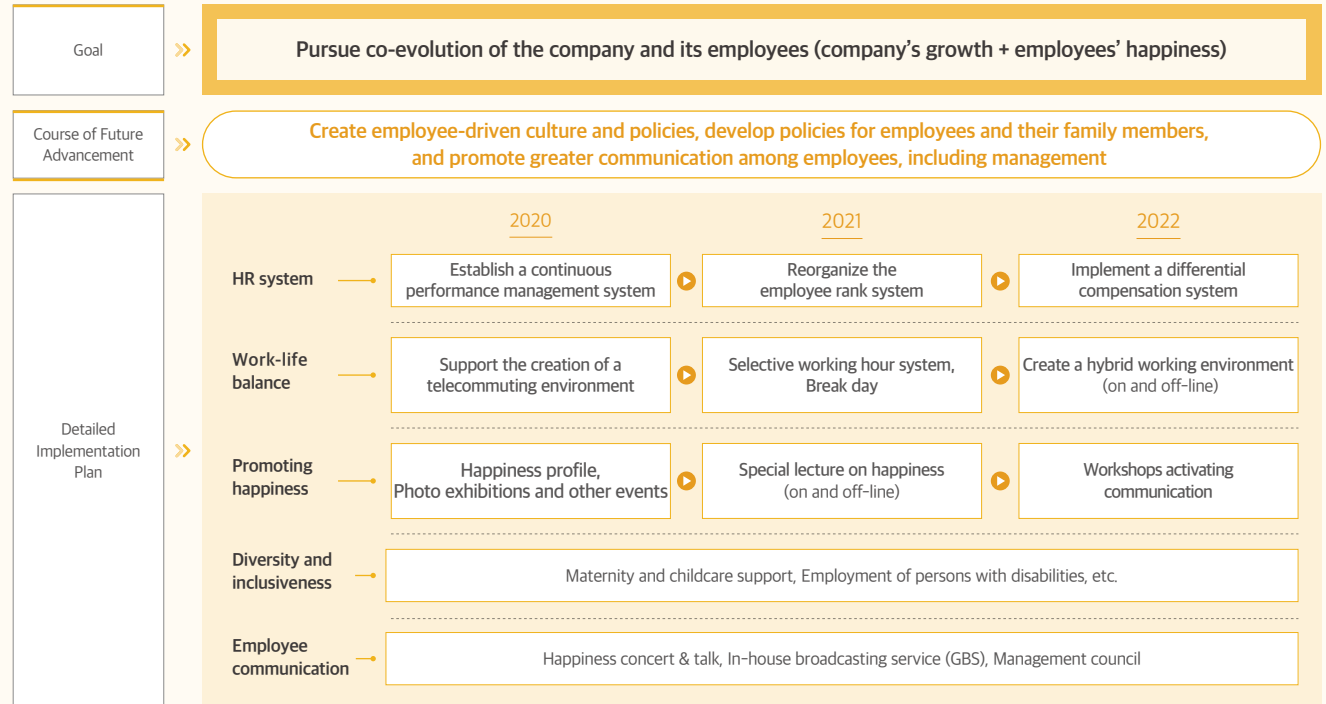
SK E&S has managed situation rooms and call centers separately and strengthened the monitoring to comply with the government's COVID-19 prevention guidelines at related facilities. In 2021, we donated KRW 720 million worth of personal preventive items, such as face masks, hand sanitizers, and self-testing kits, to the 66 service centers and call centers of the seven city gas subsidiaries. Furthermore, we have also launched the City Gas Talk service to expand non-face-to-face services and immediately assist customers while also protecting call center workers.



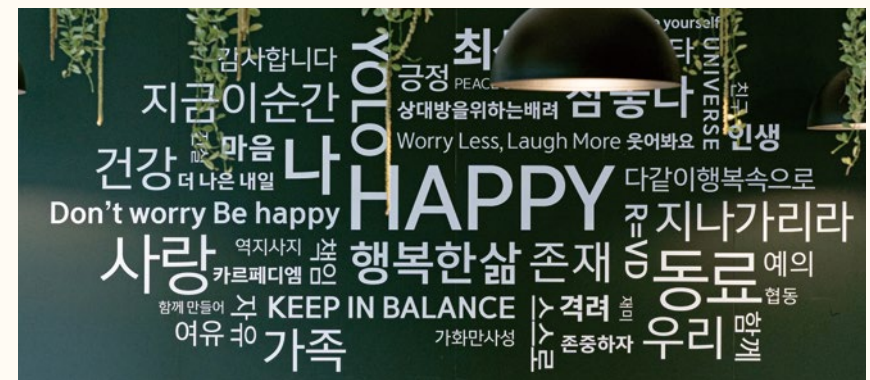
Social 3



Roadmap



Corporate Culture Related Achievements



※ Happiness-related keywords panel collected from SK E&S's employees

Human Resources System

SK E&S is implementing various systems so that the company and its employees can grow together, and we are continuously making efforts to set these systems as a part of our culture. In 2021, we reformed our performance management system to ensure systematic and fair performance evaluation even in a telecommuting environment caused by COVID-19 in 2020. In 2022, for the successful execution of the company's future Key Project, we implemented a distinctive reward system, creating a challenging and immersive environment and further strengthening the link between performance and compensation. SK E&S will continue to put efforts so that the employees can immerse themselves in their work.

Work-Life Balance

SK E&S has introduced and operated various measures to improve employees' work-life balance to increase their autonomy and execution power for business model innovation, such as the transition to Green Portfolio in 2021. We have introduced flexible working hours to help employees adjust their work and personal time and designated the fourth Friday of each month as a "Break Day" to allow them sufficient time to recharge and refocus on work. Our aim is more than 90% of employees using the Break Day

this year. We have also improved our online work tools to create a work-at-home environment amid COVID-19 and supported our employees with office equipment, monitors, lunch meals, and health supplements to enhance their quality of life under the telecommuting environment.

Metaverse Ground Rule Workshop

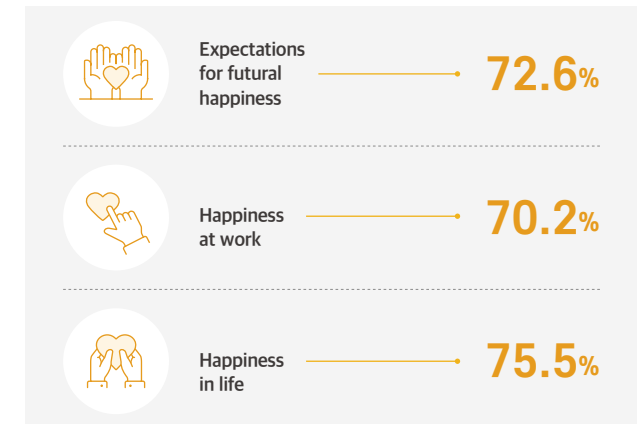
Since the spread of COVID-19 in 2020, we have launched the metaverse workshop "Ground Rule Workshop" to create an efficient online working environment. Performing various tasks in a virtual environment, employees built team spirit and communicated with each other about how to improve their performance.



Survey Related to Employees' Happiness

SK E&S annually conducts the SK Culture Survey for all of its employees to measure employees' happiness and check the current status of the corporate culture. Based on the survey results, we develop and implement the development tasks. As a result, all three levels of surveys related to happiness were rated to be more than 70 percent.

Positive Response Rate on Surveys Related to Happiness

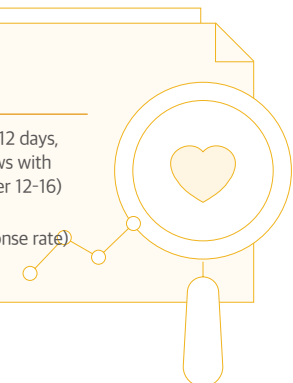


Objective



Culture Survey (2021)

- Survey method: Online survey (12 days, from September 6-17), interviews with employees (5 days, from October 12-16)
- Subject: All SK E&S employees (380 respondents; 83.9% response rate)



Promoting Employees' Happiness

Welfare and Benefits Programs

Selective welfare and benefits program

We operate a welfare and benefits program that encompasses the provision of self-development expenses and other types of offerings (points granted for online and off-line use).

Support for residential stability

Long-term, low-interest loans for house purchase/rental expenses are offered.

Support for foreign language education

We support test fees for foreign language proficiency tests and internal/external foreign language education programs.

Rewards for long-tenured employees

Employees are given rewards through leaves or cash prizes according to their years of service.

Support for mobile phone bill payment

We support employees' mobile phone bill payments for work efficiency.

Support for vacation facilities

We operate vacation facilities in major tourist attractions where employees can spend their vacation.

SK E&S operates various programs to promote our employees' happiness, as well as strives to boost communication among employees during an online working environment. Furthermore, we have introduced the self-design group, a program in which employees make their own suggestions. We have also launched a program to establish a sense of belonging for new employees in which they will be matched with a peer. Moving forward, we will further run programs to help employees proactively improve their happiness and create a happy working environment that promotes active communication among employees.

Special Lecture on Happiness

In 2021, we conducted special lectures on happiness that address various topics, including family communication, cooking, wine, and art. A total of 667* employees participated in 16 sessions with high levels of satisfaction. We will further hold special lectures on happiness to promote a happy working environment for our employees.

* Figure includes employees at subsidiaries for some programs

Happiness Profile

Since 2020, SK E&S has produced and exhibited a "happiness profile" for every employee with pictures of them smiling and their chosen motto that reflects their happiness. Their profiles are linked to the corporate system, and their profile pictures are used on their company ID cards.



Shift in Working Practices: Shared Office and Free Address Seating Plan

We operate a shared office and a free address seating plan to create a working environment where employees feel free and motivated. Using the shared office app "OnSpace," they can easily reserve their desired seats and have beverages and snacks at a shared lounge on each floor. We will keep introducing new working practices to develop a happy working environment for our employees.



Happiness Lecture

"I felt proud when my child said that his/her dad's company is awesome."

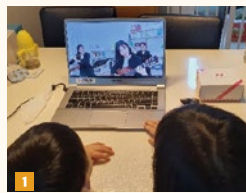
"While I mostly stay at home because of COVID-19 and found it difficult to achieve a healthy work-life balance, the program was a precious source of happiness in my life."

Happiness Profile

"I don't often have pictures of me smiling.

It was a special and joyful experience to get a photo of a "happy me" at the company."

1, 2 Happiness Lecture
3 Happiness Profile



Diversity and Inclusiveness

SK E&S believes that creating an environment where employees respect diversity and feel camaraderie represents the key driver of sustainable management. Because of this, we will promote a culture of diversity and inclusiveness that would help employees reach their full potential and competence via fair opportunities.

Inclusiveness for Family Members

SK E&S operates various policies for employees and their family members to help them fully exercise their capabilities. All employees are entitled to freely use maternity and childcare leaves and are offered assistance for their adjustment as they come back from their leaves. Furthermore, in-house childcare facilities and one-on-one childcare services are provided to assist employees' childcare needs. We also support education expenses—from kindergarten to college—, resulting in the portion of our employees who worked for 12 months or more after returning from childcare leave reaching 100% for the third consecutive year* in 2021. In addition, we conduct satisfaction surveys for each program to listen to employee feedback and reflect them in future planning. This year, we aim for an employee satisfaction score of 4.5 or above (with 5 being the highest score) regarding in-house childcare services.

* Since data were first collected



SK Happiness Childcare Center (In-House Childcare Center)

Support for Childbirth and Childcare

Category	2019	2020	2021
Number of people who used maternity leave	2	5	6
Number of people who used childcare leave	3	5	6
Number of people having returned to work after childcare leave*	3	3	7
Ratio of people who worked 12 months or more after returning from childcare leave (%)**	100	100	100
Number of people who used our in-house childcare center	2	7	6
Number of people who used our childcare services	36	37	34

* Excluding those who took a leave of absence after childcare leave

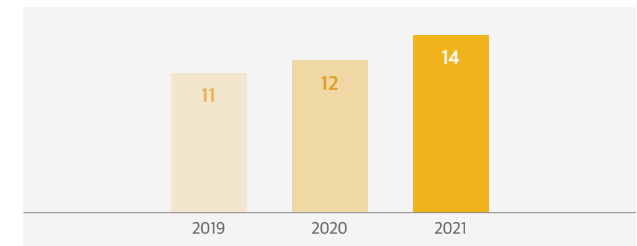
** Excluding those who resigned during childcare leave

Employees with Disabilities

SK E&S has conducted education programs to improve employees' disability awareness. Furthermore, our discrimination-free recruitment process ensures the hiring of talented individuals regardless of their disability.

Employees with Disabilities

(Unit: number of persons)



* Based on the SK E&S headquarters

Aside from financial support to assist employees with childbirth and childcare, SK E&S pursues various forms of family-oriented policies. Since 2017, we have delivered gifts and CEO's celebration messages to 160 children of our employees entering elementary school. Furthermore, we operate online happiness lectures for employees and their family members to help them spend time together.



Communication with Employees



Major Achievements in 2021

Informal communication event conducted more than 100 times a year between CEO and members

 <p>Talk with the boss and us (executive and members)</p> <p>76 sessions</p>	 <p>Happiness Concert</p> <p>10 sessions</p>	 <p>Happiness Talk (visit to subsidiaries)</p> <p>16 sessions</p>
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1 2 Talk with the boss and us 3 Support for employee clubs 4 Happiness Concert

 <p>In-house broadcasting service (GBS)</p> <p>Every week</p>	 <p>Management Council</p> <p>4 sessions</p>
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Reinforcing Communication between Management and Employees

SK E&S operates various programs to promote open and genuine communication among all employees, including management. We produce content related to major business issues or other topics for employee communication and share it with our employees every week through in-house broadcasting programs. We also operate "P.le," a communication portal on which employees can exchange their views on work, welfare and benefits, and human rights issues. In addition, employee clubs are operated to give employees a chance to bond through a shared hobby. Furthermore, the monthly "Happiness Concert" is held to encourage communication among employees through discussions about various topics. Management members, including the CEO, candidly communicate their concerns, management philosophy, and business insights to employees through casual teatime and lunch/dinner meetings at least once a week. In addition, as part of our efforts to strengthen communication between management and members

of subsidiaries and worksites, we conduct a "Happiness Talk" program in which the CEO and executive directors personally visit subsidiaries and worksites at home and abroad.

Management Council

We hold quarterly meetings for a management council that consists of four company representatives and four labor representatives to establish a healthy labor-management relationship. Furthermore, we strive to collect our employees' feedback, review our progress made regarding the agendas set in the previous quarter, and reflect new agendas in our policies through meetings. Meeting results are sent to employees via email and posted on the employee portal P.le. The management council aims to review at least one agenda related to the improvement of employees' work-life balance every year, targeting 100% implementation of related improvement tasks. SK E&S has listened to the views of every employee and reflected them into corporate policies and will continue to do so in the future.

Agendas Discussed by the Management Council in 2021

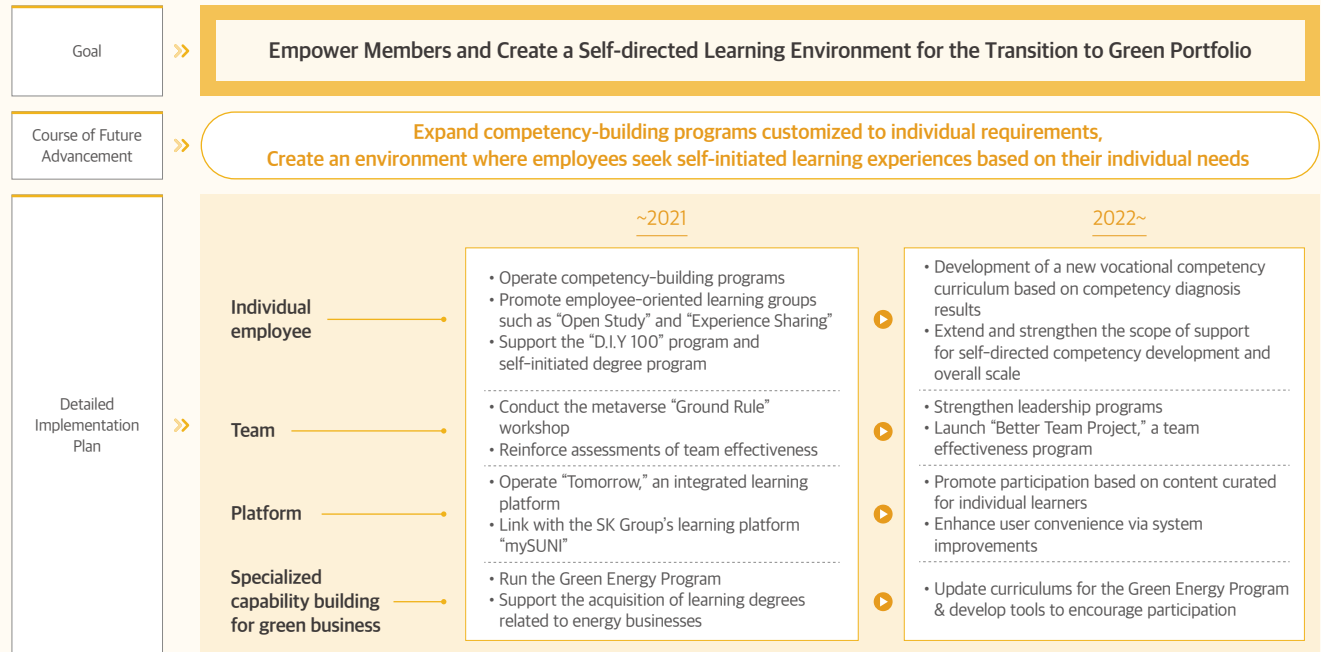
	First quarter	Second quarter	Third quarter	Fourth quarter
Discussed agendas	<ul style="list-style-type: none"> Improvement of vacation policies reflecting COVID-19 guidelines Promoting the split use of refreshment leaves Extending leaves for long-tenured employees Extending the length of fertility leaves 	<ul style="list-style-type: none"> Regular cleaning of shared wardrobes Sick leaves for hospitalization Encouraging the use of flexible working hours Increasing the use of annual paid leaves 	<ul style="list-style-type: none"> Improvement of the electronic approval system Replacement of business purpose vehicles Addition of new criteria for reimbursing business travel expenses 	<ul style="list-style-type: none"> Adding new merchants for points granted under the selective welfare and benefits program Expansion of the support for noncoverage medical expenses Reassignment of lockers & women's toilet pouch boxes
Implementation status	All agendas reflected and being implemented			

Social 4



Talent Development

Roadmap



Achievements Related to Our Talent Development Efforts in 2021

Program	Number of sessions held	Number of participants	Satisfaction score (Highest score: 5)
Project financing	7	159	4.8
Business feasibility analysis	6	98	4.4
Green energy	15	253	4.5
Workplace roles	11	304	4.3
Experience sharing program	11	342	4.5
D.I.Y 100 program	151	135	
Support for a self-initiated degree program		27	
Support for language learning		43	
Support for certificate acquisition		20	

Cumulative Achievements

Participants in the energy business expert nurturing program (Edu. degree)

18 persons

Support for other degree courses (Including the self-initiated degree program)

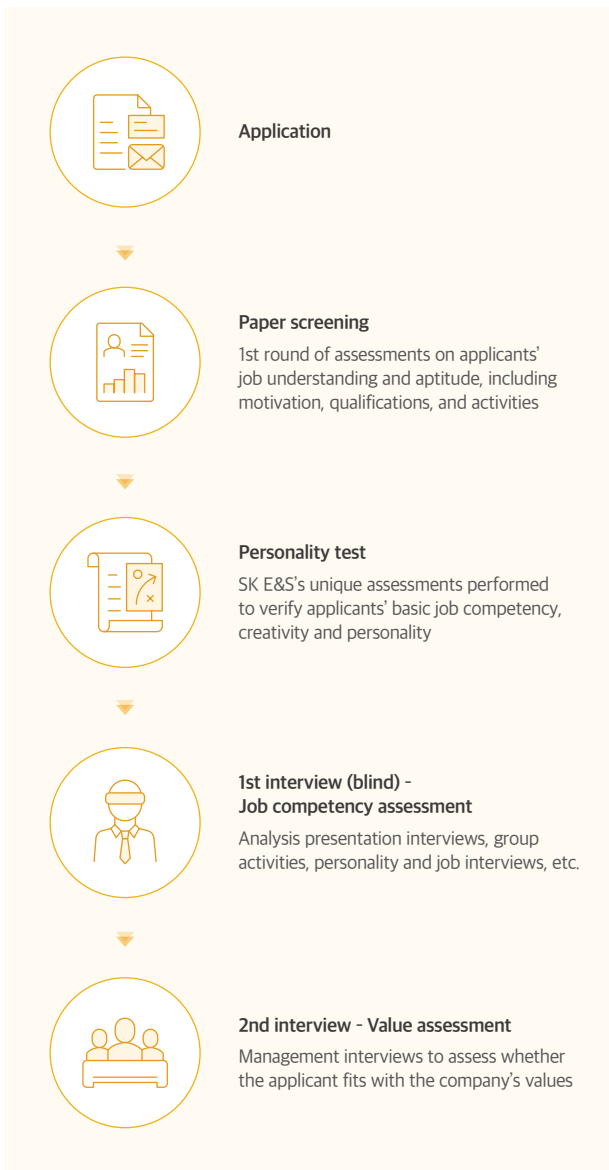
38 persons

Secondments to overseas energy-related institutions

International Energy Agency **5 persons**
Institute of Energy Economics, Japan **4 persons**



Talent Recruitment



Open Recruitment Process

SK E&S pursues open recruitment to create a discrimination and bias-free workplace with fairness based on competency. We have adopted a blind job interview system to hire talented and well-rounded individuals without excessively relying on their résumés. The system ensures a fair recruitment process in which applicants are not discriminated against on the grounds of gender, disability, or other factors irrelevant to the job performance. In addition, we continue to introduce a system in which excellent talents can

applicate and participate at any time, such as the introduction of year-round recruitment of college graduates.

There is steady growth in the number of female and foreign employees, as well as employees with disabilities, and the overall number of employees has also risen thanks to an increasing number of new employees because of an open recruitment system. Moving forward, we will continue to promote employee diversity and expand the recruitment of new talent to achieve sustainable development.

SK E&S Growth Support Program / Platform

Job competency assessment and IDP establishment	Identify areas in need of improvement via core competency assessments for individuals and organizations, and develop/implement competency-building plans	Leadership building program	Hold business insight lectures for executives and team leaders and operate online/off-line programs to improve leadership skills for team leaders
Job competency-building program	Improve the understanding of each job position and strengthen business perspectives	Energy business degree support program	Provide financial assistance to a selected number of employees taking courses for degrees in areas related to SK E&S's businesses
Secondments to overseas energy-related institutions	Operate a system to send employees to overseas energy-related institutions (such as the International Energy Agency) to nurture global energy experts	Tomorrow (learning management system)	Run SK E&S's exclusive integrated learning platform
Programs to support employee-initiated learning	Offer "Open Study" and "Experience Sharing" programs to assist self-initiated job competency-building learning curriculum	Self-initiated degree program	Provide partial financial assistance to employees taking courses of their own choice that are related to their current and future job positions
Green Energy Program (launched in 2021)	Operate a company-wide program to help employees learn the knowledge and skills required as a member of an eco-friendly energy company (carbon neutrality, hydrogen business, green finance, green technology, etc.)	D.I.Y 100	Offer financial education support worth KRW 1 million per employee every year, which can be spent on external education programs or seminars related to job competency improvement
		Better Team Project, a program to build team effectiveness (introduced in 2022)	Provide a program to improve team performances and build team spirit

SK Group Learning Program / Platform

mySUNI	SK Group-linked learning platform	SK Values	Improvement of the understanding of the SKMS, corporate vision, future goals, and group operations for new employees
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Developing Talent

SK E&S supports its members at the enterprise level to strengthen their competitive edge in line with changing businesses to drive a distinctive Green Portfolio transition, including hydrogen and renewable energy, energy solutions, and low-carbon LNG. The management periodically reports the development strategy and direction of talent development, the progress status of competency development and growth support, and future plans to the board of directors at least once a year along with the usage of SK Group education and major issues.

New Employee Development

SK E&S offers systematic training programs to new employees, including the SK Values program operated at the SK Group level and other programs according to different business models and organizational/employee characteristics.

Increasing Training Hours to Reinforce Employees' Competency Development

SK E&S seeks to expand its support for employees' competency development, targeting an average of 50-hour training per employee for 2022. We aim to increase the average training hours per employee annually by 10% over the next 3 years to 65 hours in 2025—30% higher compared to in 2022. With that said, we will strengthen the connections with competency development policies such as learning content systematization and recommendation, IDP (Individual Development Plan).

Development of Employees' Job Competency

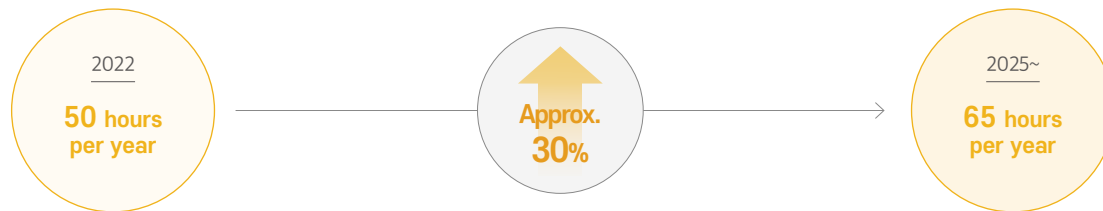
SK E&S not only operates company-wide general education programs but also offers training programs tailored to employees' individual levels to help them voluntarily develop their capabilities.

SK E&S's Exclusive Learning Platform - Tomorrow |

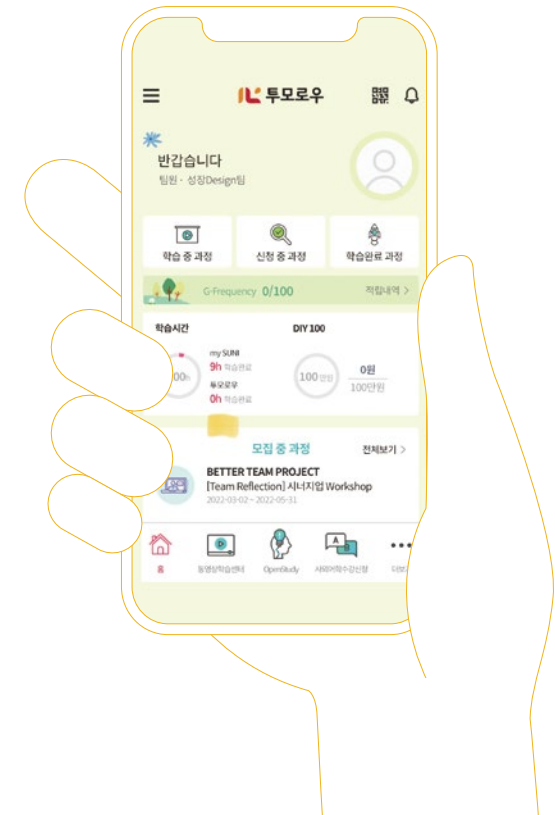
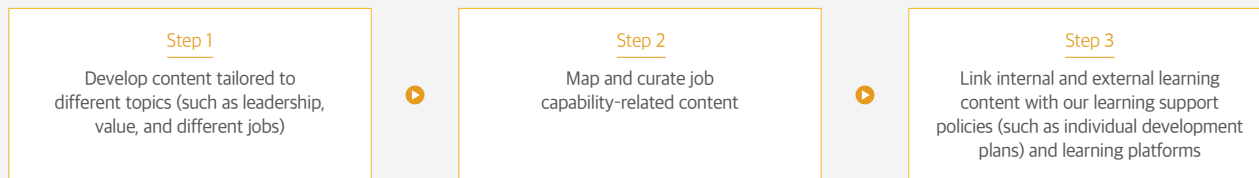
SK E&S's exclusive learning platform "Tomorrow" offers 3,500 micro-courses, encompassing several areas such as job skills, leadership, liberal arts, and foreign languages. The platform also offers other programs to support employees' learning activities, such as D.I.Y 100, Open Study, and Experience Sharing. Furthermore, employees can use the SK Group-linked learning platform "mySUNI" to access various online learning content.

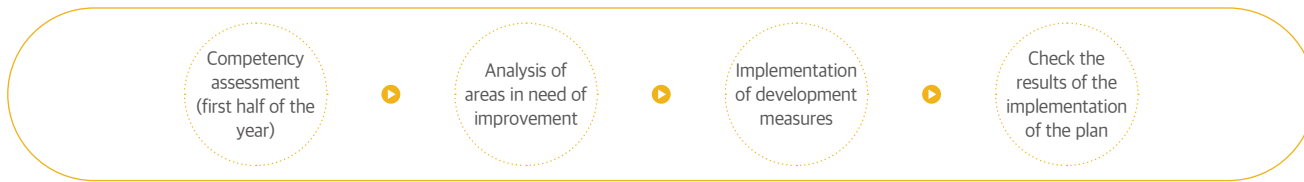
Despite prolonged COVID-19, "Tomorrow" has served as an effective platform to support employees' competency development. In 2021, the average training hours per employee reached above 50 hours. Because of this, we will continue to improve our training content and related systems to create an effective learning environment for our employees.

Increasing Average Training Hours per Employee



Detailed Implementation Plan





Job Competency Assessments and Job Proficiency Development Programs

At the beginning of each year, we conduct diagnosis of each employee’s current level of competency and provide their results and relevant information through individual job competency assessment. Based on this, members set annual goals to develop competencies that need to be supplemented, and participate in job expertise strengthening programs to develop competencies. Furthermore, we are developing measures to improve the competency level from a company-wide perspective for competencies that are commonly required to be supplemented at the organizational and company level.

Leadership Building Programs

SK E&S reinforces leadership skills for executives and team leaders by individual leadership assessments and enhances leadership capabilities by providing feedback to leaders and supporting leadership improvement. We offer online videos on demand and off-line workshops, as well as programs tailored to individual improvement targets. In addition, we provide monthly lectures for leaders in areas of leadership, liberal arts, and future outlook.

Team Effectiveness Program (introduced in 2022)

Created in 2022, the team effectiveness program develops solutions tailored to different organizational needs and situations based on organization assessments and analysis. We operate customized workshops for each team’s condition to improve effectiveness at the team level. This includes new teams or incumbent teams that those portions of new members have recently increased - ‘Jipijigi Workshop’, new tasks assigned - ‘Dongsangdongmong Workshop’, and sharing the work experience and knowledge needed - ‘Synergy Up Workshop’.

D.I.Y 100 (Do-It-Yourself 100)

SK E&S makes efforts to create and support a self-driven learning environment for employees. For this, we offer an educational support budget of KRW 1 million a year per employee that they can spend on learning programs of their own choice.

Green Energy Program and Expansion of Environmental Education

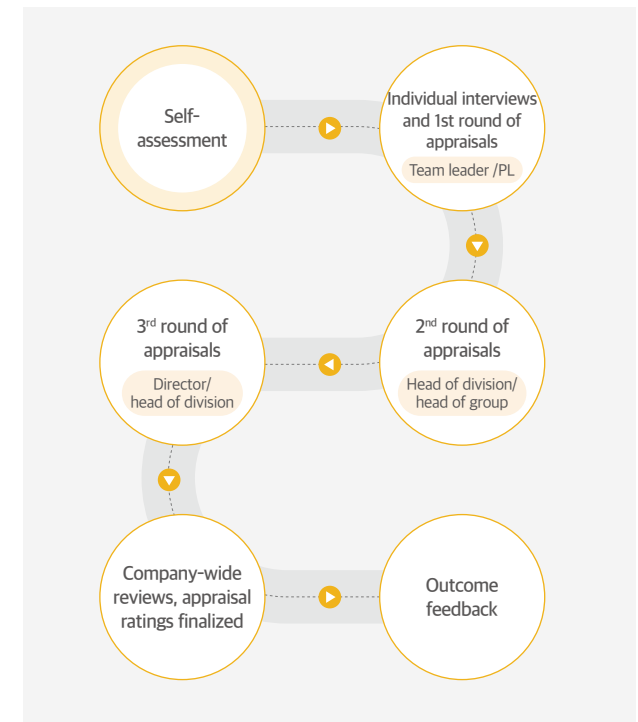
In 2021, SK E&S introduced the Green Energy Program to regularly provide the knowledge and insights required in the era of carbon neutrality. Employees freely participate in lectures held under the program, as they work in related fields voluntarily engaging in extra in-depth learning sessions. Overall, the Green Energy Program is becoming representative of an integral part of improving the knowledge and capabilities needed to pursue an ESG-based green portfolio.



Fair Performance Assessment and Remuneration

Performance Assessment Process

SK E&S operates an ongoing performance management system that provides real-time feedback, as well as coaching to develop employees’ competencies and ensure their transparent communication with company leaders. Through the “Preview Week” held every last week of the month, employees communicate their tasks’ progress and work-related achievements or difficulties over the past month with their leaders. Because of this, we strive to ensure fair performance assessment and remuneration based on various data, including work records registered on the performance management system, job competency assessments, and surveys of colleagues.

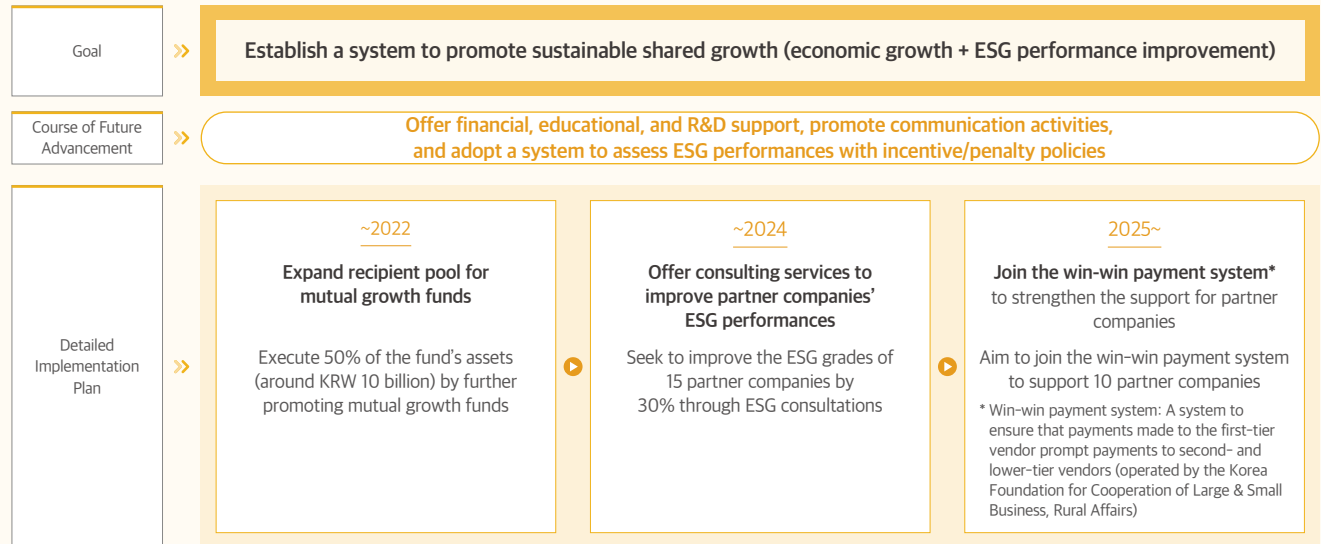


Social 5



Shared Growth

Roadmap



Systems for Mutual Growth and Management of Partner Companies' ESG Practices



Major Achievements Related to Mutual Growth in 2021



Mutual Growth with Partner Companies

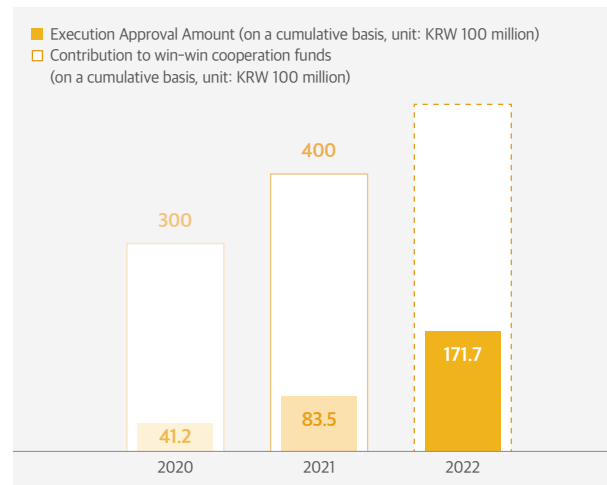
Mutual Growth Policies

Based on the management philosophy of “pursuing the happiness of stakeholders”, SK E&S strives to promote mutual growth with partner companies. We innovate transaction practices, provide education programs for business competitiveness improvement, and reinforce communication with our business partners. In particular, we are conducting various projects to promote mutual growth using the win-win cooperation fund to which we made contributions from 2019 to 2021 through BOD approval. Preparation and progress of the project are regularly reported to management.

Programs to Promote Mutual Growth

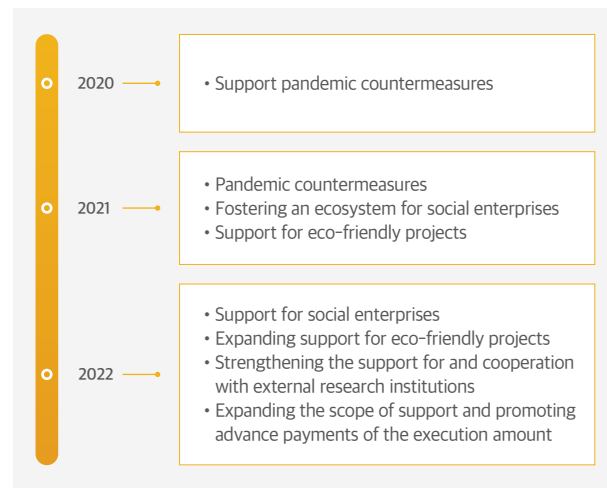
Attentive Company 2.0 | Designated as the first company of the “Attentive Company 2.0” program hosted by the Ministry of SMEs and Start-ups, SK E&S is supporting small businesses’ transition into carbon neutrality and their ESG management. Furthermore, along with the Ministry of SMEs and Start-ups and InoBiz Association*, we have signed a business agreement under the “Voluntary Company for Win-Win Cooperation 2.0” program to promote a hydrogen economy, achieve carbon neutrality, and address issues in local communities.

* An association that engages in the certification, management, and discovery of SMEs with innovative technologies, with a total of 13,574 member companies (as of April 2021)



※ Figure for 2022 based on the amount confirmed for execution approval as of March
 ※ Target to support 320 companies from 2020 to 2022

Focus Areas



Fostering companies with innovative Carbon Capture, Utilization and Storage (CCUS) technologies and offering R&D support

- Support the establishment of related companies based on the partnership with the Korea Carbon Capture & Sequestration R&D Center
- Provide the R&D foundation for the established companies and support their R&D output demonstration



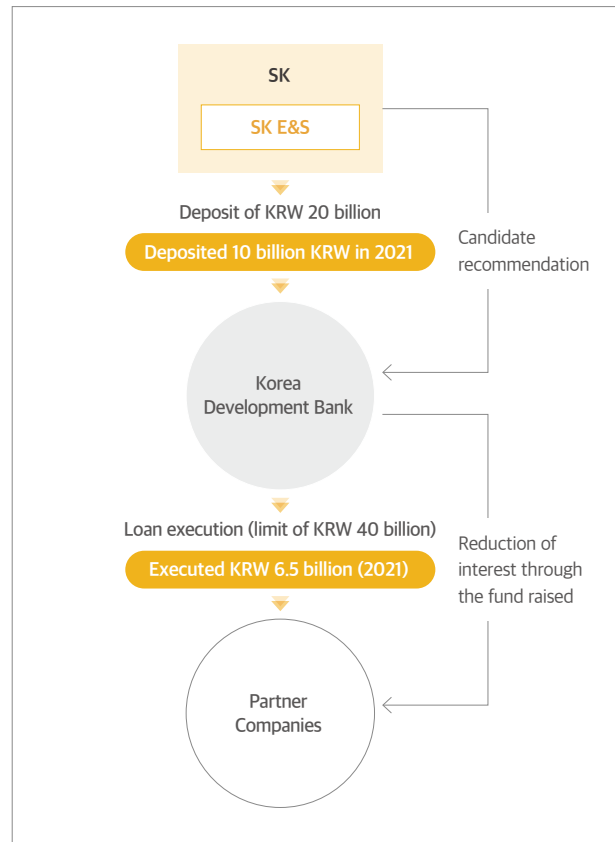
Nurturing companies with innovative hydrogen drone technologies and offering R&D/publicity support

Participated in the Drone Show Korea held in April 2021 at BEXCO in Busan and operated the SK E&S Hydrogen Drone Booth

* Joined by seven companies (EXENS, Hylum Industries, KIST, FineVT, J.MARPLE, Drone Makers, and Korea Helicopter)



Financial Support | SK E&S has created mutual growth funds with financial institutions and other SK Group affiliates to resolve partner companies' financial difficulties. We are operating our KRW 20 billion mutual growth fund with the Korea Development Bank and KRW 2 billion group-wide mutual growth fund with the Industrial Bank of Korea. By the end of 2021, a total of KRW 6.5 billion, 16.3% of the total fund amount, was provided to our partner companies. Moving forward, we will further expand the scope of our mutual growth funds and boost relevant funding support.



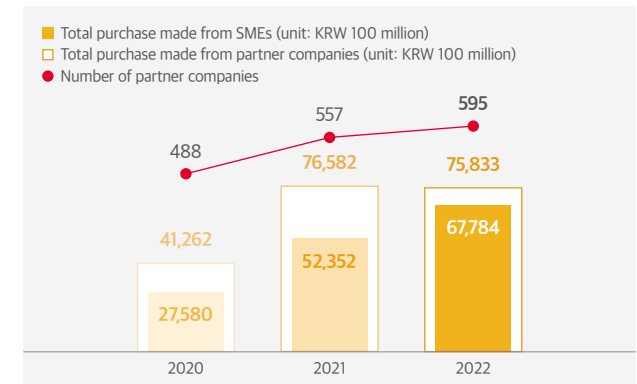
Educational Training Support | SK E&S provides partner company CEOs and employees with training programs tailored to their positions to help their competency building. For partner company CEOs, we operate a "Mutual Growth CEO Seminar" to pass and share our management knowledge in management strategies, finance, and human resources while also offering information about new technologies encompassing AI and big data. For medium-level managers (general managers and deputy general managers), we offer them an opportunity to participate in the "Mutual Growth MBA" program to support the development of core leadership management skills and give them the opportunity to train overseas. For all other partner company employees, we provide free access to SK E&S's online education platform so that they can take the same online course offered to SK E&S employees. Lastly, partner company employees can have various training experiences through the company-wide education service SK Mutual Growth Academy.

Support for Training Programs for Partner Companies

	2019	2020	2021
Number of partner companies that participated in our education training programs	6	7	6
Number of persons who participated in the mutual growth CEO seminar	4	7	12
Number of persons who participated in the mutual growth MBA program	3	N/A	12

Building Trust Through Innovating Transaction Practices | SK E&S pursues mutual development with partner companies by promoting fair and transparent business transactions based on mutual trust. While complying with the Korean Fair Trade Commission's guidelines, we ensure best-in-industry payment terms by making payments 100% in cash within 15 days of receiving each invoice. We also make early payments ahead of national holidays to facilitate the cash flow of our partner companies and promote business transactions with SMEs.

Purchases Made from Partner Companies



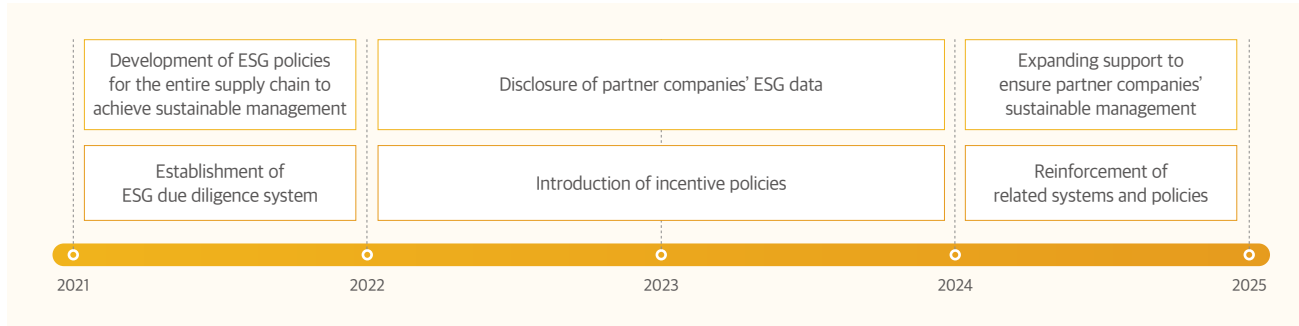
* Based on the SK E&S headquarters and power generation subsidiaries

Promoting Communication with Partner Companies and Supporting Mutual Growth Fund | SK E&S carefully listens to the partner companies' grievances and needs as part of its efforts to pursue mutual growth. Operating on-site technology exchange programs, we attend to the challenges faced by our partner companies through various channels and seek to find solutions. Furthermore, we provide mutual growth funds and pandemic-related support not only to our first-tier partner companies but also to other SMEs with whom we are not in direct relationship to promote mutual growth. For reference, contributions to mutual growth funds are made through the ESG Committee review and the BOD's approval.

Other Mutual Growth-Related Support Measures | Furthermore, our support measures—seeking ventures that develop eco-friendly technologies for climate change response, such as CCUS (carbon capture, utilization, and storage) as well as hydrogen production, fuel cell, and carbon dioxide sorbent technologies—encompass financial, knowledge, and personnel assistance across the whole R&D process, ranging from demonstration to commercialization.

Support for ESG Implementation

Roadmap for Improving the Management of Partner Companies' ESG Risks



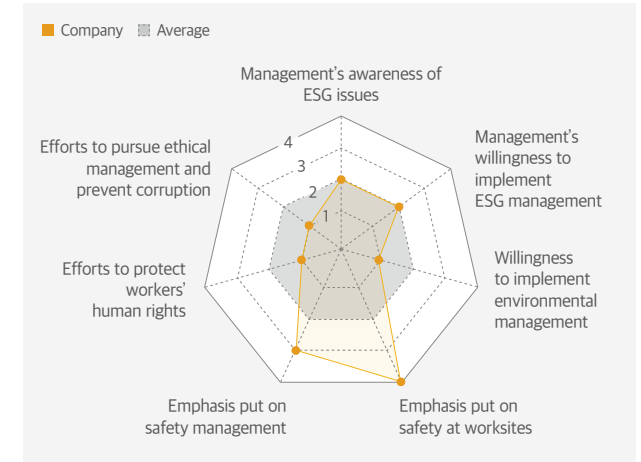
ESG Risk Management Policy for Partner Companies and ESG Due Diligence

SK E&S regularly monitors and analyzes partner companies' ESG risks, as well as reinforces ESG due diligence practices, to ensure the overall supply chain sustainability. In 2021, we established ESG policies and a code of conduct for members of our supply chain and developed an ESG due diligence system. In 2021, we established supply chain ESG policies, codes of conduct, and standards covering each Environmental, Social, and Governance area such as labor rights, human rights, safety, health, environment, management system, and ethics. And we have established an ESG due diligence system, and we manage ESG risks in the supply chain by mandating a pledge to comply with the ESG Code of Conduct when signing a contract with our partners. In 2021, we performed ESG due diligence on 15 partner companies overseeing the city gas business and renewable energy, and provided ESG training to 125 partner company employees. None were in the high-risk category according to our results of ESG due diligence on the 15 partner companies.

Assessment of ESG Due Diligence on Partner Companies

Based on the results of the ESG due diligence performed on partner companies in 2021, we will further strengthen ESG due diligence on partners. In 2022, we aim to establish an organization dedicated to the ESG practice management in the supply chain of major subsidiaries, targeting a cumulative of 35 ESG due diligence assessments on partner companies and 200 participants in ESG education programs for partner companies. By 2024, we will expand the scope, frequency, categories, and criteria for ESG risk assessments on partner companies and perform assessments on cumulatively one-third of the partner companies subject to such assessment. Based on our risk analysis and monitoring activities, we will provide companies with necessary improvement measures while also adopting an incentive/penalty scheme regarding the due diligence system. By 2025, SK E&S will advance the due diligence system to conduct ESG risk assessments on more than 30% of the companies subject to the assessment every year, applying incentives and penalties based on the assessment results. Furthermore, we will publish a supply chain ESG report biannually as part of our long-term efforts to create a more sustainable supply chain.

Example of ESG Performance Assessment for Partner Companies



SK E&S Wins Presidential Award for “Win-Win Cooperation with SMEs”



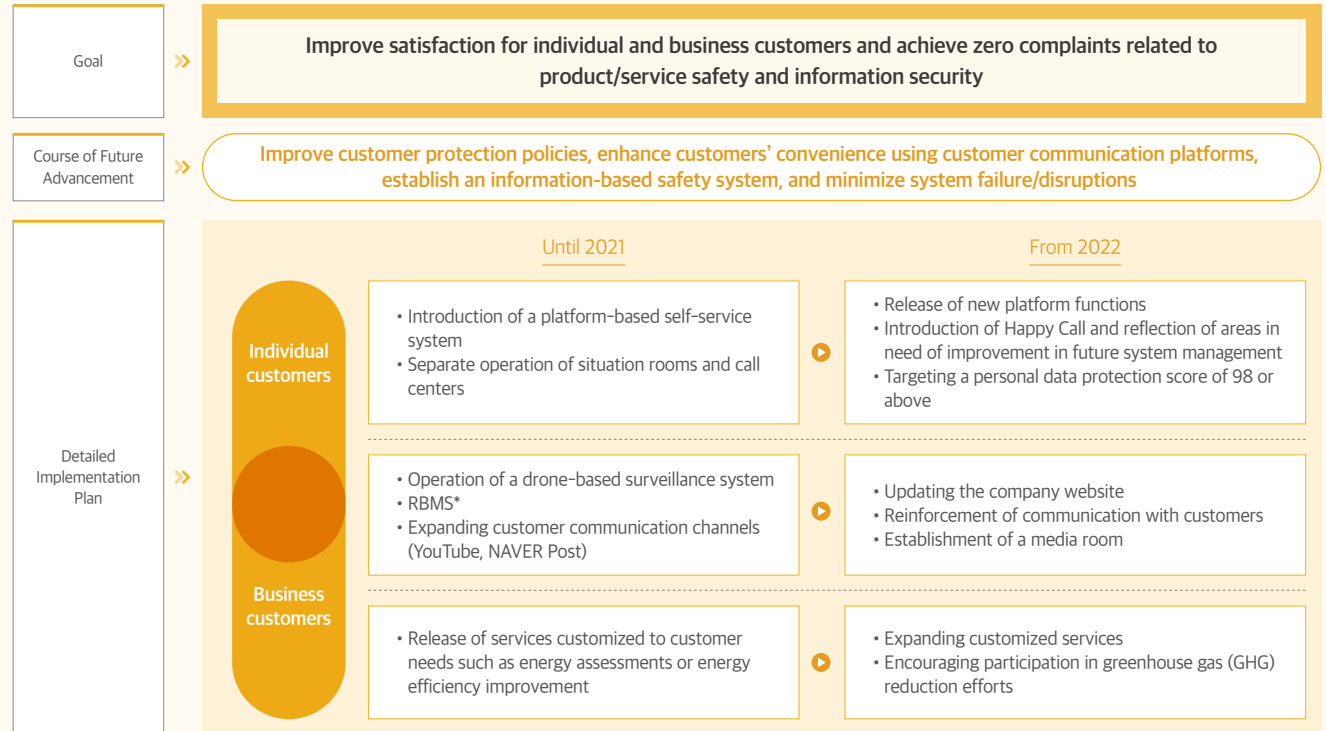
In November 2021, SK E&S won the presidential award for “Win-Win Cooperation with SMEs” thanks to promoting ESG management by pursuing mutual growth with SMEs. This award represents the highest honor given to a company for contributing to national economic development, through which SK E&S gained an opportunity to boost its prestige as a leading ESG company.



Social 6



Roadmap



* Risk Based Management System

2021 Customer Satisfaction-Related Achievements

<p>Expansion of customer communication channels</p> <p>Content upload on NAVER Post, YouTube channel operation, and company website updates</p>	<p>Personal data protection score</p> <p>97.7</p> <p>(out of 100)</p>	<p>Forced outage rate due to facility malfunction:</p> <p>0.31%</p> <p>(Average for 4 power plants)</p>	<p>System establishment for "AIDEN drone-based surveillance inspection service"</p>
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Customer Satisfaction Management

Customer Satisfaction Process

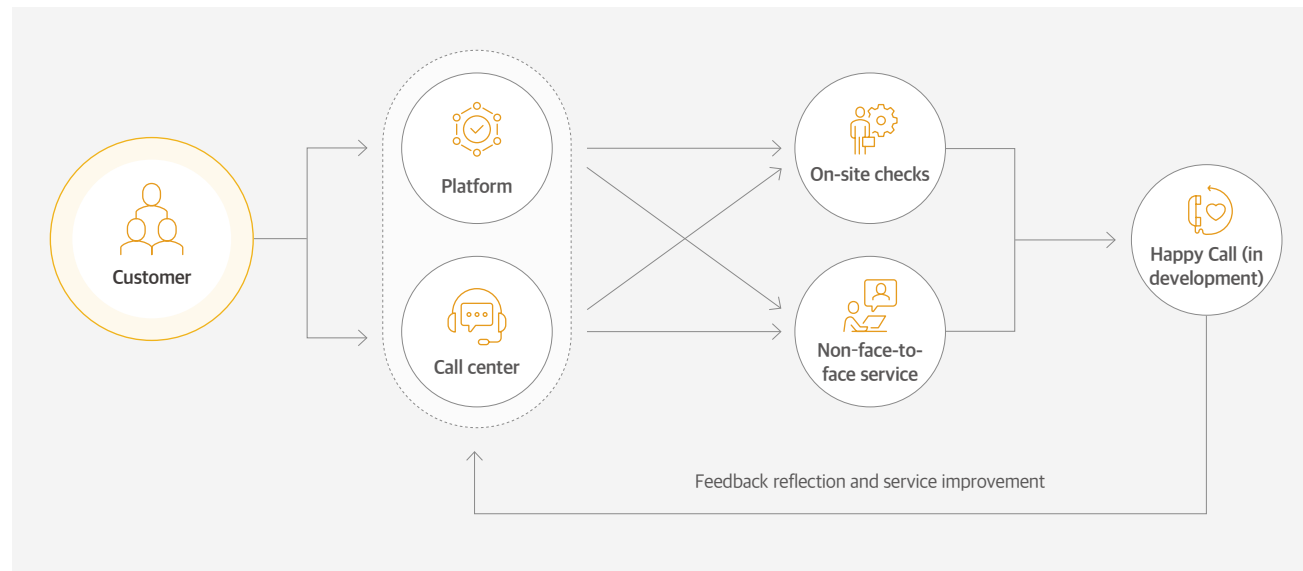
SK E&S regards a stable energy supply and safe energy use as top priorities for customer satisfaction. Because of this, we provide customer satisfaction services tailored to customers' needs.

We operate online platforms (website and mobile app of gas suppliers) and call centers to ensure convenient service accessibility for individual customers. Using such online platforms, customers are able to check their gas consumption data and bill for the month in real time and make payments in the method they prefer (e.g., automatic transfers, payments through convenience stores, and payments on the website). In addition, we operate a geographical

information-based integrated safety management system to swiftly appoint a safety manager who will address customer concerns.

For business customers, we support their energy assessments and energy efficiency improvement efforts to help them fulfill social values and achieve greater energy efficiency. In addition, we operate the "Energy Companion Project" for energy assessment and energy-saving and engage in the "Organic Rankine Cycle (ORC)" power generation project to recover industrial waste heat. In doing so, we not only pursue customer satisfaction but also assist our customers in responding to climate change.

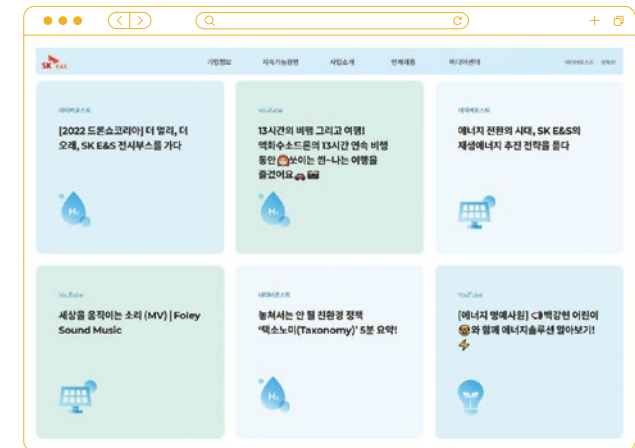
Customer Satisfaction Process



Communication with Customers

Customer Communication Channels

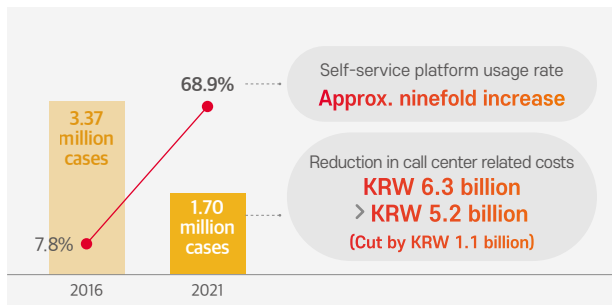
Aside from operating online platforms and call centers, SK E&S has expanded communication channels including NAVER Post and YouTube to improve customer satisfaction. In addition, we provide a timely update of the main website and brochures every year to share our major business and ESG achievements with our customers. In 2022, we plan to establish a media room to strengthen our communication with our customers.



Since 2016, the focus of our customer services has shifted from off-line call centers and service centers, which are operated based on human assistance, to online self-service platforms to ensure customer convenience and quick problem-solving. Using such platforms, customers are able to easily access a wide range of services, including the application for gas connection/disconnection (when moving in or out), viewing bills and making payments, self-gas meter reading, and application/cancellation of automatic transfers. These services can also be accessed by nonmembers, enabling effective customer privacy protection.

Amid increasing non-face-to-face environments owing to prolonged COVID-19, SK E&S focuses on self-service platforms that encompass our mobile customer center, website, and the City Gas Talk service. As a result, the customers' use of self-service platforms has shown steady growth, leading to a reduction in call center-related costs by around KRW 1.1 billion in 2021 (versus the 2016 level). As such, customers can decide between receiving paper bills or changing to e-billing, a policy we have adopted to boost environmental protection. From 2022, we will further expand platform services to include self-contracting and smart metering and adopt the Happy Call system for each city gas subsidiary to ensure swift response to customer complaints.

Increase in Customer Use of Self-Service Platforms and Resulting Cost Reduction



Customer Communication-Related Achievements

Individual Customers

Category	2019	2020	2021
VOCs collected (unit: case)	471	328	272
Personal data protection score (Highest score: 100)	96.4	97.4	97.7

Business Customers

Energy assessment

We provided our customers with energy assessment services enhancing their energy efficiency to promote both social value creation and improve customer management practices. We also shared energy resources within industrial complexes to help them save energy costs. (Customer Relationship Management)

+ 2021 performance: 10 customers



Support for energy efficiency improvement

Having supported the replacement of existing facilities with high-efficiency facilities (worth around KRW 1 billion), we helped our customers not only improve their business competitiveness through energy cost reduction but also contribute to the achievement of carbon neutrality through greenhouse gas (GHG) emission reduction (3,882 t of CO₂).

+ 2021 performance: 13 customers



Quality Management

Our Approach to Quality Management

Amid the rising standard of living, the ongoing Fourth Industrial Revolution, and the transition into a digital world, energy demand is expanding faster than ever before. As a responsible energy company, SK E&S will continue to pursue quality management practices to ensure stable, efficient, and reliable energy supply to all of our customers.

Reinforcement of Quality Management

City Gas Business | SK E&S pursues strict quality management to assure stable city gas supply. Furthermore, we manage risk factors using a checklist that covers phases—such as accident/malfunction prevention, failure detection, and swift response—to achieve continuous quality enhancement. In addition, we are operating a system that ensures prompt response to any incident. A total of eight city gas business sites have obtained the ISO 9001 certification, an international standard for quality management systems. Because of this, we achieved zero supply discontinuation caused by city gas facility failures in 2020 and, in 2021, ensured a stable energy supply to our customers. Lastly, we are strengthening our safety management system to prevent any customer inconvenience by operating the “AIDEN drone-based surveillance inspection service” using augmented reality and artificial intelligence technologies.

Power Generation Business | SK E&S has focused on LNG supply-demand management and the stable operation of power generation facilities to achieve a stable power supply. We have secured supply chain stability by ensuring stable raw material supply through direct LNG import. The Gwangyang LNG Power Plant has adopted directly imported LNG for the first time in the country, and the Paju LNG Power Plant is importing LNG from overseas gas fields, such as shale gas from North America.

Notably, having started commercial operation in 2017, the Paju LNG Power Plant has shown top-level utilization rates among domestic LNG power plants. Planning for commercial operation of the Yeosu LNG Power Plant in 2023, we will continue to ensure stable raw material supply and achieve zero forced outage rate based on consistent quality management.

Quality Management for Partner Companies

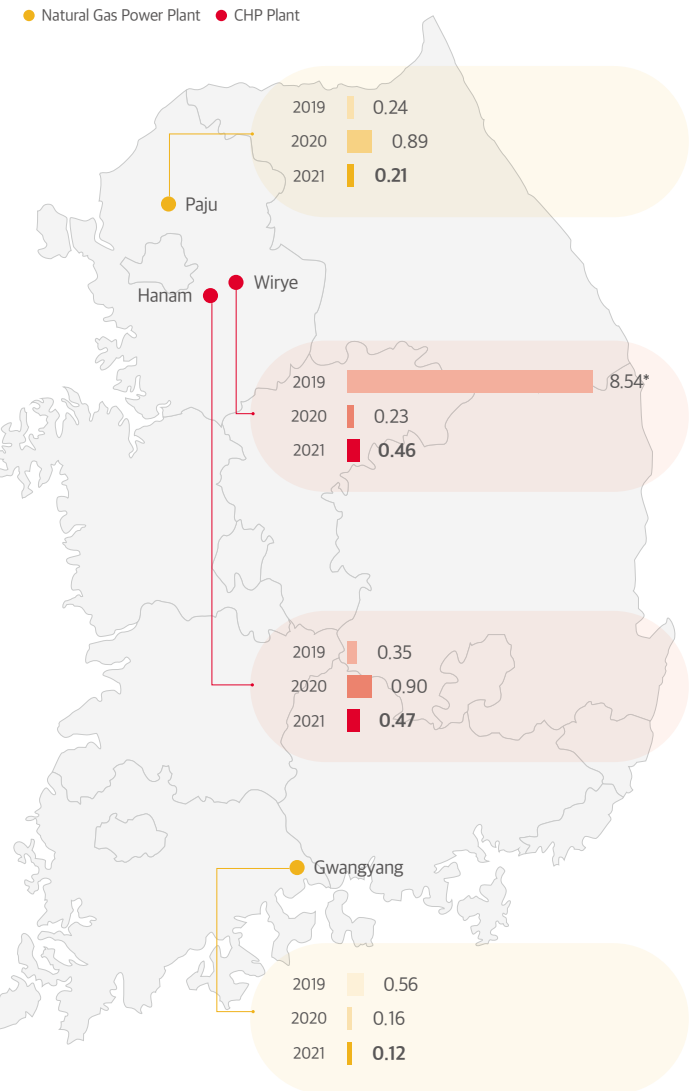
SK E&S seeks to expand the scope of quality management beyond the headquarters and subsidiaries to include partner companies, to offer the best-in-class services to customers. Because of this, we perform on-site due diligence and operate a quality certification system for partner companies so to raise the level of our own quality management. Based on such efforts, we will further strive to provide our customers with the highest quality of energy.

ISO 9001 Plan-Do-Check-Act (PDCA) Cycle



Forced Outage Rate by Power Plant

(Unit: %)



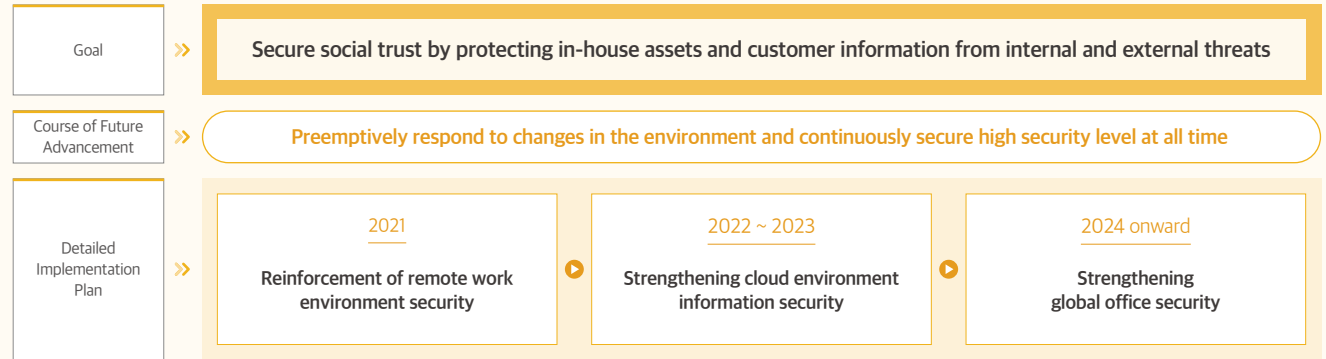
* Detailed inspection and repair work performed for around 30 days on the detection of gas turbine abnormalities

Social 7



Information Security

Roadmap



Policy

Establish information security regulations and detailed guidelines that all members must comply with to expand the importance of information security and protect customer value.

Information security regulations and detailed guidelines are listed in the groupware system (P,ple) and can be viewed by all company members.

SK E&S is doing its best to prevent the leakage of intellectual assets owned by the company, and strictly controls the unauthorized import of third-party materials.

Management System and Organization Chart



Information Security Performance in 2021

Establishing a security anomaly detection system

(immediate blocking in case of information leakage)

24/7 security control operation

(always defending against intrusion attempts)

Information Security Management System

Information Security Organization

A Chief Information Security Officer (CISO) is appointed to lead and supervise the company's information security tasks, and a dedicated information security organization prevents information leakage and responds to security compliance issues.

<p>Prevention and response of infringement incidents</p> <p>Operation of the security control center, establishment and operation of response procedures for each type of intrusion incident</p>	<p>Data protection and security monitoring</p> <p>Key data encryption and backup storage, security monitoring</p>
<p>Enhanced security level</p> <p>Improvement of security policy, internalization of security capabilities, and enhancement of security level such as security promotion activities</p>	<p>Information Security Verification and Certification</p> <p>Mock hacking and vulnerability check, external authentication maintenance and inspection response</p>

Information Security Awareness Raising Activities

Internalization of Information Security Capabilities

- We are emphasizing the importance of security and implementing various training programs to internalize the security capabilities of our employees.
- In addition to the statutory compulsory education for protection of personal information, we regularly conduct 'information security education'.
- We are conducting 'Basic Education for IT and security' for new hires. In particular, we educate new employees to prevent data from their previous jobs and inspect their documents after a certain period of time.

Data Protection and Monitoring

Data Protection

- To safely manage personal information in the information system, we comply with the requirements of relevant laws (Personal Information Security Act, Information and Communications Network Act).
- After acquiring the Personal Information Management System (PIMS) certification in 2015, personal data has been managed at the same level until now, and plans to acquire a new certification (ISMS-P: Personal Information & Information Security Management System) in 2023.

Monitoring

- We are effectively responding to various attacks that flow into the SK E&S area in the data center.
 - Intrusion Prevention System (IPS): Automatically blocked a total of 1,336,467 attacks in 2021
 - Security control service: Detected and took action on a total of 9,494 intrusion attempts in 2021

- We immediately detect and confirm various security anomalies occurring within the company (approximately 600 cases/month), immediately block information leakage that may occur from the inside, and implement recurrence prevention activities through education.

Customer Value

Customer Information Security

Customer Information Security Management System |

As Korea's No. 1 city gas operator that supplies city gas to about 4.5 million households across the nation, SK E&S ensures that all personal information received—from the time of service subscription to the time of termination—is encrypted to prevent information-related incidents. In doing so, all of our 7 city gas subsidiaries acquired the Personal Information Management System (PIMS) certification in 2015 and are striving to maintain consistent information security management levels.

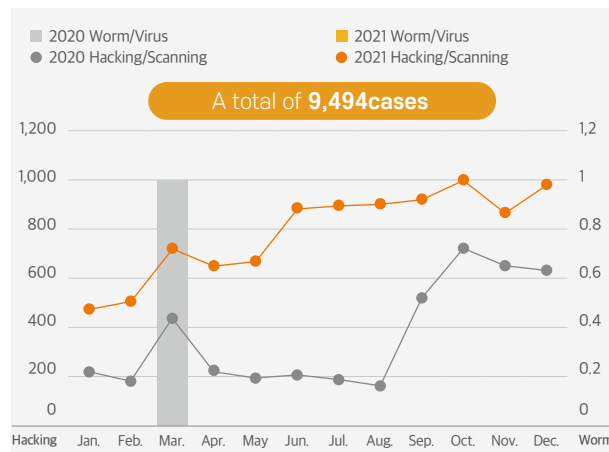
We are continuously advancing our personal information management system for city gas to reinforce customer information. In line with this, we minimize the collection and storage of customer information and immediately delete information whose purpose has expired. In addition, we have established a monitoring system of information leakage and conduct internal assessments on personal information security levels every year. In 2021, we improved the information security policies of the newly incorporated subsidiary Busan JungKwan Energy to align its security level with those of the headquarters and other subsidiaries.

Activities Related to the Protection of Individual Customers |

SK E&S seeks to create an environment that facilitates the provision of best-in-class services by operating information security capacity-building programs, campaigns to raise employees' awareness of privacy protection, and a working-level personal information committee. Furthermore, we are expanding security-related investments, strengthening information security systems, and tightening information security targets every year.

Intrusion Response Activities

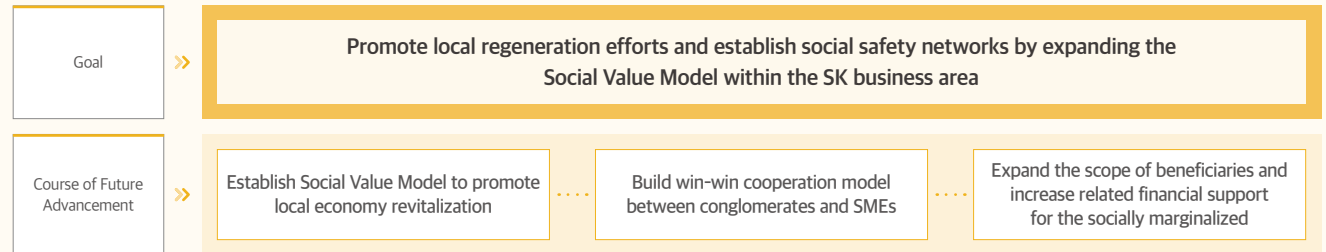
(Based on Number of Reports)



Social 8



Roadmap




Social Contribution Programs

Revitalizing local economies

⋮

Local:Rise Gunsan
SK E&S has conducted a local regeneration project to boost the economy of Gunsan, a city that has faced sluggish employment and industrial growth. Under the project, youth entrepreneurs have been nurtured and supported for three years.
* Won the SK Group's SUPEX Pursuit Award and a plaque of appreciation granted by the city of Gunsan



Contribution to the Win-win Cooperation Funds and support for SMEs
• SK E&S has assisted small- and medium-sized enterprises (SMEs) in local communities facing business hardships amid COVID-19 in paying for rental and labor expenses by funding "Korea Foundation for the Cooperation of Large & Small Business, Rural Affairs".
• SK E&S supported green technology R&D of innovative SMEs.

Saemangeum SK Cluster
We are building the SK Cluster, which includes spaces dedicated to art/culture and business foundation support activities, to create more jobs and revitalize the economy in the Saemangeum area.

Supporting socially marginalized groups

⋮

Happy Alliance
SK E&S has participated in the social contribution network to address problems related to children in need of meal support

Meal Sharing On-Tact project
We have offered meal support to seniors from vulnerable groups suffering amid the prolonged COVID-19



Support for children with asthma
We have supported the treatment and medical supplies for child patients with asthma from single-parent, low-income households. We established a cooperation system along with the city of Seoul, Seoul Health Foundation, and the Community Chest of Korea.



Education

⋮

Good Energy School
We operate the "Good Energy School" program to improve children's awareness of eco-friendly energy. In response to COVID-19, we have expanded related online content.
* "Outstanding Environmental Education Program" in 2019 by the Ministry of Environment



Other

⋮

Communication with local communities near our subsidiaries
Volunteer activities and briquette / kimchi-sharing projects

One-Company, One-Village
Our employees have engaged in weekend farming and farmers' market programs under the One-Company, One-Village project.

Donation of Timer Cocks
We have supported timer cocks (gas circuit breakers) for patients with dementia and seniors living alone, who are often exposed to risks of safety accidents.

Social Contribution Projects

In light of our business characteristics as an eco-friendly energy supplier and an energy infrastructure player operating on local levels, SK E&S has set “local regeneration and mutual cooperation” and “improvement in the awareness of clean energy” as the key pillars of our social value creation efforts. SK E&S is promoting various social contribution projects that can listen to the opinions of stakeholders under struggling conditions within the business area and clearly identify and solve pain points of them.

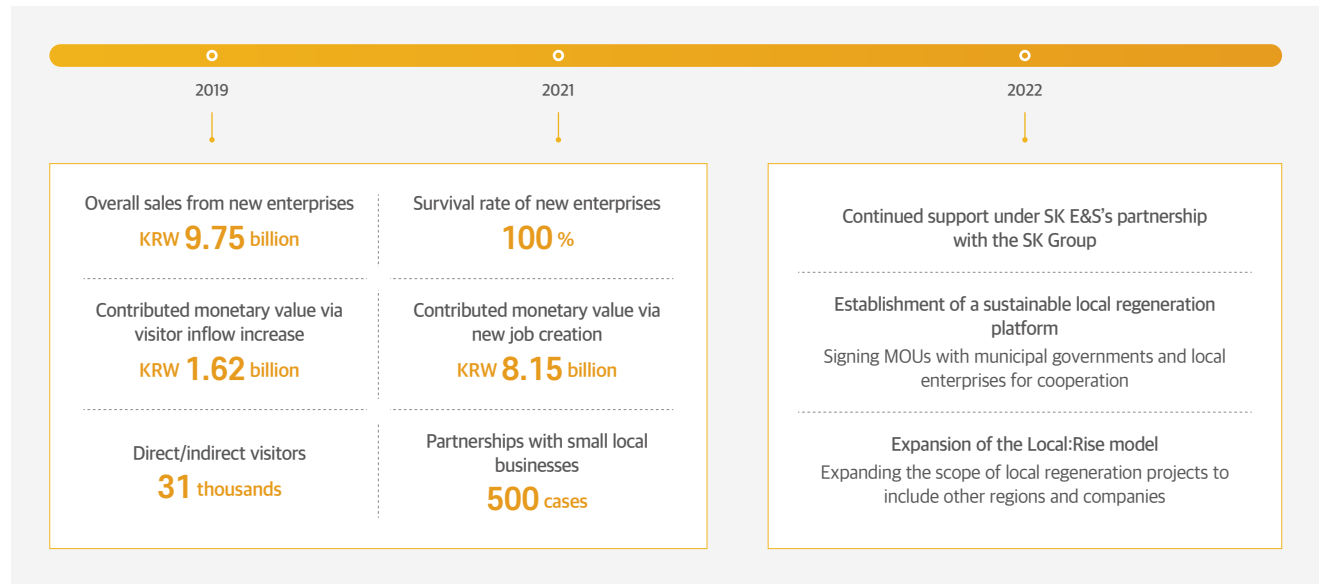
Social Contribution Related Achievements and Plans

Local:Rise Gunsan

SK E&S operates “Local:Rise Gunsan,” a company-led project to promote local regeneration by nurturing youth entrepreneurs for mutual growth with local customers and communities. Gunsan is located near the SK E&S business area, a provincial city suffering from one of the biggest pain points in Korea, having recently been suffering from a crisis of regional community breakdown due to the decline of local industries and continuous outflow of population.

Our Approach | Under “Local:Rise Gunsan” project, SK E&S has selected start-ups that can promote regional regeneration most passionately and creatively to support their growth, as a result of continuous communication and discussion with local regeneration experts, local governments, and local residents. Having signed MOUs with local community stakeholders including the Gunsan Social Economy Center, Gunsan Youth Center, and Start-up Support Center, SK E&S and the stakeholders have discussed the details required to support youth entrepreneurs in the region. Together, we engage in various cooperative projects. In addition, various support such as shared offices, living spaces, start-up coaching, and local festivals are provided for 26 start-ups so that they can settle in the local region and fulfill their roles in the city’s regeneration.

Roadmap



Major Achievements | In recognition of the achievements of increasing the income of local small business owners and revitalizing the local economy through “Local:Rise Gunsan”, SK E&S received a plaque of appreciation from Gunsan City in 2021, and the SUPEX Pursuit Award in a social value category by SK Group in 2022. Furthermore, more than 200 officials all over the country, including the prime minister and members of the National Assembly have visited the city to benchmark our local regeneration model. Major achievements of the “Local:Rise Gunsan” project have been taken as a reference for the Korean government’s major youth entrepreneur support policies. Based on the experiences and knowledge accumulated through the “Local:Rise Gunsan” project,

we are now supporting the local regeneration projects of other companies, including other SK Group affiliates, such as SK Materials and SK Nexilis, and subsidiaries such as Jeonbuk Energy Service. Furthermore, our commitment to local economic revitalization in “Local:Rise Gunsan” project helped it proceed smoothly with other community-based infrastructure projects, such as the 200 MW floating solar farm project in the Saemangeum area, as well as other renewable and hydrogen projects. Moving forward, we will further strive to prolong the success of the “Local:Rise Gunsan” project, share our local regeneration knowledge for the development of other regions, and continue to wield positive influence.

CASE STUDY

Major Events



Local:Rise Festival



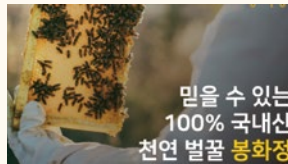
Local pop-up stores /
special exhibitions



Local revitalization programs

Major Companies

Rediv (Ssukssuk Market)



A social enterprise specializing in local food distribution in pursuit of mutual growth with local farms

- Opened 40 off-line stores in Seoul, including one at Lotte Department Store
- Led to a 25% increase in income of cooperating bee farms

MugBangi and Friends



Citizen-driven local mascot character development and support for small local businesses

- Won the local innovator award of the Presidential Committee for Balanced National Development in 2020
- Designated as the official character production company for the 2023 World Jamboree (World's largest scout event)
- Received invitations to other large-scale content fairs in Busan and Gwangju

Gunsan Sungrim



Rebranding fishery products from Gogunsando in Gunsan

- Won the Prime Ministerial Award at the 2020 Korea Tourist Product Contest
- Expanded sales channels to include home-shopping platforms, duty-free shops, pop-up stores, and department stores

Contribution to the Win-Win Partnership Fund and Support for Small and Medium-sized Enterprises (SMEs)

SK E&S focuses on fostering a social enterprise ecosystem, eco-friendly projects, and energy efficiency improvement of small and medium-sized businesses in local communities by utilizing the Win-Win Partnership Fund to build a co-prosperity model between large and small businesses. In 2021, we were selected as the No. 1 company in 'Attentive Enterprise 2.0' hosted by the Ministry of SMEs and Start-ups to actively support R&D of innovative small and medium-sized enterprises (SMEs) related to eco-friendly technologies, thereby contributing to strengthening their technological competitiveness.

In addition, we provided management stabilization funds such as rent and labor costs to small business owners and SMEs in local communities who are experiencing financial difficulties due to the COVID-19 outbreak. SK E&S will continue to strengthen the social safety net and win-win partnership so that local communities can become happier.

Saemangeum SK Cluster

SK E&S has invested around KRW 100 billion* in the Saemangeum area to build a start-up cluster, seeking to revitalize the local economy by attracting promising enterprises and talent. Through the Saemangeum SK Cluster, we will provide office facilities to community-based start-ups and venture firms to help their establishment and offer an integrated cultural space where local residents can engage in cultural activities. Furthermore, the cluster is expected to attract visitors nationwide, contributing to the development of the local area.

* Including construction costs, operation costs of facilities after completion and opening, support costs for tenant companies, etc.

Saemangeum SK Cluster Roadmap



Meal Sharing On-Tact Project

With a number of free meal services having been discontinued amid the prolonged COVID-19 pandemic, SK E&S raised around KRW 235 million to help senior citizens in need of meal support. The fund was used to provide a total of 45,000 meal boxes to seniors in Iksan (Jeonbuk), Seosan (Chungnam), Chuncheon (Gangwon), and Incheon. In addition, employees from subsidiaries near these areas participated in Parents' Day events to deliver gifts and meal boxes.

With efforts from our subsidiaries dedicated to the Meal Sharing On-Tact Project by our employees, Iksan City connected the project with its own public work program, "Senior Club," to create 125 jobs for seniors, saving meal box delivery costs. In Seosan, a total of 245 voluntary workers joined the project to conduct counseling and delivery work, bringing Lunar New Year holiday gifts to 300 seniors living alone. As for Chuncheon and Incheon, we delivered meal boxes and offered one-on-one care to seniors living alone, along with four senior welfare centers in Chuncheon and three in Incheon Seogu.

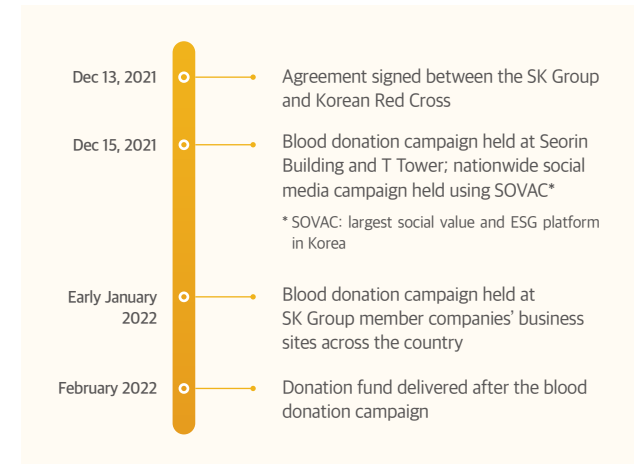


Parents' Day Event Participated by Gangwon City Gas Employees

Life Sharing On-Tact Project

The "Life Sharing On-Tact Project" is a large-scale blood donation campaign led by the SK Group to address the nationwide blood shortage driven by a prolonged COVID-19 pandemic. With the nation's blood inventory falling to a level that would last for less than five days, employees from the SK Group member companies, partner companies, social enterprises, as well as the general public participated in the campaign to resolve the blood shortage crisis.

Campaign participants donated their blood or promoted the campaign through social media. Furthermore, donations for children from socially marginalized groups and blood cancer patients were accumulated in proportion to the number of campaign participants. As such, employees from SK E&S's headquarters, subsidiaries, and partner companies participated in around 500 blood donation sessions held between December 2021 and January 2022. Having pledged a donation amount of KRW 50,000 for every employee who participated in the campaign, the SK Group donated the accumulated amount to the Korea Childhood Leukemia Foundation in March 2022. In partnership with the SK Group and other related institutions, SK E&S will further promote the blood donation campaign by encouraging not only our employees but also their family members and partner company employees to participate in the campaign.



Meal Sharing On-Tact Project

Iksan

A volunteer worker delivering a meal box discovered a senior citizen who was living alone without consciousness and called 119. The senior was immediately sent to the hospital and was given proper treatment.

Seosan

A senior citizen who used to live on instant food and alcohol changed to a healthy diet and reduced alcohol drinking after he began receiving meal boxes from the volunteer worker. As such, the meal service was called a "health keeper."

Good Energy School

SK E&S operates the clean energy awareness program “Good Energy School” to raise children’s and adolescents’ awareness of the effect of the climate crisis and the importance of environmental protection. In the program, children have multidimensional learning experiences that involve lectures, quizzes, and board games and are provided with diverse learning materials, such as solar-powered plane and Lego wind power generator assemblies, to build awareness of clean energy and learn about various energy-related jobs. In addition, amid a prolonged COVID-19 pandemic, we have produced additional online content to promote educational sharing.

Having received good feedback from not only learners but also instructors, the “Good Energy School” program has obtained recognition from the Ministry of Environment and the Ministry of Education* and received awards from the Education Minister for its contribution to building awareness of the importance of energy-saving and safe energy use. Moving forward, we will further expand the “Good Energy School” program to include child/adolescent learners from families who are socially marginalized or with visual impairment.

* Outstanding environmental education program (the Ministry of Environment), outstanding institution for donation for education (the Ministry of Education), and institution promoting career exploration for donation for education (the Ministry of Education)

Until 2021

- ✓ Developed experience-focused energy education programs
- ✓ Developed online content for COVID-19 response
- ✓ Conducted 26 education sessions for 634 learners at 39 child welfare facilities in 2021

- Awarded by the Minister of Education at the Donation for Education Award (November 2019)
- Received an award from the Minister of Environment at the Contest for Outstanding Environmental Education Programs (August 2020)
- Awarded by the Minister of Education for merit of support for career exploration activities (December 2020)
- Received a plaque of appreciation for contribution to educational development and support for career exploration activities in marginalized areas (January 2021)
- Designated as an “Outstanding Environmental Education Program” by the Ministry of Environment (June 2019)
- Recognized as an outstanding institution for donation for education by the Ministry of Education (October 2019)
- Designated as an institution promoting career exploration for donation for education (July 2020)



From 2022

- ✓ Expand online education while conducting off-line education
- ✓ Reflect SK E&S’s new business focus such as hydrogen energy and carbon neutrality
- ✓ Develop hydrogen energy characters and additional e-learning content
- ✓ Launch “Good Energy School” classes visiting learners with disabilities and expand the program to include a wider range of regions in the country
- ✓ To conduct more than 30 education sessions in 2022

- To be redesignated as the Ministry of Environment’s “Outstanding Environmental Education Program” (current designation to expire on June 24, 2022)
- To be redesignated as an outstanding institution for donation for education by the Ministry of Education (current designation to expire on Dec 31, 2022)



Ray Windy Sundori G-Bear

* Characters in actual education content developed by SK E&S

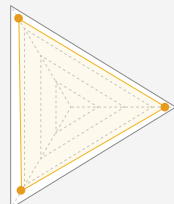
Overall Survey Results

Experience satisfaction

4.5 (out of 5)

Improvement in environment awareness

4.2 (out of 5)

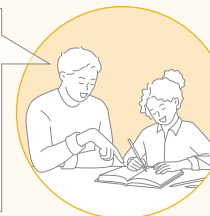


Willingness to participate again
90% (out of 100%)

Comments

Homeroom Teacher

“Thank you for creating a good program for children who have been deprived of learning opportunities amid COVID-19.”
“Children were happy with the cute gifts and airplane-making activities.”



Student Participant

“It was fun to get to know about energy and to participate in craft activities.”
“I want to tell my family and teachers that good energy is abundant and safe.”

One-Company, One-Village Project

Based on its nationwide power plant network and city gas subsidiaries, SK E&S engages in various activities to support local communities and communicate with their residents. Having established a sisterhood relationship with the Neungpyeong-ri village in Hongcheon-gun, Gangwon-do, we have engaged in various efforts to revitalize the local economy, including volunteer activities, weekend farming, and direct trade of agricultural products since 2014. Furthermore, we promote urban-rural communication by supporting local festivals and operating rural experience programs, as well as purchasing harvested crops to donate to socially vulnerable groups. For reference, we have purchased 14,290 boxes of corn over the past eight years, contributing around KRW 350 million to the income of local farmers.

Support for Children with Asthma

Caused by genetic and environmental factors (such as air pollution), asthma is a chronic disease that tends to have a high

risk of relapse. Since 2017, SK E&S has supported the treatment of children suffering from asthma because of environmental problems (such as fine dust) and improved their living environment to ensure recovery. Furthermore, we have established a platform dedicated to the treatment of pediatric asthma with cooperation among private/public institutions and municipal governments to close the medical gap and improve the quality of life of socially vulnerable patients.

Status of Support for Children with Asthma

	2019	2020	2021	2022*
Cumulative number of child patients**	78	91	107	127
Cumulative number of completely cured child patients	4	7	7	-
Support amount (KRW 1 million)	200	200	230	243

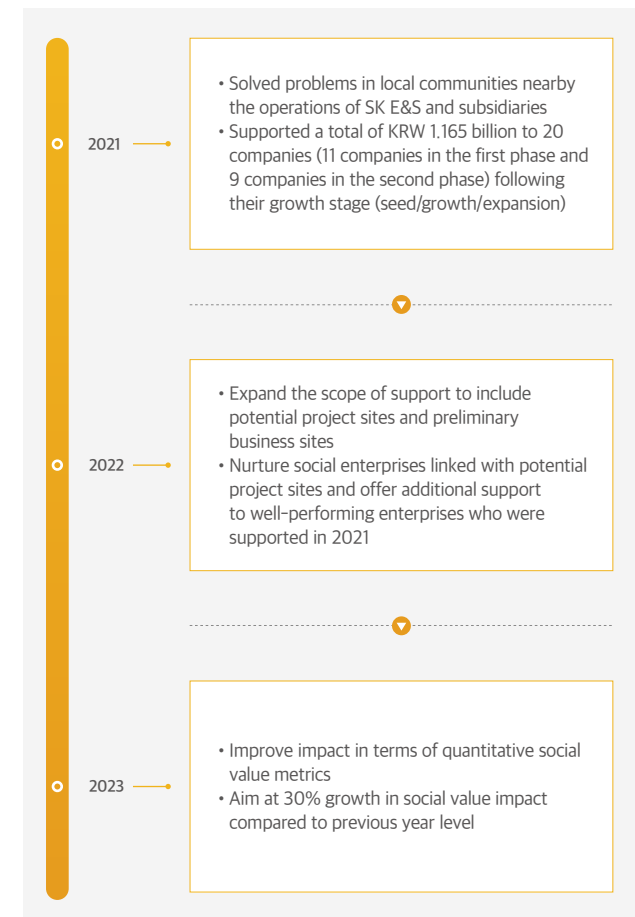
* The figure includes selected and to-be-selected patients for support.

** Child patients who have not been completely healed continue to receive our support.

Support for Social Enterprise Ecosystem

SK E&S nurtures social enterprises specializing in various areas that encompass the environment, urban regeneration, and socially vulnerable groups, fostering the ecosystem for social enterprises to address problems in local communities.

Roadmap



Support for Medical Expenses and Supplies

- Full support for medical expenses that encompass hospital bills, medication bills, and nebulizer costs
- Monthly support for face masks and health supplements

Living Environment Improvement

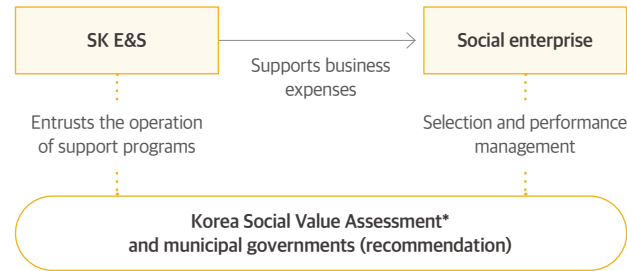
- Daily life support for air quality measurement devices, air purifiers, vacuum cleaners, replacement services for washing machines and dryers, and hypoallergenic bedding, dehumidifiers, toppers, etc.
- Support for cleaning and repair services (including mold prevention), replacement of anti-bug window nets (customized and offered after residential condition checkups for individual housing units)



Objective

Over the short term, SK E&S seeks to increase the number of regions subject to our support from five in 2021 to eight in 2022 to address social issues from a wider range of areas. From 2023 onward, we aim to manage the social impacts created by social enterprises receiving our support. We will enhance our support system to ensure that the enterprises can enhance their social value impact by 30% or more compared to before receiving our support.

Structure of Social Enterprise Ecosystem Support



* An agency that specializes in assessing social enterprises; conducted impact assessments on a cumulative number of 414 enterprises along with 61 partner institutions

Policies

We provide medium-/long-term support to social enterprises in local communities near the business sites of our city gas and power business subsidiaries (including sites planned for new projects) to promote their growth and revitalize local economies. Furthermore, we quantitatively measure the impact created by social enterprises that received our support, with additional support given to enterprises with good assessment results.

Performance

In 2021, SK E&S engaged in a two-phased social enterprise support program, under which KRW 1.165 billion was injected to 20 social enterprises. We measure the social impact generated by these enterprises to boost the creation of positive social impact. Major projects that delivered strong social impact include those related to the improvement of the overall quality of life (such as career exploration programs for children in underprivileged regions and low-income households, psychological counseling from socially marginalized groups, and recuperation care services) and those related to employment (such as job creation from socially vulnerable groups). The social impact created by the 20 social enterprises was equivalent to around KRW 2.8 billion, a level 36% higher compared to the KRW 2.06 billion last year.



Village Management Social Cooperative of Bongsan Village

Helped local regeneration projects that were at risk of termination because of a slowdown in the tourism industry to continue
A youth enterprise's local regeneration project turned empty houses in Bongsan Village, Yeongdo, an underdeveloped area in Busan, into tourist destinations.



Education Cooperative Village School

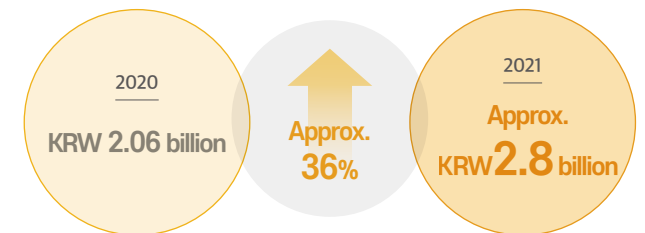
Introduced Fourth Industrial Revolution-themed IT education programs and nurtured instructors in rural and mountain villages
Fourth Industrial Revolution-themed IT education programs were provided at after-school classes in middle / high schools in geographically disadvantaged rural and mountain villages. The program also contributed to local job creation.



Happiness Charging Station for People with Disabilities

Supported social enterprises dedicated to job creation for people with disabilities based on a public-private governance partnership model
Launched in partnership with the Incheon Seogu office and Incheon Seogu development committee for people with disabilities, sizable job creation anticipated from equipment / facility purchasing support project

Total Social Performance by Social Enterprises



Governance

SK E&S engages in responsible management with the Board of Directors (BOD) at its core to become a company that can be trusted by stakeholders. To this end, we introduced a system of outside directors and professional committees despite our standing as an unlisted company.

SK E&S will continue to create a sound and transparent corporate culture along with enhancing the independence, diversity, and professionalism of the BOD.

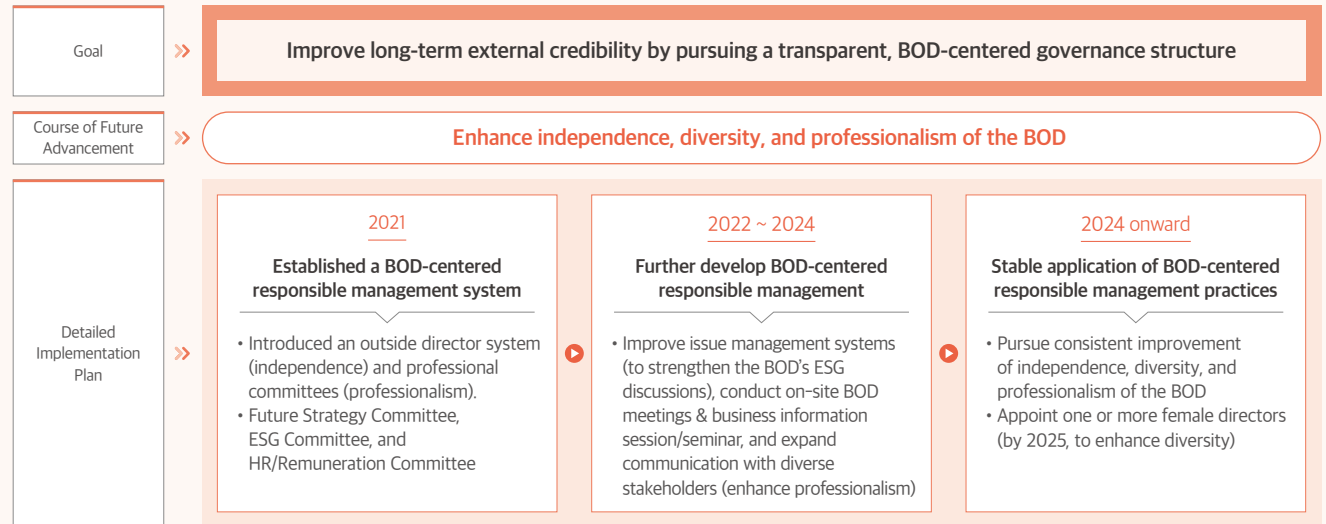
1	Board of Directors	83
2	Ethical Management and Anti-Corruption	87
3	Risk Management	90

Governance 1

Board of Directors (BOD)



Roadmap



2021 Major Achievements



Major Indicators



(As of March 31, 2022)

Board of Directors

In 2021, we established three committees under the BOD and introduced an outside director system, pursuing significant changes to strengthen a transparent governance structure to help the BOD perform its roles as the highest permanent decision-making body based on autonomous deliberations.

Independence, Diversity, and Professionalism of the BOD

SK E&S's corporate governance charter specifies the verification of independence, diversity, and professionalism when appointing outside directors. Verification of independence includes the review of the applicant's relationship with the company and his/her level of integrity. Meanwhile, the applicant's professionalism is assessed by looking at his/her expertise in SK E&S's business areas (including professionalism for energy and climate change issues), management approach, and social reputation. In addition, we promote diversity in our BOD composition by ensuring that no discrimination is made on grounds such as race, gender, age, religion, disability, nationality, regional affiliation, or political views. In 2021, SK E&S established three committees under the BOD (Future Strategy Committee, ESG Committee, and HR/Remuneration Committee), and introduced the outside director system, even though it is not required to do so as an unlisted company, to strengthen the independence, diversity, and professionalism of the BOD as specified in the corporate governance charter. We have appointed more outside directors than inside directors to bolster the BOD's independence. In addition, we have appointed outside directors as chairs or members of the committees under the BOD - that the composition of outside directors is more than half of the ESG Committee and HR/Remuneration Committee - to promote the independence and professionalism of the BOD. Especially in 2022, outside directors who specialize in ESG matters comprised 75% (three out of four directors) of ESG Committee directors. Our plan is to maintain the proportion of outside directors in the board of directors above the current level so that we can deliberate on more objective and professional deliberation items on agenda throughout management, including ESG.

BOD Composition

(As of March 31, 2022)



Jeong Joon Yu

- CEO & Vice Chairman
- ESG Committee Chair



Hyeongwook Choo

- CEO & President
- Future Strategy Committee



Chung Sup Lee

- Outside Director
- HR/Remuneration Committee, ESG Committee



Byung Nam Rhee

- Outside Director
- Future Strategy Committee, ESG Committee



Dojin Kim

- Outside Director
- HR/Remuneration Committee, ESG Committee



SUNG HYUNG LEE

- Nonexecutive Director
- Head of Financial Sector, SK Inc.
- HR/Remuneration Committee



Moo Hwan Kim

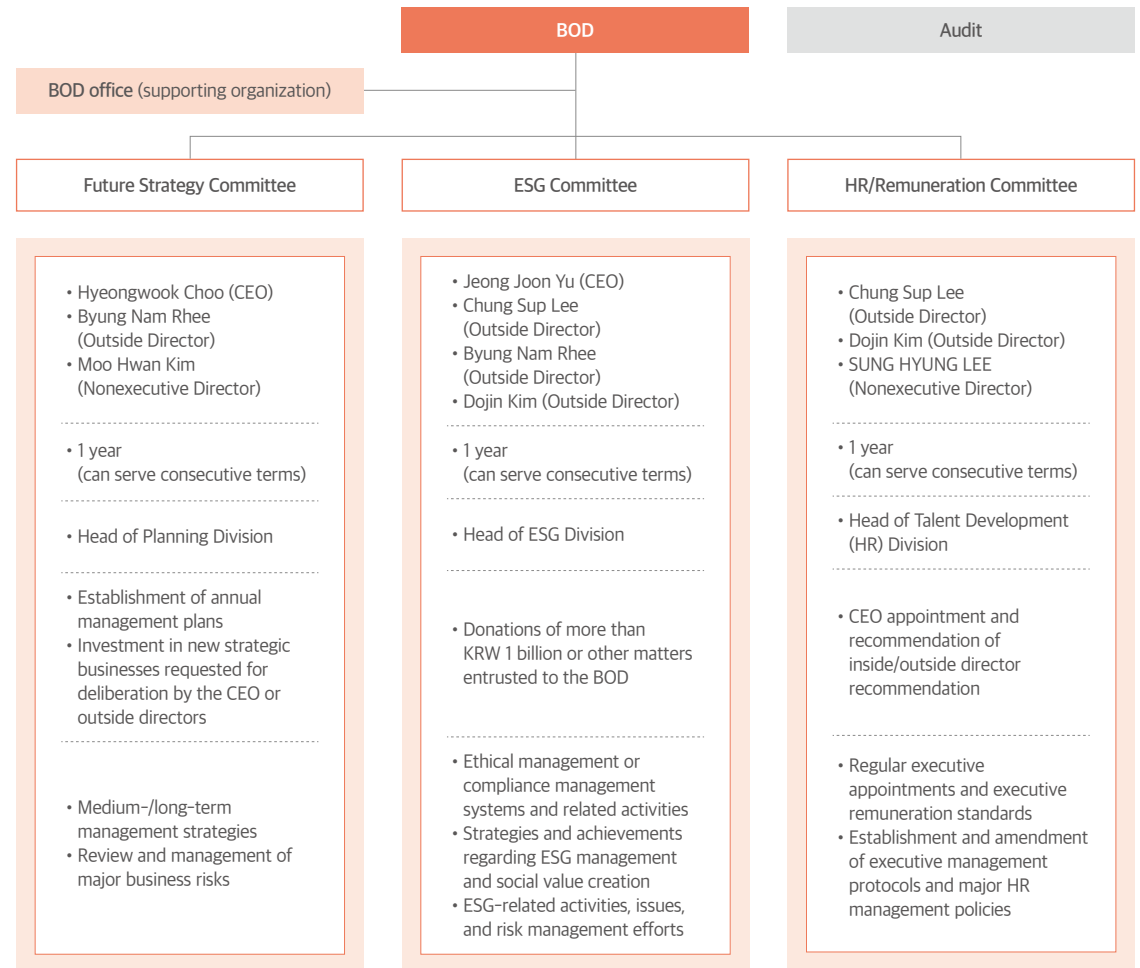
- Nonexecutive Director
- Head of Green Investment Center, SK Inc.
- Future Strategy Committee

Committees under the BOD

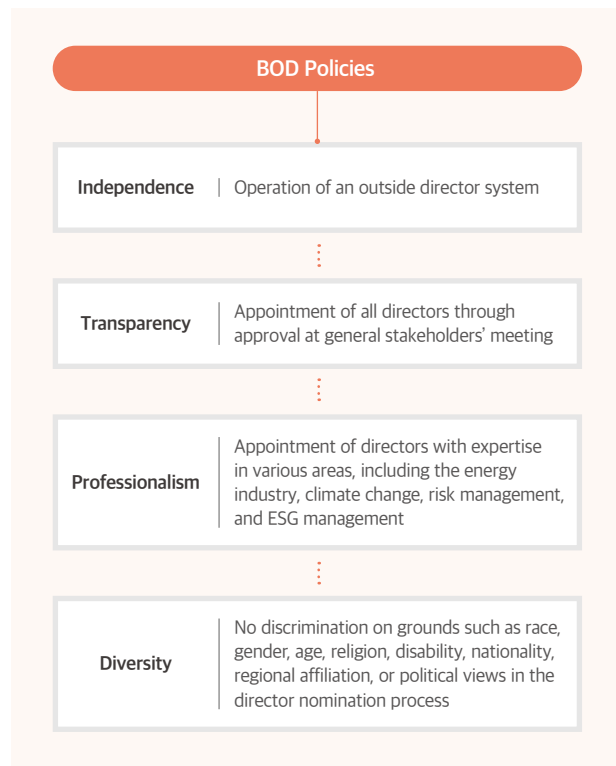
In 2022, SK E&S plans to conduct at least two on-site BOD meetings at major domestic and overseas business sites to improve directors' understanding of management issues and hold at least nine seminars/workshops and communication events to enhance the BOD's expertise. By 2024, we will update BOD education programs and expand on-site BOD meetings to boost communication with our stakeholders. And also, by 2025, we will appoint female directors to improve the BOD's diversity. As such, we will further strive to promote a transparent governance structure to gain external trust and spearhead BOD-centered ESG management practices.

In 2021, we established three committees under the BOD, which are operated according to their own regulations, to promote the BOD's swift and efficient decision-making process.

Committees Under the BOD



(As of March 31, 2022)



BOD Operation

BOD meetings are held regularly every month, with additional meetings held whenever necessary. We have set BOD operation regulations that specify their roles and responsibilities and operational procedures to ensure a transparent operation. Moreover, working-level bodies dedicated to different areas - Future strategy, ESG, HR/remuneration - provide the BOD with the necessary materials and resources to promote a professional and efficient operation.

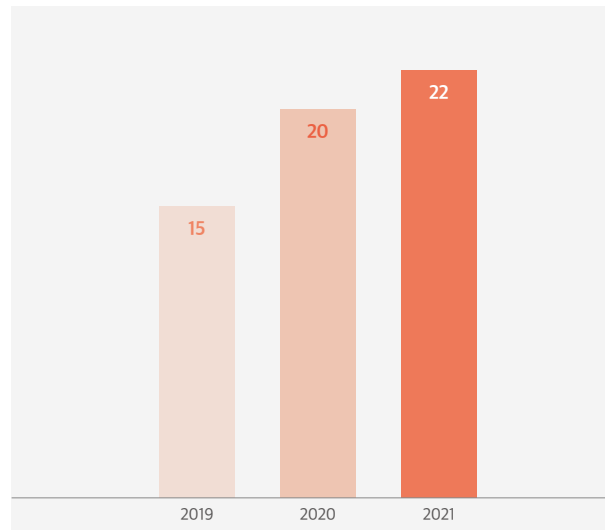
BOD Operation Status

	Unit	2019	2020	2021
BOD meetings held	Number	15	20	22
BOD meeting agendas discussed	Items for resolution	60	64	99
	Items for reporting	4	7	12
Outside director attendance rate	%	-	-	100*

* Outside directors appointed since 2021

Number of BOD Meetings

(Unit: no. of cases)



Assessment of the BOD's Performance and Remuneration

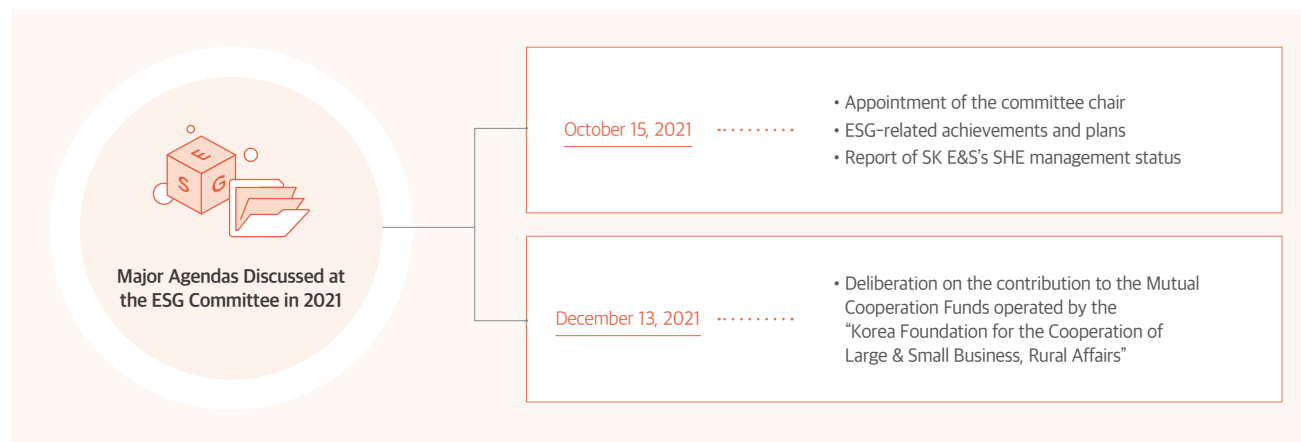
SK E&S discloses BOD-related information, including the BOD operation status, BOD meetings, and remuneration for registered directors, through our annual business report. As mentioned in the corporate governance charter, we assess management's performance fairly and execute BOD remuneration after reviewing the HR/Remuneration Committee within the ceiling approved at the general shareholders' meeting.

The KPIs of company-wide including CEO reflecting ESG performance evaluation and compensation are reviewed by the Future Strategy Committee in the first half of each year and approved by the board of directors, and approved by the Future Strategy Committee in the second half.

In 2022, ESG-related categories* (such as the implementation of ESG-related tasks and the pursuit of employee happiness) are expected to comprise up to 10% of performance evaluation for all executives (KPI) which are evaluated and compensated to facilitate our sustainable management practices.

* SK Group's ESG assessment categories

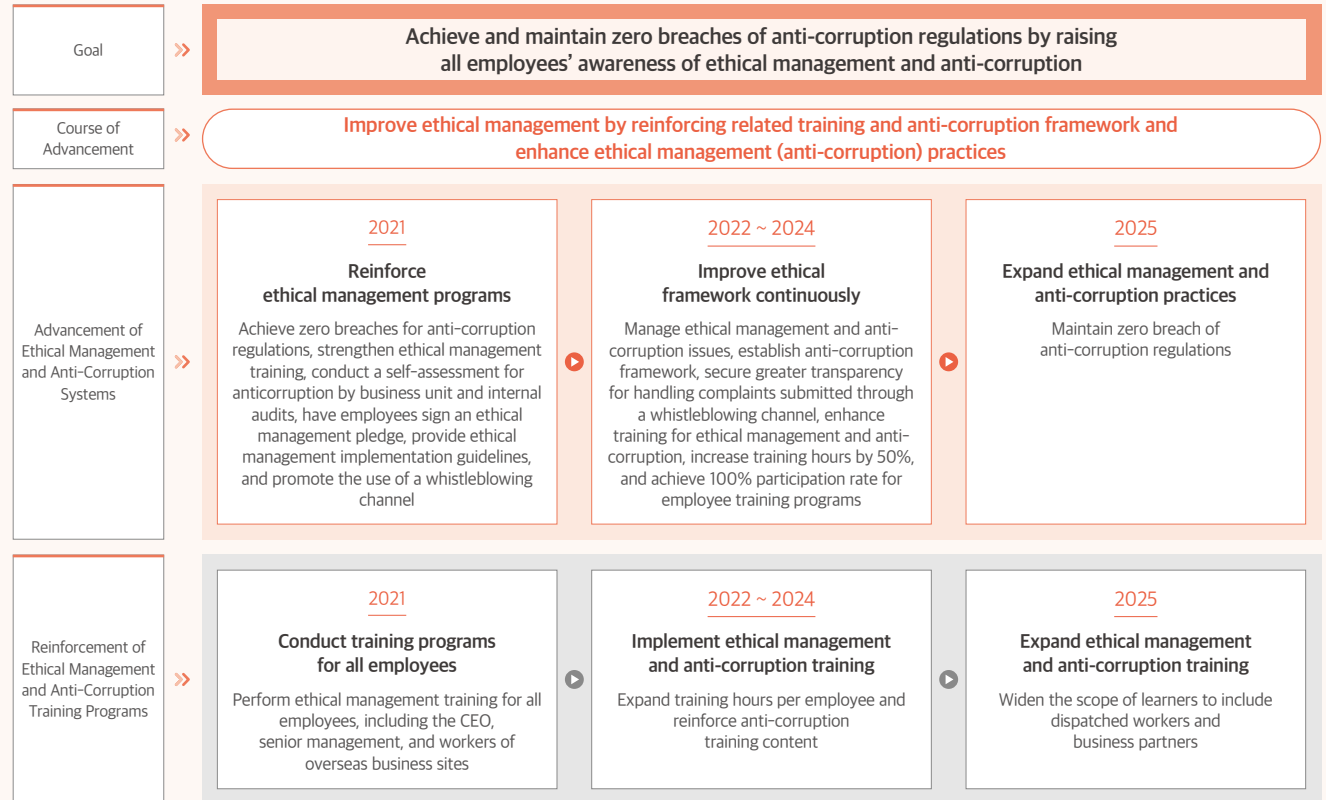
[Details of the BOD's major agendas](#)



Governance 2



Roadmap



2021 Major Achievements



Ethical Management and Anti-Corruption Organizational Framework



Ethical Management and Anti-Corruption Policies

Prioritizing ethical management as the foremost principle of its management operations, SK E&S engages in systematic ethical management and anti-corruption efforts based on specific policies, targets, and performance management schemes. SK E&S have stipulated our code of ethics, a set of principles that provide a standard by which employees can judge the appropriateness of their decision-making and actions in terms of ethical management and anti-corruption perspectives, and released related implementation guidelines, which are operated through management's review and approval. Furthermore, we have set and distributed ethical practice guidelines to build all employees' awareness of ethical management and anti-corruption.

Responsible Organization

SK E&S have upgraded the existing Ethical Management and Anti-Corruption Management unit into the Risk Management & Corporate Auditing Office that works under the CEO's direct supervision to bolster its independence and authority. As such, Risk Management & Corporate Auditing Office operates an integrated system for assessing and supporting company-wide ethical management efforts (including those at subsidiaries and overseas business sites) to promote the internalization of ethical management and anti-corruption practices. Furthermore, the office manages moral hazards, which could occur in various areas including information security, human rights, environment, and safety, in partnership with related working-level departments.

Scope of Ethical Management and Anti-Corruption Efforts

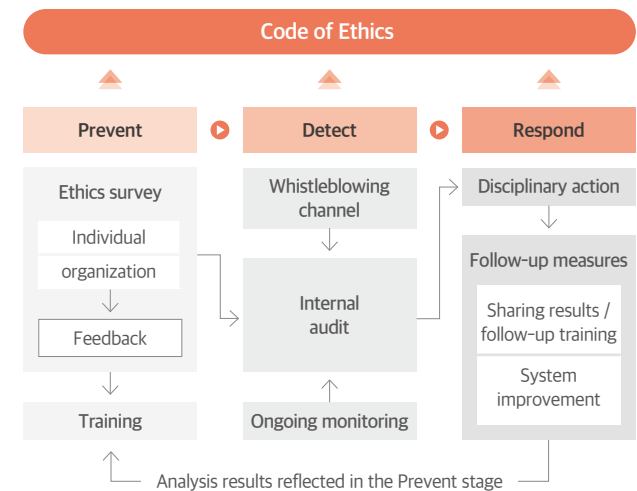
SK E&S has developed a Roadmap to develop ethical management framework and build competencies required to maintain zero cases of anti-corruption breaches. Our efforts to enhance ethical management and anti-corruption framework include the operation of a self-assessment for anticorruption and internal audits, as well as competency-building efforts to have a gradual increase in ethical management and anti-corruption training hours. Moreover, all employees sign the ethical management pledge, with Ethics Workshops held once a year led by each organization's leaders.

Ethical Management Framework

In the Prevent stage, SK E&S conduct an Ethics Assessment Survey to identify ethical management and anti-corruption issues and to minimize related risks. Based on the survey results, we operate ethical management and anti-corruption training programs for employees and hold Ethics Workshops (led by the leaders of each organization) to raise their awareness of ethical management and anti-corruption. In addition, employees having difficulty in judging whether an action performed during work constitutes a breach of ethical management and anti-corruption rules may consult a manager from the Risk Management & Corporate Auditing Office. In the Detect stage, we engage in ongoing monitoring activities by operating whistleblowing channels. SK E&S have diversified ethical management and whistleblowing channels to improve whistleblowers' accessibility and have kept their personal

information strictly confidential to ensure that whistleblowers do not face any punitive measures or discrimination that may result from the whistleblowing. Furthermore, we regularly check our self-assessment for anticorruption and conduct internal audits as part of our ongoing monitoring activities.

In the Respond stage, we take comprehensive follow-up measures, such as personnel measures, follow-up training, and system improvement. Moreover, case analysis results are reflected in the Prevent stage to further improve our ethical management system. Overall, we seek to constantly update our ethical management and anti-corruption scheme by operating our three-phased ethical management framework.



Self-assessment for Anticorruption and Management Assessment

- Regular evaluation of core business areas (such as HR, finance, and purchasing) > Self-assessment for anticorruption
- Periodic assessment of company operations and business areas (including those at domestic and overseas subsidiaries) > Internal audits

Identify ethical management and anti-corruption risks in advance and develop necessary response measures

Competency Building

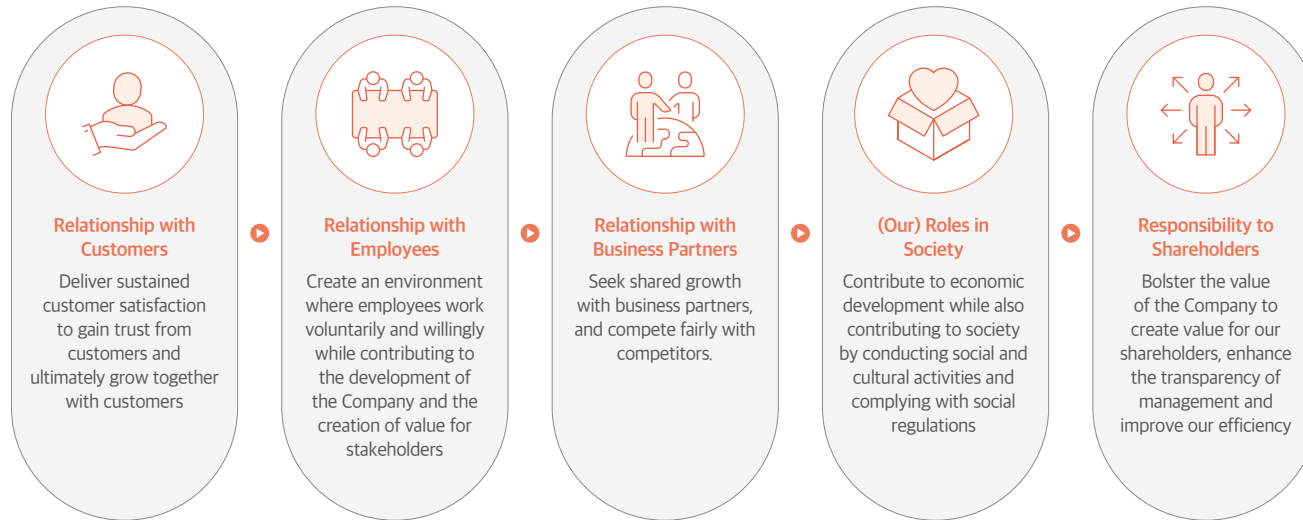
- Signing of the ethical management pledge by all employees > raise awareness of ethical management and anti-corruption
- Discussions on ethical dilemmas specific to each organization at annual Ethics Workshops led by leaders of each organization > build ethical and anti-corruption awareness

Ethics Assessment Surveys for all employees > identify the status of the company's ethical business practices

Ethical Management and Anti-Corruption Training

Category		2019	2020	2021
Training program	Number of participants	2,021	2,214	2,363
	Participation rate (%)	100	100	99
Practice workshops	Number of participants	2,013	2,074	2,341
	Participation rate (%)	98	99	97

Approach to Ethical Management



Reporting/Counseling Channels

SK E&S discloses its code of ethics on a group-wide ethical management website to share them with our external stakeholders, including partner companies and customers. Furthermore, we operate a channel that allows internal and external stakeholders to report or receive consultation on actions that go against our code of ethics, such as unfair work processing, the use of one’s position to make undue demands, unethical verbal behavior, the provision or receipt of money, goods, entertainment, or conveniences, interference in the business of partner companies, payment-related complaints, and leaks of confidential information. Complaints can be made anonymously. Moreover, we run a whistleblower protection program to ensure that anyone can report or request counseling with confidence. In the program, we have stipulated the “protection of the whistleblower’s status and complaint content according to the laws and corporate regulations,” the “prohibition of disadvantages and discrimination against

whistleblowers,” and the “right to look through report content.” In addition, whenever anti-corruption issues occur, we conduct audits according to internal policies and procedures (such as internal audit policy). In 2021, we received a total of 20 complaints through our whistleblowing channels, out of which there was no corruption-related case. All of the received complaints were handled according to internal procedures.

Number of Complaints Received Through Whistleblowing Channel and Number of Cases Closed

Category	2019	2020	2021
Number of complaints received	13	19	20
Number of complaints handled	13	19	20

Compliance Management

System Establishment

A governing body designated to compliance and an operating system were established in 2020, and the existing Fair Trade Voluntary Compliance Program (CP) was upgraded to establish an executable compliance management system. From 2021, the management process has been enhanced, including periodic legal risk assessment, and the effectiveness of the ‘compliance control standards’, including the compliance management process, is evaluated and the results are reported to the BOD. The compliance control standards include matters such as appointment and dismissal of The Compliance Officer, powers and obligations, specific compliance control activities, and handling in case of breach. Based on the relevant standards, the Compliance Officer performs compliance control activities such as monitoring compliance with the standards, collecting the current status and areas for improvement, and Performing reviews in accordance with the Fair Trade Act.

SK E&S Business Partners’ Code of Conduct - Ethics

All business partners of SK E&S shall pursue free competition in their business relationships and comply with all laws and regulations in all business activities and respect the transaction practices. Through our Fair Trade Voluntary Compliance Program (CP), we continuously strive to ensure that all transactions comply with laws and regulations. In addition, we develop and carry out various programs to promote mutual growth with our business partners, and make mutual efforts to ensure that honest and fair trade continues.

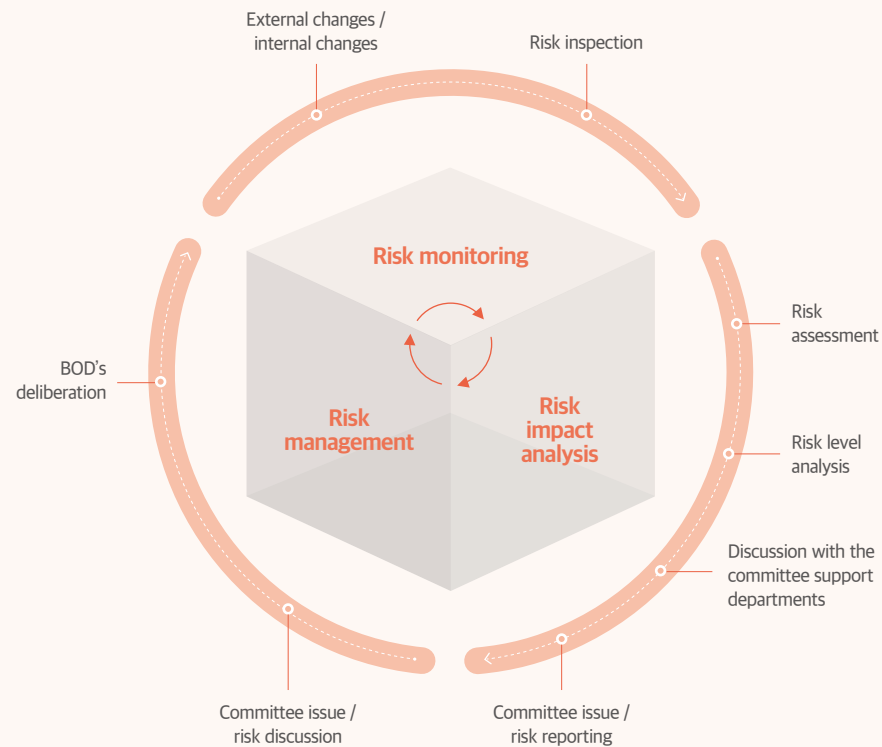
Governance 3



Risk Management System

Having established a company-wide integrated risk management framework, SK E&S manages risks that could affect the company, including those related to investment, business operation, disaster, policies, and SHE. The BOD is the highest responsible body for overall risk management and control, with its committees managing multilateral risks of specific categories.

SK E&S Risk Management Framework



Risk Management and Response

SK E&S has established a company-wide integrated risk management basic policy to manage and control risks that may affect the entire company, such as investment, operation, accident, policy, and SHE. The BOD is the highest responsible body for risk management and control, and each committee manages risks by classifying them into issue types.

Financial Risks

Category	Detail	Potential impacts on SK E&S		SK E&S's response
		+	-	
Market risks for new businesses	<ul style="list-style-type: none"> Increase in market volatility stemming from growth in renewable energy demand and an expansion in the global renewable energy market Risks because of massive R&D investment for new projects and new technology development 	<ul style="list-style-type: none"> Increase in sales thanks to improved economic efficiency for renewable energy and CCUS projects Positive reputation as a market leader 	<ul style="list-style-type: none"> Increased financial burden due to hefty investment 	<ul style="list-style-type: none"> Utilization of existing business portfolios and systematic business expansion Technological R&D priorities set considering business relevance Improvement in business portfolios focusing on the long-term growth of hydrogen, energy solution, and renewable energy-related areas
Market risks for existing businesses	<ul style="list-style-type: none"> Volatility in global source of energy prices Heightened system instability Rising calls for stable supply because of power purchase agreements 	<ul style="list-style-type: none"> Expansion in new business opportunities Economic efficiency of imported fuels 	<ul style="list-style-type: none"> Economic losses due to constrained power generation Extra costs incurred for transmission and distribution lines 	<ul style="list-style-type: none"> Investment planning for energy solutions Increase in directly imported fuels Preemptive securement of system capacity
Carbon credit risks	<ul style="list-style-type: none"> Risks of tightening regulations for GHG reduction at home and abroad and increasing carbon costs Decline in demand for energy sources with hefty GHG emissions 	<ul style="list-style-type: none"> Increased business opportunities thanks to greater demand for low-carbon energy sources such as hydrogen and renewable energy 	<ul style="list-style-type: none"> Possible deterioration in corporate financials because of increased investment in GHG emission reduction Cost increase due to the reduction in the free allocation of carbon credits Conversion costs incurred because of the use of low-carbon energy sources 	<ul style="list-style-type: none"> Establishment and implementation of SK E&S's policy to achieve Net-Zero emission by 2040 Expansion in hydrogen and renewable energy sources Strengthening management guidelines in response to the introduction of the carbon credit system Reduction in GHG emissions by using CCUS technologies
Forex risks	<ul style="list-style-type: none"> Forex risks incurred because of foreign currency transactions from the import of energy raw materials 	<ul style="list-style-type: none"> Cost competitiveness secured from stable foreign currency management 	<ul style="list-style-type: none"> Fluctuating forex valuations stemming from foreign currency transactions 	<ul style="list-style-type: none"> Systematic forex management by determining the subject, cycle, and procedures to manage forex-related information Operation of a monitoring system for the 24/7 management of forex risks
Liquidity risks	<ul style="list-style-type: none"> Possible exposure to investment and liquidity risks, given inherent business characteristics 	<ul style="list-style-type: none"> Reinforcement of investment capabilities through liquidity management 	<ul style="list-style-type: none"> Losses incurred because of a discrepancy in the timing of capital raising and funding or unexpected payment problems 	<ul style="list-style-type: none"> Capital forecast, cash flow analysis, and constant management of current and noncurrent capital to maintain an appropriate level of liquidity Establishment of risk management categories by process, ranging from investment approval/deliberation and fundraising to the acquisition, management, and disposal
Capital and credit risks	<ul style="list-style-type: none"> Risks related to capital risks, credit ratings, and taxation 	<ul style="list-style-type: none"> Improvement in corporate ratings by maintaining a sound capital structure and managing capital risks 	<ul style="list-style-type: none"> Difficulty in sustaining business consistency Weakening competitiveness in the capital market 	<ul style="list-style-type: none"> Maintenance of an appropriate level of asset/debt ratio

Nonfinancial Risks

Category	Detail	Potential impacts on SK E&S		SK E&S's response
		+	-	
Operational risks	<ul style="list-style-type: none"> • Opposition to new facility construction/expansion by residents in communities near our power operations • Stirring of environmental concerns in local areas (including greenwashing issues) 	<ul style="list-style-type: none"> • New business opportunity to achieve mutual growth with local communities 	<ul style="list-style-type: none"> • Deterioration in corporate reputation and souring public sentiment due to protests of local residents near our business sites 	<ul style="list-style-type: none"> • Development and implementation of sustainable local regeneration programs (e.g., Local:Rise Gunsan, SK Cluster, and other projects to foster a social enterprise ecosystem) • Reinforcement of social contribution programs linked with local communities and related communication channels
Supply network risks	<ul style="list-style-type: none"> • Risks related to safety issues and unfair transactions in supply chain management 	<ul style="list-style-type: none"> • Pursuit of a long-term partnership by managing risks related to partner companies • Contribution to partner companies' growth through cooperation 	<ul style="list-style-type: none"> • Violation of fair trade / Serious Accident Punishment Act 	<ul style="list-style-type: none"> • Operation of training programs for partner company employees to improve the ESG performance of members in our supply network • Establishment and implementation of a medium-/long-term Roadmap to manage partner companies' ESG risks and support mutual growth with them • Conduct ESG due diligence for members in our supply chain and adopt assessment and incentive policies • Reinforce communication with partner companies by securing additional communication channels
Information security risks	<ul style="list-style-type: none"> • Operational stability threatened by cyberattacks and system failures • Technology extortions and customer information leaks/misuse caused by cyber hacking 	<ul style="list-style-type: none"> • Gaining customers' trust 	<ul style="list-style-type: none"> • Information leakages leading to weakening consumer trust and cost increase • Deterioration in corporate brand image 	<ul style="list-style-type: none"> • Improvement of information security management system and reinforcement of related employee training programs • Mock drills to respond to cyber attacks
Ethical management risks	<ul style="list-style-type: none"> • Actions in violation of ethical codes, and noncompliance with fair trade and anti-corruption rules • Reputational risks because of the inappropriate operation of reporting channels 	<ul style="list-style-type: none"> • Gaining external trust through fair and transparent management practices 	<ul style="list-style-type: none"> • Increase in costs incurred because of imposed sanctions and fines from regulation breach • Deterioration in corporate reputation 	<ul style="list-style-type: none"> • Establishment of company-wide ethical codes and related practice guidelines • Development of ethical practice guidelines for employees • Employees' ethical management pledge • Securing transparency in reporting channel operations
Personnel risks	<ul style="list-style-type: none"> • Risks related to talent leaks and acquiring exceptional talents 	<ul style="list-style-type: none"> • Business competitiveness bolstered by talent development 	<ul style="list-style-type: none"> • Rising uncertainties regarding future growth 	<ul style="list-style-type: none"> • Development of an HR system stressing diversity, innovation, and growth, and reinforcement of a performance-based remuneration system • Attracting talent by promoting a healthy corporate culture and good welfare policies • Promoting a transparent and anonymous grievance-handling process
Legal risks (e.g., environmental regulations)	<ul style="list-style-type: none"> • Risks of company-side losses due to tightening waste management policies and employees' exposure to harmful chemicals 	<ul style="list-style-type: none"> • Implementation of eco-friendly management practices in compliance with environmental regulations 	<ul style="list-style-type: none"> • Increase in environmental management costs 	<ul style="list-style-type: none"> • Ensuring compliance with laws by strengthening internal management standards • Minimizing discharge of pollutants • Reducing the use of harmful chemicals • Develop "Zero Waste to Landfill" projects

Management of Subsidiaries' ESG Performances

SK E&S seeks to improve the ESG performance of not only the headquarter but also of its power and city gas subsidiaries. We review ESG-related data of our power and city gas subsidiaries at least once a quarter and disclose nonfinancial data of our subsidiaries on a consolidated basis on our annual sustainability report. Moving forward, we will further expand the scope of data disclosure.

Policies to Manage Subsidiaries' ESG Performances

SK E&S has selected ESG management areas prioritized by external stakeholders (such as investors) and established an ESG management system for subsidiaries considering their business characteristics. For power subsidiaries, whose businesses are directly related to environmental issues, we not only focus on GHG reduction (including Net-Zero Roadmap) but also keep an eye on air pollutants, water, and waste-related data. Furthermore, a working-level council, which consists of members of the

headquarters and subsidiaries, ensures coordinated efforts for continuous environmental performance improvement.

Turning to city gas subsidiaries, based on a collaboration with our city gas arm, we have selected major management components specific to each of the three categories (environment, society, and governance) and applied them to the ESG performance management system for each subsidiary. Internal assessments are performed to identify areas in need of improvement and enhance the overall ESG management level. In addition, GHG emission and reduction targets are to be monitored under the Net-Zero roadmap, with targets to expand the use of hydrogen and renewable energy sources to be set and managed for each subsidiary.

Meanwhile, we will also continue to improve technologies for safe city gas supply through the City Gas Technology Safety Committee and raise employees' awareness of safety management through the city gas training center T-CENTER.

ESG Management Targets for Subsidiaries

From 2022, SK E&S will disclose major environment-related data for each power subsidiary and designate organizations dedicated to ESG management at city gas subsidiaries to facilitate the collection of subsidiaries' ESG data and reinforce the overall ESG performance management system. Moreover, from 2023 onward, we will expand the scope of ESG data disclosure in a way that meets related global standards (such as the GRI Standards) and release more data specific to each business site.

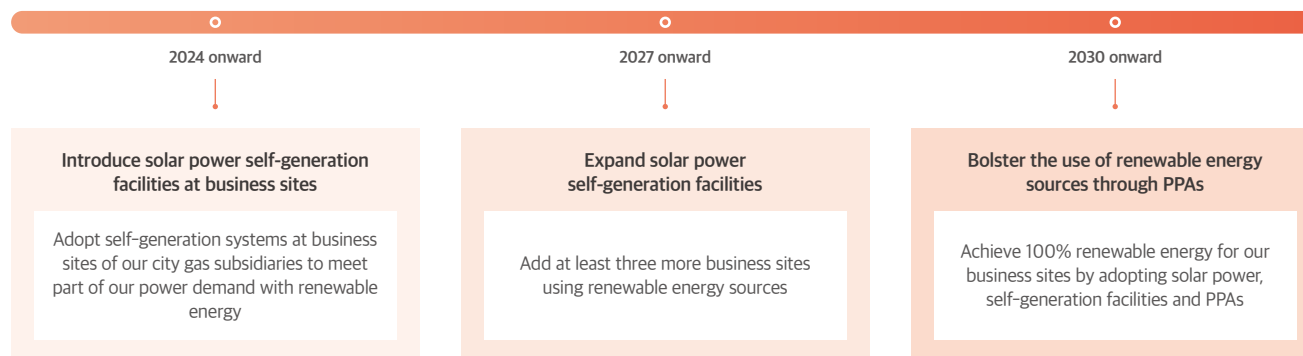
Management of Subsidiaries' ESG Performance

SK E&S discloses the ESG data of 10 subsidiaries (including both power and city gas subsidiaries) through its sustainability report and closely monitors them to improve subsidiaries' ESG performances.

[Key ESG data of power business/district energy subsidiaries](#)

[Major ESG improvements of subsidiaries](#)

Roadmap to Expand Renewable Energy Sources for City Gas Subsidiaries



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ESG Performance Data

General & Governance

Credit Rating

Category	Unit	2019	2020	2021
Criteria	rating	Commercial Paper	Corporate Bond	Corporate Bond
S&P Credit Rating	rating	BBB (Negative)	BBB- (Stable)	BBB- (Stable)
Moody's	rating	Baa2 (Negative)	Baa2 (Negative)	Baa3 (Stable)
Korea Investors Service	rating	AA+ (Stable)	AA+ (Negative)	AA (Stable)
Korea Ratings	rating	AA+ (Negative)	AA+ (Negative)	AA (Stable)
NICE Investors Service	rating	AA+ (Stable)	AA+ (Negative)	AA (Stable)

Number of Business Establishments

Category	Unit	2019	2020	2021
Domestic	number	14	15	22
Overseas	number	2	6	7

Distribution of Economic Value to Stakeholders

Category	Unit	2019	2020	2021	
Employees	Wages and others	KRW million	280,422	294,537	348,075
Countries and local communities	Income taxes	KRW million	336,231	385,963	274,028
	Donations	KRW million	22,066	20,861	17,486
Business partners	Purchase expenses	KRW million	311,097	295,564	303,264
Shareholders and investors	Interest expenses	KRW million	131,625	116,114	121,322
	Dividends	KRW million	730,043	654,778	385,772

Stock and Dividend Status

Category	Unit	2019	2020	2021		
Shareholder Investor	Corporate presentation	meetings	0	0	0	
	Conference	meetings	0	0	0	
	Introduction of written voting	o/x	x	x	x	
	Introduction of electronic voting	o/x	x	x	x	
	Autonomous distribution program at shareholders' meeting	o/x	x	x	x	
Shares	Shares authorized	number	46,401,990	46,401,990	50,496,283	
	Shares ready to trade	number	0	0	0	
Basic information of the largest shareholder	SK Inc.	Shares owned	number	41,761,791	41,761,791	41,761,791
		Equity ownership	%	90	90	90
Equity ownership status	Sum of CEO's equity ownership	%	0	0	0	
	Equity ownership of Public institutions	%	0	0	0	
Dividends	Dividend policy and implementation	o/x	o	o	o	
	Total cash dividends	KRW million	730,043	654,778	385,772	
	Cash dividend propensity (consolidated basis)	%	118.8	85.1	112.1	
	Cash dividend per share	Common stock	KRW	15,733	14,111	6,250
		Referred stock	KRW	-	-	23,389

BOD Management

Category		Unit	2019	2020	2021
Meetings held		meetings	15	20	22
Total agenda of BOD	Resolution	cases	60	65	81
	Report	cases	4	6	10
Average attendance rate		%	99	100	100
Attendance rate of in-house directors		%	98	100	100
Attendance rate of independent directors		%	-	-	100
Composition of in-house directors	In-house directors	persons	6	5	4
	Female in-house directors	persons	0	0	0
	Foreign in-house directors	persons	0	0	0
Composition of Outside directors	Outside directors	persons	0	0	2
	Female outside directors	persons	0	0	0
	Foreign outside directors	persons	0	0	0
	Outside director ratio	%	0	0	29
Other non-executive director composition	Other non-executive directors	persons	1	0	1
Average tenure of directors		months	67	68	45
Average opposition rate to board agenda		%	0	0	0

Committees under Board of Directors

Category		Unit	2019	2020	2021
Future Strategy Committee	Meetings held	meetings	-	-	2
	Outside director ratio	%	-	-	25
	Participation rate	%	-	-	100
HR/Remuneration Committee	Meetings held	meetings	-	-	3
	Outside director ratio	%	-	-	25
	Participation rate	%	-	-	100
ESG Committee	Meetings held	meetings	-	-	2
	Outside director ratio	%	-	-	67
	Participation rate	%	-	-	100

※ Committees under BOD launched in 2021

BOD Compensation

Category		Unit	2019	2020	2021
In-house Directors	Personnel	persons	6	5	5
	Total remuneration	KRW million	7,045	7,629	7,814
	Average remuneration per person	KRW million	1,409	1,526	1,563
Outside Directors	Personnel	persons	-	-	2
	Total remuneration	KRW million	-	-	65
	Average remuneration per person	KRW million	-	-	33
Audit Committee Member	Personnel	persons	-	-	-
	Total remuneration	KRW million	-	-	-
	Average remuneration per person	KRW million	-	-	-

※ Outside directors appointed in 2021

Ratio of Highest Paid Employees to Average Paycheck

Category	Unit	2019	2020	2021
Amount of highest paid employees	KRW million	3,515	4,892	4,840
Average paycheck for employees	KRW million	133	115	134
Ratio of highest paid employees to average paycheck	ratio	26.43	42.54	36.12
Increase in ratio of highest paid employees to average paycheck	ratio	-	1.61	0.85

Environmental Management Response to Climate Change

(Based on the SK E&S Headquarters & Subsidiaries)

Common Criteria Data

Category	Unit	2019	2020	2021
Sales (consolidated basis)	KRW 100 million	65,617	57,495	78,546

Green House Gas

Category		Unit	2019	2020	2021
GHG emissions (Scope 1 + 2)	Total	tCO ₂ -eq	9,070,089	8,554,838	8,770,372
	Power Business / District Energy	tCO ₂ -eq	9,021,180	8,501,594	8,712,120
	City Gas / LNG Terminal	tCO ₂ -eq	48,908	53,243	58,252
GHG emissions (Scope 1)	Total	tCO ₂ -eq	9,012,140	8,489,974	8,703,006
	Power Business / District Energy	tCO ₂ -eq	9,005,350	8,483,941	8,697,747
	City Gas / LNG Terminal	tCO ₂ -eq	6,789	6,034	5,259
GHG emissions (Scope 2)	Total	tCO ₂ -eq	57,949	64,863	67,366
	Power Business / District Energy	tCO ₂ -eq	15,830	17,654	14,373
	City Gas / LNG Terminal	tCO ₂ -eq	42,119	47,210	52,992
GHG emission intensity		tCO ₂ -eq/ KRW 100 million	138.23	148.79	111.66

Energy

Category		Unit	2019	2020	2021	
Energy usage	Total	TJ	182,261	170,582	177,792	
	Power Business / District Energy	TJ	181,068	169,292	176,397	
	City Gas / LNG Terminal	TJ	1,193	1,290	1,395	
Energy usage by type	Direct	Total	TJ	181,108	169,294	176,421
		Gasoline	TJ	15	17	16
		Diesel	TJ	17	16	15
		Kerosene	TJ	0	0	0
		LPG	TJ	0	0	0
		LNG	TJ	180,209	168,273	175,617
		Others	TJ	867	988	773
	Indirect	Total	TJ	1,152	1,288	1,370
		Electric power	TJ	1,152	1,288	1,370
		Steam	TJ	0	0	0
Others		TJ	0	0	0	

Category		Unit	2019	2020	2021	
Renewable energy	Total power consumption	MWh	129,985	145,538	154,716	
	Renewable energy consumption	Photovoltaic	MWh	123	126	121
		Wind power	MWh	0	0	0
		Others	MWh	0	0	0
	Renewable energy consumption ratio	-	%	0.09	0.09	0.08
	Renewable energy consumption by procurement method	Total	MWh	123	126	121
		Green Premium	MWh	0	0	0
		Renewable energy PPA	MWh	0	0	0
		Purchase of REC equity investment	MWh	0	0	0
		self-generation	MWh	123	126	121
	Generation of Renewable Energy (domestic)	MWh	149,901	186,527	238,014	
	Generation of Renewable Energy (Overseas)	MWh	-	-	264,093	
	Reduction in CO ₂ emissions (Domestic)*	-	tCO ₂ eq	66,439	82,672	105,493
Customers in RPS-applied markets		number	1	1	1	
RPS(Renewable Portfolio Standard) compliance performance		%	100	100	100	
Energy intensity	Energy usage / Sales	GJ/KRW 100 million	2,778	2,967	2,264	

* For every 1MWh of renewable energy generated, 0.44322 tCO₂eq of reductions were made (average GHG emissions coefficient in the Korean power generation market)

Air Pollutant Emissions and Water Pollutant Discharge

Category		Unit	2019	2020	2021	
Air pollutant emissions	NOx (nitrogen oxide)	Total	kg	2,238,250	1,971,761	1,480,665
		Power Business / District Energy	kg	2,206,516	1,948,353	1,458,529
		City Gas / LNG Terminal	kg	31,734	23,408	22,136
		/ Sales	kg/KRW 100 million	34	34	19
SOx (sulfur oxide)		Total	kg	42,425	39,916	39,263
		Power Business / District Energy	kg	42,234	39,710	39,060
		City Gas / LNG Terminal	kg	191	206	203
		/ Sales	kg/KRW 100 million	0.6466	0.6943	0.4999
Dust emissions		Total	kg	127,284	119,293	117,280
		Power Business / District Energy	kg	126,893	119,135	117,178
		City Gas / LNG Terminal	kg	391	158	102
		/ Sales	kg/KRW 100 million	2	2	1
VOCs (volatile organic compounds)		Total	kg	0	0	0
		Power Business / District Energy	kg	0	0	0
		City Gas / LNG Terminal	kg	0	0	0
		/ Sales	kg/KRW 100 million	0	0	0

Category		Unit	2019	2020	2021	
Water pollutant discharge	BOD (biological oxygen demand)	Total	kg	9,902	4,549	8,832
		Power Business / District Energy	kg	9,902	4,549	8,832
		City Gas / LNG Terminal	kg	0	0	0
		/ Sales	kg/KRW 100 million	0.15	0.08	0.11
COD (chemical oxygen demand)		Total	kg	20,867	17,933	20,113
		Power Business / District Energy	kg	20,672	17,821	19,869
		City Gas / LNG Terminal	kg	195	112	245
		/ Sales	kg/KRW 100 million	0.32	0.31	0.26
SS (suspended solids)		Total	kg	16,020	12,446	7,920
		Power Business / District Energy	kg	16,016	12,446	7,861
		City Gas / LNG Terminal	kg	4	0	60
		/ Sales	kg/KRW 100 million	0.24	0.22	0.10
T-N (total nitrogen)		Total	kg	21,789	15,130	13,457
		Power Business / District Energy	kg	21,667	14,962	13,087
		City Gas / LNG Terminal	kg	122	168	370
		/ Sales	kg/KRW 100 million	0.33	0.26	0.17

Hazardous Chemicals

Category		Unit	2019	2020	2021
Hazardous Chemicals Consumption	Total	ton	2,099	1,694	1,516
	Powe Business / District Energy	ton	2,099	1,694	1,516
	City Gas / LNG Terminal	ton	0	0	0

Water Consumption

Category		Unit	2019	2020	2021
Water intake	Total	m ³	11,345,380	10,087,720	10,198,825
	Water supply	m ³	2,863,990	2,743,615	2,826,313
	Groundwater	m ³	301,818	281,506	130,301
	Others	m ³	8,179,572	7,062,599	7,242,211
	Water intake / Sales	m ³ /KRW 100 million	173	175	130
Water consumption	Total	m ³	11,345,380	10,087,720	10,198,821
	Power Business / District Energy	m ³	11,124,794	9,862,267	9,976,781
	City Gas / LNG Terminal	m ³	220,586	225,453	222,040
Water recycled	Volume	m ³	1,128,499	1,264,184	1,388,104
	Rate	%	10	13	14
Water intake in water stress area		m ³	3,003,334	2,954,635	2,891,838

Effluent Discharge

Category		Unit	2019	2020	2021
Effluent discharge	Total	m ³	1,312,762	863,023	908,293
	Powe Business / District Energy	m ³	1,272,994	821,699	869,276
	City Gas / LNG Terminal	m ³	39,768	41,324	39,017

Waste Generation and Recycling

Category		Unit	2019	2020	2021	
Waste generated	Total waste	Total	kg	1,295,854	1,380,563	1,208,367
		Powe Business / District Energy	kg	1,212,500	1,287,928	1,136,892
		City Gas / LNG Terminal	kg	83,354	92,635	71,475
	/ Sales	kg/KRW 100 million	20	24	15	
	General waste	Total	kg	1,243,484	1,309,413	1,178,227
Powe Business / District Energy		kg	1,170,590	1,264,938	1,111,252	
City Gas / LNG Terminal		kg	72,894	44,475	66,975	
Designated waste	Total	kg	52,370	71,150	30,140	
	Powe Business / District Energy	kg	41,910	22,990	25,640	
	City Gas / LNG Terminal	kg	10,460	48,160	4,500	
Waste recycled	Total waste recycled	Total	kg	970,575	1,035,569	895,810
		Powe Business / District Energy	kg	956,505	987,409	891,310
		City Gas / LNG Terminal	kg	14,070	48,160	4,500
	Total waste recycling rate	Total	%	74.90	75.01	74.13
Powe Business / District Energy		%	78.89	76.67	78.40	
City Gas / LNG Terminal		%	16.88	51.99	6.30	

Environmental Education

Category	Unit	2019	2020	2021	
Environmental Education	Total training	hours	74	346	192

Environmental Regulations

Category	Unit	2019	2020	2021	
Penalties and non-monetary sanctions imposed for violation of environmental laws and regulations	Legal regulations	cases	0	1	0
	Air quality	cases	0	1	0
	Water Quality	cases	0	0	0
	Others	cases	0	0	0
	Total amount of fines	KRW million	0	2	0
	Lawsuits filed	cases	0	2	0
	Non-monetary sanctions	cases	0	1	0
environmental liabilities	KRW million	0	0	0	

Safety and Health Care

Common Criteria Data

Category	Unit	2019	2020	2021	
Employees	Total	hours	3,583,847	3,743,958	3,682,545
	Powe Business / District Energy	hours	689,028	716,982	741,603
	City Gas / LNG Terminal	hours	2,894,819	3,026,976	2,940,942
Number of occupational illness		persons	0	0	0

Workplace Safety & Health Management

Category	Unit	2019	2020	2021		
Workplace fatalities	Work-related death	persons	0	0	0	
	Work-related death rate	%	0	0	0	
Industrial accident*	Serious disaster	cases	0	0	0	
LTIR**	Employees	LTIR (total headquarters and subsidiaries)	%	0.1149	0.3852	0.1682
		LTIR (headquarters)	%	0	0	0
		LTIR (subsidiaries)	%	0.1142	0.4078	0.1741
	Lost time injury	cases	2	7	3	
Employees of business partner	LTIR	%	0.2416	0.4896	0.3792	
	Lost Time Injury	cases	5	12	9	
OIFR (Occupational illness frequency rate)	Employees	OIFR	%	0	0	0
	Occupational illness frequency	cases	0	0	0	

* Criteria for reporting the occupational safety and health act of Korea

** LTIR: Lost Time Injury Rate, Per 200,000 hours

Safety Training

Category		Unit	2019	2020	2021	
Safety Training	Total safety training	Total	hours	28,983	27,554	37,363
		Powe Business / District Energy	hours	5,473	6,420	7,026
		City Gas / LNG Terminal	hours	23,510	21,134	30,337

Health Management

Category		Unit	2019	2020	2021	
Health Check-ups	Total	persons	465	465	714	
		Employees	persons	370	362	428
		Family including spouse	persons	95	103	286
Psychological Counseling	Use of the program	numbers	42	99	84	

Product safety and health

Category		Unit	2019	2020	2021
Violation of regulations on the health and safety impact of products and services		cases	2	0	1

Corporate Culture·Human Resource Promotion

(Based on the SK E&S Headquarters)

Employees

Category		Unit	2019	2020	2021	
Total Employees		persons	397	426	496	
Gender	Male	persons	315	337	391	
	Male rate	%	79.3	79.1	78.8	
	Female	persons	82	89	105	
	Female rate	%	20.7	20.9	21.2	
Employment Type	Full-time	Male	persons	298	325	371
		Female	persons	78	86	98
	Full-time rate	%	94.7	96.5	94.6	
	Part-time	Male	persons	17	12	20
		Female	persons	4	3	7
	Part-time rate	%	5.3	3.5	5.4	
Average years of service		months	66	70	68	
New recruitment (as of 2021)		persons			78	

Female Talent

Category		Unit	2019	2020	2021
Female Manager	Female executives	persons	2	3	2
	Female executives rate among executives	%	6	8	4

Employee Diversity

Category	Unit	2019	2020	2021	
Diversity recruitment	Employees with disabilities	persons	11	12	14
		%	3.0	3.1	3.0

Employee Training

Category	Unit	2019	2020	2021	
Training expenses	Total	KRW	1,571,000,000	992,000,000	757,000,000
	Per employee	KRW	3,957,179	2,328,638	1,526,210
Training hours	Total	hours	18,236	68,051	41,957
	Per employee	hours	47	160	85
Trainees	persons	388	424	496	

Status by program

Category	Unit	2019	2020	2021
General training (redundancies included)	persons	968	1,155	1,505
ESG-related training	persons	not enforced	not enforced	253

Talent Development Program

Category	Program	Target	Unit	2019	2020	2021
Job competency	Job Learnch	Company-wide	persons	313	424	304
	Business feasibility analysis course	Team members	persons	not enforced	33	249
	Green Energy Program	Company-wide	persons	not enforced	not enforced	253
	E-Learning	Company-wide	persons	265	292	113
Member-led Learning Support Program	D.I.Y 100 P/G	Company-wide	persons	not enforced	87	135
	Self-initiated degree course	Company-wide	persons	4	28	27
	Small learning group (Open Study)	Company-wide	persons	not enforced	not enforced	117
	E&S experience sharing meeting	Company-wide	persons	not enforced	55	342
SK Values	Orientation for new hires / newly-transferred executives	Executives	persons	15	9	13
	New team leader course	Team leaders	persons	20	14	17
	New hire course	Team members	persons	7	15	9
	Course for scouted employees	Team members	persons	34	17	51
Mentoring	Junior mentoring	Team members	persons	27	47	not enforced
Excellent Personnel Development Program	Mid/long-term intensive development P/G	Team leaders & members	persons	3	2	2
Global Capacity Building Program	Secondments to overseas energy organizations (IEA, Institute of Energy Economics of Japan)	Team members	persons	6	2	1
	Overseas MBA program	Team members	persons	0	2	0
	In-house language skill P/G (phone/video-based learning)	Company-wide	persons	278	70	81
	Support for language learning outside the Company P/G (support for taking external language courses)	Company-wide	persons	uncounted	58	43

Shared Growth

Status of Business Partners

Category		Unit	2019	2020	2021	
Business partners	Total business partners	Total	number	1,018	1,069	1,099
		Power Business / District Energy	number	488	557	595
		City Gas	number	530	512	504
	Major business partners	Total	number	310	305	270
		Power Business / District Energy	number	97	97	97
		City Gas	number	213	208	173
Total purchases made	Total	KRW million	311,097	295,564	303,264	
	Power Business / District Energy	KRW million	41,262	76,582	75,833	
	City Gas	KRW million	269,835	218,982	227,431	

Business Partners Support

Category		Unit	2019	2020	2021	2022 (Target)	
Financial support provided	Shared growth fund (win-win cooperation fund) creation	Total raised amount	KRW million	20,000	20,000	20,000	20,000
		Amount raised by financial institution	KRW million	10,000	10,000	10,000	10,000
		Raised amount (by SK E&S)	KRW million	10,000	10,000	10,000	10,000
		Total execution amount	KRW million	12,370	11,000	6,500	10,000
		Tier 1 Business partner	KRW million	12,370	11,000	6,500	10,000
Consulting (Audit)	Total consulting provided business partners		number	0	0	6	-
	Products and services quality		number	0	0	0	
	General management (finance, HR, etc.)		number	0	0	6	
	Others (safety, health, CSR, ESG, etc.)		number	0	0	0	
	Consulting provided		number	0	0	6	-
	Products and services quality		number	0	0	0	
General management (finance, HR, etc.)		number	0	0	6		
Others (safety, health, CSR, ESG, etc.)		number	0	0	0		

Business Partner Assessment

Category	Unit	2019	2020	2021	2022 (Target)	
Business Partner Sustainability Assessment	Business partners' sustainability assessment ratio	%	0	0	15	23
	Assessment target business partners	number	0	0	97	88
	Assessment completed business partners	number	0	0	15	20
	Percentage of business partners implemented improvement measures after sustainability assessment	%	0	0	0	-
	Business partners implemented improvement measures	number	0	0	0	-

Business Partners' Competency Enhancement

Category	Unit	2019	2020	2021	2022 (Target)	
Educational support for business partner	Total educational program	number	2	1	2	2
	Shared growth CEO Seminar	number	1	1	1	1
	Shared growth MBA	number	1	0	1	1
	Total educational program provided	occasions	9	5	8	8
	Business partners attended educational program	number	6	6	6	15
	Business partners' employees attended educational program	persons	7	6	12	15
Total educational program hours	hours	14	8	12	12	

Social Contribution

Social Contribution Donations

Category	Unit	2019	2020	2021		
Donations by major types of social contribution	Cash	Total	KRW million	4,910	4,122	4,755
		Charitable donations	KRW million	976	1,287	920
		Foundations / associations related to the Group	KRW million	1,600	2,835	2,900
		Local communities investment	KRW million	2,334	0	935
		Commercial initiatives	KRW million	0	0	0
	In-kind	Total	KRW million	39	141	40
		Charitable donations	KRW million	39	141	40
		Local communities investment	KRW million	0	0	0
		Commercial initiatives	KRW million	0	0	0

Win-win Cooperation Fund

Category	Unit	2019	2020	2021	2022 (Target)
Total	KRW million	0	4,120	4,230	10,400
Eco-friendly projects	KRW million	0	0	2,690	9,660
Social enterprise	KRW million	0	1,000	810	330
Support for local SMEs and small business owners	KRW million	0	3,120	730	410

Program Support Costs

Category	Unit	2019	2020	2021	
Contributions and Other Expenses	Trade association or tax-exempt organizations	KRW	362,476,000	603,615,000	888,015,000
	Large & small business win-win cooperation fund	KRW	15,000,000,000	15,000,000,000	9,000,000,000
	Rural area win-win cooperation fund	KRW	0	0	1,000,000,000

Social Contribution Programs

Category	Unit	2019	2020	2021	
Volunteer hours	Total volunteer hours	hours	8,855	2,373	2,469
	volunteer hours per employee	hours	5	4	6
Engaged employees	Employees engaged in volunteer activities	persons	1,650	677	414
	Engagement ratio	%	-	31	18

(Not counted due to the inclusion of duplicates according to the number of participation)

Social Contribution Programs

Category	Unit	2019	2020	2021	2022 (Target)	
Good Energy School	Benefited	persons	2,886	270	634	750
	Input cost	KRW million	106	80	35	30
Pediatric asthma patients support project	Cumulated benefited	persons	78	91	107	127
	Input cost	KRW million	200	200	230	243
1 company - 1 village	Benefited	persons	88	0	0	-
	Input cost	KRW million	74	65	42	40
Sharing a meal, on-tact	Benefited	persons	0	0	505	-
	Input cost	KRW million	0	0	235	-
Sharing a life, on-tact	Benefited	persons	0	0	10	-
	Input cost	KRW million	0	0	0	-

Information Security

Information Security Status

Category	Unit	2019	2020	2021	2022 (Target)	
Information security violation	Personal data leakage	cases	0	0	0	0
	PI information leakage	cases	0	0	0	0
	Information security violation or cyber security incidents reported	cases	0	0	0	0
	Customers affected by the data leakage incidents	persons	0	0	0	0
	Total amount of monetary loss (fines or negligence) paid due to information security violations or cybersecurity incidents	KRW million	0	0	0	0
Information security manpower	persons	2	4	4	6	
Substantiated non-compliance with customers' personal data protection and lost customer data	cases	0	0	0	0	
Personal data protection security assessment outcomes (out of 100)	scores	96.4	97.4	97.7	98.0	

Information Security Management System

Category	Unit	2019	2020	2021	2022 (Target)
Operation of the security management system	cases	1	1	1	1
Coverage of checklists used for information security reviews	-	7 areas / 104 items / 801 Checklist	7 areas / 104 items / 801 Checklist	7 areas / 104 items / 801 Checklist	7 areas / 104 items / 801 Checklist
Information security management organization	-	CISO appointed	CISO, CPO appointed	CISO, CPO appointed	CISO, CPO integrated appointment

Information Security Training

Category	Unit	2019	2020	2021	2022 (Target)
Information security training	Training hours	hours	2hrs	1hrs 20minutes	1hrs
	Training provided	occasions	1	1	1
	Attendees	persons	379	423	415
Mock drills conducted to respond to malicious emails	cases	0	1	3	3

Personal Data Protection

Category	Unit	2019	2020	2021	2022 (Target)
Information security training	Training hours	hours	1hrs 30minutes	2hrs	1hrs
	Trainings provided	occasions	1	1	1
	Attendees	persons	63	64	82

Information Security Operation and Investment

Category	Unit	2019	2020	2021	2022 (Target)	
Information security operation and investment	Operational outcomes	KRW 100 million	26	25	29	33
	Investments made	KRW 100 million	34	7	9	18

Customer Satisfaction

Customer Satisfaction

Category	Unit	2019	2020	2021
Customer satisfaction scores (out of 5)	score	4.41	4.42	4.43
City gas service assessments (Supervised by the Korea City Gas Association)	rating	Excellent: 3 companies, Good: 5 companies	-	-

Customer Complaint Handling

Category	Unit	2019	2020	2021
VOCs received	cases	471	328	272

End-use Efficiency and Demand

New Energy Business

Category	Unit	2019	2020	2021
Percentage of power generation supplied through Smart-Grid Technology	%	0	0	0

Economic Power Deliveries

Category	Unit	2019	2020	2021
Electric power business sales ratio due to decoupling rate structure	%	N/A	N/A	N/A
Rate of electricity business sales containing LRAM (a lost revenue adjustment mechanism)	%	N/A	N/A	N/A

Human Rights Management·Ethical Management and Anti-Corruption

Compliance Inspection Status

Category	Unit	2019	2020	2021
Internal Ethics·Compliance Status Inspection	cases	13	12	22

Fines and Sanctions

Category	Unit	2019	2020	2021		
Non-Compliance & Law Violation	Total fines	KRW	0	200만	0	
	Litigation filed	cases	0	2	0	
	Non-monetary sanctions	cases	0	1	0	
Legal Action Taken Regarding Compliance	Non-compliance	Total	cases	0	0	0
		Anti-corruption	cases	0	0	0
		Fair trade	cases	0	0	0
Fines imposed	KRW million	0	0	0		
Non-monetary sanctions	cases	0	0	0		

Training Program

Category			Unit	2019	2020	2021	2022 (Target)
Ethics Management Anti-Corruption Training	Training hours	Total	minutes / person	30 minutes	30 minutes	45 minutes	60 minutes
		Online	minutes / person	30 minutes	30 minutes	30 minutes	50 minutes
		Offline	minutes / person	0	0	15 minutes	10minutes
	Attendees	Total	persons	2,021	2,214	2,363	All personnel
		Online	persons	2,021	2,214	2,363	All personnel
		Offline	persons	0	0	2,341	All personnel
	Training set target		persons	2,021	2,214	2,382	All personnel
Trainings provided		occasions	1	1	2	2	
Online Ethics Training	Employees who completed online ethics training		%	2,013	2,074	2,341	All personnel
	Training set target		persons	2,049	2,088	2,411	All personnel
	Employees who completed training against the set target		%	98	99	97	100
Human Rights Training	Training hours	Total	hours	1,311	1,416	1,488	1,548
		Prevention of sexual harassment	hours	437	472	496	516
		Awareness improvement for people with disabilities	hours	432	476	496	516
		Prevention of workplace harassment	hours	377	475	496	516
	Attendees	Total	persons	397	426	496	516
		Prevention of sexual harassment	persons	437	472	496	516
		Awareness improvement for people with disabilities	persons	432	476	496	516
Prevention of workplace harassment		persons	377	475	496	516	






Category			Unit	2019	2020	2021	2022 (Target)
Fair Trade Training	Training hours		hours / person	2hrs	3hrs	1.5hrs	1hrs
	Attendees		persons	9	16	104	20
	Trainings provided		occasions	1	1	1	1





Ethics Management Reports-Processes

Category		Unit	2019	2020	2021
Whistleblower Reports Submitted on Ethics Management	Total	cases	13	19	20
	Report Type (2021)				
	Sexual harassment	cases			0
	Anti-corruption	cases			0
	Non-compliance with Code of Ethics	cases			8
	Others	cases			12
Whistleblower Reports Processing (2021)	Refer to related department for handling	cases			14
	Engage direct investigations	cases			6
Reported and Processing Cases related to Corruption (2021)	Corruption/bribery case reported	cases			0
	Disciplines	cases			0
	Ratio of corrective measures practiced among corruption reports	%	-	-	-

UN SDGs

UN SDGs (UN Sustainable Development Goals)	SK E&S Activites	Page
 2.1. By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	Support meals for the underfed children and the vulnerable elderly	75
 3.4. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Policies to promote membership well-being, diversity, and embracing Support treatment and medical supplies for children with asthma	57, 58 80
3.8. Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all		
 4.7. By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	Green energy & pro-environment education program ESG training for cooperative companies' CEOs and representatives Operation of programs to enhance eco-friendly energy awareness for children and adolescents	63 67 79
 5.1. End all forms of discrimination against all women and girls everywhere	Indicate the prohibition of discrimination and exploitation and violence in all forms, including gender discrimination in the human rights guidelines	43
5.2. Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation		
5.4. Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	Childbirth and child care support program in diversity and embracing Policy	58
5.c. Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	Nondiscriminatory recruitment procedures and customized programs for women	55, 61
 6.3. By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Reduction and management of air pollutants, recycling rates, wastewater, and chemicals	33
6.4. By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Water usage and recycling management	34
 7.2. By 2030, increase substantially the share of renewable energy in the global energy mix	Investing in and increasing green energy generation	22, 39
7.3. By 2030, double the global rate of improvement in energy efficiency	Environmental management system including operational efficiency optimization Efforts to improve efficiency through investment in energy solutions	32 40
7.a. By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	Participate in global initiatives and promote hydrogen and CCUS-related businesses and alliances Drive a Net-Zero plan that includes securing global leadership in green energy	15, 32 37
 8.3. Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Corporate Partnership programs and increased transactions with SMEs Regional revitalization and development of social enterprises by supporting start-ups	65, 67 76, 80
8.7. Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	State the prohibition of labor for children and minors in the human rights guidelines	43

UN SDGs (UN Sustainable Development Goals)	SK E&S Activites	Page	
 8.8. Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	The human rights of workers, such as working hours and wages, are specified in the human rights guidelines	43	
	Introduction of the management system and new technologies for a safe and healthy working environment	46	
	Efforts to improve the working environment, such as promotion of happiness and customized programs for women, etc	55	
8.9. By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	Support for start-ups and regional regeneration by utilizing local resources	76	
8.b. By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization	Youth-centered start-up support program	76, 80	
 9.1. Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Delivering high-quality energy services customized to individuals and industries	67	
	9.4. By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Contaminants and waste management system for the entire business establishment Efficiency in Net-Zero Plans, CCUS Eco-Friendly Technology, etc Energy Efficiency Program for Industrial Customers	33 37 71
 10.2. By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	Human rights guidelines, membership policies, board diversity standards	43, 58, 84	
	10.3. Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard		
	10.4. Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality		
 11.a. Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	Regional revitalization by utilizing local resources and fostering start-up enterprises	76, 80	
 12.2. By 2030, achieve the sustainable management and efficient use of natural resources	Application of power generation efficiency and CCUS eco-friendly technology within the Net-Zero plan	37	
	Energy Efficiency Program for Industrial Customers	71	
	12.4. By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Reduction and management of air pollutants, wastewater, chemicals and recycling rates	33
	12.5. By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse		
	12.6. Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	Publication of sustainability report and comprehensive management of ESG performance	94
12.8. By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature			
12.b. Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	Support for start-ups and regional regeneration using local resources	76	

UN SDGs (UN Sustainable Development Goals)	SK E&S Activites	Page	
 13.1. Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	Environmental management and climate change response	31-41	
	13.2. Integrate climate change measures into national policies, strategies and planning	Energy efficiency program for industrial customers	71
	13.3. Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Green energy & pro-environment education program	63
 15.1. By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	ESG training for cooperative companies' CEOs and representatives	67	
	15.5. Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Programs to enhance eco-friendly energy awareness for children and adolescents	79
	15.a. Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	Reduction and management of air pollutants, wastewater, chemicals and recycling rates	33
	16.2. End abuse, exploitation, trafficking and all forms of violence against and torture of children		
 16.3. Promote the rule of law at the national and international levels and ensure equal access to justice for all	State the rule of law and respect for human rights to various stakeholders, including the prohibition of violence in the human rights guidelines	43	
	16.5. Substantially reduce corruption and bribery in all their forms	Anti-corruption programs and training	87
	16.7. Ensure responsive, inclusive, participatory and representative decision-making at all levels	Gather stakeholder feedback through Materiality Test and communication channels	20
		State the various rights of stakeholders within the human rights guidelines	43
		Board operating system based on independence, diversity, and expertise	84
	16.b. Promote and enforce non-discriminatory laws and policies for sustainable development	Human rights policies reflecting laws, regulations, international declarations & guidelines	43
 17.14. Enhance policy coherence for sustainable development	Board diversity policy operated on the principle of non-discrimination	84	
	17.16. Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries	Enforcing the sustainability management system through the operation of the ESG Committee and Future Strategy Committee	83
		Strengthening partnerships through participating in and joining global initiatives & value chain	9, 35

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303-1	Interactions with water as a shared resource	34	
303-2	Management of water discharge-related impacts	99	
303-3	Water withdrawal	100	
303-4	Water discharge	100	
303-5	Water consumption	100	

Topic	Title	Page	Notes
GRI 304 : Biodiversity			
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	-	
304-2	Significant impacts of activities, products, and services biodiversity	-	
304-3	Habitats protected or restored	-	
304-4	UCN Red List species and national conservation list species with habitats in areas affected by operations	-	
GRI 305 : Emissions			
305-1	Direct (Scope 1) GHG emissions	97	
305-2	Energy indirect (Scope 2) GHG emissions	97	
305-3	Other indirect (Scope 3) GHG emissions	-	To be published separately within the year
305-4	GHG emissions intensity	97	
305-5	Reduction of GHG emissions	97	
305-6	Emissions of ozone-depleting substances (ODS)	-	
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	99	
GRI 306 : Waste			
306-1	Waste generation and significant waste-related impacts	99, 100	
306-2	Management of significant waste-related impacts disclosures	100	in accordance with domestic legal standards
306-3	Waste generated	-	
306-4	Waste diverted from disposal	100	in accordance with domestic legal standards
306-5	Waste directed to disposal	-	
GRI 307 : Environmental Compliance			
307-1	Non-compliance with environmental laws and regulations	101	

Topic	Title	Page	Notes
GRI 308 : Supplier Environmental Assessment			
308-1	New suppliers that were screened using environmental criteria	-	
308-2	Negative environmental impacts in the supply chain and actions taken	67	
GRI 401 : Employment			
401-1	New employee hires and employee turnover	-	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	53-58	
401-3	Parental leave	58	
GRI 402 : Labor/Management Relations			
402-1	Minimum notice periods regarding operational changes	-	
GRI 403 : Occupational Health and Safety			
403-1	Occupational health and safety management system	28-29, 46-54	
403-2	Hazard identification, risk assessment, and incident investigation	28-29, 46-54	
403-3	Occupational health services	53-54	
403-4	Worker participation, consultation, and communication on occupational health and safety	49	
403-5	Worker training on occupational health and safety	49	
403-6	Promotion of worker health	53-54	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	28-29, 46-54	
403-8	Workers covered by an occupational health and safety management system	48, 50	
403-9	Work-related injuries	48	
403-10	Work-related ill health	101	

Topic	Title	Page	Notes
GRI 404 : Training and Education			
404-1	Average hours of training per year per employee	62, 103	
404-2	Programs for upgrading employee skills and transition assistance programs	61-63	
404-3	Percentage of employees receiving regular performance and career development reviews	-	
GRI 405 : Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees	102	
405-2	Ratio of basic salary and remuneration of women to men	-	Annual Report 282-283p
GRI 406 : Non-discrimination			
406-1	Incidents of discrimination and corrective actions taken	42-45	
GRI 407 : Freedom of Association and Collective Bargaining			
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	-	
GRI 408 : Child Labor			
408-1	Operations and suppliers at significant risk for incidents of child labor	42-45	
GRI 409 : Forced or Compulsory Labor			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	42-45	
GRI 410 : Security Practices			
410-1	Security personnel trained in human rights policies or procedures	-	
GRI 411 : Rights of Indigenous Peoples			
411-1	Incidents of violations involving rights of indigenous peoples	97	
GRI 412 : Human Rights Assessment			
412-1	Operations that have been subject to human rights reviews or impact assessments	-	
412-2	Employee training on human rights policies or procedures	45	Human Rights Impact Assessment to be conducted in 2022
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	-	

Topic	Title	Page	Notes
GRI 413 : Local Communities			
413-1	Operations with local community engagement, impact assessments, and development programs	75-81	
413-2	Operations with significant actual and potential negative impacts on local communities	-	
GRI 414 : Supplier Social Assessment			
414-1	New suppliers that were screened using social criteria	-	
414-2	Negative social impacts in the supply chain and actions taken	67	
GRI 415 : Public Policy			
415-1	Political contributions	95	
GRI 416 : Customer Health and Safety			
416-1	Assessment of the health and safety impacts of product and service categories	52	
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	102	
GRI 417 : Marketing and Labeling			
417-1	Requirements for product and service information and labeling	N/A	
417-2	Incidents of non-compliance concerning product and service information and labeling	N/A	Electric power/ LNG industry
417-3	Incidents of non-compliance concerning marketing communications	N/A	
GRI 418 : Customer Privacy			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	107	
GRI 419 : Socioeconomic Compliance			
419-1	Non-compliance with laws and regulations in the social and economic area	108	

TCFD

Category	Recommendations	Page
Governance	a. The board's oversight of climate-related risks and opportunities	35, 84
	b. Management's role in assessing and managing climate-related risks and opportunities	35, 84
Strategy	a. The climate-related risks and opportunities the organization has identified over the short, medium, and long term	36-37, 91
	b. The impact of climate-related risks and opportunities on SK E&S's businesses, strategy, and financial planning	36-37, 91
	c. The resilience of the organization's strategy, taking into consideration different climate-related scenarios	24-25, 36-37
Risk Management	a. The organization's processes for identifying and assessing climate-related risks	38, 91
	b. The organization's processes for managing climate-related risks	38, 91
	c. How processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	38, 91
Metrics and Targets	a. The metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process	24-25, 39
	b. Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	39, 97
	c. The targets used by the organization to manage climate-related risks and opportunities and performance against targets	25-27, 40

SASB

Electric Utilities & Power Generators

Sustainability Disclosure Topics & Accounting Metrics

Topic	Code	Accounting Metric	Page	Code
Greenhouse Gas Emissions & Energy Resource Planning	IF-EU-110a.1	(1) Gross global Scope 1 emissions, percentage covered under (2) emissions-limiting regulations, and (3) emissions-reporting regulations	97	
	IF-EU-110a.2	Greenhouse gas (GHG) emissions associated with power deliveries	97	
	IF-EU-110a.3	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	24-27, 35-40	
	IF-EU-110a.4	(1) Number of customers served in markets subject to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market	-	
Air Quality	IF-EU-120a.1	(1) NOx (excluding N ₂ O), (2) SOx, (3) particulate matter (PM10)	99	
Water Management	IF-EU-140a.1	(1) Total water withdrawn (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	100	
	IF-EU-140a.2	Number of incidents of non-compliance associated with water quantity and/or quality permits, standards, and regulations	101	
	IF-EU-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	34	
Coal Ash Management	IF-EU-150a.1	Amount of coal combustion residuals (CCR) generated, percentage recycled		
	IF-EU-150a.2	Total number of coal combustion residual (CCR) impoundments, broken down by hazard potential classification and structural integrity assessment	N/A	No coal power generation in the value chain
Energy Affordability	IF-EU-240a.1	Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers		
	IF-EU-240a.2	Typical monthly electric bill for residential customers for (1) 500 kWh and (2) 1,000 kWh of electricity delivered per month		
	IF-EU-240a.3	Number of residential customer electric disconnections for non-payment, percentage reconnected within 30 days	N/A	Due to the structure of the domestic power market, the Korea Electric Power Corporation exclusively conducts transmission, distribution, and electricity sales
	IF-EU-240a.4	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory		
Workforce Health & Safety	IF-EU-320a.1	(1) Total recordable incident rate (TRIR) (2) fatality rate, and (3) near miss frequency rate (NMFR)	48, 101	TRIR-NMFR is an alternative disclosure due to LTIR-serious disaster

Topic	Code	Accounting Metric	Page	Code
End-Use Efficiency & Demand	IF-EU-420a.1	Percentage of electric utility revenues from rate structures that (1) are decoupled and (2) contain a lost revenue adjustment mechanism (LRAM)	N/A	Due to the structure of the domestic power market, the Korea Electric Power Corporation exclusively conducts transmission, distribution, and electricity sales
	IF-EU-420a.2	Percentage of electric load served by smart grid technology	108	
	IF-EU-420a.3	Customer electricity savings from efficiency measures, by market	N/A	Due to the structure of the domestic power market, the Korea Electric Power Corporation exclusively conducts transmission, distribution, and electricity sales
Nuclear Safety & Emergency Management	IF-EU-540a.1	Total number of nuclear power units, broken down by U.S. Nuclear Regulatory Commission (NRC) Action Matrix Column	N/A	No nuclear power in the value chain
	IF-EU-540a.2	Description of efforts to manage nuclear safety and emergency preparedness		
Grid Resiliency	IF-EU-550a.1	Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations	107	
	IF-EU-550a.2	(1) System Average Interruption Duration Index (SAIDI) (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days	N/A	Due to the structure of the domestic power market, the Korea Electric Power Corporation exclusively conducts transmission, distribution, and electricity sales

Membership of Associations

Sep. 2021 Energy Alliance	Jun. 2021 Private LNG Industry Association	Jan. 2021 Hydrogen Convergence Alliance	May. 2020 Korea Photovoltaic Industry Association	Feb. 2019 Climate Change Center
Dec. 2016 Korea New Renewable Energy Association	Sep. 2014 Energy Future Forum	Jan. 2011 Korea District Heating & Cooling Association	May. 2010 Private Power Producer Association	Apr. 1999 The Korea Gas Union





SK Group Industry-Specific Indicators


SK E&S reports on items specific to the industrial area - Electric Utilities that SK E&S belongs, reflecting standards from Global ESG disclosure/assessment agencies such as MSCI (Morgan Stanley Capital International index) and SASB (Sustainability Accounting Standard Board).

※ As of 2021

Caterogy	Content	Notes
Eco-Efficiency for Products		
Eco-Design Products	N/A	-
Status of 3rd party and Type II certified products		
Opportunities in Renewable Energy		
Target of expanding renewable energy production/power generation capacity	p22	↗
Business structure for developing renewable energy production/power generation capacity	p23	↗
Investment in renewable energy grid - renewable energy generation capacity added	Cheongsan Onshore Wind Power 22MW (Commercial operation started in Jan 2021)	-
Investment in renewable energy grid - planned ratio of renewable energy in total power generation capacity	As of 2025, about 59% (renewable energy 7GW, LNG power/district energy 4.9GW)	-
Investment in renewable energy grid - share of renewable energy to total generation capacity	As of 2021, about 8% (renewable energy 336MW, LNG power/district energy 3,895MW)	-
Provision of green power options for customers	Power Purchase Agreement (PPA) signed	🔗
Commercialization of renewable energy equipment	N/A	-
External partnerships on renewable energy	Joining/participating in renewable energy associations	↗
Renewable energy capacity - wind power	Domestic 85 MW / Overseas 50 MW in operation	-
Renewable energy capacity - solar power	Domestic 70MW / Overseas 131MW in operation	-

Caterogy	Content	Notes
Renewable energy capacity - geothermal		
Renewable energy capacity - biomass		
Renewable energy capacity - waste Energy	N/A	-
Renewable energy capacity - tidal		
Renewable energy capacity - water power		
Renewable energy capacity - other		
Renewable energy capacity - total	Total 336MW operating (as of 2021)	-
Changes in renewable energy production/power generation capacity	2005 0MW → 2021 336MW	-
Toxic Emissions & Waste		
Status of managing Soil, Noise Vibration, and Odor	Refer to Environmental Information Disclosure System	🔗
Activities to process improvement to reduce hazardous material emissions	p33, 34	↗
Strategies for reducing footprints of hazardous substances in the supply chain	N/A	-
Periodic environmental impact audit - Implementation of the overall site	Conducting environmental diagnosis at least once a year (for specified sites)	↗
periodic environmental impact audit - Implementation yearly		
Trend of hazardous substance emissions		
Performance of hazardous substance emissions - Absolute amount (volume), per Sales (Intensity)	p99	↗
Use of Raw Materials		
Usage and per Sales of raw materials	p98	-
Water Consumption		
Number of incidents of non-compliance associated with water quantity and/or quality permits, standards, and regulations	0 case	↗

Caterogy	Content	Notes
Description of water management risks and discussion of strategies and practices to mitigate those risks	p34	-
Biodiversity & Land Use		
Validation through cooperation with external stakeholder groups with reliable biodiversity activities	N/A	-
Policy of sustainable management for the use of natural resources and raw materials		
Policy to minimize ecosystem disturbance due to business		
Policy to reclaim habitat		
Policy of disturbed land	Environmental impact assessment and post-monitoring at each site when developing renewable energy (Site conservation and shelter creation for animal and plant habitat protection, tree planting, prevention of the use of cleaning agents when cleaning solar modules, construction of environmental damage prevention facilities due to soil leakage, waste and waste oil disposal, etc.)	
Establishment/disclosure of coverage of biodiversity-related policies		
Regeneration or restoration activities for disturbed areas of operation due to business		
Efforts to minimize ecosystem and land disturbances due to business		
Program to protect ecosystem		
Biodiversity and community impact assessment: Conducting a biodiversity impact assessment before expanding business in a new area		
Performance of efforts to minimize disturbance due to business - oil spill		
Performance of efforts to minimize disturbance due to business - fresh water use		
Human Capital Development		
Employee stock ownership plan (ESOP) or employee stock purchase plan (ESPP)	N/A	
Determinants of compensation (compensation system)	p63	-
Regular performance assessment and feedback process		
Addressing Climate Change		
Greenhouse gas (GHG) emissions associated with power deliveries to the end consumer		
(1) Number of customers served in markets subject to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market	p97, 98	

Caterogy	Content	Notes
Amount of coal combustion residuals (CCR) generated, percentage recycled		<ul style="list-style-type: none"> No coal and nuclear power plant Due to the structure of the domestic power market, the KEPCO(Korea Electric Power Corporation) exclusively conducts transmission, distribution, and electricity sales
Total amount of coal combustion residual (CCR), broken down by hazard potential classification and structural integrity assessment	N/A	
Energy Accessibility		
Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers		
Typical monthly electric bill for residential customers for (1) 500 kWh and (2) 1,000 kWh of electricity delivered per month		
Number of residential customer electric disconnections for non-payment, percentage reconnected within 30 days		
Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory		
Percentage of electric utility revenues from rate structures that (1) are decoupled and (2) contain a lost revenue adjustment mechanism (LRAM)	N/A	<ul style="list-style-type: none"> No coal and nuclear power plant Due to the structure of the domestic power market, the KEPCO(Korea Electric Power Corporation) exclusively conducts transmission, distribution, and electricity sales
Percentage of electric load served by smart grid technology (MWh)		
Customer electricity savings from efficiency measures, by market		
Total number of nuclear power units, broken down by U.S. Nuclear Regulatory Commission (NRC) Action Matrix Column		
Policy to manage nuclear safety and emergency preparedness		
<ul style="list-style-type: none"> SAIDI (System Average Interruption Duration Index) SAIFI (System Average Interruption Frequency Index) CAIDI (Customer Average Interruption Duration Index) 		
Privacy and Data Security		
Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations	0 case	

Independent Assurance Statement

To readers of 2021 SK E&S Sustainability Report

Introduction

Korea Management Registrar (KMR) was commissioned by SK E&S to conduct an independent assurance of its Sustainability Report 2021 (the "Report"). The data and its presentation in the Report is the sole responsibility of the management of SK E&S. KMR's responsibility is to perform an assurance engagement as agreed upon in our agreement with SK E&S and issue an assurance statement.

Scope and Standards

SK E&S described its sustainability performance and activities in the Report. Our Assurance Team carried out an assurance engagement in accordance with the AA1000AS v3 and KMR's assurance standard SRV1000. We are providing a Type 2, moderate level assurance. We evaluated the adherence to the AA1000AP (2018) principles of inclusivity, materiality, responsiveness and impact, and the reliability of the information and data provided using the Global Reporting Initiative (GRI) Index provided below. The opinion expressed in the Assurance Statement has been formed at the materiality of the professional judgment of our Assurance Team.

Confirmation that the Report was prepared in accordance with the Core Options of the GRI standards was included in the scope of the assurance. We have reviewed the topic-specific disclosures of standards which were identified in the materiality assessment process. We also confirmed that the report was prepared in accordance with the TCFD recommendations and SASB.

- GRI Sustainability Reporting Standards
- Universal Standards
- Topic Specific Standards
 - Management approach of Topic Specific Standards
 - GRI 203: Indirect Economic Impacts
 - GRI 303: Water and Effluents
 - GRI 305: Emissions
- GRI 306: Effluents and Waste
- GRI 413: Local Communities
- GRI 414: Supplier Social Assessment
- SASB Sustainability Disclosure Topics & Accounting Metrics
- TCFD recommendations

As for the reporting boundary, the engagement excludes the data and information of SK E&S' partners, suppliers and any third parties.

KMR's Approach

To perform an assurance engagement within an agreed scope of assessment using the standards outlined above, our Assurance Team undertook the following activities as part of the engagement:

- reviewed the overall Report;
- reviewed materiality assessment methodology and the assessment report;
- evaluated sustainability strategies, performance data management system, and processes;
- interviewed people in charge of preparing the Report;
- reviewed the reliability of the Report's performance data and conducted data sampling;
- assessed the reliability of information using independent external sources such as Financial Supervisory Service's DART and public databases.

Limitations and Recommendations

KMR's assurance engagement is based on the assumption that the data and information provided by SK E&S to us as part of our review are provided in good faith. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. To address this, we referred to independent external sources such as DART and National Greenhouse Gas Management System (NGMS) and public databases to challenge the quality and reliability of the information provided.

Conclusion and Opinion

Based on the document reviews and interviews, we had several discussions with SK E&S on the revision of the Report. We reviewed the Report's final version in order to make sure that our recommendations for improvement and revision have been reflected. Based on the work performed, it is our opinion that the Report applied the Core Option of the GRI Standards. Nothing comes to our attention to suggest that the Report was not prepared in accordance with the AA1000AP (2018) principles.

Inclusivity

SK E&S has developed and maintained different stakeholder communication channels at all levels to announce and fulfill its responsibilities to the stakeholders. Nothing comes to our attention to suggest that there is a key stakeholder group left out in the process. The organization makes efforts to properly reflect opinions and expectations into its strategies.

Materiality

SK E&S has a unique materiality assessment process to decide the impact of issues identified on its sustainability performance. We have not found any material topics left out in the process.

Responsiveness

SK E&S prioritized material issues to provide a comprehensive, balanced report of performance, responses, and future plans regarding them. We did not find anything to suggest that data and information disclosed in the Report do not give a fair representation of SK E&S' actions.

Impact

SK E&S identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible.

Reliability of Specific Sustainability Performance Information

In addition to the adherence to AA1000AP (2018) principles, we have assessed the reliability of economic, environmental, and social performance data related to sustainability performance. We interviewed the in-charge persons and reviewed information on a sampling basis and supporting documents as well as external sources and public databases to confirm that the disclosed data is reliable. Any intentional error or misstatement is not noted from the data and information disclosed in the Report.

Competence and Independence

KMR maintains a comprehensive system of quality control including documented policies and procedures in accordance with ISO/IEC 17021:2015 - Requirements for bodies providing audit and certification of management systems. This engagement was carried out by an independent team of sustainability assurance professionals. KMR has no other contract with SK E&S and did not provide any services to SK E&S that could compromise the independence of our work.

June 2022 Seoul, Korea

CEO E. J. Hwang



SRV1000
Sustainability Committee Assurance



SK Social Value Measurement Formula

(Based on 2021 results and public announcement)

Indirect Economic Contribution

No.	Indicator	Equation	Baseline			Monetization proxy		
			Content	Value	Reference	Content	Value	Reference
1	Employment	Total amount of an employee's wages + incentives + benefits in the current year		N/A		Total amount of wages and benefits of executives and employees (including foreigners) (measuring excess of legal standards, excluding bimeasure with other indicators)		N/A
2	Dividends	Total amount of dividends in the current year			N/A		The amount of dividends in the statement of changes in equity in the financial statements	
3	Tax payment	Total amount of tax payments in the current year			N/A		Tax amount in income statement of the current year, excluding the following three items: 1. Penalties, fines, and handicapped employment fees (labor metrics overlapped) 2. Items included in manufacturing expenses 3. Association fees such as the Chamber of Commerce and industry dues	

Environment

No.	Category	Indicator	Equation	Baseline			Monetization proxy		
				Content	Value	Reference	Content	Value	Reference
4	Process	Used water	Used water in the measurement year × Monetization Proxy		N/A		The unit cost by water is calculated as the average value of the purchase unit cost by water in the measurement year × processing water cost rate* * Processing water cost rate = (1 - Value-added rate of water supplier) ※ If the company itself uses the water after intake and treatment, the amount of water intake is measured.		N/A
5	Process	Greenhouse gas emissions	GHG emissions in the measurement year × Monetization Proxy (Eco-cost of GHG)		N/A		SCC (Social Cost of Carbon)	106,325.02KRW	PwC Methodology Report
6	Process	NOx emissions (Air pollutant)	NOx emissions in the measurement year × Monetization Proxy (Eco-cost of NOx)		N/A		unit cost of NOx	7,237.4265KRW	
7	Process	SOx emissions (Air pollutant)	SOx emissions in the measurement year × Monetization Proxy (Eco-cost of SOx)		N/A		unit cost of SOx	11,837.994732KRW	TU Delft, Ecocosts emissions 2022 v1.1(2021.10.01)
8	Process	PM10 emissions (Air pollutant)	PM10 emissions in the measurement year × Monetization Proxy (Eco-cost of PM10)		N/A		unit cost of PM10	10,795.2642KRW	
9	Process	PM2.5 emissions (Air pollutant)	PM2.5 emissions in the measurement year × Monetization Proxy (Eco-cost of PM2.5)		N/A		unit cost of PM2.5	47,347.65KRW	
10	Process	VOC emissions (Air pollutant)	VOC emissions in the measurement year × Monetization Proxy (Eco-cost of VOC)		N/A		unit cost of VOC	6,457.0864537434KRW	Modified data based on TU Delft Eco-cost

No.	Category	Indicator	Equation	Baseline			Monetization proxy		
				Content	Value	Reference	Content	Value	Reference
11	Process	COD (Chemical Oxygen Demand) (Water pollutant)	COD in the measurement year × Monetization Proxy (Eco-cost of COD)		N/A		unit cost of COD	124,1049546KRW	TU Delft, Ecocosts emissions 2017 V1-6
12	Process	T-P emissions (Water pollutant)	T-P emissions in the measurement year × Monetization Proxy (Eco-cost of T-P)		N/A		unit cost of T-P	19,455.82578KRW	TU Delft, Ecocosts emissions 2022 V1.1(2021.10.01)
13	Process	T-N emissions (Water pollutant)	T-N emissions in the measurement year × Monetization Proxy (Eco-cost of T-N)		N/A		unit cost of T-N	28,230.02172KRW	
14	Process	General waste (incineration)	The amount of general waste incinerated in the measurement year × Monetization Proxy (The eco-cost of general waste incinerated)		N/A		unit cost of general waste (incineration)	116,310.86448453KRW	TU Delft, 2012
15	Process	Designated waste (incineration)	The amount of designated waste incinerated in the measurement year × Monetization Proxy (The eco-cost of designated waste incinerated)		N/A		unit cost of designated waste (incineration)	166,393.17KRW	Idemat 2021
16	Process	Waste (landfill)	The amount of waste sent to landfill in the measurement year × Monetization Proxy (The eco-cost of waste sent to landfill)		N/A		unit cost of waste (landfill)	766,238.3698581KRW	TU Delft, 2012
17	Product/Service	Reduction in particular matter through fuel cell (PM 10)	(Inhaled amount of PM 2.5 by fuel cell-Inhaled amount of PM 2.5 without fuel cell)*monetization proxy of PM2.5* (Inhaled amount of PM 2.5 by fuel cell in a single month)	Reduced amount of PM 2.5	0	Korean institute of science and technology	Unit cost of PM2.5	47347.65KRW/kg	Delft University of Technology, Eco-costs
18	Product/Service	Reduction in resource consumption by running renewable power plant	(Average unit price of resources in electricity generation market-unit price of resources in renewable power plants run by SK E&S)*1*Amount of generated energy by renewable power plant × heat coefficient[Amount of generated energy by renewable power plant * heat coefficient * 1000.00]	Average unit price of resources in electricity generation market	0.147866778KRW/MJ	Yearbook of energy statistics, Korea Coal Association, Korea Petroleum Association	1	1KRW	-
19	Product/Service	Reduction in greenhouse gas emission by running renewable power plant	(Average GHG emission factor in electricity generation market-GHG emission factor of renewable power plants run by SK E&S)*SCC(Social Cost of Carbon)*Amount of generated energy by renewable power plant * heat coefficient[Amount of generated energy by renewable power plant * heat coefficient * 1000.00]	Average GHG emission factor in electricity generation market	49.752808989g/MJ	Korea Power Exchange, GHG emission factor in energy generation sector	SCC (Social Cost of Carbon)	106325.02KRW/tCO ₂ e	PwC Methodology Report
20	Product/Service	Reduction in air pollutant emission by running renewable power plant (NOx)	(Average NOx emission factor in electricity generation market-NOx emission factor of renewable power plants run by SK E&S)*monetization proxy of NOx*Amount of generated energy by renewable power plant * heat coefficient[Amount of generated energy by renewable power plant * heat coefficient]	Average NOx emission factor in electricity generation market	0.032929338g/MJ		Unit cost of NOx	7237.4265KRW/kg	
21	Product/Service	Reduction in air pollutant emission by renewable energy generation (SOx)	(Average SOx emission factor in electricity generation market-SOx emission factor of renewable power plants run by SK E&S)*monetization proxy of SOx*Amount of generated energy by renewable power plant * heat coefficient[Amount of generated energy by renewable power plant * heat coefficient]	Average SOx emission factor in electricity generation market	0.017916984g/MJ	Korea Power Exchange;National Institute Of Environmental Research, Statistics on the amount of air pollutant	Unit cost of SOx	11837.994732KRW/kg	Delft University of Technology, Eco-costs
22	Product/Service	Reduction in air pollutant emission by renewable energy generation (Particular matter)	(Average particular matter emission factor in electricity generation market- particular matter emission factor of renewable power plants run by SK E&S)*monetization proxy of particular matter*Amount of generated energy by renewable power plant * heat coefficient[Amount of generated energy by renewable power plant * heat coefficient]	Average particular matter emission factor in electricity generation market	0.000984854g/MJ		Unit cost of particular matter	15671.023852516KRW/Kg	

No.	Category	Indicator	Equation	Baseline			Monetization proxy		
				Content	Value	Reference	Content	Value	Reference
23	Product/Service	Reduction in air pollutant emission by fuel cell energy generation (NOx)	(Average NOx emission factor in electricity generation market- NOx emission factor of fuel cells run by SK E&S)*monetization proxy of NOx*Amount of generated energy by fuel cell * heat coefficient[Amount of generated energy by fuel cell * heat coefficient]	Average NOx emission factor in electricity generation market	0.032929338g/MJ		Unit cost of NOx	7237.4265KRW/kg	
24	Product/Service	Reduction in air pollutant emission by fuel cell energy generation (SOx)	(Average SOx emission factor in electricity generation market- SOx emission factor of fuel cells run by SK E&S)*monetization proxy of SOx*Amount of generated energy by fuel cell *4 heat coefficient[Amount of generated energy by fuel cell * heat coefficient]	Average SOx emission factor in electricity generation market	0.017916984g/MJ	Korea Power Exchange:National Institute Of Environmental Research, Statistics on the amount of air pollutant	Unit cost of SOx	11837.994732KRW/kg	Delft University of Technology, Eco-costs
25	Product/Service	Reduction in air pollutant emission by fuel cell energy generation (Particular matter)	(Average particular matter emission factor in electricity generation market- particular matter emission factor of fuel cells run by SK E&S)*monetization proxy of particular matter*Amount of generated energy by fuel cell * heat coefficient[Amount of generated energy by fuel cell * heat coefficient]	Average particular matter emission factor in electricity generation market	0.000984854g/MJ		Unit cost of particular matter	15671.023852516KRW/Kg	
26	Product/Service	Reduction in greenhouse gas emission by transferring fuel of public buses from fossil fuel to CNG	(Average GHG emission factor of public bus-GHG emission factor of public CNG bus)*SCC (Social Cost of Carbon)*driving distance (km)/1000[CNG sales * fuel efficiency of CNG bus / 1000.00]	Average GHG emission factor of public bus	721.462g/Km		SCC (Social Cost of Carbon)	106325.02KRW/tCO ₂ eq	PwC Methodology Report
27	Product/Service	Reduction in air pollutant emission by transferring fuel of public buses from fossil fuel to CNG (NOx)	(Average NOx emission factor of public bus-NOx emission factor of public CNG bus)*monetization proxy of NOx*driving distance (km) [CNG sales * fuel efficiency of CNG bus]	Average NOx emission factor of public bus	5.1614199g/Km		Unit cost of NOx	7237.4265KRW/kg	
28	Product/Service	Reduction in air pollutant emission by transferring fuel of public buses from fossil fuel to CNG (Particular matter)	(Average particular matter emission factor of public bus- particular matter emission factor of public CNG bus)*monetization proxy of NOx*driving distance (km)[CNG sales * fuel efficiency of CNG bus]	Average particular matter emission factor of public bus	0.0093324g/Km	Ministry of Environment, Study on the validity of the policy on the spreadout of CNG bus by analysis on the environmental & economical efficiency of diesel bus and CNG bus (2012, Korean article)	Unit cost of PM10	10795.2642KRW/kg	Delft University of Technology, Eco-costs
29	Product/Service	Reduction in air pollutant emission by transferring fuel of public buses from fossil fuel to CNG (VOCs)	(Average VOCs emission factor of public bus-VOCs emission factor of public CNG bus)*monetization proxy of NOx*driving distance(km) [CNG sales * fuel efficiency of CNG bus]	Average VOCs emission factor of public bus	4.06115g/Km		Unit cost of VOC (Volatile Organic Compounds)	6457.086453743KRW/kg	
30	Product/Service	Reduction in air pollutant emission by transferring fuel of public buses from fossil fuel to CNG (CO)	(Average CO emission factor of public bus-CO emission factor of public CNG bus)*monetization proxy of NOx*driving distance(km) [CNG sales * fuel efficiency of CNG bus]	Average CO emission factor of public bus	0.4654448g/Km		Unit cost of CO	330.0266484KRW/kg	
31	Product/Service	Reduction in air pollutant emission by supplying city gas mixed with biogas	(Market average damage cost of CH4 - damage cost of CH4 in biogas)*1*biogas sales[biogas sales]	Market average damage cost of CH4	4593.959239954KRW/kg	-	1	1KRW	-
32	Product/Service	Reduction in particular matter through fuel cell (PM 10)	(Inhaled amount of PM 10 by fuel cell-Inhaled amount of PM 10 without fuel cell)*monetization proxy of PM10* (Inhaled amount of PM 10 by fuel cell in a single month)	Inhaled amount of PM 10 without fuel cell	0	Korean institute of science and technology	Unit cost of PM10	10795.2642KRW/kg	Delft University of Technology, Eco-costs

Society

No.	Category	Indicator	Equation	Baseline			Monetization proxy		
				Content	Value	Reference	Content	Value	Reference
33	Process	Poverty alleviation through the employment of vulnerable groups on the labor market (basic livelihood security recipients)	(Earned income of the employed vulnerable group on the labor market - Pre-employment income of the vulnerable group on the labor market) * Number of people	Monthly pre-employment income of basic livelihood security recipients	1,822,480KRW	Ministry of Employment and Labor, Minimum wage notification (2020.08.05)		N/A	
34	Process	Poverty alleviation through the employment of vulnerable groups on the labor market (next lowest income bracket)		Monthly pre-employment income of next lowest income bracket	1,822,480KRW			N/A	
35	Process	Poverty alleviation through the employment of vulnerable groups on the labor market (career-interrupted women)		Monthly pre-employment income of career-interrupted women	1,822,480KRW			N/A	
36	Process	Poverty alleviation through the employment of vulnerable groups on the labor market (elderly men)		Monthly pre-employment income of elderly men	528,837KRW	Statistics Korea, Modified data based on Household Income and Expenditure Survey		N/A	
37	Process	Poverty alleviation through the employment of vulnerable groups on the labor market(elderly women)		Monthly pre-employment income of elderly women	172,772KRW			N/A	
38	Process	Poverty alleviation through the employment of vulnerable groups on the labor market (severely disabled men)		Monthly pre-employment income of severely disabled men	576,775KRW	Korea Employment Agency for Persons with Disabilities (KEAD), Modified data based on Survey on the Economic Activities of Disabled Persons		N/A	
39	Process	Poverty alleviation through the employment of vulnerable groups on the labor market (mildly disabled men)		Monthly pre-employment income of mildly disabled men	1,137,558KRW			N/A	
40	Process	Poverty alleviation through the employment of vulnerable groups on the labor market (severely disabled women)		Monthly pre-employment income of severely disabled women	507,516KRW			N/A	
41	Process	Poverty alleviation through the employment of vulnerable groups on the labor market (mildly disabled women)		Monthly pre-employment income of mildly disabled women	635,997KRW			N/A	
42	Process	Expenditure for the special levy for the disabled employment		Total amount of related expenses applied		N/A			N/A
43	Process	Improving employees' quality of life through education		Total amount of related expenses applied		N/A		Depending on each affiliates	N/A
44	Process	Improving employees' quality of life through family-friendly institutions (childcare leave)	Number of months of childcare leave * Average wages of employees on childcare leave		N/A		average monthly minimum wage in Korea	3,831,232KRW	Ministry of Employment and Labor
45	Process	Improving employees' quality of life through family-friendly institutions (paid reduced working hours)	Reduced working hours × Average wage (Hourly wage rate)		N/A		average hourly minimum wage in Korea	23,105KRW	Ministry of Employment and Labor
46	Process	Improving employees' quality of life through family-friendly institutions (unpaid reduced working hours)	Reduced working hours × Minimum wage (Hourly wage rate)		N/A		hourly minimum wage in Korea	8,720KRW	Ministry of Employment and Labor, Minimum wage notification (2020.08.05)
47	Process	Improving employees' quality of life through family-friendly institutions (other work-family balance assistance performances)	Other work-family balance assistance implementation total input cost applied		N/A		Depending on each affiliates		N/A
48	Process	Ensuring employee safety through disease & illness prevention/health care	Total cost of disease & illness prevention-related assistance		N/A		Depending on each affiliates		N/A
49	Process	Damage to employees' safety due to industrial accidents	Total amount of industrial accident insurance benefits		N/A		Depending on each affiliates		N/A

No.	Category	Indicator	Equation	Baseline			Monetization proxy		
				Content	Value	Reference	Content	Value	Reference
50	Process	Achievements in fair contract fulfillment by shortening the number of days taken for subcontract payment	Annual total amount of subcontract payments * (Average payment deadline of large companies - average payment days)/365 days * Average interest rate of commercial banks	Average payment deadline of large companies	14.9 days	Korea Commission for Corporate Partnership, 2020 Fair Transaction Agreement performance result evaluated	Average interest rate of commercial banks	2.95%	Bank of Korea, the weighted average lending rate of the deposit bank > the amount of new loans
51	Process	Damage to suppliers due to unfair trade	The costs of damage to suppliers due to unfair trade practices		N/A		N/A	N/A	N/A
52	Process	Achievements in contribution to mutual growth/win-win cooperation through financial support (Free contribution)	Full amount of contributions		N/A		N/A	N/A	N/A
53	Process	Achievements in contribution to mutual growth/win-win cooperation through financial support (interest-free or low-interest loan) ※ For general SMEs	Amount of loan * (Average interest rate of commercial banks - Interest rate offered)	Average interest rate of commercial banks	2.95%	Bank of Korea, the weighted average lending rate of the deposit bank > the amount of new loans	N/A	N/A	N/A
54	Process	Achievements in contribution to mutual growth/win-win cooperation through financial support (interest-free or low-interest loan) ※ For SMEs with low credit ratings	Amount of loan * (interest rate of Network Loan - Interest rate offered)	Average interest rate on SME loan	4.6%	Korea Federation of Banks, The interest rate on SME loan	N/A	N/A	N/A
55	Process	Achievements in contribution to mutual growth/win-win cooperation through technology support/protection (Free contribution in cash)	Total amount of free contribution in cash		N/A		N/A	N/A	N/A
56	Process	Achievements in contribution to mutual growth/win-win cooperation through technology support/protection (Free contribution in kind)	Estimated market price of products for in-kind support * quantity of product for in-kind support		N/A		Depending on each affiliates	N/A	N/A
57	Process	Achievements in contribution to mutual growth/win-win cooperation through technology support/protection (Free or low-interest loan in cash)	Amount of loan * (Average interest rate of commercial banks - Interest rate offered)	Average interest rate of commercial banks	2.95%	Bank of Korea, the weighted average lending rate of the deposit bank > the amount of new loans	N/A	N/A	N/A
58	Process	Achievements in contribution to mutual growth/win-win cooperation through technology support/protection (Free or low-interest loan in kind)	Market lending price × number of loans		N/A		N/A	N/A	N/A
59	Process	Achievements in contribution to mutual growth/win-win cooperation through technology support/protection (etc.)	Purchase-linked amount of products that support technology development * Value-added rate for the business type (Suppliers)		N/A		the value-added rate of the business type of the supplier	different value-added rates by industries	using data on National Tax Service, Statistics Korea, Bank of Korea
60	Process	Achievements in contribution to mutual growth/win-win cooperation through recruitment support	Recruitment support cost		N/A		N/A	N/A	N/A
61	Process	Achievements in contribution to mutual growth/win-win cooperation through management support	Management support cost		N/A		N/A	N/A	N/A
62	Process	Achievements in contribution to increased income of vulnerable producers through fair trade in deprived areas	Amount of fair trade with deprived areas * Value-added rate of the business type		N/A		the value-added rate of the business type of the supplier	different value-added rates by industries	using data on National Tax Service, Statistics Korea, Bank of Korea
63	Process	Achievements in contribution to increased income of vulnerable producer group through social contribution purchase	Total transaction amount of social contribution purchase * Value-added rate of the business type		N/A		N/A	N/A	N/A
64	Process	Compliance with global socially-responsible purchase	the total transaction cost		N/A		N/A	N/A	N/A

No.	Category	Indicator	Equation	Baseline			Monetization proxy		
				Content	Value	Reference	Content	Value	Reference
65	Process	Achievements in contribution to strengthening the soundness of the global supply chain	Total input cost for a system for improving the soundness of global supply chain		N/A		N/A		N/A
66	Process	Safe working conditions through safety & health management of suppliers	Total amount of supplier's safety and health management support cost		N/A		N/A		N/A
67	Process	Damage to supplier's person or property caused by industrial accidents	Total amount of the property and personal damage (industrial accidents) related to the company's value chain		N/A		N/A		N/A
68	Process	Purchasing performance through Happy Narae	Affiliate's purchase amount of social enterprise * Social enterprise's value-added rate of the business type		N/A		value-added rate calculated by Happy Narae	different value-added rates by year	Providing data by Happy Narae
69	Philanthropy	Performance through corporate philanthropic support programs	The performance of corporate philanthropic activities is measured, and the market price of the social benefits obtained by the beneficiaries through philanthropic activities is estimated and measured.		N/A		Depending on each affiliates		N/A
70	Philanthropy	Happynarae (a subsidiary distribution platform)'s performance of supporting the social enterprise ecosystem through profit sharing is measured by recognizing the contribution of each affiliate	Total social performance of the Happynarae support project * Social enterprise's (Affiliate's total purchases from Happynarae / total purchase by Happynarae)		N/A		N/A		N/A
71	Philanthropy	Employee volunteering performance (Work that requires no special skills or education)	Total hours of volunteering activities hours by type * statutory minimum wage (hourly rate)		N/A		statutory minimum wage (Work that requires no special skills or education)	8,720KRW	Ministry of Employment and Labor, Minimum wage notification (2020.08.05)
72	Philanthropy	Employee volunteering performance (Caring)	Total hours of volunteering activities hours by type * hourly pay for a 1st-grade social worker		N/A		hourly pay for a 1st-grade social worker (activities dealing with beneficiaries such as child care)	10,979KRW	Ministry of Health and Welfare, Guidelines for labor wage for employee in social welfare facilities
73	Philanthropy	Employee volunteering performance (Talent donation)	Total hours of volunteering activities hours by type * Hourly wage by type		N/A				N/A
74	Philanthropy	Employee volunteering performance (Pro bono activities)	Total hours of volunteering activities hours by type * Hourly wage by type		N/A		Depending on each affiliates		N/A
75	Philanthropy	Performance of cash and in-kind donations	Total amount of cash and in-kind donations		N/A				N/A
76	Product/Service	Reduction in cost for building national electricity system through distributed generation	(Market average of benefit coefficient of distributed generation-benefit coefficient of distributed energy source)*1*Bid amount on distributed generation (Kwh) [Bid amount on distributed generation * 1000.00]	Market average of benefit coefficient of distributed generation-benefit coefficient of distributed energy source	12.00576KRW/kWh	-	1	1KRW	-
77	Product/Service	Improving public interest by stable electricity supply in national scale (SCON*) (SMP)	(unindemnified amount of SCON-price of electricity at energy market)*1*unindemnified amount of SCON[unindemnified amount of SCON]	price of electricity at energy market	0	Result from in-house research	1	1KRW	-
78	Product/Service	Improving public interest by stable electricity supply in national scale (SCON) (facilitate tax)	(Unindemnified amount of regional development tax-charged amount of regional development tax)*1*Unindemnified amount of regional development tax[Unindemnified amount of regional development tax]	regional development tax	0	Result from in-house research	1	1KRW	-

* energy produced due to System CONstraint.



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